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MIL-STD-3031A
w/ CHANGE 1
15 June 2016

SUPERSEDING
MIL-STD-3031
25 March 2011

DEPARTMENT OF DEFENSE STANDARD PRACTICE

ARMY BUSINESS RULES FOR S1000D: INTERNATIONAL SPECIFICATION FOR TECHNICAL PUBLICATIONS UTILIZING A COMMON SOURCE DATA BASE

AMSC ***9656*** **AREA TMSS**

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FOREWORD

1. This standard is approved for use by the Department of the Army and Headquarters Marine Corps and is available for use by all Departments and Agencies of the Department of Defense (DOD).

2. This standard establishes the business rules to be used with S1000D Issues 4.0 and 4.0.1 for the preparation of technical publications required to support the various types of equipment and weapon systems within the Department of the Army and Headquarters Marine Corps. The requirements contained in this standard cover operation and maintenance at all levels through overhaul (depot), including Depot Maintenance Work Requirements (DMWRs) and National Maintenance Work Requirements (NMWRs). This standard does not contain requirements for training material.

3. Comments, suggestions, or questions should be addressed to USAMC Logistics Support Activity, ATTN: AMXLS-AP, Bldg 3307, Redstone Arsenal, AL 35898 or e-mailed to usarmy.redstone.logsa.mbx.tmss@mail.mil. Since contact information can change, you may want to verify the currency of this address information using the ASSIST online database at https://assist.dla.mil/.

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CHANGE SUMMARY

This is a summary of the changes made in this change notice. All technical changes are marked with vertical bars. Editorial changes (e.g., spelling corrections, grammar corrections, punctuation corrections, corrections to paragraph references, etc.) are not marked with vertical bars. Also, changes to the table of contents will not be marked with a vertical bar. Changes to Section 2 and to paragraph 3.1 in Section 3 are not marked with vertical bars due to large number of changes to them. For figures, changes to the title and/or number will be marked with a vertical bar to the left of the figure title/number. When the content of the figure changes or when both title/number and contents change, the vertical bar will appear to the right of the figure number/title. For tables, changed material in the titles, rows, and blocks may be marked individually with vertical bars next to the changed information when there is only a few changes to the table. For those tables which have substantial changes such as those in Appendix A or B, the vertical bar will appear to the right of the table title. If only the table title is changed, the vertical bar will appear to the left of the table title. Below is a tabular listing with all the specific technical changes made which are marked with a vertical bar.

Current Para/Fig/Table Number	***Previous Para/Fig/Table Number***	***Action***
Foreword, para 3	Foreword, para 3	Changed
1.1	1.1	Changed
1.7	1.7	Changed
Section 2	Section 2	Changed
3.2	3.2	Changed
*	3.3.5	Deleted
3.3.8	3.3.8	Changed
3.3.18A	*	Added
3.3.19	3.3.19	Changed
3.3.25	3.3.25	Changed
3.3.28	3.3.28	Changed
3.3.32	3.3.32	Changed
3.3.38	3.3.38	Changed
3.3.41	3.3.41	Changed
3.3.45	3.3.45	Changed
3.3.46	3.3.46	Changed
3.3.48	3.3.48	Changed
3.3.51	3.3.51	Changed
*	3.3.65	Deleted
3.3.70	3.3.70	Changed
3.3.71	3.3.71	Changed
3.3.72	3.3.72	Changed
3.3.73	3.3.73	Changed
3.3.73A	*	Added
3.3.73B	*	Added
3.3.75	3.3.75	Changed
*	3.3.76	Deleted

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Current Para/Fig/Table Number	***Previous Para/Fig/Table Number***	***Action***
3.3.77	3.3.77	Changed
3.3.78	3.3.78	Changed
3.3.81	3.3.81	Changed
3.3.87	3.3.87	Changed
3.3.88	3.3.88	Changed
3.3.88A	*	Added
3.3.90	3.3.90	Changed
3.3.98	3.3.98	Changed
3.3.111	3.3.111	Changed
3.3.112	3.3.112	Changed
3.3.113	3.3.113	Changed
3.3.114	3.3.114	Changed
3.3.115	3.3.115	Changed
3.3.118	3.3.118	Changed
3.3.119	3.3.119	Changed
3.3.123	3.3.123	Changed
3.3.128	3.3.128	Changed
3.3.133	3.3.133	Changed
3.3.136A	*	Added
*	5.5j	Deleted
5.7.1.1	5.7.1.1	Title changed
5.8.1.1	5.8.1.1	Changed
5.9.1.1	5.9.1.1	Changed
5.9.1.3	5.9.1.3	Changed
5.9.1.4	*	Added
5.9.1.5	*	Added
5.9.2.3	*	Added
5.9.2.4	*	Added
5.10.1.3	*	Added
5.10.2.6	5.10.2.6	Changed
5.11.1.7	5.11.1.7	Changed
5.11.1.9	5.11.1.9	Changed
5.11.1.10	5.11.1.10	Changed
5.11.1.15.1	5.11.1.15.1	Changed
5.11.2.2	5.11.2.2	Changed
5.13.1.3	5.13.1.3	Changed
5.13.1.4	5.13.1.4	Changed
5.13.1.12	5.13.1.12	Title changed
5.13.1.15	5.13.1.15	Changed
5.13.1.16	5.13.1.16	Changed
5.13.1.16A	*	Added
5.15.2.1	5.15.2.1	Changed
5.16.1.2	*	Added

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Current Para/Fig/Table Number	***Previous Para/Fig/Table Number***	***Action***
5.17.1.1A	*	Added
5.17.1.9	5.17.1.9	Changed
5.17.1.16	5.17.1.16	Changed
5.17.1.19	*	Added
5.17.1.20	*	Added
*	5.17.2.1	Deleted
5.19.1.4	5.19.1.4	Changed
5.19.1.6A	*	Added
5.19.1.6B	*	Added
5.19.1.7	5.19.1.7	Changed
5.19.1.7.1	5.19.1.7.1	Changed
5.19.1.7.2	5.19.1.7.2	Changed
5.19.1.7.4	5.19.1.7.4	Changed
5.19.1.7.4A	*	Added
5.19.1.7.6	5.19.1.7.6	Title changed
5.19.1.7.7	5.19.1.7.7	Changed
5.19.1.7.8	5.19.1.7.8	Changed
5.19.1.9	5.19.1.7.9	Title changed
5.19.1.11	5.19.1.11	Title changed
5.19.1.12	5.19.1.12	Title changed
5.19.1.16	5.19.1.16	Changed
5.19.1.18	5.19.1.18	Changed
5.19.1.18.1	*	Added
5.19.1.21	*	Added
5.19.2.14	5.19.2.14	Changed
5.19.2.20	5.19.2.20	Changed
5.20.1.1	5.20.1.1	Changed
5.21.1.2	5.21.1.2	Changed
5.21.1.5	5.21.1.5	Changed
5.21.1.6	5.21.1.6	Title changed
5.21.1.7	5.21.1.7	Changed
5.21.1.10	5.21.1.10	Changed
5.21.1.16	5.21.1.16	Changed
*	5.21.1.17	Deleted
5.21.1.18	*	Added
5.21.1.19	*	Added
5.21.1.20	*	Added
5.21.1.21	*	Added
*	5.21.2.4	Deleted
*	5.21.2.5	Deleted
5.24.1.1	*	Added
*	5.24.1.2	Deleted
5.24.1.3	*	Added

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Current Para/Fig/Table Number	***Previous Para/Fig/Table Number***	***Action***
5.24.2.1	*	Added
5.27.1.1	*	Added
5.27.1.2	*	Added
5.27.1.3	*	Added
5.27.1.4	*	Added
5.27.1.5	*	Added
Table IIB	*	Added
5.27.1.6	*	Added
5.27.1.7	*	Added
5.32.1.3	5.32.1.3	Changed
5.32.1.4	5.32.1.4	Changed
5.32.1.5	*	Added
5.33.1.1A	*	Added
5.35.1.30	*	Added
*	5.35.2.1	Deleted
5.37.1.26A	*	Added
5.37.1.35	5.37.1.35	Changed
5.37.2.8	5.37.2.8	Changed
5.37.2.9	5.37.2.9	Changed
5.40.1.2	*	Added
Table XV	Table XV	Changed
Table XXVI	Table XXVI	Changed
5.55.1.2	5.55.1.2	Changed
5.55.1.3	5.55.1.3	Changed
5.56.2.1	5.56.2.1	Changed
5.57.1.1	5.57.1.1	Changed
5.57.1.2A	*	Added
5.57.1.5	5.57.1.5	Changed
5.57.1.8	*	Added
5.63.1.4	5.63.1.4	Changed
5.63.1.6	*	Added
5.63.1.7	*	Added
5.69.1.6.1	*	Added
5.69.1.6.2	*	Added
5.69.1.12	5.69.1.12	Changed
5.69.1.16	5.69.1.16	Changed
5.70.1.1.2	5.70.1.1.2	Changed
Table XXXVII	Table XXXVII	Changed
5.70.1.1.3	5.70.1.1.3	Changed
Table XXXVIII	Table XXXVIII	Changed
5.70.1.4	5.70.1.4	Changed
5.70.2.4	*	Added
5.71.1.2	*	Added

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5.84.1.2a&b	5.84.1.2a&b	Changed
5.84.1.3	5.84.1.3	Changed
5.85.4.1.11	5.85.4.1.11	Changed
5.85.5.1.4	5.85.5.1.4	Changed
5.85.6.1.4	5.85.6.1.4	Changed
5.85.7.1.3	5.85.7.1.3	Changed
5.86.3.1.5	5.86.3.1.5	Changed
5.86.3.1.5A	*	Added
5.86.3.1.7	5.86.3.1.7	Changed
5.86.3.1.10	5.86.3.1.10	Changed
5.86.3.1.12	*	Added
5.86.4.1.2d	5.86.4.1.2d	Changed
5.86.4.1.3	5.86.4.1.3	Changed
*	5.86.4.1.3.1	Deleted
5.86.4.1.4	5.86.4.1.4	Changed
5.86.4.1.5	5.86.4.1.5	Changed
5.86.4.1.5.1	*	Added
5.86.4.1.5.2	*	Added
5.86.4.1.5.3	*	Added
5.86.4.1.5.4	*	Added
5.86.4.1.9	5.86.4.1.9	Changed
5.86.4.1.10	5.86.4.1.10	Changed
5.86.4.1.10.1	*	Added
5.86.4.1.12	5.86.4.1.12	Changed
5.86.4.1.15	5.86.4.1.15	Changed
5.86.5.1.4	5.86.5.1.4	Changed
5.86.6.1.1	5.86.6.1.1	Changed
5.86.6.1.2d	5.86.6.1.2d	Changed
5.87.1h	*	Added
5.87.2.1.1	5.87.2.1.1	Changed
5.87.2.1.2	5.87.2.1.2	Changed
5.87.3.1.1	5.87.3.1.1	Changed
5.87.3.1.2.2c	5.87.3.1.2.2c	Changed
5.87.5.1.1	5.87.5.1.1	Changed
5.87.5.1.2e	5.87.5.1.2e	Changed
5.87.6.1.2b	5.87.6.1.2b	Changed
5.87.6.1.2e(1)	5.87.6.1.2e(1)	Changed
5.87.6.1.2e(8)	5.87.6.1.2e(8)	Changed
5.87.6.1.2f	5.87.6.1.2f	Changed
5.87.6.1.3	5.87.6.1.3	Changed
5.87.7.1.3A	*	Added
5.87.7.1.4	5.87.7.1.4	Changed
5.87.7.1.5	5.87.7.1.5	Changed

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Current Para/Fig/Table Number	***Previous Para/Fig/Table Number***	***Action***
*	5.87.7.1.6	Deleted
5.87.8.1.1h	5.87.8.1.1h	Changed
5.87.8.1.2	5.87.8.1.2	Changed
5.87.8.1.3f	*	Added
5.87.8.1.3i	5.87.8.1.3h	Changed
5.87.8.1.4.2	5.87.8.1.4.2	Changed
5.87.8.1.4.2.1	*	Added
5.87.8.1.4.2.2	*	Added
5.87.8.1.5a	5.87.8.1.5a	Changed
5.87.8.1.9	5.87.8.1.9	Changed
5.87.8.1.10a	5.87.8.1.10a	Changed
5.87.8.1.10b	*	Added
5.87.8.1.10d	*	Added
5.87.8.1.11	5.87.8.1.11	Changed
5.87.8.1.11g	*	Added
5.87.8.1.12	5.87.8.1.12	Changed
5.87.8.1.13	5.87.8.1.13	Changed
5.87.8.1.18	5.87.8.1.18	Changed
5.87.8.1.19	5.87.8.19	Changed
5.87.8.1.23g	*	Added
5.87.8.1.24	5.87.8.1.24	Changed
5.87.8.1.25f&g	*	Added
5.87.8.1.26	5.87.8.1.26	Title changed
*	5.87.8.1.30	Deleted (moved to 5.87.11A)
*	5.87.8.1.30.1	Deleted (moved to 5.87.11A.1)
*	5.87.8.1.30.2	Deleted (moved to 5.87.11A.2)
5.87.8.1.31	5.87.8.1.31	Changed
5.87.8.1.31A	*	Added
5.87.8.1.31B	*	Added
5.87.8.1.32	5.87.8.1.32	Changed
5.87.8.1.33	5.87.8.1.33	Changed
5.87.8.1.34	5.87.8.1.34	Changed
5.87.8.1.35	5.87.8.1.35	Changed
5.87.8.1.36	*	Added
5.87.8.1.37	*	Added
5.87.8.1.38	*	Added
5.87.8.1.39	*	Added
5.87.11.1.2c	5.87.11.1.2c	Changed
5.87.11A	*	Added (data moved from 5.87.8.1.30)
5.87.11A.1	*	Added

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5.87.11A.2	*	Added
5.87.18.1.1	5.87.18.1.1	Change
5.87.22.1.3.6	5.87.22.1.3.6	Changed
5.87.22.1.3.6A	*	Added
5.87.22.1.3.7	5.87.22.1.3.7	Changed
5.87.22.1.3.8	5.87.22.1.3.8	Changed
5.87.22.1.3.9A	*	Added
5.87.22.1.3.11	5.87.22.1.3.11	
5.87.22.1.3.11A	*	Added
5.87.22.1.3.12	5.87.22.1.3.12	Changed
5.87.22.1.3.12A	*	Added
5.87.22.1.5	5.87.22.1.5	Changed
5.87.22.1.6	5.87.22.1.6	Changed
5.87.22.1.7	5.87.22.1.7	Changed
5.87.22.1.7.1	5.87.22.1.7.1	Changed
5.87.22.1.7.2	5.87.22.1.7.2	Changed
5.87.22.1.7.3	5.87.22.1.7.3	Changed
5.87.22.1.7.4	5.87.22.1.7.4	Changed
5.87.22.1.7.5	5.87.22.1.7.5	Changed
5.87.22.1.7.6	5.87.22.1.7.6	Changed
5.87.22.1.7.7	5.87.22.1.7.7	Changed
5.87.22.1.7.8	5.87.22.1.7.8	Changed
5.87.22.1.7.9	5.87.22.1.7.9	Changed
5.87.22.2.3	5.87.22.2.3	Changed
5.87.22.2.4	5.87.22.2.4	Changed
5.87.23.1.1	5.87.23.1.1	Changed
5.87.23.1.2	5.87.23.1.2	Changed
5.87.23.1.4	5.87.23.1.4	Changed
5.87.23.1.6	5.87.23.1.6	Changed
5.87.23.1.7	5.87.23.1.7	Changed
5.88.1.3	5.88.1.3	Changed
5.88.1.4	5.88.1.4	Changed
5.88.1.23	5.88.1.23	Changed
5.88.8.1.5	5.88.8.1.5	Changed
5.88.8.1.6.1	5.88.8.1.6.1	Changed
5.92.1.2.1	*	Added
5.92.1.3	5.92.1.3	Changed
5.92.1.4	5.92.1.4	Changed
5.92.1.5	5.92.1.5	Changed
5.92.1.5.1	*	Added
5.92.1.5.2	*	Added
5.92.1.6	5.92.1.4	Moved
5.92.1.7	5.92.1.5	Moved

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5.92.2.4	*	Added
5.93.1n	*	Added
5.93.4	5.93.4	Changed
5.93.4.1.1	5.93.4.1.1	Changed
5.93.4.1.2	*	Added
5.93.4.1.3	*	Added
5.93.5	5.93.5	Changed
5.93.11.1.1	5.93.11.1.1	Changed
5.93.11.1.6	5.93.11.1.6	Changed
5.93.11.1.7	5.93.11.1.7	Changed
5.93.12.1.1	5.93.12.1.1	Changed
5.93.12.1.3	5.93.12.1.3	Changed
5.93.13.1.1	5.93.13.1.1	Changed
5.93.14.1.1	5.93.14.1.1	Changed
5.93.14.2	5.93.14.2	Changed
5.93.14A	*	Added
5.93.14A.1	*	Added
5.93.14A.1.1	*	Added
5.93.14A.1.2	*	Added
5.93.14A.1.3	*	Added
5.93.14A.2	*	Added
5.93.16.1.1	5.93.16.1.1	Changed
5.93.16.1.2	5.93.16.1.2	Changed
5.93.16.2.1	5.93.16.2.1	Changed
5.93.17	5.93.17	Title changed
5.93.17.1.1	5.93.17.1.1	Changed
5.93.17.1.2	5.93.17.1.2	Changed
5.93.17.1.3	5.93.17.1.3	Changed
5.94.1.1.1	5.94.1.1.1	Boiler plate changed
5.94.2.1.1	5.94.2.1.1	Boiler plate changed
5.97.4.1	5.97.4.1	Changed
*	5.97.4.1.1	Deleted
5.97.4.1.2	5.97.4.1.2	Changed
*	Table XXXIX	Deleted
5.97.4.1.3	5.97.4.1.3	Changed
5.97.4.1.4	5.97.4.1.4	Changed
5.97.4.1.4A	*	Added
Table XXXIXA	*	Added (was XLI)
5.97.4.1.4B	*	Added
5.97.4.1.5	5.97.4.1.5	Changed
5.97.4.1.6	5.97.4.1.6	Changed
5.97.4.1.10	5.97.4.1.10	Changed
5.97.4.1.10A	*	Added

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Current Para/Fig/Table Number	***Previous Para/Fig/Table Number***	***Action***
5.97.4.1.10B	*	Added
5.97.4.1.11	5.97.4.1.11	Changed
5.97.4.1.12	5.97.4.1.12	Changed
5.97.4.1.12A	*	Added
5.97.4.1.13	5.97.4.1.13	Changed
5.97.4.1.13.1	5.97.4.1.13.1	Changed
5.97.4.1.14	5.97.4.1.14	Changed
*	5.97.4.1.18	Deleted
*	Table XL	Deleted
*	5.97.4.1.25	Deleted (moved to 5.97.4.1.4A)
*	Table XLI	Deleted (Moved to Table XXIXA)
*	5.97.4.1.26	Deleted (Moved to 5.97.4.1.4B)
5.97.4.1.28	5.97.4.1.28	Changed
5.97.4.2.1	*	Added
5.101.1.1.9d&e	*	Added
5.101.1.1.10	5.101.1.1.10	Changed
5.101.1.1.12	5.101.1.1.12	Changed
5.101.1.1.13.1a	5.101.1.1.13.1a	Changed
5.101.2.1.6.1	5.101.2.1.6.1	Boiler plate changed
5.101.2.1.6.3	5.101.2.1.6.3	Boiler plate changed
5.102.1.4.2e	5.102.1.4.2e	Changed
5.106.1.1.1i	5.106.1.1.1i	Changed
5.106.2.1.6.5	5.106.2.1.6.5	Changed
5.106.2.1.6.5c	5.106.2.1.6.5c	Changed
5.106.2.1.6.9a	5.106.2.1.6.9a	Changed
5.115.1.8.3a	5.115.1.8.3a	Boiler plate changed
5.115.1.16.1	5.115.1.16.1	Changed
5.122.1.6.1.3	5.122.1.6.1.3	Changed
5.122.1.6.1.5	5.122.1.6.1.5	Changed
5.122.1.6.1.12	5.122.1.6.1.12	Changed
5.122.1.7.1.1	5.122.1.7.1.1	Changed
5.122.1.7.1.3a	5.122.1.7.1.3a	Changed
5.122.1.7.2.1.6	5.122.1.7.2.1.6	Changed
5.122.1.18	5.122.1.18	Changed
*	5.128.1.1.3.1L	Deleted
5.128.1.1.3.1s	*	Added
*	5.128.1.1.3.6	Deleted
5.128.1.1.3.7	5.128.1.1.3.7	Changed
5.128.1.1.3.8	5.128.1.1.3.8	Changed
5.128.1.1.3.9	5.128.1.1.3.9	Changed

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5.128.1.1.3.12	*	Added
5.128.1.1.5.1	5.128.1.1.5.1	Changed
5.128.1.1.5.2c	5.128.1.1.5.2c	Changed
5.128.1.1.8.1a(2)	5.128.1.1.8.1a(2)	Changed
5.128.1.1.8.1a(3)(b)	5.128.1.1.8.1a(3)(b)	Changed
5.128.1.1.8.1b(3)(b)	5.128.1.1.8.1b(3)(b)	Changed
5.128.1.1.9.1	5.128.1.1.9.1	Changed
5.128.2.1.2	5.128.2.1.2	Changed
5.128.2.1.3	5.128.2.1.3	Changed
5.128.2.1.4	5.128.2.1.4	Changed
5.128.2.1.5a	5.128.2.1.5a	Changed
5.128.2.1.5.1c	5.128.2.1.5.1c	Changed
*	5.128.2.1.7m	Deleted
5.128.2.1.7.4a(3)(b)	5.128.2.1.7.4a(3)(b)	Changed
*	5.128.2.1.7.7	Deleted
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5.128.2.1.7.9	5.128.2.1.7.9	Changed
5.128.2.1.7.10	5.128.2.1.7.10	Changed
5.128.2.1.9	5.128.2.1.9	Changed
Table XLV	Table XLV	Changed
Table XLVI	Table XLVI	Changed
Table LI	Table LI	First row deleted
5.138.3A	*	Added
5.138.3A.1	*	Added
Table LIIA	*	Added
Table LVI	Table LVI	Changed
Table LVII	Table LVIII	Changed
*	5.138.8.2.1	Deleted
Table LVIII	Table LVIII	Changed
Table LIX	Table LIX	Changed
Table LXVII	Table LXVII	Changed
Table LXXVIII	Table LXXVIII	Changed
Table LXIX	Table LXIX	Changed
Table LXX	Table LXX	Changed
Table LXXI	Table LXXI	Changed
Table LXXII	Table LXXII	Changed
Table LXXIII	Table LXXIII	Changed
Table LXXVIII	Table LXXVIII	Changed
5.142.3.1.1	5.142.3.1.1	Changed
5.148.1.4	5.148.1.4	Changed
*	5.148.1.5	Deleted
5.165.1.2	5.165.1.2	Changed
5.165.1.3	5.165.1.3	Changed

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Current Para/Fig/Table Number	***Previous Para/Fig/Table Number***	***Action***
Table A-I	Table A-I	Changed
Table A-II	Table A-II	Changed
Table A-VI	Table A-VI	Changed
Table A-VII	Table A-VII	Changed
Table A-VIII	Table A-VIII	Changed
Table A-IX	Table A-IX	Changed
Table A-X	Table A-X	Changed
Table A-XI	Table A-XI	Changed
Table A-XII	Table A-XII	Changed
Table A-XIII	Table A-XIII	Changed
Table A-XIV	Table A-XIV	Changed
Table A-XV	Table A-XV	Changed
Table A-XVI	Table A-XVI	Changed
Table A-XVII	Table A-XVII	Changed
Table A-XVIII	Table A-XVIII	Changed
Table A-XX	Table A-XX	Changed
Table A-XXI	Table A-XXI	Changed
Table A-XXII	Table A-XXII	Changed
Table A-XXIV	Table A-XXIV	Changed
Table A-XXVI	Table A-XXVI	Changed
Table A-XXVIII	Table A-XXVIII	Changed
Table A-XXIX	Table A-XXIX	Changed
Table A-XXXI	Table A-XXXI	Changed
Table A-XXXIII	Table A-XXXIII	Changed
Table A-XXXV	Table A-XXXV	Changed
Table A-XXXVII	Table A-XXXVII	Changed
Appendix B (All tables)	Appendix B (All tables)	Changed
C.1	C.1	Changed
Table C-II	Table C-II	Changed
Table C-IV	Table C-IV	Changed
Table C-V	Table C-V	Changed
Table C-VII	Table C-VII	Changed
Table C-IX	Table C-IX	Changed
Table C-X	Table C-X	Changed
Table C-XI	Table C-XI	Changed

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CONTENTS

PARAGRAPH PAGE

1. SCOPE 1
1.1 Scope. 1
1.2 Paragraphs with limited applicability. 1
1.3 Legacy data. 1
1.4 Use of the technical content. 1
1.5 Organization of the technical content. 1
1.6 Shall and must. 2
1.7 Joint service business rules. 2
1.8 Project decisions. 2

2. APPLICABLE DOCUMENTS. 3
2.1 General. 3
2.2 Government documents. 3
2.2.1 Specifications, standards, and handbooks. 3
2.2.2 Other Government documents. 4
2.2.3 Non-Government publications. 6
2.2.4 Order of precedence. 7

3. DEFINITIONS 8

4. GENERAL REQUIREMENTS 36
4.1 General 36
4.2 Types of technical publication. 36
4.3 Selective application and tailoring. 36
4.4 Preparation of digital data for electronic delivery. 36

5. DETAILED REQUIREMENTS 37

5.1 S1000D Chapter 1 – Introduction to the specification. 37
5.2 S1000D Chapter 1.4 – Introduction to the specification – How to tailor for a specific project. 37
5.2.1 Army business rules. 37
5.2.1.1 General 37
5.2.1.2 Order of precedence 37
5.2.1.3 Business rules sustainment 37
5.2.2 Project decisions. 37
5.3 S1000D Chapter 1.5 – Introduction to the specification – Request for change. 37
5.3.1 Army business rules. 37
5.3.1.1 Changes to S1000D. 37
5.3.2 Project decisions. 37
5.4 S1000D Chapter 2 – Documentation Process. 37
5.5 S1000D Chapter 3 – Information generation. 38
5.6 S1000D Chapter 3.3 – Information generation – Information sets. 38

Source: https://assist.dla.mil -- Downloaded: 2016-12-10T00:01Z
Check the source to verify that this is the current version before use.

CONTENTS

PARAGRAPH PAGE

5.6.1 Army business rules. 38
5.6.1.1 Content selection matrices 38
5.6.1.2 Content selection 39
5.6.1.3 Additional information sets 39
5.6.2 Project decisions. 39
5.6.2.1 Definition of information sets 39
5.6.2.2 Project specific information sets 39
5.6.2.3 Content section matrices 39
5.7 S1000D Chapter 3.4 – Information generation – Zoning and access. 39
5.7.1 Army business rules. 39
5.7.1.1 Determine best zoning (granularity) methodology 39
5.7.2 Project decisions. 39
5.7.2.1 Use of zoning and access 39
5.7.2.2 Methods for zoning air systems 39
5.7.2.3 General identificaiton of access points 39
5.7.2.3.1 Identifying access points for air systems 39
5.7.2.3.2 Identifying access points for surface ships and submarine systems 40
5.8 S1000D Chapter 3.5 – Information generation – Updating data modules....40
5.8.1 Army business rules. 40
5.8.1.1 Change package 40
5.8.1.2 Revisions 40
5.8.1.3 Changes to front and rear matter 40
5.8.1.4 Changed data modules 40
5.8.1.5 Changes to identification and status sections only 40
5.8.2 Project decisions. 40
5.8.2.1 Frequency of updates 40
5.8.2.2 Deleted data modules 40
5.9 S1000D Chapter 3.6 – Information generation – Security and data restrictions. 41
5.9.1 Army business rules. 41
5.9.1.1 Classified data modules 41
5.9.1.2 For official use only 41
5.9.1.3 Presentation of commercial classification and/or caveat as security marking 41
5.9.1.4 Retention of security classification 41
5.9.1.5 Marking of security classification 41
5.9.2 Project decisions. 41
5.9.2.1 For official use only 41
5.9.2.2 Caveats 41
5.9.2.3 Use of export control 41
5.9.2.4 Use of the element **<exportControl>** 42
5.10 S1000D Chapter 3.7 – Information generation – Quality assurance. 42

Source: https://assist.dla.mil -- Downloaded: 2016-12-10T00:01Z
Check the source to verify that this is the current version before use.

CONTENTS

PARAGRAPH PAGE

5.10.1 Army business rules. 42
5.10.1.1 Final delivery of unverified data modules 42
5.10.1.2 Verification rules 42
5.10.1.3 Exchange of draft data modules 42
5.10.2 Project decisions. 42
5.10.2.1 Degree of the application of Quality Assurance (QA) 42
5.10.2.2 Decide on which type of first verificaiton to use 42
5.10.2.3 Decide on the appropriate review cycle process 42
5.10.2.4 In process review 42
5.10.2.5 Applicability 42
5.10.2.6 Draft delivery of unverified data modules 42
5.11 S1000D Chapter 3.9.1 – Authoring – General writing rules. 43
5.11.1 Army business rules. 43
5.11.1.1 Descriptive text 43
5.11.1.2 Simple word order 43
5.11.1.3 Repeating information 43
5.11.1.4 Neutral terms 43
5.11.1.5 National Stock Number (NSN) and part numbers 43
5.11.1.6 Military terms 43
5.11.1.7 Nomenclature 43
5.11.1.8 Terminology data base 43
5.11.1.9 Abbreviations 44
5.11.1.10 Grammar and writing 44
5.11.1.11 Use of equations 44
5.11.1.12 Language 44
5.11.1.13 Proprietary names 45
5.11.1.14 Advertising 45
5.11.1.15 Special marking 45
5.11.1.15.1 Nuclear harness (Hardness-Critical Processes) marking 45
5.11.1.15.2 Electrostatic Discharge (ESD) sensitive marking 45
5.11.1.15.3 Quality Assurance (QA) 46
5.11.2 Project decisions 46
5.11.2.1 Simplified Technical English 46
5.11.2.2 Measurements 46
5.12 S1000D Chapter 3.9.2 – Authoring – Illustration rules and multimedia. 47
5.12.1 Army business rules. 47
5.12.2 Project decisions. 47
5.12.2.1 Scope of printable data 47
5.12.2.2 Multimedia technologies and environment 47
5.13 S1000D Chapter 3.9.2.1 – Illustration rules and multimedia – Illustrations, General. 47
5.13.1 Army business rules. 47

Source: https://assist.dla.mil -- Downloaded: 2016-12-10T00:01Z
Check the source to verify that this is the current version before use.

CONTENTS

PARAGRAPH PAGE

5.13.1.1 Illustration and multimedia scope 47
5.13.1.2 Digital graphics formats 47
5.13.1.3 Use of human figure 47
5.13.1.4 Procedural data in figures 47
5.13.1.5 Credit lines 47
5.13.1.6 Multisheet illustrations 47
5.13.1.7 Placement 48
5.13.1.8 Landscape 48
5.13.1.9 Graphics size options 48
5.13.1.10 Symbols 48
5.13.1.11 Graphics in tables 48
5.13.1.12 Engineering drawings (**DMWR/NMWR only**) 48
5.13.1.13 Scale 48
5.13.1.14 Leader lines 48
5.13.1.15 Index numbers 49
5.13.1.16 Index number order 49
5.13.1.16A Nomenclature callouts 49
5.13.1.17 Identification of significant features 49
5.13.1.18 Index numbers and nomenclature 49
5.13.1.19 Index numbers in multisheet illustrations 49
5.13.1.20 Legends 50
5.13.1.21 Cartoons 50
5.13.1.22 Illustrations and graphs - Air crew manuals 50
5.13.1.22.1 General 50
5.13.1.22.2 Lettering 50
5.13.1.22.3 Keys for illustrations 50
5.13.1.22.4 Presenting data graphically 50
5.13.1.22.5 Explanatory text 50
5.13.1.22.6 Priorities 50
5.13.1.22.7 Titles for graphs 51
5.13.1.22.8 Condition heading 51
5.13.1.22.9 Sub-graphs 51
5.13.1.22.10 Notes 51
5.13.1.22.11 Data basis 52
5.13.1.22.12 Examples 52
5.13.1.22.13 Example text 52
5.13.1.22.14 Example values 52
5.13.1.22.15 Scaling 52
5.13.1.22.16 Units 53
5.13.1.22.17 Data range 53
5.13.1.22.18 Grid 53
5.13.1.22.19 Scales 53

Source: https://assist.dla.mil -- Downloaded: 2016-12-10T00:01Z
Check the source to verify that this is the current version before use.

CONTENTS

PARAGRAPH PAGE

5.13.1.22.20 Data lines and label values....53
5.13.1.22.21 Primary data lines....54
5.13.1.22.22 Secondary data lines....54
5.13.1.22.23 Layout and sizing....55
5.13.1.22.24 Original graphical data designs....56
5.13.2 Project decisions....56
5.13.2.1 Portrait....56
5.13.2.2 Case....56
5.13.2.3 chematics....56
5.14 S1000D Chapter 3.9.2.2 – Illustration rules and multimedia – Navigation and configuration....56
5.14.1 Army business rules....56
5.14.1.1 Hotspot explanation....56
5.14.1.2 Nested hotspots....56
5.14.1.3 Figure title....56
5.14.1.4 Multiple appearances of an assembly....57
5.14.1.5 Figure numbers....57
5.14.1.6 Identical parts in same figure....57
5.14.1.7 References....57
5.14.2 Project decisions....57
5.15 S1000D Chapter 3.9.2.3 – Illustration rules and multimedia – Use of color and photographs....57
5.15.1 Army business rules....57
5.15.1.1 Use of photographic illustrations....57
5.15.1.2 Digital photographs....57
5.15.2 Project decisions....57
5.15.2.1 Color....57
5.15.2.2 Photographs....57
5.16 S1000D Chapter 3.9.2.4 – Illustration rules and multimedia – Multimedia, General....58
5.16.1 Army business rules....58
5.16.1.1 Classified data files....58
5.16.1.2 Use of the attribute **`autoplay`**....58
5.16.2 Project decisions....58
5.16.2.1 General....58
5.16.2.2 Use of three-dimensional (3-D) illustrations....58
5.17 S1000D Chapter 3.9.3 – Authoring – Warnings, cautions and notes....58
5.17.1 Army business rules....58
5.17.1.1 Tank or reservoir....58
5.17.1.1A Definitions....58
5.17.1.2 Header....58
5.17.1.3 Page breaks....58

Source: https://assist.dla.mil -- Downloaded: 2016-12-10T00:01Z
Check the source to verify that this is the current version before use.

CONTENTS

PARAGRAPH PAGE

5.17.1.4 Warnings in separate data modules....58
5.17.1.5 Cautions in separate data modules....58
5.17.1.6 Notes in separate data modules....59
5.17.1.7 Vital....59
5.17.1.8 First aid....59
5.17.1.9 Descriptive text....59
5.17.1.10 Use of notes....59
5.17.1.11 Placement of notes....59
5.17.1.12 Indenture....59
5.17.1.13 Grouping alerts....59
5.17.1.14 Safety conditions....59
5.17.1.15 General warnings as individual data modules....59
5.17.1.16 Use of attribute **`warningType`**....59
5.17.1.17 Use of attribute **`cautionType`**....59
5.17.1.18 Use of attribute **`noteType`**....60
5.17.1.19 Warnings and cautions collections....60
5.17.1.20 Notes content....60
5.17.2 Project decisions....60

5.18 S1000D Chapter 3.9.4 – Authoring – Front matter....60
5.18.1 Army business rules....60
5.18.1.1 Use of list of effective pages....60
5.18.1.2 List of effective data modules content....60
5.18.2 Project decisions....60
5.18.2.1 Use of extended highlight data module....60
5.19 S1000D Chapter 3.9.5.1 – Data modules – Identification and status section....60
5.19.1 Army business rules....60
5.19.1.1 Information name....60
5.19.1.2 Alternate information names....60
5.19.1.3 Language....60
5.19.1.4 Security classification element....61
5.19.1.5 Classification values....61
5.19.1.6 Use of North Atlantic Treaty Organization (NATO) classified data....61
5.19.1.6A Use of the element **`<restrictionInstructions>`**....61
5.19.1.6B Use of the element **`<restrictionInfo>`**....61
5.19.1.7 Data restrictions....61
5.19.1.7.1 Data distribution element....61
5.19.1.7.2 Export control....61
5.19.1.7.3 Handling....61
5.19.1.7.4 Destruction notice element....62
5.19.1.4A Destruction notice....62
5.19.1.7.5 Disclosure....62

Source: https://assist.dla.mil -- Downloaded: 2016-12-10T00:01Z
Check the source to verify that this is the current version before use.

CONTENTS

PARAGRAPH PAGE

5.19.1.7.6 Copyrighted material 62
5.19.1.7.6.1 Lists in copyright statement 62
5.19.1.7.7 Policy statement element 62
5.19.1.7.8 Data conditions element 63
5.19.1.8 Originator Commercial and Government Entity (CAGE) values 63
5.19.1.9 Element **<authorityNotes>** with the element **<techStandard>** 63
5.19.1.10 Business Rules EXchange (BREX) 63
5.19.1.11 Element **<reasonForUpdate>** and change packages 63
5.19.1.12 Element **<reasonForUpdate>** and highlights 63
5.19.1.13 Availability statement and general purpose notices 63
5.19.1.14 Content of **<supersedure>** 63
5.19.1.15 Publication title page 63
5.19.1.16 Element **<logo>** 64
5.19.1.17 Skill level 64
5.19.1.18 Element **<productSafety>** 64
5.19.1.18.1 Use of the attribute **safetyLabel** 64
5.19.1.19 Second verification 64
5.19.1.20 Issue type 64
5.19.1.21 Element **<functionalItem Code>** 64
5.19.2 Project decisions. 64
5.19.2.1 Exchange of draft data modules within the project 64
5.19.2.2 Issue date 64
5.19.2.3 Data module code extension 64
5.19.2.4 Define a list of Commercial and Government Entity (CAGE) codes 64
5.19.2.5 Deleted data module extension 64
5.19.2.6 Responsible Partner Company (RPC) Commercial and Government Entity (CAGE) values 65
5.19.2.7 Orinator Commercial and Government Entity (CAGE) values 65
5.19.2.8 Originator name 65
5.19.2.9 Applicability 65
5.19.2.10 Technical standard 65
5.19.2.10.1 Technical standard, details 65
5.19.2.11 Authority information values 65
5.19.2.12 The element **<authorityNotes>** 65
5.19.2.13 Use of applicability information 65
5.19.2.14 System breakdown or functional breakdown codes 65
5.19.2.15 Use of the attribute **functionalItemNumber** wihtin the element **<functionalItem Ref>** 66
5.19.2.16 Use of manufacturer code with the element **<functionalItemRef>** 66
5.19.2.17 Standard reasons for update 66
5.19.2.18 Reason for update and the production process 66

Source: https://assist.dla.mil -- Downloaded: 2016-12-10T00:01Z
Check the source to verify that this is the current version before use.

CONTENTS

PARAGRAPH PAGE

5.19.2.19 Use of applicability information 66
5.19.2.20 Definition of safety label attributes....66
5.19.2.21 Use of applicability information 66
5.20 S1000D Chapter 3.9.5.2.1.1 – Common constructs – Change marking. 66
5.20.1 Army business rules. 66
5.20.1.1 Deletion content 66
5.20.1.2 Use of the attribute **updateReasonType** 66
5.20.2 Project decisions. 66
5.20.2.1 Use of the cross-reference method for the reason for update 66
5.20.2.2 Types of changes to mark up 67
5.20.2.3 Definition of project-specific change types 67
5.20.2.4 Format of reason for update identifiers....67
5.20.2.5 Standard statements for reason for update 67
5.20.2.6 Use of reason for update 67
5.20.2.7 Use of reason for update in conjunction with the production process 67
5.20.2.8 Use of applicability information 67
5.20 2.9 Use of the attribute **id** on the element **<changeInline>** 67
5.20.2.10 Modify and add change markers....67
5.20.2.11 Use of the value "**modify**"....67
5.20.2.12 Display of change markings in tables 67
5.20.2.13 Relationship between the element **<reasonForAmendment>** and the element **<reasonForUpdate>** 68
5.20.2.14 Recording reason for amendment 68
5.20.2.15 Change attributes on individual sheets of a multi-sheet figure....68
5.21 S1000D Chapter 3.9.5.2.1.2 – Common constructs – Referencing. 68
5.21.1 Army business rules. 68
5.21.1.1 Minimum cross reference 68
5.21.1.2 Internal references....68
5.21.1.3 Use of the attribute i**nternalRefTargetType**....68
5.21.1.4 Linking to list items 68
5.21.1.5 Presentation of cross references....68
5.21.1.6 Use of the element **<internalRef>** in titles 68
5.21.1.7 Data module references....68
5.21.1.8 Use of the element **<dmRefAddressItems>**....69
5.21.1.9 Use of the element **<dmTitle>**....69
5.21.1.10 Publication module references....69
5.21.1.11 Use of the element **<pmRefAddressItems>**....69
5.21.1.12 Use of the element **<pmTitle>**....69
5.21.1.13 External publication references....69
5.21.1.14 Use of the element **<externalPubTitle>** 69
5.21.1.15 Use of the element **<behavior>** 69

Source: https://assist.dla.mil -- Downloaded: 2016-12-10T00:01Z
Check the source to verify that this is the current version before use.

CONTENTS

PARAGRAPH PAGE

5.21.1.16 Use of other information in data module references....69
5.21.1.17 **DELETED** 69
5.21.1.18 Use of cross-references from titles 69
5.21.1.19 Element **`<internalRef>`** destination title when addressing graphical objects 69
5.21.1.20 Text in **`<internalRef>`** when addressing graphical objects....69
5.21.1.21 Format of cross-references....70
5.21.2 Project decisions. 70
5.21.2.1 Use and format of the attribute **`referredFragment`** of element **`<dmRef>`** 70
5.21.2.2 Referenced technical publications 70
5.21.2.3 Element **`<internalRef>`** target when addressing graphical objects....70
5.21.2.4 **DELETED** 70
5.21.2.5 **DELETED** 70
5.21.2.6 Use fo the element **`<externalPubissueInfo>`**....70
5.21.2.7 Use of the element **`<externalPubRefAddressItems>`** 70
5.21.2.8 Use of the element **`<shortExternalPubTitle>`** 71
5.22 S1000D Chapter 3.9.5.2.1.3 – Common constructs – Lists. 71
5.22.1 Army business rules. 71
5.22.1.1 Use of titles 71
5.22.1.2 Use of the definition list header 71
5.22.2 Project decisions. 71
5.22.2.1 Simple or unordered lists 71
5.23 S1000D Chapter 3.9.5.2.1.4 – Common constructs – Caption Groups. 71
5.23.1 Army business rules. 71
5.23.1.1 Caption group....71
5.23.2 Project decisions. 71
5.23.2.1 Caption attributes 71
5.24 S1000D Chapter 3.9.5.2.1.5 – Common constructs – Titles. 71
5.24.1 Army business rules. 71
5.24.1.1 Data module titles 71
5.24.1.2 Step titles....72
5.24.1.3 Elements requiring titles 72
5.24.2 Project decisions. 72
5.24.2.1 Use of titles 72
5.25 S1000D Chapter 3.9.5.2.1.6 – Common constructs – Tables. 72
5.25.1 Army business rules. 72
5.25.1.1 Graphics in tables....72
5.25.1.2 Table presentation settings....72
5.25.2 Project decisions. 72
5.25.2.1 Table foldouts 72

Source: https://assist.dla.mil -- Downloaded: 2016-12-10T00:01Z
Check the source to verify that this is the current version before use.

CONTENTS

PARAGRAPH PAGE

5.25.2.2 Use of applicability information 72
5.*26* *S1000D Chapter 3.9.5.2.1.7 – Common constructs – Figures and foldouts. 72*
5.26.1 Army business rules. 72
5.26.2 Project decisions. 73
5.26.2.1 Use of applicability 73
5.26.2.2 Decide on format of the entries in the legend 73
5.26.2.3 Use of foldout 73
5.*27* *S1000D Chapter 3.9.5.2.1.8 – Common constructs – Hotspots. 73*
5.27.1 Army business rules. 73
5.27.1.1 Use of attribute **`hotspotTitle`** 73
5.27.1.2 Use of hotspots 73
5.27.1.3 Hotspots for figures 73
5.27.1.4 Use of the attribute **`applicationStructureName`** in CGM hotspot ...73
5.27.1.5 Use of the attribute **`hotspotType`** 73
5.27.1.6 Creation of generic hotspots 74
5.27.1.7 Use of hyperlinks 74
5.27.2 Project decisions. 75
5.27.2.1 Use of hotspots 75
5.28 *S1000D Chapter 3.9.5.2.1.9 – Common constructs – Preliminary requirements and requirements after job completion. 75*
5.28.1 Army business rules. 75
5.28.1.1 Test equipment and tools setup information 75
5.28.1.2 Materials and parts setup information 75
5.28.1.3 References in preliminary requirements 75
5.28.1.4 Personnel 75
5.28.1.5 Required persons 75
5.28.1.6 Person 75
5.28.1.7 Use of the element **`<taskDuration>`** 75
5.28.1.8 Man-Hours 76
5.28.1.9 National Stock Number (NSN) 76
5.28.1.10 Use of the element **`<partAndSerialNumber>`** 76
5.28.2 Project decisions. 76
5.28.2.1 Production management data 76
5.28.2.2 Use of the element **`<thresholdInterval>`** 76
5.28.2.3 Use of the element **`<zoneRef>`** 76
5.28.2.4 Use of the element **`<accessPointRef>`** 76
5.28.2.5 Use of the attribute **`lsarData`** 76
5.28.2.6 Use fo the element **`<workArea>`** 76
5.28.2.7 Use of the attributes **`startupDuration`** and **`closeupDuration`** 76
5.28.2.8 Use of the attribute **`reqCondCategory`** 76
5.28.2.9 Use of list of the element **`<reqCondCircuitBreaker>`** 76

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Check the source to verify that this is the current version before use.

CONTENTS

PARAGRAPH PAGE

5.28.2.10 Values for the attribute **personCategoryCode** 76
5.28.2.11 Trade codes 77
5.28.2.12 Use of the element **<reqTechInfo>** 77
5.28.2.13 When to use the element **<reqTechInfo>** 77
5.28.2.14 Listing of common and standard tools 77
5.28.2.15 Use of the attribute **internalRefId** of element **<internalRef>** and the atribute **id** on element **<supportEquipDescr>** 77
5.28.2.16 Use of identification 77
5.28.2.17 Use of the attribute **internalRefId** of element **<internalRef>** and the atribute **id** on element **<supplyDescr>** 77
5.28.2.18 Use of the attribute **internalRefId** of element **<internalRef>** and the atribute **id** on element **<spareDescr>** 77
5.29 S1000D Chapter 3.9.5.2.1.10 – Common constructs – Text elements. 78
5.29.1 Army business rules. 78
5.29.1.1 Size and scale of symbols 78
5.29.1.2 Footnotes 78
5.29.1.3 Use of the element **<inlineSignificantData>** 78
5.29.1.4 Miscellaneous significant paragraph data 78
5.29.2 Project decisions. 78
5.29.2.1 Index 78
5.29.2.2 Subscript 78
5.29.2.3 Superscript 78
5.29.2.4 Acronym 78
5.29.2.5 Use of attribute **verbatimStyle** 78
5.29.2.6 Types of inline significant data to markup 78
5.29.2.7 Level of implementation 78
5.29.2.8 Types of quantity data to markup 78
5.29.2.9 Use of unit of measure 79
5.29.2.10 Types of unit of measure 79
5.29.2.11 Circuit breaker 79
5.29.2.12 Circuit breaker attributes 79
5.29.2.13 Zones and access points 79
5.29.2.14 Footnote marker type 79
5.29.2.15 Use of the attribute **controlIndicatorNumber** 79
5.30 S1000D Chapter 3.9.5.2.1.11 – Common constructs – Controlled content 79
5.30.1 Army business rules. 79
5.30.1.1 Use of controlled content 79
5.30.2 Project decisions. 79
5.31 S1000D Chapter 3.9.5.2.1.12 – Common constructs – Common information. 79
5.31.1 Army business rules. 79

Source: https://assist.dla.mil -- Downloaded: 2016-12-10T00:01Z
Check the source to verify that this is the current version before use.

CONTENTS

PARAGRAPH PAGE

5.31.1.1 Use of common information 79
5.31.1.2 Markup method for common information 80
5.31.2 Project decisions. 80
5.32 S1000D Chapter 3.9.5.2.2 – Content section – Descriptive information. 80
5.32.1 Army business rules. 80
5.32.1.1 Granularity 80
5.32.1.2 Paragraph depth 80
5.32.1.3 Warnings and cautions 80
5.32.1.4 Use of the attribute **`id`** 80
5.32.1.5 Additional Army requirements for attribute **`id`** 80
5.32.2 Project decisions. 81
5.32.2.1 Single paragraphs 81
5.33 S1000D Chapter 3.9.5.2.3 – Content section – Procedural information. 81
5.33.1 Army business rules. 81
5.33.1.1 Step titles 81
5.33.1.2 Single step numbering 81
5.33.1.3 Skill levels 81
5.33.1.4 Use of the optional attribute **`keepWithNext`** 81
5.33.1.5 Use of the optional attribute **`itemCharacteristic`** 81
5.33.2 Project decisions. 81
5.33.2.1 Use of the optional element **`<commonInfo>`** 81
5.33.2.2 Check 81
5.33.2.3 Skill levels 81
5.33.2.4 Maximum number of step levels 81
5.33.2.5 Use of single sub-step 81
5.34 S1000D Chapter 3.9.5.2.4 – Content section – Fault information. 82
5.34.1 Army business rules. 82
5.34.1.1 Step titles 82
5.34.1.2 Skill levels 82
5.34.1.3 Preliminary requirements 82
5.34.2 Project decisions. 82
5.34.2.1 Use of correlation 82
5.34.2.2 Correlated fault messages and warnings 82
5.34.2.3 Population of detection and description information elements 82
5.34.2.4 Single fault isolation data module 82
5.34.2.5 Use of attribute **`skillLevelCode`** 82
5.34.2.6 Use of attribute **`independentCheck`** 82
5.35 S1000D Chapter 3.9.5.2.5 – Content section – Maintenance planning information. 83
5.35.1 Army business rules. 83
5.35.1.1 Use of the element **`<maintPlanning>`** 83

Source: https://assist.dla.mil -- Downloaded: 2016-12-10T00:01Z
Check the source to verify that this is the current version before use.

CONTENTS

PARAGRAPH PAGE

5.35.1.2 Use of the element **<commonInfo>** 83
5.35.1.3 Use of the element **<componentAssy>** 83
5.35.1.4 Use of the element **<componentAssyGroup>** 83
5.35.1.5 Use of the element **<maintQualifier>** 83
5.35.1.6 Use of the attribute **function** 83
5.35.1.7 Use of the attribute **maintLevelCode** 83
5.35.1.8 Use of the attribute **skillLevelCode** 83
5.35.1.9 Use of the element **<timeLimitCategory>** 83
5.35.1.10 Values for the attribute **limitUnitType** 83
5.35.1.11 Values for the attribute **releaseEvent** 83
5.35.1.12 Values for the attribute **markerType** 83
5.35.1.13 Values for the attribute **taskCode** 84
5.35.1.14 Values for the attribute **relatedTaskDescr** 84
5.35.1.15 Values for the attribute **source criticality** 84
5.35.1.16 Values for the attribute **sourceTypeCode** 84
5.35.1.17 Values for the attribute **supervisorLevelCode** 84
5.35.1.18 Values for the attribute **inspectionTypeCategory** 84
5.35.1.19 Use of the attribute **sourceOfRqmt** 84
5.35.1.20 Use of the attribute **approval** 84
5.35.1.21 Use of the attribute **skillType** 84
5.35.1.22 Use of the attribute **worthinessLimit** 84
5.35.1.23 Use of the attribute **reducedMaint** 84
5.35.1.24 Control of the names of equipment 84
5.35.1.25 Task groupings 84
5.35.1.26 Sequence 84
5.35.1.27 Sampling rates 84
5.35.1.28 Trigger definitions 84
5.35.1.29 Threshold 84
5.35.1.30 Use of the attribute **thresholdUnitOfMeasure** 84
5.35.2 Project decisions. 85
5.35.2.1 **DELETED** 85
5.35.2.2 Use of the attribute **skillLevelCode** 85
5.35.2.3 Use of the element **<commonInfo>** 85
5.35.2.4 Use of the element **<typeDesignation>** 85
5.36 S1000D Chapter 3.9.5.2.6 – Content section – Crew/Operator information. *85*
5.36.1 Army business rules. 85
5.36.1.1 Preparing data modules 85
5.36.1.2 Crew drill step levels 85
5.36.1.3 Use of the element **<crewMemberGroup>** 85

Source: https://assist.dla.mil -- Downloaded: 2016-12-10T00:01Z
Check the source to verify that this is the current version before use.

CONTENTS

PARAGRAPH PAGE

5.36.1.4 Use of the element **<crewProcedureName>** 85
5.36.1.5 Use of the element **<endMatter>** 85
5.36.1.6 Use of operators 85
5.36.1.7 Use of the attribute **skillLevelCode** 86
5.36.2 Project decisions. 86
5.36.2.1 Skill level 86
5.36.2.2 Special conditions 86
5.36.2.3 Check 86
5.36.2.4 Use of the attribute **keepWithnext** 86
5.36.2.5 Use of crew member types 86
5.37 S1000D Chapter 3.9.5.2.7 – Content section – Parts information. 86
5.37.1 Army business rules. 86
5.37.1.1 Figures 86
5.37.1.2 Callout placement 86
5.37.1.3 Number of callouts 86
5.37.1.4 Leader lines 86
5.37.1.5 Number of items 86
5.37.1.6 Place nuts 86
5.37.1.7 Hardness critical items 86
5.37.1.8 Electrostatic Discharge (ESD) 87
5.37.1.9 Expendable and durable items 87
5.37.1.10 List order 87
5.37.1.11 Nonstocked assembled items 87
5.37.1.12 Special tools 87
5.37.1.13 Usable On Code (UOC) 87
5.37.1.14 North Atlantic Treaty Organization (NATO) stock number 87
5.37.1.15 National Stock Number (NSN) optional attributes 87
5.37.1.16 Use of the element **<fullNatoStockNumber>** 87
5.37.1.17 Item entry for kits and sets 87
5.37.1.18 Identical parts 88
5.37.1.19 Identical assemblies 88
5.37.1.20 Functional group title 88
5.37.1.21 Bulk item functional group 88
5.37.1.22 Bulk item presentation 88
5.37.1.23 Part numbers 88
5.37.1.24 Quantities for basis of issue items 88
5.37.1.25 Part characteristic 88
5.37.1.26 Depot level items 88
5.37.1.26A Service option code 88
5.37.1.27 Special tool sets and kits 88
5.37.1.28 Component indenture 88
5.37.1.29 Catalog sequence number indenture 89

Source: https://assist.dla.mil -- Downloaded: 2016-12-10T00:01Z
Check the source to verify that this is the current version before use.

CONTENTS

PARAGRAPH PAGE

5.37.1.30 Catalog sequence number value....89
5.37.1.31 Non-chapterized Catalog Sequence Number (CSN)....89
5.37.1.32 Quantities....89
5.37.1.33 Kit identification....89
5.37.1.34 Bulk item lists....89
5.37.1.35 Service....89
5.37.1.36 Basis of Issue (BOI)....89
5.37.1.37 Quantity per end item....89
5.37.1.38 Use of attribute **`genericPartDataName`**....89
5.37.1.39 Part location data segment....90
5.37.1.40 Initial provisioning project number....90
5.37.1.41 Special storage....90
5.37.1.42 Fitment code....90
5.37.1.43 Calibration marker....90
5.37.1.44 Physical security....90
5.37.1.45 Usable on code equipment....90
5.37.1.46 Usable on code assembly....90
5.37.1.47 Interchangeability....90
5.37.1.48 Model version....90
5.37.2 Project decisions....90
5.37.2.1 Item sequence number attributes....90
5.37.2.2 File identifier....90
5.37.2.3 Unit of issue....90
5.37.2.4 Unit of issue qualification segment....91
5.37.2.5 Use of the element **`<descrForItem>`**....91
5.37.2.6 Unit of measure....91
5.37.2.7 Select or manufacture from range....91
5.37.2.8 Service option code....91
5.37.2.9 Model version....91
5.37.2.10 Effectivity....91
5.37.2.11 Hotspot mechanism....91
5.38 S1000D Chapter 3.9.5.2.9 – Content section – Wiring information (and all sub-chapters)....91
5.38.1 Army business rules....91
5.38.2 Project decisions....91
5.38.2.1 Use of the wiring data module....91
5.39 S1000D Chapter 3.9.5.2.10 – Content section – Process data module....91
5.39.1 Army business rules....91
5.39.1.1 Use of the process data module....91
5.39.1.2 Alternative data modules....92
5.39.2 Project decisions....92
5.39.2.1 Use of the process data module....92

Source: https://assist.dla.mil -- Downloaded: 2016-12-10T00:01Z
Check the source to verify that this is the current version before use.

CONTENTS

PARAGRAPH PAGE

5.39.2.2 Level of context filtering 92
5.39.2.3 Model structure or expression....92
5.39.2.4 Check 92
5.39.2.5 Skill level 92
5.39.2.6 Use of alternatives....92
5.39.2.7 Use of loops 92
5.39.2.8 Dialogs associated with variables 92
5.39.2.9 Menu vs **<userEntry>** dialogs....92
5.39.2.10 Dialog faults....92
5.39.2.11 Variable naming and typing....92
5.39.2.12 Results receive method 92
5.40 S1000D Chapter 3.9.5.2.11 Content section – Technical information repository. *93*
5.40.1 Army business rules.....93
5.40.1.1 Technical information repositories 93
5.40.1.2 Internal and external use of Common Information repository (CIR) data modules 93
5.40.2 Project decisions. 93
5.40.2.1 Use of technical information repository 93
5.41 S1000D Chapter 3.9.5.2.12 – Content section – Container data module. 93
5.41.1 Army business rules.....93
5.41.1.1 Container data modules....93
5.41.2 Project decisions. 93
5.42 S1000D Chapter 3.9.5.2.13 – Content section – Learning data modules. 93
5.42.1 Army business rules.....93
5.42.1.1 Use of learning data modules....93
5.42.2 Project decisions. 93
5.42.2.1 Use of learning data modules....93
5.42.2.2 Use of the available branches 94
5.43 S1000D Chapter 3.9.5.2.14 – Maintenance Checklists and Inspections. 94
5.43.1 Army business rules.....94
5.43.2 Project decisions. 94
5.43.2.1 Use of the attribute **checkListCategory** 94
5.43.2.2 Checklist categories 94
5.43.2.3 Use of the element **<commonInfo>**....94
5.43.2.4 Use of the element **<preliminaryRqmts>** 94
5.43.2.5 Use of the element **<title>**....94
5.43.2.6 Use of the element **<checkListIntervals>** 94
5.43.2.7 Use of the element **<zoneRef>**....94
5.43.2.8 Use of the element **<workArea>** 94
5.43.2.9 Use of the optional child elements of **<checkListItem>** 94

Source: https://assist.dla.mil -- Downloaded: 2016-12-10T00:01Z
Check the source to verify that this is the current version before use.

CONTENTS

PARAGRAPH PAGE

5.43.2.10 Use of the element **<itemNumbers>** 94

5.43.2.11 Use of the element **<threshold>** 95
5.43.2.12 Use of the element **<equip>** 95
5.43.2.13 Use of the element **<name>** 95
5.43.2.14 Use of the element **<remarks>** 95
5.44 S1000D Chapter 3.9.5.3 – Data modules – Applicability 95
5.44.1 Army business rules. 95
5.44.1.1 Applicability value clashes 95
5.44.1.2 Use of the element **<assign>** 95
5.44.1.3 Obtaining a product value 95
5.44.1.4 Product identifier type 95
5.44.1.5 Process data module variable mapping 95
5.44.1.6 Use of the attribute **applicProperty** 96
5.44.1.7 Human readable display text 96
5.44.1.8 Applicability statements 96
5.44.2 Project decisions. 96
5.44.2.1 Applicability strategy 96
5.44.2.2 Population or generation of element **<displayText>** 96
5.44.2.3 Use of attribute **applicDisplayClass** 96
5.44.2.4 Use of textual applicability annotations 96
5.44.2.5 Consistent population 96
5.44.2.6 Use of attribute **applicConfiguration** 97
5.45 S1000D Chapter 3.9.5.3.1 – Applicability – Applicability cross-reference table 97
5.45.1 Army business rules. 97
5.45.2 Project decisions. 97
5.45.2.1 Use of pattern, enumeration, and open text 97
5.45.2.2 Method of defining multiple values or ranges 97
5.45.2.3 Use of display text 97
5.46 S1000D Chapter 3.9.5.3.2 – Applicability – Conditions cross-reference table 97
5.46.1 Army business rules. 97
5.46.2 Project decisions. 97
5.46.2.1 Use of conditions cross-reference table 97
5.46.2.2 Use of multiple tables 97
5.46.2.3 Use of attribute **valuePattern** 97
5.46.2.4 Method of defining multiple values or ranges 97
5.46.2.5 Use of display text 98
5.47 S1000D Chapter 3.9.5.3.3 – Applicability – Product cross reference table 98

Source: https://assist.dla.mil -- Downloaded: 2016-12-10T00:01Z
Check the source to verify that this is the current version before use.

CONTENTS

PARAGRAPH PAGE

5.47.1 Army business rules. 98
5.47.2 Project decisions. 98
5.47.2.1 Use of the Product Corss-reference Table (PCT) 98
5.47.2.2 Product attributes and conditions to include 98
5.48 S1000D Chapter 3.9.6.1 – Authoring – Project configurable attributes. 98
5.48.1 Army business rules. 98
5.48.1.1 Access point type - attribute **accessPointTypeValue** 98
5.48.1.2 Type of acronym or abbreviation - attribute **acronymType** 98
5.48.1.3 Caption for dialog cancel function - attribute **cancelCaption** 99
5.48.1.4 National caveat - attribute **caveat** 99
5.48.1.5 Check list category - attribute **checkListCategory** 99
5.48.1.6 Caption color - attribute **color** 100
5.48.1.7 Priority level of a comment - attribute **commentPriorityCode** 100
5.48.1.8 Commercial security classification - attribute **commercialClassification** 101
5.48.1.9 Type crew member required for drill or procedural step - attribute **crewMemberType** 101
5.48.1.10 Crew step condition - attribute **crewStepCondition** 102
5.48.1.11 IPD item description code - attribute **descrForItemCode** 102
5.48.1.12 Type of aircrew drill - attribute **drillType** 103
5.48.1.13 Type of emphasis - attribute **emphasisType** 103
5.48.1.14 Type of maintenance function - attribute **function** 104
5.48.1.15 Type of equipment install location - attribute **installationLocationType** 105
5.48.1.16 Item characteristic - attribute **itemCharateristic** 106
5.48.1.17 Origin of an equipment or harness or wire - attribute **itemOrginator** 106
5.48.1.18 Limit type - attribute **limitType** 106
5.48.1.19 Prefix of **<randomList>** items - attribute **listItemPrefix** 106
5.48.1.20 Lowest authorized level - attribute **lowestLevel** 107
5.48.1.21 Maintenance level code - attribute **maintLevelCode** 108
5.48.1.22 Part characteristic - attribute **partCharacteristic** 108
5.48.1.23 Publication module entry type - attribute **pmEntryType** 108
5.48.1.24 Quantity type - attribute **quantityType** 109
5.48.1.25 Required condition category - attribute **reqCondCategory** 109
5.48.1.26 Required technical information category - attribute **reqTechInfoCategory** 110
5.48.1.27 Caption for Dialog reset function - attribute **resetCaption** 110
5.48.1.28 Type of response to a comment - attribute **responseType** 110
5.48.1.29 Security classification - attribute **securityClassification** 111

Source: https://assist.dla.mil -- Downloaded: 2016-12-10T00:01Z
Check the source to verify that this is the current version before use.

CONTENTS

PARAGRAPH PAGE

5.48.1.30 Paragraph significant data type - attribute **`significantParaDataType`** 111
5.48.1.31 Personnel skill level - attribute **`skillLevelCode`** 112
5.48.1.32 Personnel skill category - attribute **`skillType`** 112
5.48.1.33 Source criticality - attribute **`sourceCriticality`** 113
5.48.1.34 Source type code - attribute **`sourceTypeCode`** 113
5.48.1.35 Caption for dialog submit function - attribute **`submitCaption`** 113
5.48.1.36 Supervisor level - attribute **`supervisorLevelCode`** 113
5.48.1.37 Task code - attribute **`taskCode`** 113
5.48.1.38 Unit of measurement for threshold interval - attribute **`thresholdUnitOfMeasure`** 113
5.48.1.39 Update reason type for reason for update - attribute **`updateReasonType`** 115
5.48.1.40 Style/class of verbatim text - attribute **`verbatimStyle`** 116
5.48.2 Project decisions. 116
5.48.2.1 Application of project specific values 116
5.49 S1000D Chapter 3.9.6.2 – Attributes – Fixed Values. 116
5.49.1 Army business rules. 116
5.49.2 Project decisions. 116
5.49.2.1 Use of project specific values 116
5.50 S1000D Chapter 3.9.7 – Authoring – Human performance technology and training. 117
5.50.1 Army business rules. 117
5.50.2 Project decisions. 117
5.50.2.1 Scope information 117
5.50.2.2 Presentation 117
5.50.2.3 Scope of preplanning 117
5.51 S1000D Chapter 4 – Information Management. 117
5.52 S1000D Chapter 4.2 – Information management – Common Source Data Base (CSDB). 117
5.52.1 Army business rules. 117
5.52.1.1 Data module size 117
5.52.1.2 Use of optional elements 117
5.52.2 Project decisions. 117
5.53 S1000D Chapter 4.2.1 – Common source database – Information objects 118
5.53.1 Army business rules. 118
5.53.1.1 Use of Extensible Markup Language (XML) 118
5.53.2 Project decisions. 118
5.54 S1000D Chapter 4.3 – Information management – Data module code 118
5.54.1 Army business rules. 118
5.54.2 Project decisions. 118

Source: https://assist.dla.mil -- Downloaded: 2016-12-10T00:01Z
Check the source to verify that this is the current version before use.

CONTENTS

PARAGRAPH PAGE

5.54.2.1 Data module coding strategy 118
5.55 S1000D Chapter 4.3.1 – Data module code – Model identification code. 118
5.55.1 Army business rules. 118
5.55.1.1 Model identification code 118
5.55.1.2 Model identification code for general purpose data modules 118
5.55.1.3 Model identification registration with NATO (North Atlantic Treaty Organization) Support and Procurement Agency (NPSA) 118
5.55.2 Project decisions. 118
5.55.2.1 Allocation of model identification code 118
5.55.2.2 Use of one or several model identification codes 118
5.55.2.3 Model identification code 119
5.55.2.4 Model identification structure 119
5.56 S1000D Chapter 4.3.2 – Data module code – System difference code....119
5.56.1 Army business rules. 119
5.56.2 Project decisions. 119
5.56.2.1 System difference code 119
5.56.2.2 Usable On Code (UOC) as system difference code 119
5.57 S1000D Chapter 4.3.3 – Data module code – Standard numbering system..119
5.57.1 Army business rules. 119
5.57.1.1 Standard Numbering System (SNS) 119
5.57.1.2 Use of Functional Group Code (FGC) 119
5.57.1.2A Illustrated parts data SNS 119
5.57.1.3 Documentation of Standard Numbering System (SNS) 120
5.57.1.4 Documentation of Standard Numbering System (SNS) and technical names 120
5.57.1.5 Use of technical names and Standard Numbering System (SNS) 120
5.57.1.6 Responsible Partner Company (RPC) 120
5.57.1.7 Initial Provisioning Project Number (IPPN) 120
5.57.2 Project decisions. 120
5.57.2.1 Material item category code 120
5.57.2.2 Sub-subsytem Standard numbering System (SNS) allocations 120
5.57.2.3 Unit or assembly portion of the Data Module Code (DMC) 120
5.57.2.4 Number of characters in unit or assembly 120
5.58 S1000D Chapter 4.3.4 – Data module code – Disassembly code. 120
5.58.1 Army business rules. 120
5.58.1.1 Alternate use of the disassembly code 120
5.58.2 Project decisions. 121
5.58.2.1 Alternate use of the disassembly code 121
5.58.2.2 Disassembly code linking 121
5.59 S1000D Chapter 4.3.5 – Data module code – Disassembly code variant. 121
5.59.1 Army business rules. 121
5.59.2 Project decisions. 121

Source: https://assist.dla.mil -- Downloaded: 2016-12-10T00:01Z
Check the source to verify that this is the current version before use.

CONTENTS

PARAGRAPH PAGE

5.59.2.1 Disassembly Code Variant (DCV).....121
5.60 S1000D Chapter 4.3.6 – Data module code – Information codes. 121
5.60.1 Army business rules.....121
5.60.1.1 Information codes and information names 121
5.60.1.2 "Available for projects" information codes 122
5.60.2 Project decisions. 122
5.61 S1000D Chapter 4.3.7 – Data module code – Information code variant.....122
5.61.1 Army business rules.....122
5.61.1.1 Information code variants 122
5.61.2 Project decisions. 122
5.62 S1000D Chapter 4.3.8 – Data module code – Item location code. 122
5.62.1 Army business rules.....122
5.62.2 Project decisions. 122
5.62.2.1 Allocation of the item location code "T" 122
5.63 S1000D Chapter 4.4 – Information management – Information Control Number.....122
5.63.1 Army business rules.....122
5.63.1.1 Information Control Number (ICN).....122
5.63.1.2 Presentation of Information Control Number (ICN) 122
5.63.1.3 Identification code, system difference code, and Standard Numbering System (SNS).....122
5.63.1.4 Use of Commercial and Government Entity (CAGE) code or model identification code based on Information Control Number (ICN).....123
5.63.1.5 Unique identifier 123
5.63.1.6 Security classifications to be used for CAGE code based and model ..... identification based Information Control Number (ICN) 123
5.63.1.7 Security classifications to be used for model identification based Information Control Number (ICN).....123
5.63.2 Project decisions. 123
5.63.2.1 Responsible Partner Company (RPC).....123
5.63.2.2 Commercial and Government Entity Codes (CAGECs) for originator.....123
5.63.2.3 Illustration variant code 123
5.63.2.4 Issue number.....123
5.63.2.5 Security classification.....123
5.64 S1000D Chapter 4.5.1 – Data module lists – Data module requirement list.....124
5.64.1 Army business rules.....124
5.64.1.1 Data Module Requirements List (DMRL).....124
5.64.1.2 Population of **`modelIdentCode`** in the data module requirements list.....124
5.64.1.3 Change markers 124
5.64.1.4 Data module title.....124
5.64.1.5 Issue date.....124

Source: https://assist.dla.mil -- Downloaded: 2016-12-10T00:01Z
Check the source to verify that this is the current version before use.

CONTENTS

PARAGRAPH PAGE

5.64.1.6 Security classification 124
5.64.2 Project decisions. 124
5.64.2.1 Data Module Requirements List (DMRL) format 124
5.64.2.2 Commercial and Government Entity (CAGE) codes for Data Module Requirements List (DMRL) senders 124
5.64.2.3 Issue date 124
5.64.2.4 Use of data restriction 124
5.64.2.5 Use of reference 124
5.64.2.6 Use of data module code extension 125
5.64.2.7 Use of data module issue number 125
5.64.2.8 Use of data module requirement answer 125
5.64.2.9 Use of data module requirements remarks 125
5.64.2.10 Deleted Data Modules (DMs) 125
5.65 S1000D Chapter 4.5.2 – Data module lists – CSDB status list. 125
5.65.1 Army business rules. 125
5.65.1.1 CSDB (Common Source Data Base) Status List (CSL) delivery 125
5.65.1.2 Data deliverable dates 125
5.65.2 Project decisions. 125
5.65.2.1 Data module issues 125
5.65.2.2 CSDB (Common Source Data base) Status List (CSL) delivery 125
5.66 S1000D Chapter 4.6 – Information management – Comment. 125
5.66.1 Army business rules. 125
5.66.1.1 Department of the Army (DA) Form 2028 125
5.66.1.2 Use of common schema 125
5.66.2 Project decisions. 125
5.66.2.1 Use of comment 126
5.66.2.2 Workflow 126
5.66.2.3 Model information code 126
5.66.2.4 Commercial and Government Entity codes (CAGECs) for issuing authority 126
5.66.2.5 Use of titles 126
5.66.2.6 Originator 126
5.66.2.7 Data restrictions 126
5.66.2.8 Priority codes 126
5.66.2.9 Use of response codes 126
5.66.2.10 Rules for response coded 126
5.66.2.11 Remarks 126
5.66.2.12 References to attachments 126
5.66.2.13 Allowed file types 126
5.67 S1000D Chapter 4.7 – Information management – Version control of data modules. 126
5.67.1 Army business rules. 126

Source: https://assist.dla.mil -- Downloaded: 2016-12-10T00:01Z
Check the source to verify that this is the current version before use.

CONTENTS

PARAGRAPH PAGE

5.67.1.1 Data Dispatch Note (DDN) 126
5.67.1.2 Revision summary (Change transmittal page) 127
5.67.1.3 Authentication block 127
5.67.1.4 Interactive Electronic Technical Publication (IETP) updates 127
5.67.1.5 Printed publications changes 127
5.67.1.6 Printed publication revisions 127
5.67.2 Project decisions. 127
5.67.2.1 Data module revisions 127
5.67.2.2 Delivery of inwork Data Modules (DMs) 127
5.68 S1000D Chapter 4.8 – Information management – Interchange of data modules. 127
5.68.1 Army business rules. 127
5.68.1.1 Data Dispatch Notes (DDN)
5.68.2 Project decisions. 127
5.68.2.1 File formats 127
5.68.2.2 Procedures for data exchange 127
5.68.2.3 Inclusion of graphics 128
5.68.2.4 Non-sequential numbering 128
5.68.2.5 Mixed data 128
5.68.2.6 Use of photographs 128
5.68.2.7 Use of multimedia formats 128
5.68.2.8 Raster graphic resolution 128
5.69 S1000D Chapter 4.9.1 – Publication management – Publication module. 128
5.69.1 Army business rules. 128
5.69.1.1 Publication module definitions 128
5.69.1.2 Use of publication modules 128
5.69.1.3 Language 128
5.69.1.4 Data restrictions 128
5.69.1.5 Use of originator and responsible partner company 129
5.69.1.6 Use of the element **`<enterpriseName>`** in parent publication modules 129
5.69.1.6.1 Use of the element **`<responsiblepartnerCompany>`** with the element **`<enterpriseName>`** and/or the attribute **`enterpriseCode`** 129
5.69.1.6.2 Use of the element **`<originator>`** with the element **`<enterpriseName>`** and/or the attribute **`enterpriseCode`** 129
5.69.1.7 Use of media 129
5.69.1.8 Publication media type 129
5.69.1.9 Publication media code 130
5.69.1.10 Location 130
5.69.1.11 System breakdown code and functional item code 130
5.69.1.12 Use of the element **`<reasonForUpdate>`** 130
5.69.1.13 Remarks 130
5.69.1.14 Titles for multi-volume publications 130

Source: https://assist.dla.mil -- Downloaded: 2016-12-10T00:01Z
Check the source to verify that this is the current version before use.

CONTENTS

PARAGRAPH PAGE

5.69.1.15 Nomenclature 130
5.69.1.16 Use of the element **<issueDate>** 130
5.69.1.17 Logo 131
5.69.2 Project decisions. 131
5.69.2.1 Volume 131
5.69.2.2 Short publication module title 131
5.70 S1000D Chapter 4.9.2 – Publication management – Coding of publications. 131
5.70.1 Army business rules. 131
5.70.1.1 Publication numbering 131
5.70.1.1.1 Model identification code 131
5.70.1.1.2 Issuing authority 131
5.70.1.1.3 Publication number 132
5.70.1.1.4 Volume 133
5.70.1.2 Numbering nested publication modules 133
5.70.1.2.1 Model identification code 133
5.70.1.2.2 Issuing authority 133
5.70.1.2.3 Publication number 134
5.70.1.3 Chapters 134
5.70.1.4 Chapter and section identification 134
5.70.1.5 Chapter numbers 134
5.70.2 Project decisions. 134
5.70.2.1 Applicability 134
5.70.2.2 Publication number 134
5.70.2.3 Nested publication module volume 134
5.70.2.4 Chapter and section identification 134
5.71 S1000D Chapter 4.10 – Information management – Business rules exchange. 134
5.71.1 Army business rules. 134
5.71.1.1 Layered project BREX 134
5.71.1.2 Use of layered Business Rules Exchange (BREX) data modules 134
5.71.2 Project decisions. 134
5.71.2.1 Simplified Technical English 134
5.72 S1000D Chapter 4.10.1 – Information Business rules exchange – Coding of BREX data modules. 135
5.72.1 Army business rules. 135
5.72.1.1 Business rules reference 135
5.72.2 Project decisions. 135
5.72.2.1 Applicable sets of business rules 135
5.73 S1000D Chapter 4.10.2 – Information Business rules exchange – The BREX data module. 135
5.73.1 Army business rules. 135

Source: https://assist.dla.mil -- Downloaded: 2016-12-10T00:01Z
Check the source to verify that this is the current version before use.

CONTENTS

PARAGRAPH PAGE

5.73.1.1 Exchange of Standard Numbering System (SNS) using the BREX data module 135
5.73.1.2 Use of the element **<snsDescr>** 135
5.73.1.3 Use of the **<snsRules>** branch 135
5.73.1.4 Standard Numbering System (SNS) titles....135
5.73.2 Project decisions. 135
5.73.2.1 Notations 135
5.73.2.2 System documentation 135
5.73.2.3 Subsystem documentation 135
5.73.2.4 Sub-subsystem documentation....136
5.73.2.5 Assembly documentation....136
5.74 S1000D Chapter 4.11 – Information management – Process data module. .136
5.74.1 Army business rules. 136
5.74.1.1 Process data module....136
5.74.2 Project decisions. 136
5.74.2.1 Use of the process data module 136
5.74.2.2 Variable naming conventions 136
5.75 S1000D Chapter 4.12 – Information management – Multiple instances of data modules. 136
5.75.1 Army business rules. 136
5.75.1.1 Use of several instances per data module 136
5.75.2 Project decisions. 136
5.76 S1000D Chapter 4.13.1 – Optimizing and reuse – Paragraph significant data and quantity data. 136
5.76.1 Army business rules. 136
5.76.2 Project decisions. 136
5.76.2.1 General use of paragraph significant data elements 136
5.77 S1000D Chapter 4.13.2 – Optimizing and reuse – Technical information repository data module. 137
5.77.1 Army business rules. 137
5.77.2 Project decisions. 137
5.77.2.1 Use of technical information repository 137
5.78 S1000D Chapter 4.13.3– Optimizing and reuse – Container data module. ..137
5.78.1 Army business rules. 137
5.78.2 Project decisions. 137
5.78.2.1 Use of container data module 137
5.78.2.2 Identification of container data module 137
5.78.2.3 Use of applicability within container data module content 137
5.79 S1000D Chapter 4.14 – Information management – Applicability. 137
5.79.1 Army business rules. 137
5.79.2 Project decisions. 137
5.79.2.1 Providing the human readable part of applicability....137

Source: https://assist.dla.mil -- Downloaded: 2016-12-10T00:01Z
Check the source to verify that this is the current version before use.

CONTENTS

PARAGRAPH PAGE

5.79.2.2 Level of applicability lifecycle 137
5.79.2.3 Product attribute, conditions naming and identification scheme 137
5.79.2.4 Method of displaying invalid content 138
5.79.2.5 Number of Applicability Cross-reference table (ACT), Conditions Cross-reference table (CCT), and Product Cross-reference Table (PCT) data module instances 138
5.80 S1000D Chapter 4.14.1 – Information management – Applicability cross-reference table....138
5.80.1 Army business rules. 138
5.80.2 Project decisions. 138
5.80.2.1 Use of product attributes versus conditions 138
5.80.2.2 Configuration management of product attributes 138
5.81 S1000D Chapter 4.14.2 – Information management – Conditions cross-reference table....138
5.81.1 Army business rules. 138
5.81.2 Project decisions. 138
5.81.2.1 Use of product attributes versus conditions 138
5.81.2.2 Use of the pattern 138
5.81.2.3 Configuration management of the conditions 138
5.81.2.4 Use of the incorporation list 138
5.82 S1000D Chapter 4.14.3 – Information management – Products cross-reference table....138
5.82.1 Army business rules. 138
5.82.2 Project decisions. 139
5.82.2.1 Use of a published or a transient data module 139
5.82.2.2 Scope of the product instances 139
5.82.2.3 Configuration management of the product instances 139
5.83 S1000D Chapter 5 – Information sets and publications....139
5.84 S1000D Chapter 5.2.1 – Information sets – Common information sets. 139
5.84.1 Army business rules. 139
5.84.1.1 Content depth and breadth 139
5.84.1.2 Maintenance concepts 139
5.84.1.3 Standard information 140
5.84.2 Project decisions. 140
5.85 S1000D Chapter 5.2.1.1 – Common information sets – Crew/Operator information....140
5.85.1 Army business rules. 140
5.85.1.1 Scope 140
5.85.1.2 General 141
5.85.1.3 Preparation of operator instructions 141
5.85.2 Project decisions. 141
5.85.2.1 Types 141

Source: https://assist.dla.mil -- Downloaded: 2016-12-10T00:01Z
Check the source to verify that this is the current version before use.

CONTENTS

PARAGRAPH PAGE

5.85.3 Controls and indicators. 141
5.85.3.1 Army business rules 141
5.85.3.1.1 General 141
5.85.3.1.2 Controls and indicators description tabular option 141
5.85.3.1.3 Controls and indicators description narrative option 142
5.85.3.2 Project decisions 142
5.85.3.2.1 Use of the technical information repository 142
5.85.3.2.2 Use of the tabular format 142
5.85.3.2.3 Multiple data modules 142
5.85.3.2.4 Use of the control indicator number attribute 142
5.85.4 Operation under usual conditions. 142
5.85.4.1 Army business rules 142
5.85.4.1.1 General 142
5.85.4.1.2 Security measures for electronic data 143
5.85.4.1.3 Siting 143
5.85.4.1.4 Shelter 143
5.85.4.1.5 Assembly and preparation for use 144
5.85.4.1.6 Initial adjustments, before use, and self-test 144
5.85.4.1.7 Normal operation procedures 144
5.85.4.1.8 Operating procedure considerations 145
5.85.4.1.9 Normal operation procedures (Operating auxiliary equipment) 145
5.85.4.1.10 Preparation for movement 145
5.85.4.1.11 Decals and instruction plates 145
5.85.4.2 Project decisions 145
5.85.4.2.1 Optional siting features 145
5.85.4.2.2 Optional operating procedures 146
5.85.5 Operation under unusual conditions. 146
5.85.5.1 Army business rules 146
5.85.5.1.1 Security measures for electronic data (Unusual conditions) 146
5.85.5.1.2 Unusual environment/weather 146
5.85.5.1.3 Fording and swimming 146
5.85.5.1.4 Interim Chemical, Biological, Radiological, Nuclear, and Explosives (CBRNE) decontamination procedures 146
5.85.5.1.5 Jamming and Electronic Countermeasures (ECM) procedures 146
5.85.5.1.6 Degraded operation procedures 147
5.85.5.2 Project decisions 147
5.85.6 Operation under emergency conditions. 147
5.85.6.1 Army business rules 147
5.85.6.1.1 General 147
5.85.6.1.2 Operation of the equipment during emergency conditions 147
5.85.6.1.3 Shut down procedures 147
5.85.6.1.4 Vehicle recovery 147

Source: https://assist.dla.mil -- Downloaded: 2016-12-10T00:01Z
Check the source to verify that this is the current version before use.

CONTENTS

PARAGRAPH PAGE

5.85.6.2 Project decisions 147
5.85.7 Stowage and decal/data plate guide. 147
5.85.7.1 Army business rules 147
5.85.7.1.1 General 147
5.85.7.1.2 Scope 147
5.85.7.1.3 Location of decals 148
5.85.7.2 Project decisions 148
5.85.7.2.1 Preparation instructions and information 148
5.86 S1000D Chapter 5.2.1.2 – Common information sets – Description and operation. 148
5.86.1 Army business rules. 148
5.86.1.1 Scope 148
5.86.1.2 General 148
5.86.1.3 Preparation of general information, equipment description, and theory of operation 148
5.86.2 Project decisions. 148
5.86.3 General data. 148
5.86.3.1 Army business rules 149
5.86.3.1.1 General 149
5.86.3.1.2 Scope 149
5.86.3.1.3 Ozone Depleting Substances (ODS) 149
5.86.3.1.4 Destruction of Army materiel to prevent enemy use 149
5.86.3.1.5 Preparation for storage or shipment 149
5.86.3.1.5A Transportability guidance 149
5.86.3.1.6 Nomenclature cross-reference list 149
5.86.3.1.7 List of abbreviations 150
5.86.3.1.8 Safety, care, and handling 150
5.86.3.1.9 Calibration 151
5.86.3.1.10 Supporting information for repair parts, special tools, and Test Measurement and Diagnostic Equipment (TMDE), and support equipment (**Field level only**) 151
5.86.3.1.10.1 Common tools and equipment 151
5.86.3.1.10.2 Special tools, Test Measurement and Diagnostics Equipment (TMDE), and support equipment 151
5.86.3.1.10.3 Repair parts 151
5.86.3.1.11 Copyright credit line 151
5.86.3.1.12 Item unique identification (IUID) 151
5.86.3.2 Project decisions 152
5.86.4 General information. 152
5.86.4.1 Army business rules 152
5.86.4.1.1 General 152
5.86.4.1.2 Maintenance forms, records, and reports 152

Source: https://assist.dla.mil -- Downloaded: 2016-12-10T00:01Z
Check the source to verify that this is the current version before use.

CONTENTS

PARAGRAPH PAGE

5.86.4.1.3 Reporting equipment improvement recommendations 153
5.86.4.1.3.1 **DELETED** 154
5.86.4.1.4 Hand receipt (HR) manuals (**Field**) 154
5.86.4.1.5 Corrosion prevention and control (CPC) 154
5.86.4.1.5.1 CPC structure 154
5.86.4.1.5.2 CPC boiler plate statement 154
5.86.4.1.5.3 SF Form 368 boiler plate information 155
5.86.4.1.5.4 References to relevant tasks, data modules, and DA publications 156
5.86.4.1.6 Warranty information 156
5.86.4.1.7 Quality of material (not required for operator's manuals) 156
5.86.4.1.8 Nuclear hardness 156
5.86.4.1.9 Quality Assurance (QA) (**DMWR/NMWR and aviation only**) 157
5.86.4.1.10 Critical Safety Items (CSIs) 157
5.86.4.1.10.1 Identification of procedural steps involving critical safety items (CSI) 157
5.86.4.1.11 Engineering Change Proposals (ECPs) (**DMWR/NMWR only**) 158
5.86.4.1.12 Modification list (**DMWR/NMWR only**) 158
5.86.4.1.13 Deviations and exceptions (**DMWR/NMWR only**) 158
5.86.4.1.14 Mobilization requirements (**DMWR/NMWR only**) 158
5.86.4.1.15 Cost considerations (**DMWR/NMWR only**) 158
5.86.4.2 Project decisions 159
5.86.4.2.1 References to Quality Assurance (QA) 159
5.86.4.2.2 Separate Hand Receipt (HR) 159
5.86.5 Equipment description and data. 159
5.86.5.1 Army business rules 159
5.86.5.1.1 General 159
5.86.5.1.2 Equipment characteristics, capabilities, and features 159
5.86.5.1.3 Location and description of major components (**except Conventional Ammunition and Chemical Manuals only**) 159
5.86.5.1.4 Equipment differences 160
5.86.5.1.5 Equipment data 161
5.86.5.1.6 Instructions for the use, transportation, handling, storage, or disposal 161
5.86.5.2 Project decisions 161
5.86.6 Theory of operation **(except Conventional and Chemical Ammunition only)**. 161
5.86.6.1 Army business rules 161
5.86.6.1.1 General 161
5.86.6.1.2 Scope 162
5.86.6.2 Project decisions 162
5.86.6.2.1 DMWR/NMWR 162
5.86.6.2.2 Introductory general information 162
5.86.7 General information **(Preventive Maintenance Services Manual only)**. 162
5.86.7.1 Army business rules 163

Source: https://assist.dla.mil -- Downloaded: 2016-12-10T00:01Z
Check the source to verify that this is the current version before use.

CONTENTS

PARAGRAPH PAGE

5.86.7.1.1 General 163
5.86.7.1.2 Maintenance activities 163
5.86.7.1.3 General information 163
5.86.7.2 Project decisions 165
5.86.8 General information **(Phased Maintenance Inspection Manual only)**. 165
5.86.8.1 Army business rules 166
5.86.8.1.1 General 165
5.86.8.1.2 Additional general information 165
5.86.8.2 Project decisions 167
5.*87* *S1000D Chapter 5.2.1.3.1 – Maintenance information – Maintenance procedures* *167*
5.87.1 Scope. 167
5.87.2 General. 168
5.87.2.1 Army business rules 168
5.87.2.1.1 General 168
5.87.2.1.2 Maintenance information sets 168
5.87.2.1.3 Preliminary requirements 168
5.87.2.1.4 Procedural data modules 168
5.87.2.2 Project decisions 169
5.87.3 Service upon receipt **(Field only)**. 169
5.87.3.1 Army business rules 169
5.87.3.1.1 General 169
5.87.3.1.2 Service upon receipt of materiel 169
5.87.3.1.2.1 Unpacking 169
5.87.3.1.2.2 Checking unpacked equipment 169
5.87.3.1.2.3 Processing unpacked equipment 170
5.87.3.1.3 Installation instructions 170
5.87.3.1.3.1 Assembly of equipment 170
5.87.3.1.3.2 Install procedure 171
5.87.3.1.3.3 Special application installation instructions 171
5.87.3.1.3.4 Van and shelter procedure 172
5.87.3.1.4 Preliminary servicing 172
5.87.3.1.5 Preliminary checks and adjustment of equipment 172
5.87.3.1.6 Preliminary calibration of equipment 173
5.87.3.1.7 Circuit alignment 173
5.87.3.1.8 Ammunition service upon receipt tasks 173
5.87.3.1.9 Ammunition marking 173
5.87.3.1.10 Classification of defects 174
5.87.3.1.11 Handling ammunition 174
5.87.3.1.12 Procedures to activate ammunition 174
5.87.3.1.13 Other service upon receipt task 174
5.87.3.2 Project decisions 174

Source: https://assist.dla.mil -- Downloaded: 2016-12-10T00:01Z
Check the source to verify that this is the current version before use.

CONTENTS

PARAGRAPH PAGE

5.87.3.2.1 Other service upon receipt task 174
5.87.4 Preventive Maintenance Checks and Services (PMCS), including lubrication instructions **(except for Conventional and Chemical Ammunition, aircraft TMs, DMWR and NMWR only)**. 174
5.87.4.1 Army business rules 174
5.87.4.1.1 Reliability Centered Maintenance (RCM) 175
5.87.4.2 Project decisions 175
5.87.5 Preventive Maintenance Checks and Services (PMCS) introduction. 175
5.87.5.1 Army business rules 175
5.87.5.1.1 General 175
5.87.5.1.2 Preventive Maintenance Checks and Services (PMCS) data 175
5.87.5.2 Project decisions 177
5.87.6 Preventive Maintenance Checks and Services (PMCS). 177
5.87.6.1 Army business rules 177
5.87.6.1.1 General 177
5.87.6.1.2 Preventive Maintenance Checks and Services (PMCS) data preparation 177
5.87.6.1.3 Mandatory replacement parts 179
5.87.6.2 Project decisions 179
5.87.6.2.1 Man-hours required 179
5.87.7 Preventive Maintenance Checklist (PMC) 179
5.87.7.1 Army business rules 179
5.87.7.1.1 General 179
5.87.7.1.2 National Stock Numbers (NSNs) and part Numbers (P/Ns) 180
5.87.7.1.3 Front matter 180
5.87.7.1.3A PMCS introduction data module 180
5.87.7.1.4 PMCS data modules 180
5.87.7.1.5 Rear matter 180
5.87.7.1.6 **DELETED** 180
5.87.7.2 Project decisions 180
5.87.8 Maintenance information sets (**Not required for aircraft PM and PMS manuals**). 180
5.87.8.1 Army business rules 180
5.87.8.1.1 General 180
5.87.8.1.2 Maintenance tasks 181
5.87.8.1.3 Maintenance task requirements 182
5.87.8.1.4 Inspect 184
5.87.8.1.4.1 Test and inspection 184
5.87.8.1.4.2 Inspection of conventional and chemical ammunition or components containing radioactive materials (**Maintainer, below depot sustainment, or ASB**) 184
5.87.8.1.4.2.1 Specific instructions for inspection of radioactive ammunition, chemical ammunitions, or components 184

Source: https://assist.dla.mil -- Downloaded: 2016-12-10T00:01Z
Check the source to verify that this is the current version before use.

CONTENTS

PARAGRAPH PAGE

5.87.8.1.4.2.2 Specific instructions for inspection of non-radioactive ammunition, chemical ammunition, and components 185
5.87.8.1.4.3 Pre-embarkation inspection 186
5.87.8.1.4.4 Inspection of installed items 186
5.87.8.1.4.5 Inspection-acceptance and rejection criteria 186
5.87.8.1.5 Testing 186
5.87.8.1.6 Servicing 187
5.87.8.1.7 Adjust 188
5.87.8.1.8 Align 188
5.87.8.1.9 Calibrate 188
5.87.8.1.10 Removal procedure 188
5.87.8.1.11 Install 189
5.87.8.1.12 Replace 189
5.87.8.1.13 Repair 189
5.87.8.1.14 Painting 190
5.87.8.1.15 Overhaul procedure 190
5.87.8.1.16 Rebuild 190
5.87.8.1.17 Lubrication 190
5.87.8.1.18 Mark 190
5.87.8.1.19 Pack procedure 191
5.87.8.1.20 Unpacking 191
5.87.8.1.21 Preservation procedure 191
5.87.8.1.22 Assembly and preparation for use 191
5.87.8.1.23 Assemble procedure 192
5.87.8.1.24 Disassembly procedure 192
5.87.8.1.25 Cleaning 192
5.87.8.1.26 Non-Destructive Inspection (NDI) 193
5.87.8.1.27 Radio interference suppression 194
5.87.8.1.28 Placing in service 194
5.87.8.1.29 Ground handling 194
5.87.8.1.29.1 Towing 195
5.87.8.1.29.2 Jacking 195
5.87.8.1.29.3 Parking 195
5.87.8.1.29.4 Mooring 195
5.87.8.1.29.5 Covering 195
5.87.8.1.29.6 Hoisting 195
5.87.8.1.29.7 Sling loading 195
5.87.8.1.29.8 External power 195
5.87.8.1.30 **DELETED** 195
5.87.8.1.31 Preparation for storage 195
5.87.8.1.31A Preparation for shipment 196

Source: https://assist.dla.mil -- Downloaded: 2016-12-10T00:01Z
Check the source to verify that this is the current version before use.

CONTENTS

PARAGRAPH PAGE

5.87.8.1.31B Transport 197
5.87.8.1.32 Arm 197
5.87.8.1.33 Load 198
5.87.8.1.34 Unload 198
5.87.8.1.35 Install peripheral device 198
5.87.8.1.36 Uninstall peripheral device 198
5.87.8.1.37 Upgrade/patch 198
5.87.8.1.38 Configure 198
5.87.8.1.39 Debug 198
5.87.8.2 Project decisions 199
5.87.8.2.1 Cleaning information codes 199
5.87.8.2.2 Additional maintenance task 199
5.87.9 Follow-on maintenance 199
5.87.9.1 Army business rules 199
5.87.9.1.1 General 199
5.87.9.2 Project decisions 199
5.87.9.2.1 Follow-on maintenance 199
5.87.10 General maintenance 199
5.87.10.1 Army business rules 199
5.87.10.1.1 General 199
5.87.10.2 Project decisions 199
5.87.10.2.1 General maintenance instructions 199
5.87.11 Lubrication instructions 199
5.87.11.1 Army business rules 200
5.87.11.1.1 General 200
5.87.11.1.2 Lubrication charts 200
5.87.11.2 Project decisions 200
5.87.11A Preservation, packaging, and marking data module (**DMWR/NMWR only**) 200
5.87.11A.1 Packaging information 200
5.87.11A.2 Special instructions 202
5.87.12 Facilities **(DMWR/NMWR only)** 202
5.87.12.1 Army business rules 202
5.87.12.1.1 General 202
5.87.12.2 Project decisions 202
5.87.13 Overhaul and retirement schedule **(aircraft only)**. 202
5.87.14 Overhaul Inspection Procedures (OIP) **(DMWRs/NMWRs only)**. 203
5.87.14.1 Army business rules 203
5.87.14.1.1 General 203
5.87.14.1.2 Scope 203
5.87.14.2 Project decisions 204
5.87.14.2.1 Overhaul Inspection Procedures (OIP) data modules 204

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Check the source to verify that this is the current version before use.

CONTENTS

PARAGRAPH PAGE

5.87.15 Depot mobilization requirements **(DMWR/NMWR only)**. 204
5.87.15.1 Army business rules.....204
5.87.15.1.1 General.....204
5.87.15.1.2 Introduction for depot mobilization requirements 204
5.87.15.1.3 Mobilization requirements.....204
5.87.15.2 Project decisions 204
5.87.15.2.1 Mobilization requirements.....204
5.87.16 Quality Assurance (QA) requirements **(DMWR/NMWR only)**. 204
5.87.16.1 Army business rules.....204
5.87.16.1.1 Statement of responsibility 205
5.87.16.1.2 Definitions.....205
5.87.16.1.3 Special requirements for inspection tools and equipment 205
5.87.16.1.4 Certification requirements 205
5.87.16.1.5 Quality program.....205
5.87.16.1.6 In-process inspections.....205
5.87.16.1.7 Acceptance requirements.....205
5.87.16.1.8 First article inspection.....206
5.87.16.2 Project decisions 206
5.87.17 Illustrated list of manufactured items **(Field level or above only)**. 206
5.87.17.1 Army business rules.....206
5.87.17.1.1 General.....206
5.87.17.1.2 Introduction for illustrated list of manufactured items data module.....206
5.87.17.1.3 Index of manufactured items 206
5.87.17.1.4 Illustrations of manufactured items 207
5.87.17.2 Project decisions 207
5.87.18 Torque limits **(Field/AMC level or above only)**. 207
5.87.18.1 Army business rules.....207
5.87.18.1.1 General.....207
5.87.19.1.2 Introduction.....207
5.87.19.1.3 Torque instructions 207
5.87.19.2 Project decisions 207
5.87.19 Ammunition maintenance. 207
5.87.19.1 Army business rules.....208
5.87.19.1.1 General.....208
5.87.19.1.2 Care and handling 208
5.87.19.1.3 Defective.....208
5.87.19.1.4 Cleaning and painting 208
5.87.19.2 Project decisions 208
5.87.20 Ammunition marking. 208
5.87.20.1 Army business rules.....208
5.87.20.1.1 General.....208
5.87.20.2 Project decisions 208

Source: https://assist.dla.mil -- Downloaded: 2016-12-10T00:01Z
Check the source to verify that this is the current version before use.

CONTENTS

PARAGRAPH PAGE

5.87.21 Foreign ammunition (NATO). 208
5.87.21.1 Army business rules 208
5.87.21.1.1 General 208
5.87.21.2 Project decisions 209
5.87.22 Maintenance/Demilitarization of Conventional and Chemical Ammunition (M/DCCA) (**DMWR/NMWR only**). 209
5.87.22.1 Army business rules 209
5.87.22.1.1 General 209
5.87.22.1.2 Front matter 209
5.87.22.1.3 Maintenance/Demilitarization of Conventional and Chemical Ammunition (M/DCCA) Chapter 1 - Introduction (General Information and scope) 209
5.87.22.1.3.1 Scope 209
5.87.22.1.3.2 Forms, records, and reports 209
5.87.22.1.3.3 Deviations, waivers, and exceptions 209
5.87.22.1.3.4 Corrosion Prevention and Control (CPC) 209
5.87.22.1.3.5 Work planning 209
5.87.22.1.3.6 Disposition guidance 210
5.87.22.1.3.6A Equipment 210
5.87.22.1.3.7 Safety requirements 210
5.87.22.1.3.8 Protection against general hazards 210
5.87.22.1.3.9 Protection against specific hazards 211
5.87.22.1.3.9A Hazard analysis 211
5.87.22.1.3.10 Environmental regulation compliance 211
5.87.22.1.3.11 Resource conservation and recovery regulation 211
5.87.22.1.3.11A Reporting requirements 211
5.87.22.1.3.12 Tabulated data 211
5.87.22.1.3.12A Flowchart 211
5.87.22.1.4 Maintenance/Demilitarization of Conventional and Chemical Ammunition (M/DCCA) Chapter 2 - Operational requirements 211
5.87.22.1.5 Maintenance/Demilitarization of Conventional and Chemical Ammunition (M/DCCA) Chapter 3 - Quality acceptance requirements 212
5.87.22.1.6 List of terms 212
5.87.22.1.7 Maintenance/Demilitarization of Conventional and Chemical Ammunition (M/DCCA) appendices 212
5.87.22.1.7.1 References 212
5.87.22.1.7.2 Consumable materials 212
5.87.22.1.7.3 Equipment and special facilities 213
5.87.22.1.7.4 Tabulated data, military specifications, and drawings 213
5.87.22.1.7.5 Approved intraplant transfer equipment 213
5.87.22.1.7.6 Pentachlorophenol (PENTA)-treated packing materials 213
5.87.22.1.7.7 Environmental requirements 213
5.87.22.1.7.8 Hazard analysis 213

Source: https://assist.dla.mil -- Downloaded: 2016-12-10T00:01Z
Check the source to verify that this is the current version before use.

CONTENTS

PARAGRAPH PAGE

5.87.22.1.7.9 Other data modules 213
5.87.22.1.8 Authentication page 213
5.87.22.2 Project decisions 214
5.87.22.2.1 Stand alone 214
5.87.22.2.2 PENTA-treated packaging 214
5.87.22.2.3 Additional data modules 214
5.87.22.2.4 Approved intraplant transfer equipment 214
5.87.23 Preventive maintenance checklist. 214
5.87.23.1 Army business rules 214
5.87.23.1.1 General 214
5.87.23.1.2 Scope 214
5.87.23.1.3 Item numbers 214
5.87.23.1.4 Checks and service procedures 214
5.87.23.1.5 Type size 214
5.87.23.1.6 Technical content 214
5.87.23.1.7 Item numbers 215
5.87.23.1.8 Sequence 215
5.87.23.1.9 Not Mission Capable (NMC) faults 215
5.87.23.1.10 Warnings and cautions 215
5.87.23.2 Project decisions 215
5.87.23.2.1 Stand alone 215
5.88 S1000D Chapter 5.2.1.3.2 – Common information sets – Fault isolation 215
5.88.1 Army business rules. 215
5.88.1.1 Scope 215
5.88.1.2 General 215
5.88.1.3 Troubleshooting scope 216
5.88.1.4 Testing and troubleshooting philosophy 216
5.88.1.5 Information to be provided 216
5.88.1.6 Methods of testing and troubleshooting 217
5.88.1.7 Manual (non-automatic) troubleshooting 217
5.88.1.8 Semi-automatic or automatic testing and troubleshooting 217
5.88.1.9 Testing and troubleshooting using Built-In-Test (BIT) equipment 217
5.88.1.10 Sensor driven failures 217
5.88.1.11 Failure interpretation 217
5.88.1.12 Types of testing and troubleshooting information 217
5.88.1.13 Fault reporting/fault isolation information 217
5.88.1.14 Integrated system testing and troubleshooting 218
5.88.1.15 Integrated systems having self-test or built-in test capability 218
5.88.1.16 Integrated systems requiring the use of system peculiar test sets 218
5.88.1.17 Integrated systems requiring the use of common test equipment 218
5.88.1.18 Troubleshooting procedures content 218

Source: https://assist.dla.mil -- Downloaded: 2016-12-10T00:01Z
Check the source to verify that this is the current version before use.

CONTENTS

PARAGRAPH PAGE

5.88.1.19 Aviation testing and troubleshooting category (**Aircraft Troubleshooting TMs only**) 220
5.88.1.20 Standard testing and troubleshooting category 220
5.88.1.21 DMWR/NMWR testing and troubleshooting category (**depot only**) 220
5.88.1.22 Master index testing and troubleshooting category 220
5.88.1.23 Testing and troubleshooting 220
5.88.1.24 Information set content 220
5.88.1.25 Safety devices and interlocks 221
5.88.2 Project decisions. 221
5.88.3 Troubleshooting introduction 221
5.88.3.1 Army business rules 221
5.88.3.1.1 General 221
5.88.3.1.2 Scope 221
5.88.3.2 Project decisions 221
5.88.4 Troubleshooting index. 221
5.88.4.1 Army business rules 221
5.88.4.1.1 General 221
5.88.4.1.2 Malfunction index 221
5.88.4.1.3 Symptom index 222
5.88.4.1.4 Master index 222
5.88.4.1.5 System/subsystem index 222
5.88.4.2 Project decisions 222
5.88.4.2.1 Troubleshooting index 222
5.88.5 Preshop analysis **(DMWR/NMWR only)** 222
5.88.5.1 Army business rules 222
5.88.5.1.1 General 222
5.88.5.1.2 Scope 222
5.88.5.1.3 Preparation procedures 223
5.88.5.1.4 Preshop analysis procedures 223
5.88.5.1.5 Purpose and coverage of preshop analysis 223
5.88.5.2 Project decisions 224
5.88.5.2.1 Preshop analysis format 224
5.88.6 Component checklist **(DMWR/NMWR only)**. 224
5.88.6.1 Army business rules 224
5.88.6.1.1 General 224
5.88.6.1.2 Introduction 224
5.88.6.1.3 Component checklist 224
5.88.6.2 Project decisions 224
5.88.6.2.1 Introduction 224
5.88.7 Operational checkout. 225
5.88.7.1 Army business rules 225
5.88.7.1.1 General 225

Source: https://assist.dla.mil -- Downloaded: 2016-12-10T00:01Z
Check the source to verify that this is the current version before use.

CONTENTS

PARAGRAPH PAGE

5.88.7.1.2 Operational checkout introduction....225
5.88.7.1.3 General procedures and precautions....225
5.88.7.1.4 Pretest setup procedures....225
5.88.7.1.5 Operational checkout procedures....225
5.88.7.1.5.1 Operational checkout test procedure....226
5.88.7.1.5.2 Message index....226
5.88.7.1.5.3 Fault code reference index....226
5.88.7.1.6 Post-operational checkout shutdown procedures....226
5.88.7.2 Project decisions....226
5.88.7.2.1 Introduction....226
5.88.7.2.2 Method....226
5.88.8 Troubleshooting....226
5.88.8.1 Army business rules....226
5.88.8.1.1 General....227
5.88.8.1.2 Troubleshooting introduction....227
5.88.8.1.3 General troubleshooting procedures and precautions....227
5.88.8.1.4 Pretest setup procedures....227
5.88.8.1.5 Graphic troubleshooting tree....227
5.88.8.1.6 Troubleshooting type....227
5.88.8.1.6.1 Troubleshooting procedure....228
5.88.8.1.6.2 Diagnostics (using the process data module)....228
5.88.8.1.6.2.1 General....228
5.88.8.1.6.2.2 State table explanation....228
5.88.8.1.6.2.3 State table limits....229
5.88.8.1.6.2.4 Simple test....229
5.88.8.1.6.2.5 Complex tests....229
5.88.8.1.6.2.5.1 IF statement....229
5.88.8.1.6.2.5.2 LOOP COUNTER statement....229
5.88.8.1.6.2.5.3 LOOP UNTIL CONDTION statement....230
5.88.8.1.6.2.5.4 Loop test actions....230
5.88.8.1.6.2.6 Test results action....230
5.88.8.1.7 Post-troubleshooting shutdown procedures....230
5.88.8.1.8 Integrated system troubleshooting procedures....230
5.88.8.2 Project decisions....230
5.88.8.2.1 Introduction....230
5.88.8.2.2 Troubleshooting type....230
5.88.8.2.3 Use of integrated system troubleshooting procedures....231
5.89 S1000D Chapter 5.2.1.3.3 – Common information sets – Non-destructive testing....231
5.90 S1000D Chapter 5.2.1.3.4 – Common information sets – Corrosion control....231
5.91 S1000D Chapter 5.2.1.3.5 – Common information sets – Storage....231

Source: https://assist.dla.mil -- Downloaded: 2016-12-10T00:01Z
Check the source to verify that this is the current version before use.

CONTENTS

PARAGRAPH PAGE

5.92 S1000D Chapter 5.2.1.4 – Common information sets – Wiring data. 231
5.92.1 Army business rules. 231
5.92.1.1 General 231
5.92.1.2 Introduction 231
5.92.1.2.1 Wiring diagrams index 232
5.92.1.3 Abbreviations 232
5.92.1.4 Component descriptions wiht related schamtic locations table 232
5.92.1.5 Wire identification 232
5.92.1.5.1 SAE wire designaitons 232
5.92.1.5.2 Wire color designations 232
5.92.1.6 Wiring diagrams 232
5.92.1.7 Signal flow 232
5.92.2 Project decisions. 232
5.92.2.1 Data module size 232
5.92.2.2 Single or multiple data modules 232
5.92.2.3 Use of the wiring data module 233
5.92.2.4 Use of tables in wiring data module 233
5.93 S1000D Chapter 5.2.1.5 – Common information sets – Illustrated parts data. 233
5.93.1 Scope. 233
5.93.2 Army business rules. 233
5.93.2.1 General 233
5.93.2.2 Separate publication 233
5.93.2.3 Parts data included in a maintenance publication 234
5.93.2.4 Parts data included in a DMWR/NMWR 234
5.93.2.5 Depot repair parts 234
5.93.2.6 Repair parts list, special tools, and kits layout 234
5.93.2.7 Use of automated systems to generate parts data 234
5.93.3 Project decisions 234
5.93.3.1 Separate parts manual 234
5.93.4 Parts introduction. 235
5.93.4.1 Army business rules 235
5.93.4.1.1 Non-aviation parts information introduction 235
5.93.4.1.2 Aviation parts information introduction 243
5.93.4.1.3 (MC) Marine Corps only parts information introduction 251
5.93.4.2 Project decisions 260
5.93.4.2.1 Parts list illustration 260
5.93.5 Repair parts information. 260
5.93.5.1 Army business rules 260
5.93.5.1.1 General 260
5.93.5.1.2 Scope 260
5.93.5.1.3 Repair parts figure title 261

Source: https://assist.dla.mil -- Downloaded: 2016-12-10T00:01Z
Check the source to verify that this is the current version before use.

CONTENTS

PARAGRAPH		PAGE
5.93.5.1.4	List requirements	261
5.93.5.1.5	Basic Issue Items (BII) (repair parts)	263
5.93.5.1.6	Expendable and durable items	263
5.93.5.2	Project decisions	263
5.93.5.2.1	Optional columns	263
5.93.6	Illustrations.	263
5.93.6.1	Army business rules	263
5.93.6.1.1	Parts list specific illustration requirements	264
5.93.6.2	Project decisions	264
5.93.7	Repair parts for special tools	264
5.93.7.1	Army business rules	264
5.93.7.1.1	General	264
5.93.7.1.2	Special tools repair parts items list	264
5.93.7.1.3	Functional group header	265
5.93.7.2	Project decisions	265
5.93.8	Kit parts list.	265
5.93.8.1	Army business rules	265
5.93.8.1.1	General	265
5.93.8.1.2	Kits part items list	265
5.93.8.2	Project decisions	265
5.93.9	Bulk items.	265
5.93.9.1	Army business rules	265
5.93.9.1.1	General	265
5.93.9.1.2	Bulk items list	266
5.93.9.2	Project decisions	266
5.93.10	Special tools list.	266
5.93.10.1	Army business rules	266
5.93.10.1.1	General	266
5.93.10.1.2	Special tools list	266
5.93.10.2	Project decisions	267
5.93.11	Cross-reference indices.	267
5.93.11.1	Army business rules	267
5.93.11.1.1	General	267
5.93.11.1.2	Preparation	267
5.93.11.1.3	Bulk figure reference	267
5.93.11.1.4	Sets and kits	267
5.93.11.1.5	National Stock Number (NSN) index	267
5.93.11.1.6	Part number index	268
5.93.11.1.7	Reference designator index	268
5.93.11.2	Project decisions	268
5.93.11.2.1	Cross reference index	268
5.93.12	Components of End Item (COEI) list.	268

Source: https://assist.dla.mil -- Downloaded: 2016-12-10T00:01Z
Check the source to verify that this is the current version before use.

CONTENTS

PARAGRAPH PAGE

5.93.12.1 Army business rules 268
5.93.12.1.1 General 268
5.93.12.1.2 Components of End Item (COEI) introduction 268
5.93.12.1.3 Components of End Items (COEI) or SSR list 270
5.93.12.1.4 Method B illustration 270
5.93.12.2 Project decisions 270
5.93.12.2.1 Components of the End item (COEI) method 270
5.93.13 Basic Issue Items (BII) list 270
5.93.13.1 Army business rules 271
5.93.13.1.1 General 271
5.93.13.1.2 Basic Issue Items (BII) introduction 271
5.93.13.1.3 Basic issue Items (BII) list 272
5.93.13.2 Project decisions 272
5.93.13.2.1 Basic Issue Items (BII) method 272
5.93.14 Additional Authorization List (AAL) **(operator only)**. 272
5.93.14.1 Army business rules 272
5.93.14.1.1 General 273
5.93.14.1.2 Introduction 273
5.93.14.1.3 Additional Authorization List (AAL) 274
5.93.14.2 Project decisions 274
5.93.14A (MC) Collateral Material (CM) Data Module 274
5.93.14A.1 (MC) Army Business Rules 274
5.93.14A.1.1 (MC) General 274
5.93.14A.1.2 (MC) Introduction 274
5.93.14A.1.3 (MC) CM list 275
5.93.14A.2 Project decisions 275
5.93.15 Expendable and durable items list. 275
5.93.15.1 Army business rules 275
5.93.15.1.1 General 275
5.93.15.1.2 Introduction 275
5.93.15.1.3 Scope 276
5.93.15.1.4 No illustrations 276
5.93.15.2 Project decisions 276
5.93.16 Mandatory replacement parts **(Field/Aviation Maintenance Company (AMC) level or above only)**. 276
5.93.16.1 Army business rules 276
5.93.16.1.1 General 276
5.93.16.1.2 Scope 277
5.93.16.1.3 Introduction 277
5.93.16.1.4 Mandatory replacement parts 277
5.93.16.2 Project decisions 277
5.93.16.2.1 Mandatory replacement parts format 277

Source: https://assist.dla.mil -- Downloaded: 2016-12-10T00:01Z
Check the source to verify that this is the current version before use.

CONTENTS

PARAGRAPH PAGE

5.93.17 Critical Safety Items (CSIs). 277
5.93.17.1 Army business rules 277
5.93.17.1.1 General 277
5.93.17.1.2 Critical Safety Items (CSIs) 277
5.93.17.1.3 Critical Safety Items (CSIs) 278
5.93.17.2 Project decisions 278
5.93.18 Hand Receipt (HR) technical manuals. 278
5.93.18.1 Army business rules 278
5.93.18.1.1 General 278
5.93.18.1.2 Section I. Introduction 278
5.93.18.1.3 Section II, Hand receipt 278
5.93.18.1.3.1 Overprinted Da Form 2062 278
5.93.18.1.3.2 Current as of date 279
5.93.18.2 Project decisions 279
5.93.18.2.1 Hand receipt data as part of a larger manual. 279
5.94 S1000D Chapter 5.2.1.6 – Common information sets – Maintenance planning information. 279
5.94.1 Maintenance Allocation Chart (MAC) introduction (**for Army non-aviation**). 279
5.94.1.1 Army business rules 279
5.94.1.1.1 General 279
5.94.1.2 Project decisions 286
5.94.2 Maintenance Allocation Chart (MAC) Introduction (**for Army aviation**). 286
5.94.2.1 Army business rules 286
5.94.2.1.1 General 286
5.94.2.2 Project decisions 292
5.94.3 Maintenance Allocation Chart (MAC). 292
5.94.3.1 Army business rules 292
5.94.3.1.1 General 292
5.94.3.1.2 Single Maintenance Allocation Chart (MAC) data module 293
5.94.3.1.3 Maintenance Allocation Chart (MAC) entries 293
5.94.3.1.4 Maintenance Allocation Chart (MAC) format 293
5.94.3.1.5 Tools and test equipment requirements 294
5.94.3.1.6 Common tools 294
5.94.3.1.7 Remarks 294
5.94.3.2 Project decisions 294
5.94.3.2.1 Maintenance Allocation Chart (MAC) nomenclature 294
5.94.3.2.2 Single Maintenance Allocation Chart (MAC) data module 295
5.95 S1000D Chapter 5.2.1.7 – Common information sets – Mass and balance information. 295
5.95.1 Weighing and loading. 295
5.95.1.1 Army business rules 295

Source: https://assist.dla.mil -- Downloaded: 2016-12-10T00:01Z
Check the source to verify that this is the current version before use.

CONTENTS

PARAGRAPH PAGE

5.95.1.1.1 General 295
5.95.1.1.2 Scope 295
5.95.1.l.3 Weighing 295
5.95.1.1.4 Loading 295
5.95.1.2 Project decisions 296
5.96 S1000D Chapter 5.2.1.8 – Common information sets – Recovery information. 296
5.97 S1000D Chapter 5.2.1.9 – Common information sets – Equipment information. 296
5.97.1 Equipment/user fitting instructions **(Field or above only)**. 296
5.97.1.1 Army business rules 296
5.97.1.1.1 General 296
5.97.1.2 Project decisions 296
5.97.1.2.1 Information codes 296
5.97.2 Auxiliary equipment maintenance. 296
5.97.2.1 Army business rules 296
5.97.2.1.1 General 296
5.97.2.1.2 Auxiliary equipment procedures 296
5.97.2.2 Project decisions 296
5.97.2.2.1 Data module types and information codes 296
5.97.3 Supplemental data for Commercial Off-The-Shelf (COTS) manuals. 297
5.97.3.1 Army business rules 297
5.97.3.1.1 General 297
5.97.3.1.2 Identifying Technical Publication Sheet 297
5.97.3.1.3 Equipment/model coverage 297
5.97.3.1.4 Content/format selection summary 297
5.97.3.1.4.1 Front matter 297
5.97.3.1.4.2 Destruction of military materiel to prevent enemy use 297
5.97.3.1.4.3 Lubrication instructions 297
5.97.3.1.4.4 Preventive Maintenance Checks and Services (PMCS) 297
5.97.3.1.4.5 Maintenance Allocation Chart (MAC) 297
5.97.3.1.4.6 Components of End Item (COEI) 297
5.97.3.1.4.7 Basic Issue Items (BII) list 298
5.97.3.1.4.8 Additional Authorization List (AAL) 298
5.97.3.1.4.9 Expendable supplies and materials list 298
5.97.3.1.4.10 Repair parts information 298
5.97.3.1.4.11 Other requirements as specified 298
5.97.3.1.4.12 Warranty information 298
5.97.3.1.4.13 Copyright 298
5.97.3.2 Project decisions 298
5.97.3.2.1 Determination of supplemental data 298
5.97.3.2.2 Identifying Technical Publication Sheet 298

Source: https://assist.dla.mil -- Downloaded: 2016-12-10T00:01Z
Check the source to verify that this is the current version before use.

CONTENTS

PARAGRAPH		PAGE
5.97.3.2.3	Cover contents	298
5.97.3.2.4	List of Effective Data Modules (LOEDM)	299
5.97.4	Lubrication instructions.	299
5.97.4.1	Army business rules for separate lubrication order (LO)	299
5.97.4.1.1	**DELETED**	299
5.97.4.1.2	Lubrication Order (LO) sizes	299
5.97.4.1.3	Lubrication Order (LO) number	299
5.97.4.1.4	Lubrication Order (LO) page numbering	299
5.97.4.1.4A	Lubrication interval symbols	299
5.97.4.1.4B	Measurements	300
5.97.4.1.5	Title page (cover) contents	300
5.97.4.1.6	Heading	300
5.97.4.1.7	Title	300
5.97.4.1.8	National Stock Number (NSN), Part Number (P/N), Commercial and Government Entity Code (COGEC), and End Item Code (EIC)	300
5.97.4.1.9	Reference line	300
5.97.4.1.10	Reporting errors	300
5.97.4.1.10A	Supersedure notice	300
5.97.4.1.10B	Distribution statement, export control warning, and destruction notice	301
5.97.4.1.11	Lubrication Order (LO) statement	301
5.97.4.1.12	Service nomenclature	301
5.97.4.1.12A	LO date	301
5.97.4.1.13	LO introduction	301
5.97.4.1.13.1	General statement(s)/Notes	301
5.97.4.1.13.2	Oil filter statement	301
5.97.4.1.13.3	Army Oil Analysis Program (AOAP) sampling interval statement	301
5.97.4.1.13.4	Army Oil Analysis Program (AOAP) not available/non-enrolled statement	302
5.97.4.1.13.5	Warranty hardtime statement	302
5.97.4.1.14	Lubrication procedures	302
5.97.4.1.15	Warnings, cautions, and notes	302
5.97.4.1.16	Illustrations	302
5.97.4.1.17	Multiple illustrations	302
5.97.4.1.18	**DELETED**	302
5.97.4.1.19	Grouped lubrication points	302
5.97.4.1.20	Disassembling and hand packing	303
5.97.4.1.21	Cleaning, disassembling, and reassembling	303
5.97.4.1.22	Washing and natural drying	303
5.97.4.1.23	Preservative material	303
5.97.4.1.24	Lubricants and military symbols	303
5.97.4.1.25	**DELETED**	303
5.97.4.1.26	**DELETED**	303

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CONTENTS

PARAGRAPH PAGE

5.97.4.1.27 Lubricant table 304
5.97.4.1.28 Notes to tables 304
5.97.4.1.29 Special notes 304
5.97.4.1.29.1 Pertinent lubrication point information 304
5.97.4.1.29.2 Effect of extreme conditions 304
5.97.4.1.29.3 Authentication block 304
5.97.4.2 Project decisions 304
5.97.4.2.1 LO page size 304
5.97.5 Army Test, Measurement and Diagnostic Equipment (TMDE). 304
5.97.5.1 Army business rules 304
5.97.5.1.1 General 304
5.97.5.1.2 Paragraph numbering 304
5.97.5.1.3 Content and order of presentation 305
5.97.5.1.4 Front matter 305
5.97.5.1.5 Test, Measurement and Diagnostic Equipment (TMDE) Chapter 1 - Introduction 305
5.97.5.1.5.1 Section I - test, Measurement and Diagnotic Equipment (TMDE) introduction (Scope) 305
5.97.5.1.5.2 Section II - Description (Description and Data) 305
5.97.5.1.5.2.1 Description 305
5.97.5.1.5.2.2 Performance data 305
5.97.5.1.5.2.3 Configuration data 306
5.97.5.1.5.2.4 Equipment, accessories, and publications required 306
5.97.5.1.6 Test, Measurement and Diagnostic Equipment (TMDE) Chapter 2 - Functional analysis 306
5.97.5.1.7 Test, Measurement and Diagnostic Equipment (TMDE) Chapter 3 - Operating procedures 306
5.97.5.1.7.1 Section I - Setup instructions 306
5.97.5.1.7.2 Section II - Controls and indicators 307
5.97.5.1.7.3 Section III - Turn-on and turn-off procedures 307
5.97.5.1.8 Test, Measurement and Diagnostic Equipment (TMDE) Chapter 4 - Maintenance requirements 307
5.97.5.1.8.1 Section I - Facilities, equipment, and material standards 307
5.97.5.1.8.1.1 Facilities 307
5.97.5.1.8.1.2 Material standards 307
5.97.5.1.8.1.3 Special support equipment and tools 307
5.97.5.1.8.2 Section II - Preventive maintenance 307
5.97.5.1.8.3 Section III - Pre-operational specifications and self-test procedure 308
5.97.5.1.8.4 Section IV - Troubleshooting procedure 308
5.97.5.1.8.5 Section V - Maintenance 308
5.97.5.1.8.5.1 Disassembly procedure 308
5.97.5.1.8.5.1.1 Replace 308

Source: https://assist.dla.mil -- Downloaded: 2016-12-10T00:01Z
Check the source to verify that this is the current version before use.

CONTENTS

PARAGRAPH PAGE

5.97.5.1.8.5.1.2 Repair 308
5.97.5.1.8.5.2 Assembly procedure 309
5.97.5.1.9 Test, Measurement and Diagnostic Equipment (TMDE) Chapter 5 - Calibrate 309
5.97.5.1.10 Appendix A - References 309
5.97.5.1.11 Appendix B - List of parts 309
5.97.5.1.12 Appendix C - Unit Under Test (UUT) procedures 309
5.97.5.1.13 Other appendixes 309
5.97.5.1.14 Rear matter 309
5.97.5.2 Project decisions 310
5.97.5.2.1 Stand alone 310
5.98 S1000D Chapter 5.2.1.10 – Common information sets – Weapon loading information 310
5.99 S1000D Chapter 5.2.1.11 – Common information sets – Cargo loading information 310
5.99.1 Army business rules. 310
5.99.1.1 On-vehicle equipment loading plan 310
5.99.1.2 Scope 310
5.99.1.3 Locator graphic 310
5.99.2 Project decisions. 310
5.100 S1000D Chapter 5.2.1.12 – Common information sets – Stores loading information 310
5.101 S1000D Chapter 5.2.1.13 – Common information sets – Role change information 311
5.101.1 Modification Work Orders (MWOs). 311
5.101.1.1 Army business rules 311
5.101.1.1.1 General 311
5.101.1.1.2 Text 311
5.101.1.1.3 Paragraph 1 - Purpose, and Paragraph 2 - Introduction (Priority) 311
5.101.1.1.3.1 Paragraph 1 311
5.101.1.1.3.2 Paragraph 2 311
5.101.1.1.4 Paragraph 3 - End item(s) or system(s) to be modified, Paragraph 4 - Module(s) (components, assemblies, subassemblies, boards, and cards) to be modified, and Paragraph 5 - Part(s) to be modified 312
5.101.1.1.4.1 Paragraph 3 312
5.101.1.1.4.2 Paragraph 4 312
5.101.1.1.4.3 Paragraph 5 312
5.101.1.1.5 Paragraph 6 - Modification application 312
5.101.1.1.6 Paragraph 7 - Technical publications affected/changed 313
5.101.1.1.7 Paragraph 8 - Kit part list 313

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Check the source to verify that this is the current version before use.

CONTENTS

PARAGRAPH PAGE

5.101.1.1.8 Paragraph 9 - Special support equipment and tools (Special tools; tool kits; jigs; Test, Measurement, and Diagnostic Equipment (TMDE); and fixtures required) 313
5.101.1.1.9 Paragraph 10 - Modification procedures 313
5.101.1.1.10 Paragraph 11 - Calibration requirements 314
5.101.1.1.11 Paragraph 12 - Weight and balance data 314
5.101.1.1.12 Paragraph 13 - Quality assurance requirements 314
5.101.1.1.13 Paragraph 14 - Paragraph 14 - Recording and reporting of the modification, Paragraph 15 - Materiel change number, and Paragraph 16 - Modification identification 315
5.101.1.1.13.1 Paragraph 14 315
5.101.1.1.13.2 Paragraph 15 315
5.101.1.1.13.3 Paragraph 16 315
5.101.1.1.14 Abbreviated Modification Work Orders (MWOs) (short form) 315
5.101.1.2 Project decisions 316
5.101.1.2.1 Abbreviated Modification Work Orders (MWOs) format 316
5.101.2 Demilitarization of surplus military items. 316
5.101.2.1 Army business rules 316
5.101.2.1.1 General 316
5.101.2.1.2 Printing 316
5.101.2.1.3 Foldouts 316
5.101.2.1.4 Content 316
5.101.2.1.5 Front matter 316
5.101.2.1.6 Demilitarization of surplus military items Chapter 1 - Introduction 316
5.101.2.1.6.1 Scope 316
5.101.2.1.6.2 Authorization 317
5.101.2.1.6.3 Certification 317
5.101.2.1.6.4 Reporting demilitarization 317
5.101.2.1.6.5 Special information 317
5.101.2.1.7 Demilitarization of surplus military items Chapter 2 - Methods of demilitarization 318
5.101.2.1.8 Demilitarization of surplus military items Chapter 3 - Detailed instructions for demilitarization 318
5.101.2.1.9 Appendix A - References 318
5.101.2.1.10 Rear matter 318
5.101.2.2 Project decisions 318
5.101.2.2.1 Stand alone 318
5.101.2.2.2 Page layout 318
5.101.3 Destruction of equipment to prevent enemy use 319
5.101.3.1 Army business rules 319
5.101.3.1.1 General requirements 319
5.101.3.1.2 Approach 319

Source: https://assist.dla.mil -- Downloaded: 2016-12-10T00:01Z
Check the source to verify that this is the current version before use.

CONTENTS

PARAGRAPH PAGE

5.101.3.1.3 Types of manuals 319
5.101.3.1.4 Destruction manuals for a stock class 319
5.101.3.1.5 Destruction manuals/data modules for weapon systems 319
5.101.3.1.6 General destruction rules 319
5.101.3.1.6.1 Destruction general information 320
5.101.3.1.6.2 Scope of manual 320
5.101.3.1.6.3 Authority to destroy materiel 320
5.101.3.1.6.4 Reporting destruction 320
5.101.3.1.6.5 General destruction information 321
5.101.3.1.6.6 Degree of destruction 321
5.101.3.1.6.7 Essential components and spare parts 321
5.101.3.1.7 Parts list 321
5.101.3.1.8 Destruction procedures 321
5.101.3.1.9 Destruction procedures - Classified equipment 322
5.101.3.2 Project decisions 322
5.101.3.2.1 Stand alone 322
5.101.3.2.2 Generic destruction manual 322
5.102 S1000D Chapter 5.2.1.14 – Common information sets – Battle damage assessment and repair information. 322
5.102.1 Army business rules. 322
5.102.1.1 General 322
5.102.1.2 Content 322
5.102.1.3 Operating procedures 323
5.102.1.4 Battle Damage Assessment and Repair (BDAR) introduction (General information) 323
5.102.1.4.1 Operating procedures 323
5.102.1.4.2 Introduction 323
5.102.1.4.3 Standards and practices 323
5.102.1.4.4 Tasks and responsibilities 324
5.102.1.4.5 Combat threats (**Aviation only**) 324
5.102.1.5 General fault assessment tables (Battle damage assessment tables) 324
5.102.1.5.1 Introduction 325
5.102.1.5.2 Fault assessment tables 325
5.102.1.6 Repair 325
5.102.1.6.1 General repair 325
5.102.1.6.2 End item repair 325
5.102.1.6.3 Major functional group repair 325
5.102.1.6.4 Auxiliary equipment 325
5.102.1.6.5 Introduction 325
5.102.1.6.6 Repair procedure 326
5.102.1.7 References 326
5.102.1.8 Support equipment and tools (Special or fabricated tools) 327

Source: https://assist.dla.mil -- Downloaded: 2016-12-10T00:01Z
Check the source to verify that this is the current version before use.

CONTENTS

PARAGRAPH PAGE

5.102.1.9 Expendable and durable items list 327
5.102.1.10 Substitute materials/parts 327
5.102.2 Project decisions 327
5.102.2.1 Format of assessment data 327
5.103 S1000D Chapter 5.2.1.15 – Common information sets – Illustrated tool and support equipment information. 327
5.103.1 Tool identification list **(Field/Aviation Maintenance Company (AMC) level or above only)**. 327
5.103.1.1 Army business rules 327
5.103.1.1.1 General 328
5.103.1.1.2 Introduction 328
5.103.1.1.3 Tool identification list 328
5.103.1.2 Project decisions 329
5.104 S1000D Chapter 5.2.1.16 – Common information sets – Service bulletins...329
5.105 S1000D Chapter 5.2.1.17 – Common information sets – Material data. 329
5.105.1 Army business rules. 329
5.105.1.1 General 329
5.105.1.2 Front matter 329
5.105.1.3 Introduction 329
5.105.1.4 Munitions equipment and ammunition data sheets 329
5.105.1.4.1 Photograph or line drawing of the munitions equipment or ammunition item 330
5.105.1.4.2 Type classification 330
5.105.1.4.3 Use 330
5.105.1.4.4 Description 330
5.105.1.4.5 Functioning 330
5.105.1.4.6 Differences between models 330
5.105.1.4.7 Tabulated data 330
5.105.1.4.8 Performance 330
5.105.1.4.9 Temperature limits 331
5.105.1.4.10 Drawings 331
5.105.1.4.11 Unit of issue 331
5.105.1.4.12 Packing data 331
5.105.1.4.13 Shipping and storage data 331
5.105.1.4.14 Limitations 331
5.105.1.4.15 References 331
5.105.1.4.16 Remarks 331
5.105.1.4.17 Associated equipment 331
5.105.1.4.18 Kits 331
5.105.1.5 Appendices 331
5.105.1.5.1 Appendix A - Deleted items 331
5.105.1.5.2 Appendix B - Operational index 332

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Check the source to verify that this is the current version before use.

CONTENTS

PARAGRAPH PAGE

5.105.1.5.3 Appendix C - Preparation and handling of ammunition peculiar equipment for shipment and storage 332
5.105.1.6 Rear matter 332
5.105.2 Project decisions. 332
5.105.2.1 Stand alone 332
5.105.2.2 Photographs and line drawings 332
5.106 S1000D Chapter 5.2.1.18 – Common information sets – Common information and data 332
5.106.1 Supporting information – General. 332
5.106.1.1 Army business rules 332
5.106.1.1.1 General 332
5.106.1.1.2 References 333
5.106.1.1.3 Support equipment and tools (Support items) 333
5.106.1.1.4 Additional supporting information 333
5.106.1.2 Project decisions 333
5.106.2 Warranty Technical Bulletins (WTBs). 333
5.106.2.1 Army business rules 333
5.106.2.1.1 General 333
5.106.2.1.2 National Stock Numbers (NSNs) 333
5.106.2.1.3 References 334
5.106.2.1.4 Order of presentation 334
5.106.2.1.5 Front matter 334
5.106.2.1.6 General 334
5.106.2.1.6.1 Paragraph 1, General 334
5.106.2.1.6.2 Paragraph 2, Explanation of terms 334
5.106.2.1.6.2.1 Abuse 334
5.106.2.1.6.2.2 Acceptance date 335
5.106.2.1.6.2.3 Acquiring command or activity 335
5.106.2.1.6.2.4 Alterations/Modifications 335
5.106.2.1.6.2.5 Consolidated warranty technical bulletin 335
5.106.2.1.6.2.6 Contractor support 335
5.106.2.1.6.2.7 Defect 335
5.106.2.1.6.2.8 Failed item 335
5.106.2.1.6.2.9 False return rate 335
5.106.2.1.6.2.10 Manufacturer's recall 335
5.106.2.1.6.2.11 Primary damage 335
5.106.2.1.6.2.12 Prime contractor 335
5.106.2.1.6.2.13 Reimbursement 336
5.106.2.1.6.2.14 Repair 336
5.106.2.1.6.2.15 Reparable 336
5.106.2.1.6.2.16 Secondary damage 336
5.106.2.1.6.2.17 Serviceable 336

Source: https://assist.dla.mil -- Downloaded: 2016-12-10T00:01Z
Check the source to verify that this is the current version before use.

CONTENTS

PARAGRAPH PAGE

5.106.2.1.6.2.18 Subcontractor 336
5.106.2.1.6.2.19 Tailoring....336
5.106.2.1.6.2.20 Turnaround time....336
5.106.2.1.6.2.21 Validation....336
5.106.2.1.6.2.22 Verification 336
5.106.2.1.6.2.23 Warranty 337
5.106.2.1.6.2.24 Warranty claim....337
5.106.2.1.6.2.25 Warranty Control Office (WARCO) 337
5.106.2.1.6.2.26 Warranty period 337
5.106.2.1.6.2.27 Warranty start date....337
5.106.2.1.6.3 Paragraph 3, Coverage - Specific....337
5.106.2.1.6.4 Contractor responsibilities 338
5.106.2.1.6.5 Government responsibilities/identification....338
5.106.2.1.6.6 Design/performance specifications....339
5.106.2.1.6.7 Nullification 339
5.106.2.1.6.8 Abuse determination 339
5.106.2.1.6.9 Claim procedures 339
5.106.2.1.6.10 Storage/shipment/handling 340
5.106.2.1.7 Appendices - Warranty tables....341
5.106.2.1.8 Rear matter....341
5.106.2.2 Project decisions 341
5.107 S1000D Chapter 5.2.1.19 – Common information sets – Training. 341
5.107.1 Army business rules....341
5.107.2 Project decisions. 341
5.107.2.1 Planning cope and depth 341
5.107.2.2 Training information scope and depth 341
5.108 S1000D Chapter 5.2.1.20 – Common information sets – List of applicable publications....342
5.108.1 Army business rules....342
5.108.2 Project decisions. 342
5.108.2.1 One or several publication list data modules 342
5.108.2.2 Include unpublished publications and documents 342
5.108.2.3 Include the manufacturer's part no. or reference no....342
5.108.2.4 Markup of publication entry as a link....342
5.108.2.5 Use of language....342
5.109 S1000D Chapter 5.2.1.21 – Common information sets – Maintenance checklists and inspections....342
5.110 S1000D Chapter 5.2.2.1 – Air specific information sets – Use of generic information....342
5.111 S1000D Chapter 5.2.2.3 – Air specific information sets – Cross servicing information....342

Source: https://assist.dla.mil -- Downloaded: 2016-12-10T00:01Z
Check the source to verify that this is the current version before use.

CONTENTS

PARAGRAPH PAGE

5.112 S1000D Chapter 5.2.2.4 – Air specific information sets – Engine maintenance information. 343
5.113 S1000D Chapter 5.2.2.5 – Air specific information sets – Power plant build-up information. 343
5.114 S1000D Chapter 5.2.2.6 – Air specific information sets – Engine standard practices information. 343
5.115 S1000D Chapter 5.2.2.7 – Air specific information sets – Aircrew information. 343
5.115.1 Army business rules. 343
5.115.1.1 General 343
5.115.1.2 Preparing data modules 343
5.115.1.3 Scope 343
5.115.1.4 Hierarchical breakdown 344
5.115.1.5 Volume size 344
5.115.1.6 Volume content 344
5.115.1.7 Front matter 344
5.115.1.8 Aircraft operator's manual Chapter 1 - Introduction 344
5.115.1.8.1 Explanation of warnings, cautions, and notes 344
5.115.1.8.2 Theory of operation (Description) 345
5.115.1.8.3 References 345
5.115.1.8.4 How to use this manual 345
5.115.1.8.4.1 Designator symbols 346
5.115.1.8.4.2 Explanation of the use of shall, should, and may 346
5.115.1.8.4.3 Additional introductory information 346
5.115.1.9 Aircraft operator's manual Chapter 2 - Aircraft and systems description and operation 346
5.115.1.9.1 General 346
5.115.1.9.1.1 Unmanned Aircraft System (UASs) 346
5.115.1.9.1.2 Interactive displays 347
5.115.1.9.1.3 Controls 347
5.115.1.9.1.4 Indicators 347
5.115.1.9.2 Section I - Description (Aircraft) 347
5.115.1.9.2.1 General 347
5.115.1.9.2.2 Illustrations and tables 347
5.115.1.9.2.3 Unmanned Aircraft System (UAS)-specific illustrations and tables 348
5.115.1.9.2.4 Landing gear system 349
5.115.1.9.2.5 Instruments, panels, and consoles 349
5.115.1.9.2.6 Canopies 349
5.115.1.9.2.7 Doors 349
5.115.1.9.2.8 Seats 349
5.115.1.9.2.9 Ground data terminal/Antenna systems 349
5.115.1.9.2.9.1 Data link system (**UAS only**) 349

Source: https://assist.dla.mil -- Downloaded: 2016-12-10T00:01Z
Check the source to verify that this is the current version before use.

CONTENTS

PARAGRAPH PAGE

5.115.1.9.2.10 Emergency recovery system (**UAS only**) 350
5.115.1.9.3 Section II - Emergency equipment 350
5.115.1.9.3.1 Description (General)....350
5.115.1.9.3.2 Illustrations 350
5.115.1.9.4 Section III - Description (Engines and related systems)....350
5.115.1.9.4.1 Engines....350
5.115.1.9.5 Section IV - Description (Fuel system) 350
5.115.1.9.5.1 General....351
5.115.1.9.5.2 Controls and indicators 351
5.115.1.9.5.3 Fuel system management....351
5.115.1.9.6 Section V - Description (Flight control system)....351
5.115.1.9.6.1 General....351
5.115.1.9.6.2 Automatic flight control system....351
5.115.1.9.7 Section VI - Description (Hydraulic and pneumatic systems)....351
5.115.1.9.8 Section VII - Description (Power train system)....352
5.115.1.9.9 Section VIII - Description (Rotors or propellers)....352
5.115.1.9.10 Section IX - Description (Utility systems)....352
5.115.1.9.11 Section X - Description (Heating, ventilation, cooling, and environmental control systems) 352
5.115.1.9.12 Section XI - Description (Electrical power supply and distribution systems)....352
5.115.1.9.12.1 Direct Current (DC) power supply system 352
5.115.1.9.12.2 Alternating Current (AC) power supply system 353
5.115.1.9.12.3 Breakers 353
5.115.1.9.13 Section XII - Description (Auxiliary power unit)....353
5.115.1.9.14 Section XIII - Description (Lighting) 353
5.115.1.9.15 Section XIV - Description (Flight instruments)....353
5.115.1.9.16 Section XV - Description (Servicing, parking, and mooring) 353
5.115.1.9.16.1 General....353
5.115.1.9.16.2 Servicing diagram 354
5.115.1.9.16.3 Servicing information 354
5.115.1.9.16.4 Approved fuels....354
5.115.1.9.16.5 Additional servicing instructions 354
5.115.1.9.16.6 Ground handling 354
5.115.1.9.16.7 Parking and mooring....354
5.115.1.9.16.8 Additional sections....354
5.115.1.10 Aircraft operator's manual Chapter 3 - Avionics 355
5.115.1.10.1 Section I - Introduction (General)....355
5.115.1.10.2 Sections II through IV....355
5.115.1.10.2.1 Description....355
5.115.1.10.2.2 Controls and functions 355
5.115.1.10.2.3 Operation....355

Source: https://assist.dla.mil -- Downloaded: 2016-12-10T00:01Z
Check the source to verify that this is the current version before use.

CONTENTS

PARAGRAPH PAGE

5.115.1.10.2.4 Emergency operations....356
5.115.1.10.2.5 Power source....356
5.115.1.10.3 Section II - Description (Communications)....356
5.115.1.10.4 Section III - Description (Navigation)....356
5.115.1.10.5 Section IV - Description (Transponder and radar)....357
5.115.1.10.6 Additional sections....357
5.115.1.11 Aircraft operator's manual Chapter 4 - Mission equipment....357
5.115.1.11.1 General....357
5.115.1.11.2 Section I - Description (Mission avionics)....357
5.115.1.11.3 Section II - Description (Armament control systems)....357
5.115.1.11.3.1 General....357
5.115.1.11.3.2 Armament control system....357
5.115.1.11.3.3 Gunnery equipment....358
5.115.1.11.3.4 Rocket equipment....358
5.115.1.11.3.5 Missiles....358
5.115.1.11.3.6 Laser control system....358
5.115.1.11.4 Section III - Cargo Handling....358
5.115.1.11.5 Section IV - Description (Passive defense)....358
5.115.1.11.5.1 Description (Additional system coverage)....358
5.115.1.12 Aircraft operator's manual Chapter 5 - Operating limits and restrictions....358
5.115.1.12.1 General....358
5.115.1.12.2 Section I - Operating limits - General....359
5.115.1.12.3 Section II - Operating limits - System....359
5.115.1.12.3.1 Instrument, interactive display, or display operating ranges and markings...359
5.115.1.12.3.2 Propeller limitations....359
5.115.1.12.3.3 Rotor limitations....359
5.115.1.12.3.4 Additional limitations....359
5.115.1.12.4 Section III - Operating limits - Power....360
5.115.1.12.5 Section IV - Operating limits - Loading....360
5.115.1.12.5.1 General....360
5.115.1.12.5.2 Center-of-gravity limitations....360
5.115.1.12.5.3 Weight limitations....360
5.115.1.12.5.4 Turbulence....360
5.115.1.12.5.5 Other limitations....360
5.115.1.12.6 Section V - Operating limits - Airspeed....360
5.115.1.12.6.1 General....361
5.115.1.12.6.2 Airspeed operating limits chart....361
5.115.1.12.7 Section VI - Operating limits - Maneuvering....361
5.115.1.12.7.1 General....361
5.115.1.12.7.2 Flight envelope chart....361
5.115.1.12.8 Section VII - Operating limits - Environmental....361
5.115.1.12.8.1 General....361

Source: https://assist.dla.mil -- Downloaded: 2016-12-10T00:01Z
Check the source to verify that this is the current version before use.

CONTENTS

PARAGRAPH PAGE

5.115.1.12.8.2 Flight under Instrument Meteorological Conditions (IMC) 362
5.115.1.12.8.3 Description (Additional sections) 362
5.115.1.13 Aircraft operator's manual Chapter 6 - Weight/balance and loading.....362
5.115.1.13.1 Section I - Weight and balance (General).....362
5.115.1.13.1.1 General.....362
5.115.1.13.1.2 Aircraft compartment and station diagram 362
5.115.1.13.2 Section II - Weight and balance data 362
5.115.1.13.3 Section III - Weight and balance - Fluids (Fuel/oil).....362
5.115.1.13.3.1 General.....363
5.115.1.13.3.2 Oil data.....363
5.115.1.13.4 Section IV - Weight and balance - Personnel 363
5.115.1.13.4.1 General.....363
5.115.1.13.4.2 Personnel compartment and entrances.....363
5.115.1.13.4.3 Personnel loading and unloading 363
5.115.1.13.4.4 Personnel weight.....363
5.115.1.13.4.5 Personnel moments 364
5.115.1.13.5 Section V - Weight and balance - Mission equipment 364
5.115.1.13.6 Section VI - Cargo loading 364
5.115.1.13.6.1 General.....364
5.115.1.13.6.2 Description and illustrations 364
5.115.1.13.6.3 Equipment loading and unloading 364
5.115.1.13.6.4 Preparation of general cargo 365
5.115.1.13.6.5 Loading, securing, and unloading cargo 365
5.115.1.13.6.6 Cargo center-of-gravity.....365
5.115.1.13.6.7 Loading procedure 365
5.115.1.13.6.8 Securing loads.....365
5.115.1.13.6.9 Unloading procedures 365
5.115.1.13.7 Section VII - Center-of-Gravity (CG).....366
5.115.1.14 Aircraft operator's manual Chapter 7 - Performance data 366
5.115.1.14.1 General.....366
5.115.1.14.2 Data basis 366
5.115.1.14.3 Identification 367
5.115.1.14.4 Factors affecting data 367
5.115.1.14.5 Configuration 367
5.115.1.14.6 Fuel 367
5.115.1.14.7 Atmospheric conditions 368
5.115.1.14.8 Allowances.....368
5.115.1.14.9 Limitations and restrictions.....368
5.115.1.14.10 Definitions.....368
5.115.1.14.11 Rotary wing performance data.....368
5.115.1.14.12 Fixed wing performance data.....368
5.115.1.14.13 Section I - Introduction 369

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CONTENTS

PARAGRAPH PAGE

5.115.1.14.13.1 Purpose....369
5.115.1.14.13.2 General....370
5.115.1.14.13.3 Use of charts....370
5.115.1.14.13.4 Data basis....370
5.115.1.14.13.5 Specific conditions....371
5.115.1.14.13.6 General conditions....371
5.115.1.14.13.7 Performance discrepancies....371
5.115.1.14.14 Section II and subsequent sections - Performance data....371
5.115.1.14.14.1 General....371
5.115.1.14.14.2 Rotary wing chart content....371
5.115.1.14.14.2.1 Fuel flow chart....372
5.115.1.14.14.2.2 Maximum torque available chart....372
5.115.1.14.14.2.3 Hover chart....372
5.115.1.14.14.2.4 Critical data chart....372
5.115.1.14.14.2.5 Takeoff chart....372
5.115.1.14.14.2.6 Drag chart....373
5.115.1.14.14.2.7 Cruise chart....373
5.115.1.14.14.2.8 Climb-descent chart....374
5.115.1.14.14.2.9 Airspeed calibration chart....374
5.115.1.14.14.2.10 Optimum cruise....374
5.115.1.14.14.3 Fixed wing chart content....374
5.115.1.14.14.3.1 Crosswind chart....375
5.115.1.14.14.3.2 Idle fuel flow chart....375
5.115.1.14.14.3.3 Torque available for takeoff chart....375
5.115.1.14.14.3.4 Takeoff chart....375
5.115.1.14.14.3.5 Rotation/takeoff airspeed chart....375
5.115.1.14.14.3.6 Acceleration check distance chart....375
5.115.1.14.14.3.7 Accelerate-stop distance chart....376
5.115.1.14.14.3.8 Accelerate after takeoff chart....376
5.115.1.14.14.3.9 Minimum single engine control airspeed chart....376
5.115.1.14.14.3.10 Single engine climb chart....376
5.115.1.14.14.3.11 Cruise climb chart....376
5.115.1.14.14.3.12 Drag chart....376
5.115.1.14.14.3.13 Cruise chart....377
5.115.1.14.14.3.14 Climb-descent chart....377
5.115.1.14.14.3.15 Approach speed chart....377
5.115.1.14.14.3.16 Landing chart....377
5.115.1.14.14.3.17 Optimum cruise....378
5.115.1.15 Aircraft operator's manual Chapter 8 - Normal procedures....405
5.115.1.15.1 General....405
5.115.1.15.2 Section I - Operational requirements (Crew duties)....405
5.115.1.15.3 Section II - Operating procedures and maneuvers....405

Source: https://assist.dla.mil -- Downloaded: 2016-12-10T00:01Z
Check the source to verify that this is the current version before use.

CONTENTS

PARAGRAPH PAGE

5.115.1.15.3.1 General 405
5.115.1.15.3.2 Normal operation procedures 405
5.115.1.15.3.3 Amplified checklist 406
5.115.1.15.3.4 Normal operation check - Preflight (Preflight check) 406
5.115.1.15.3.5 Normal operation check - Preflight (Before exterior check) 407
5.115.1.15.3.6 Normal operation check - Preflight (Exterior check) 407
5.115.1.15.3.7 Normal operation check - Preflight (Interior check) 407
5.115.1.15.3.8 Normal operation check - Preflight (Crew/passenger briefing check) 407
5.115.1.15.3.9 Normal operation - Preflight 407
5.115.1.15.3.9.1 General 408
5.115.1.15.3.9.2 Lineup check 408
5.115.1.15.3.10 Normal operation - Flight 408
5.115.1.15.3.11 Normal operation - Post flight 410
5.115.1.15.4 Section II - Normal operation - Instrument flight 410
5.115.1.15.5 Section IV - Normal operation - Flight characteristics 410
5.115.1.15.5.1 Stalls 410
5.115.1.15.5.2 Stall chart (**fixed wing only**) 411
5.115.1.15.5.3 Spins (**fixed wing only**) 411
5.115.1.15.5.4 Diving 411
5.115.1.15.5.5 Maneuvering flight 411
5.115.1.15.5.6 Flight controls 411
5.115.1.15.5.7 Level flight 411
5.115.1.15.5.8 External loads 411
5.115.1.15.5.9 Asymmetrical loads 411
5.115.1.15.6 Section V - Normal operation - Weather 411
5.115.1.15.6.1 Cold weather operations 412
5.115.1.15.6.1.1 Preparation for flight 412
5.115.1.15.6.1.2 Engine starting 412
5.115.1.15.6.1.3 Warm-up and ground testing 412
5.115.1.15.6.1.4 Taxiing and hovering instructions 412
5.115.1.15.6.1.5 Before takeoff 412
5.115.1.15.6.1.6 Takeoff 412
5.115.1.15.6.1.7 During flight 412
5.115.1.15.6.1.8 Descent 413
5.115.1.15.6.1.9 Landing 413
5.115.1.15.6.1.10 Engine shutdown 413
5.115.1.15.6.2 Desert and hot weather operations 413
5.115.1.15.6.3 Turbulence and thunderstorm operations 413
5.115.1.15.6.4 Rain 413
5.115.1.15.6.5 Additional sections 413
5.115.1.16 Aircraft operator's manual Chapter 9 - Emergency procedures 413
5.115.1.16.1 General 413

Source: https://assist.dla.mil -- Downloaded: 2016-12-10T00:01Z
Check the source to verify that this is the current version before use.

CONTENTS

PARAGRAPH PAGE

5.115.1.16.2 Section I - Aircraft systems....414
5.115.1.16.2.1 Emergency equipment and exits....415
5.115.1.16.2.2 Engine....416
5.115.1.16.2.2.1 Flight characteristics under partial power conditions....416
5.115.1.16.2.2.2 Engine malfunction under specific conditions....416
5.115.1.16.2.2.3 Engine malfunction during takeoff and low altitude/low airspeed flight....416
5.115.1.16.2.2.4 Engine malfunction during cruise....416
5.115.1.16.2.2.5 Engine malfunction during final approach....416
5.115.1.16.2.2.6 Engine restart during flight....417
5.115.1.16.2.2.7 Maximum glide....417
5.115.1.16.2.2.8 Autorotational descent....417
5.115.1.16.2.2.9 Landing with one or more engines inoperative....417
5.115.1.16.2.2.10 Go-around with one or more engines inoperative (fixed wing)....417
5.115.1.16.2.2.11 Height velocity....417
5.115.1.16.2.3 Propeller/rotor, transmissions, and drive systems....417
5.115.1.16.2.3.1 Propeller failure (fixed wing)....417
5.115.1.16.2.3.2 Tail rotor failure and directional control malfunctions....418
5.115.1.16.2.3.3 Malfunctions of main rotor transmission and drive systems....418
5.115.1.16.2.4 Other emergencies....418
5.115.1.16.2.5 Fire....418
5.115.1.16.2.5.1 Engine fire....418
5.115.1.16.2.5.2 Fuselage fire....418
5.115.1.16.2.5.3 Wing fire....418
5.115.1.16.2.5.4 Electrical fire....418
5.115.1.16.2.5.5 Smoke and fume elimination....418
5.115.1.16.2.6 Fuel system....418
5.115.1.16.2.7 Electrical system....419
5.115.1.16.2.8 Hydraulic system....419
5.115.1.16.2.9 Landing and ditching....419
5.115.1.16.2.9.1 Emergency descent....419
5.115.1.16.2.9.2 Landing emergencies....419
5.115.1.16.2.9.3 Body positions....419
5.115.1.16.2.9.4 Ditching....419
5.115.1.16.2.10 Flight controls....419
5.115.1.16.2.11 Bailout/eject....419
5.115.1.16.3 Section II - Mission equipment....420
5.115.1.16.3.1 Emergency jettisoning....420
5.115.1.16.3.2 Ground control malfunctions....420
5.115.1.16.3.3 Ground control station malfunctions....420
5.115.1.16.3.4 Data link malfunctions....420
5.115.1.16.3.5 Ground control support equipment malfunctions....420
5.115.1.17 Rear matter....420

Source: https://assist.dla.mil -- Downloaded: 2016-12-10T00:01Z
Check the source to verify that this is the current version before use.

CONTENTS

PARAGRAPH PAGE

5.115.2 Project decisions 420
5.115.2.1 Emergency systems....420
5.115.3 Aircraft operator checklist. 420
5.115.3.1 Army business rules....420
5.115.3.1.1 General....420
5.115.3.1.2 Special style and format rules....421
5.115.3.1.2.1 Standard checklist....421
5.115.3.1.2.2 Standard operator's checklist 421
5.115.3.1.2.3 Fold-out pages....421
5.115.3.1.3 Scope....421
5.115.3.1.4 Standard operator's checklist 421
5.115.3.1.4.1 Detailed requirements for standard operator's checklist....421
5.115.3.1.4.2 Front matter....422
5.115.3.1.4.3 Introduction (General information and scope)....422
5.115.3.1.4.4 Normal procedures....422
5.115.3.1.4.5 Through-flight checklist....422
5.115.3.1.4.6 Emergency operations procedures 422
5.115.3.1.4.7 Normal operation checklist - Performance data....422
5.115.3.1.4.7.1 General....422
5.115.3.1.4.8 Rear matter....423
5.115.3.1.4.8.1 Detailed requirements for alternate operator's checklists 423
5.115.3.2 Project decisions 423
5.115.3.2.1 Standard or alternate checklist....423
5.115.4 Aircraft operator Maintenance Test Flight (MTF) manual....423
5.115.4.1 Army business rules....423
5.115.4.1.1 General....423
5.115.4.1.2 Content....423
5.115.4.1.3 Front matter....424
5.115.4.1.4 Section I - Introduction 424
5.115.4.1.4.1 General....424
5.115.4.1.4.2 Purpose....424
5.115.4.1.4.3 Definitions....424
5.115.4.1.4.4 General information 424
5.115.4.1.4.5 Special instructions 425
5.115.4.1.5 Section 2 - Maintenance Test Flight (MTF) checklist....425
5.115.4.1.6 Section 3 - Troubleshooting introduction 425
5.115.4.1.7 Section 4 - Special/Detailed procedures 426
5.115.4.1.8 Section 5 - Charts and forms....426
5.115.4.1.8.1 General....426
5.115.4.1.8.2 List of charts 426
5.115.4.1.8.3 Maintenance test flight check sheets....426
5.115.4.1.9 Appendices....426

Source: https://assist.dla.mil -- Downloaded: 2016-12-10T00:01Z
Check the source to verify that this is the current version before use.

CONTENTS

PARAGRAPH PAGE

5.115.4.1.10 Rear matter....426
5.115.4.1.10.1 Metric conversion chart....426
5.115.4.2 Project decisions....426
5.115.4.2.1 Aerodynamic report....426
5.116 *Technical description* ***(aircraft troubleshooting manuals only)****.*....*427*
5.116.1 Army business rules....427
5.116.1.1 General....427
5.116.1.2 Equipment description and data....427
5.116.1.3 Controls and indicators....427
5.116.1.4 Theory of operation....427
5.116.2 Project decisions....427
5.*117* *Preventive Maintenance Services (PMS)/Preventive Maintenance Daily (PMD) inspection* ***(aircraft preventive maintenance services only)****...427*
5.117.1 Army business rules....427
5.117.1.1 General....427
5.117.1.2 Mandatory safety-of-flight inspection items....428
5.117.1.3 Area diagram....428
5.117.1.4 Standard checklists....428
5.117.2 Project decisions....428
5.118 *Phased Maintenance (PM) inspection* ***(aircraft phased maintenance checklist only)****....429*
5.118.1 Army business rules....429
5.118.1.1 General....429
5.118.1.2 Inspection area diagrams....429
5.118.1.3 Phased maintenance checklist....429
5.118.2 Project decisions....429
5.119 *Preventive maintenance inspection* ***(aircraft only)****.*....*429*
5.119.1 Army business rules....429
5.119.1.1 General....429
5.119.1.2 General information and introduction....429
5.119.1.3 Standards of serviceability....430
5.119.1.4 Special instructions....430
5.119.2 Project decisions....430
5.120 *Aircraft inventory master guide* ***(aircraft only)****....430*
5.120.1 Army business rules....430
5.120.1.1 General....431
5.120.1.2 Introduction....431
5.120.1.3 Security....431
5.120.1.4 Inventoriable items....431
5.120.1.5 Periods inventory....432
5.120.2 Project decisions....432
5.121 *Storage of aircraft....432*

Source: https://assist.dla.mil -- Downloaded: 2016-12-10T00:01Z
Check the source to verify that this is the current version before use.

CONTENTS

PARAGRAPH PAGE

5.121.1 Army business rules. 432
5.121.1.1 General 432
5.121.1.2 General information for storage of aircraft information set 432
5.121.1.3 Flyable storage, short term storage, and intermediate storage 433
5.121.2 Project decisions. 433
5.122 Shipment of Army aircraft. 433
5.122.1 Army business rules. 433
5.122.1.1 General 433
5.122.1.2 Specific contents and format 433
5.122.1.3 Front matter 435
5.122.1.4 Shipment of Army aircraft - Chapter 1 - Introduction 435
5.122.1.4.1 Section I - Introduction (Purpose and scope) 435
5.122.1.4.2 Section II - How to use this manual (General) 435
5.122.1.4.2.1 General 435
5.122.1.4.2.2 Description and use of this manual 435
5.122.1.4.2.3 Classified materials 435
5.122.1.4.2.4 Warnings, cautions, and notes 435
5.122.1.4.2.5 Deviations 435
5.122.1.4.3 Section III - Description (Aircraft description) 435
5.122.1.4.3.1 Line drawings 436
5.122.1.4.3.2 Scale 436
5.122.1.4.3.3 Dimensional data 436
5.122.1.4.4 Section IV - Shipping characteristics 437
5.122.1.4.4.1 Flight delivery 437
5.122.1.4.4.2 Modes of shipment 437
5.122.1.4.4.3 Types of shipment 437
5.122.1.4.4.4 Tabular data 437
5.122.1.4.4.5 Tiedowns 437
5.122.1.4.4.6 Disassembly 437
5.122.1.4.4.7 Unusual characteristics 437
5.122.1.4.4.8 International shipment 437
5.122.1.4.5 Section V - Ground handling 438
5.122.1.4.6 Section VI - Safety summary 438
5.122.1.4.7 Section VII - Preservation/depreservation check sheets 438
5.122.1.5 Shipment of Army aircraft - Chapter 2 - Shipment by cargo aircraft 438
5.122.1.5.1 Section I - Shipment of aircraft - General 438
5.122.1.5.1.1 Types of shipment 438
5.122.1.5.1.2 Functions of cargo aircraft crew 438
5.122.1.5.1.3 Functions of the Army loading team 439
5.122.1.5.1.4 Facility requirements 439
5.122.1.5.1.5 Weight and balance 439
5.122.1.5.1.6 Security 439

Source: https://assist.dla.mil -- Downloaded: 2016-12-10T00:01Z
Check the source to verify that this is the current version before use.

CONTENTS

PARAGRAPH PAGE

5.122.1.5.1.7 Safety 440
5.122.1.5.2 Sections II, III, and IV - Shipment by C-5, C-17, and C-130 aircraft 440
5.122.1.5.2.1 Shipping characteristics 440
5.122.1.5.2.2 Preparing the aircraft....440
5.122.1.5.2.3 Loading 441
5.122.1.5.2.4 Tiedown 441
5.122.1.5.2.5 Unloading....442
5.122.1.5.2.6 Depreservation and reassembly 442
5.122.1.6 Shipment of Army aircraft - Chapter 3 - Shipment by vessel....442
5.122.1.6.1 Section I - Shipment of aircraft - General....442
5.122.1.6.1.1 General....442
5.122.1.6.1.2 Types of shipment....442
5.122.1.6.1.3 Responsibilities of Surface Deployment and Distribution Command (SDDC)....442
5.122.1.6.1.4 Functions of marine terminal personnel 443
5.122.1.6.1.5 Functions of the Army loading team 443
5.122.1.6.1.6 Equipment requirements 443
5.122.1.6.1.7 Material requirements 443
5.122.1.6.1.8 Manpower requirements 443
5.122.1.6.1.9 Facility requirements 443
5.122.1.6.1.10 Aircraft security 444
5.122.1.6.1.11 Safety 444
5.122.1.6.1.12 Characteristics....444
5.122.1.6.2 Section II - Tactical shipment....444
5.122.1.6.2.1 Preparing the aircraft - Vessel, Tactical....444
5.122.1.6.2.2 Loading - Vessel, Tactical 444
5.122.1.6.2.3 Tiedown - Vessel, Tactical 445
5.122.1.6.2.4 Unloading - Vessel, Tactical....445
5.122.1.6.2.5 Depreservation and reassembly - Vessel, Tactical 445
5.122.1.6.3 Section III - Logistical shipment....445
5.122.1.6.3.1 Preparing the aircraft - Vessel, Logistical....445
5.122.1.6.3.2 Loading - Vessel, Logistical 446
5.122.1.6.3.3 Tiedown - Vessel, Logistical 446
5.122.1.6.3.4 Unloading - Vessel, Logistical....446
5.122.1.6.3.5 Depreservation and reassembly - Vessel, Logistical 446
5.122.1.6.4 Section IV - Shipment by U.S. Navy air capable ships 446
5.122.1.6.4.1 Preparing the aircraft - Vessel, U.S. Navy capable....447
5.122.1.6.4.2 Loading - Vessel, U.S. Navy capable 447
5.122.1.6.4.3 Tiedown - Vessel, U.S. Navy capable 447
5.122.1.6.4.4 Unloading - Vessel, U.S. Navy capable....447
5.122.1.6.4.5 Depreservation and reassembly - vessel, U.S. Navy capable 447
5.122.1.7 Shipment of Army aircraft - Chapter 4 - Shipment by truck 448

Source: https://assist.dla.mil -- Downloaded: 2016-12-10T00:01Z
Check the source to verify that this is the current version before use.

CONTENTS

PARAGRAPH PAGE

5.122.1.7.1 Section I - Shipment of aircraft - General....448
5.122.1.7.1.1 General....448
5.122.1.7.1.2 Types of truck shipments....448
5.122.1.7.1.3 Responsibilities of the shipper....448
5.122.1.7.1.4 Equipment requirements....449
5.122.1.7.1.5 Material requirements....449
5.122.1.7.1.6 Manpower requirements....449
5.122.1.7.1.7 Facility requirements....449
5.122.1.7.1.8 Safety requirements....449
5.122.1.7.2 Section II - Aircraft recovery and tactical transport....449
5.122.1.7.2.1 Shipping characteristics - Aircraft recovery....449
5.122.1.7.2.1.1 Drawings....449
5.122.1.7.2.1.2 Dimensions....449
5.122.1.7.2.1.3 Capabilities....449
5.122.1.7.2.1.4 Limitations....449
5.122.1.7.2.1.5 Load characteristics....450
5.122.1.7.2.1.6 Highway permits....450
5.122.1.7.2.2 Preparing the aircraft - Aircraft recovery and tactical transport....450
5.122.1.7.3 Section III - Shipment of aircraft - Truck (Long haul)....451
5.122.1.8 Shipment of Army aircraft - Chapter 5 - Crated and intermodal container shipment....451
5.122.1.8.1 Section I - Shipment of aircraft - general (Crated shipment)....451
5.122.1.8.1.1 General....451
5.122.1.8.1.2 Characteristics....451
5.122.1.8.1.3 Handling methods....451
5.122.1.8.1.4 Security requirements....451
5.122.1.8.1.5 Facility requirements....451
5.122.1.8.1.6 Equipment....452
5.122.1.8.1.7 Consumable materials....452
5.122.1.8.1.8 Manpower requirements....452
5.122.1.8.1.9 Preparing the aircraft - Crated....452
5.122.1.8.1.9.1 Crating....452
5.122.1.8.1.10 Unpacking and reassembly....453
5.122.1.8.2 Section II - Shipment of aircraft - General (Intermodal container shipment)....453
5.122.1.8.2.1 General....453
5.122.1.8.2.2 Characteristics....453
5.122.1.8.2.3 Drawings....453
5.122.1.8.2.4 Security requirements....453
5.122.1.8.2.5 Facility requirements....453
5.122.1.8.2.6 Safety requirements....453

Source: https://assist.dla.mil -- Downloaded: 2016-12-10T00:01Z
Check the source to verify that this is the current version before use.

CONTENTS

PARAGRAPH PAGE

5.122.1.8.2.7 Equipment requirements 454
5.122.1.8.2.8 Consumable materials 454
5.122.1.8.2.9 Manpower requirements 454
5.122.1.8.2.10 Preparing the aircraft - Intermodal container 454
5.122.1.8.2.11 Loading - Intermodal container 454
5.122.1.8.2.12 Tiedown - Intermodal container 454
5.122.1.8.2.13 Unloading - Intermodal container 455
5.122.1.8.2.14 Depreservation and reassembly - Intermodal container 455
5.122.1.9 Shipment of Army aircraft - Chapter 6 - Preservation and packaging 455
5.122.1.9.1 Section I - Preservation, packaging, and marking (General) 455
5.122.1.9.2 Section II - Aircraft cleaning 455
5.122.1.9.3 Section III - Preservation of aircraft 456
5.122.1.9.4 Section IV - Preservation and packaging of components 456
5.122.1.9.5 Section V - Marking of aircraft/preparation of shipping documents 456
5.122.1.9.6 Section VI - Depreservation and reassembly 457
5.122.1.10 Shipment of Army aircraft - Chapter 7 - Transportability equipment fabricated at unit level 457
5.122.1.10.1 General 457
5.122.1.11 Shipment of Army aircraft - Chapter 8 - Operator and maintenance instructions for transportability equipment including illustrated parts data ..457
5.122.1.11.1 Section I - Normal operation procedures (Operator instructions) 457
5.122.1.11.2 Section II - Repair/overhaul procedures 457
5.122.1.11.3 Section III - Repair parts information 458
5.122.1.12 Shipment of Army aircraft - Chapter 9 - External transport by helicopter (Aerial recovery 458
5.122.1.12.1 Section I - Aerial recovery - General 458
5.122.1.12.1.1 Types of transport 458
5.122.1.12.1.2 Functions of aircraft recovery team 458
5.122.1.12.1.3 Safety 458
5.122.1.12.1.4 Structurally damaged aircraft 458
5.122.1.12.1.5 Drag 458
5.122.1.12.2 Section II - Single cargo hook rotor head lift 458
5.122.1.12.2.1 Aerial recovery - Lift factors 459
5.122.1.12.2.2 Preparing the aircraft - Aircraft recovery, single cargo hook rotor head lift 459
5.122.1.12.2.3 Reassembly 459
5.122.1.12.3 Section III - Aerial recovery - Single cargo hook hard point lift 460
5.122.1.12.4 Section IV - Aerial recovery - Dual cargo hook rotor head lift 460
5.122.1.12.5 Section V - Aerial recovery - Dual cargo hook hard point lift 460
5.122.1.12.6 Section VI - Aerial recovery - Single cargo hook belly band lift 460
5.122.1.12.6.1 General 460
5.122.1.12.6.2 Alternate methods 460

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Check the source to verify that this is the current version before use.

CONTENTS

PARAGRAPH PAGE

5.122.1.13 Shipment of Army aircraft - Appendix A - References 460
5.122.1.14 Shipment of Army aircraft - Appendix B - Preservation/Depreservation check sheets 460
5.122.1.15 Shipment of Army aircraft - Appendix C - Weight and balance (Information for transportability 461
5.122.1.16 Shipment of Army aircraft - Appendix D - Consumable materials list 461
5.122.1.17 Shipment of Army aircraft - Appendix E - Support equipment and tools (Special tools and equipment list) 461
5.122.1.18 Shipment of Army aircraft - Appendix F - Quarantine inspection/ Customs clearance 461
5.122.1.19 Shipment of Army aircraft - Appendix G - Heat shrink film protective covering....461
5.122.1.19.1 Preparation of aircraft - Protective covering....461
5.122.1.19.1.1 General 462
5.122.1.19.1.2 Application of film....462
5.122.1.19.1.3 Fuel and battery vents 462
5.122.1.19.1.4 Installation of ventilators 462
5.122.1.19.2 Hoisting....462
5.122.1.19.3 Tiedown - General 462
5.122.1.19.4 Enroute maintenance....462
5.122.1.19.5 Shipment of aircraft - Protective covering, removal....462
5.122.1.19.6 Shipment of Army aircraft - Tools and equipment, consumable materials and manpower....462
5.122.1.19.6.1 General 462
5.122.1.19.6.2 Consumable materials....463
5.122.1.19.6.3 Manpower 463
5.122.1.19.7 Shipment of Army aircraft - Safety check sheet....463
5.122.1.20 Shipment of Army aircraft - Rear matter....463
5.122.2 Project decisions. 463
5.122.2.1 Stand alone....463
5.123 S1000D Chapter 5.2.3.1 – Land/Sea specific information sets – Crew/operator descriptive information. 463
5.124 S1000D Chapter 5.2.3.2 – Land/sea specific information sets – Crew/operator operation. 463
5.125 S1000D Chapter 5.2.3.3 – Land/sea specific information sets – Crew/operator sequential operation....464
5.126 S1000D Chapter 5.2.3.4 – Land/sea specific information sets – Crew/operator fault detection, isolation and resolution....464
5.127 S1000D Chapter 5.2.3.5 – Land/sea specific information sets – International, national and regulatory scheduled check. 464
5.128 S1000D Chapter 5.3.1.1 – Common requirements – Front matter. 464
5.128.1 Front matter – Page oriented materials. 464

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Check the source to verify that this is the current version before use.

CONTENTS

PARAGRAPH PAGE

5.128.1.1 Army business rules 464
5.128.1.1.1 Content, Page-based 464
5.128.1.1.2 Content, Reduced page-based 465
5.128.1.1.3 Front cover 466
5.128.1.1.3.1 General 466
5.128.1.1.3.2 National overhaul standards statement (**DMWRs/NMWRs with NMP overhaul standards only**) 467
5.128.1.1.3.3 National Stock Number (NSN) and End Item Code (EIC) 467
5.128.1.1.3.4 Availability statement 467
5.128.1.1.3.5 Supersedure notice 467
5.128.1.1.3.6 **DELETED** 467
5.128.1.1.3.7 Distribution statement 467
5.128.1.1.3.8 Export control warning 467
5.128.1.1.3.9 Destruction notice 467
5.128.1.1.3.10 General purpose notice 467
5.128.1.1.3.11 Publication date 467
5.128.1.1.3.12 (MC) Publications Control Number (PCN) 467
5.128.1.1.4 Promulgation letter (**MC only**) 468
5.128.1.1.5 Safety summary (Warning summary) 468
5.128.1.1.5.1 First aid 468
5.128.1.1.5.2 Warning summary 468
5.128.1.1.6 Revision summary 468
5.128.1.1.7 List Of Effective Data Modules (LOEDM) 469
5.128.1.1.7.1 List of effective data modules content 469
5.128.1.1.7.2 Multi-volume manuals 469
5.128.1.1.7.3 Dates of issue for changes 469
5.128.1.1.8 Title page 470
5.128.1.1.8.1 Reporting errors and recommending improvements statement 470
5.128.1.1.8.2 Preventive maintenance services and phased maintenance inspection manuals title block page with warning data (**Aviation only**) 474
5.128.1.1.9 Table of contents 474
5.128.1.1.9.1 General 474
5.128.1.1.9.2 Contents 475
5.128.1.1.9.3 List of tables 475
5.128.1.1.9.4 List of illustrations 475
5.128.1.1.10 List of terms (Glossary) 475
5.128.1.1.11 How to use this manual (**except illustrated parts data, DMWR, and NMWR**) 475
5.128.1.1.11.1 International standardization agreements 476
5.128.1.2 Project decisions 476
5.128.1.2.1 Use of a descriptive data module to prepare table of contents 476
5.128.1.2.2 Part figures 476

Source: https://assist.dla.mil -- Downloaded: 2016-12-10T00:01Z
Check the source to verify that this is the current version before use.

CONTENTS

PARAGRAPH PAGE

5.128.1.2.3 Access illustrations 476
5.128.1.2.4 List of symbols....476
5.128.1.2.5 Technical standard record 477
5.128.1.2.6 List of applicable specifications and documentation 477
5.128.2 Front matter – Interactive Electronic Technical Publication (IETP). 477
5.128.2.1 Army business rules 477
5.128.2.1.1 General 477
5.128.2.1.2 Interactive Electronic Technical Publication (IETP) installation data/ data access....477
5.128.2.1.3 Disc content screen 478
5.128.2.1.4 Promulgation letter (**MC Only**)....478
5.128.2.1.5 Safety summary (Warning summary)....478
5.128.2.1.5.1 Warning summary....478
5.128.2.1.6 Revision summary 479
5.128.2.1.7 Identification information 479
5.128.2.1.7.1 Interactive Electronic Technical Publication (IETP) number....479
5.128.2.1.7.2 National overhaul standards statement (**DMWR/NMWR with NMP overhaul standards only**)....479
5.128.2.1.7.3 Weapon system name 479
5.128.2.1.7.4 Reporting errors and recommending improvements statement 480
5.128.2.1.7.5 Availability statement (**DMWR/NMWR only**)....482
5.128.2.1.7.6 Supersedure notice for revisions only....482
5.128.2.1.7.7 **DELETED** 482
5.128.2.1.7.8 Distribution statement....482
5.128.2.1.7.9 Export control notice warning 482
5.128.2.1.7.10 Destruction notice 483
5.128.2.1.7.11 General purpose notice 483
5.128.2.1.7.12 Service nomenclature....483
5.128.2.1.7.13 Publication date....483
5.128.2.1.7.14 For Army Communications Security (COMSEC) manuals use 483
5.128.2.1.8 Table of contents....483
5.128.2.1.8.1 List of tables....483
5.128.2.1.8.2 Authentication information....483
5.128.2.1.9 How to use this manual....484
5.128.2.1.10 Reporting errors and recommending improvements (DA Form 2028) 484
5.128.2.1.10.1 Blank forms....485
5.128.2.1.11 Glossary 485
5.128.2.2 Project decisions 485
5.128.2.2.1 "How to use This IETP" information....485
5.128.3 Common requirements – Rear matter. 485
5.128.3.1 Rear matter - Page oriented manuals 485
5.128.3.1.1 Army business rules....485

Source: https://assist.dla.mil -- Downloaded: 2016-12-10T00:01Z
Check the source to verify that this is the current version before use.

CONTENTS

PARAGRAPH PAGE

5.128.3.1.1.1 General 485
5.128.3.1.1.2 Alphabetical index 485
5.128.3.1.1.3 Authentication page 485
5.128.3.1.1.4 Reporting errors and recommending improvements (DA Form 2028) 486
5.128.3.1.1.5 Foldout pages 486
5.128.3.1.1.6 Back cover 486
5.128.3.1.2 Project decisions 486
5.128.3.1.2.1 Alphabetical index use 486
5.128.3.1.2.2 Alpabetical index detail 486
5.128.4 Rear matter – Interactive Electronic Technical Publication (IETP). 486
5.129 S1000D Chapter 5.3.1.2 – Common requirements – Technical content. 486
5.130 S1000D Chapter 5.3.1.3 – Common requirements – Illustrated parts data. 486
5.131 S1000D Chapter 5.3.2 – Publications – Requirements for air specific publications. 486
5.132 S1000D Chapter 5.3.2.1 – Air specific publications – Aircrew information. 486
5.133 S1000D Chapter 5.3.2.2 – Air specific publications – Cross servicing guide. 487
5.134 S1000D Chapter 5.3.3 – Publications – Requirements for land/sea specific publications. 487
5.135 S1000D Chapter 6 – Information presentation/use. 487
5.136 S1000D Chapter 6.2 – Information presentation/use – Page-oriented publications. 487
5.136.1 Army business rules. 487
5.136.1.1 Use of the S1000D standard page-oriented presentation chapters 487
5.136.2 Project decisions. 487
5.137 S1000D Chapter 6.2.1 – Information presentation/use – Page layout, paper publications, headers and footers. 487
5.137.1 Page layout. 487
5.137.1.1 Army business rules 487
5.137.1.2 Project decisions 489
5.137.1.2.1 Page sizes 489
5.137.1.2.2 Page orientation 489
5.137.2 Header and footer. 489
5.137.2.1 General 489
5.137.2.1.1 Army business rules 489
5.137.2.1.2 Project decisions 490
5.137.2.1.2.1 Applicability 490
5.137.2.2 Page identification 490
5.137.2.2.1 Army business rules 490
5.137.2.2.2 Project decisions 492

Source: https://assist.dla.mil -- Downloaded: 2016-12-10T00:01Z
Check the source to verify that this is the current version before use.

CONTENTS

PARAGRAPH PAGE

5.137.2.2.2.1 Double sided printing of foldout pages....492
5.137.2.3 Security markings....492
5.137.2.3.1 Army business rules....492
5.137.2.3.2 Project decisions....493
5.137.2.4 Logotype....493
5.137.2.4.1 Army business rules....493
5.137.2.4.2 Project decisions....493
5.137.2.5 End of data module....494
5.137.2.5.1 Army business rules....494
5.137.2.5.2 Project decisions....494
5.137.3 Double column text....494
5.137.3.1 Army business rules....494
5.137.3.2 Projec decisions....494
5.137.3.2.1 Use of double column text....494
5.137.4 Folding and binding....494
5.137.4.1 Army business rules....494
5.137.4.2 Project decisions....495
5.137.4.2.1 Foldouts....495
5.138 S1000D Chapter 6.2.2 – Information presentation/use – Typography – Layout elements....495
5.138.1 Font....495
5.138.1.1 Army business rules....495
5.138.1.2 Project decisions....495
5.138.2 Headings and titles....495
5.138.2.1 Army business rules....495
5.138.2.2 Project decisions....496
5.138.3 Paragraphs of text....496
5.138.3.1 Army business rules....496
5.138.3.2 Project decisions....497
5.138.3A Steps....497
5.138.3A.1 Army business rules....497
5.138.4 Lists....498
5.138.4.1 Army business rules....498
5.138.4.2 Project decisions....499
5.138.5 Footnotes....499
5.138.5.1 Army business rules....499
5.138.5.2 Project decisions....500
5.138.6 Tables....500
5.138.6.1 Army business rules....500
5.138.6.2 Project decisions....501
5.138.7 Figures....501
5.138.7.1 Army business rules....501

Source: https://assist.dla.mil -- Downloaded: 2016-12-10T00:01Z
Check the source to verify that this is the current version before use.

CONTENTS

PARAGRAPH PAGE

5.138.7.2 Project decisions 502
5.138.7.2.1 Color 502
5.138.8 Warnings, cautions, and notes. 502
5.138.8.1 Army business rules 502
5.138.8.2 Project decisions 504
5.138.9 Change marks....504
5.138.9.1 Army business rules 504
5.138.9.2 Project decisions 505
5.138.9.2.1 Presentation of publication module/non S1000D publication titles in the reference table 505
5.138.9.2.2 Inline presentation of non S1000D publication titles 505
5.138.9.2.3 Presentation of name of spares, supplies, and support equipment....505
5.138.10 References. 506
5.138.10.1 Army business rules 506
5.138.10.2 Project decisions 506
5.138.11 Aircraft operator style and format....506
5.138.11.1 Army business rules 506
5.138.11.1.1 Linear dimensions 506
5.138.11.1.2 Use of manufacturer's names 506
5.138.11.1.3 Emergency procedures 506
5.138.11.1.4 Designator symbols....507
5.138.11.1.5 Checklist titles....507
5.138.11.2 Project decisions 507
5.139 S1000D Chapter 6.2.3 – Information presentation/use – Layout. 507
5.140 S1000D Chapter 6.3.1 – IETP – Output specification....507
5.140.1 General. 507
5.140.1.1 Army business rules 507
5.140.1.2 Project decisions 507
5.140.2 Title bar. 507
5.140.2.1 Army business rules 507
5.140.2.2 Project decisions 508
5.140.3 Inner shell....508
5.140.3.1 General 508
5.140.3.1.1 Army business rules 508
5.140.3.1.2 Project decisions 508
5.140.3.1.2.1 Main menu bar 508
5.140.3.1.2.2 Additional information bar 508
5.140.3.2 Inner shell status bar 508
5.140.3.2.1 Army business rules 508
5.140.3.2.2 Project decisions 509
5.140.3.3 Table of contents panel 509
5.140.3.3.1 Army business rules 509

Source: https://assist.dla.mil -- Downloaded: 2016-12-10T00:01Z
Check the source to verify that this is the current version before use.

CONTENTS

PARAGRAPH PAGE

5.140.3.3.2 Project decisions 510
5.140.3.3.2.1 Additional Table of Contents (TOC) items 510
5.140.3.4 Reset area 510
5.140.3.4.1 Army business rules 510
5.140.3.4.2 Project decisions 511
5.140.3.4.2.1 General 511
5.140.3.5 Navigation panel 511
5.140.3.5.1 Army business rules 511
5.140.3.5.2 Project decisions 513
5.140.3.6 Main content area 513
5.140.3.6.1 Army business rules 513
5.140.3.6.2 Project decisions 513
5.140.4 Icons. 513
5.140.4.1 Army business rules 513
5.140.4.1.1 Session control items 513
5.140.4.1.2 Bookmark icons 514
5.140.4.1.3 Annotation function icons 514
5.140.4.1.4 Redline function icons 515
5.140.4.1.5 Browsing display icons 515
5.140.4.1.6 Navigation icons 516
5.140.4.2 Project decisions 517
5.140.4.2.1 Icons 517
5.140.4.2.2 Printing of classified data 517
5.140.5 Style and format. 517
5.140.5.1 Army business rules 517
5.140.5.2 Project decisions 518
5.140.5.2.1 Font size 518
5.140.6 Dialog boxes. 518
5.140.6.1 Army business rules 518
5.140.6.2 Project decisions 520
5.140.6.2.1 Tool tips 520
5.140.6.2.2 Help 520
5.140.6.2.3 Display 520
5.140.7 Lists. 520
5.140.7.1 Army business rules 520
5.140.7.2 Project decisions 520
5.140.8 Steps/Procedural. 521
5.140.8.1 Army business rules 521
5.140.8.2 Project decisions 521
5.140.9 Tables. 521
5.140.9.1 Army business rules 521
5.140.9.2 Project decisions 521

Source: https://assist.dla.mil -- Downloaded: 2016-12-10T00:01Z
Check the source to verify that this is the current version before use.

CONTENTS

PARAGRAPH PAGE

5.140.9.2.1 Background 521
5.140.9.2.2 Display 521
5.140.10 Hyperlinks. 522
5.140.10.1 Army business rules 522
5.140.10.2 Project decisions 523
5.140.10.2.1 Presentation of references 523
5.140.11 Warnings, cautions, and notes. 523
5.140.11.1 Army business rules 523
5.140.11.2 Project decisions 527
5.140.11.2.1 Acknowledgement of alerts 527
5.140.12 Change marks. 527
5.140.12.1 Army business rules 527
5.140.12.2 Project decisions 528
5.140.13 Acronyms and abbreviations. 528
5.140.13.1 Army business rules 528
5.140.13.2 Project decisions 528
5.140.14 Illustrations. 528
5.140.14.1 Army business rules 528
5.140.14.2 Project decisions 529
5.140.14.2.1 Pop up windows 529
5.140.14.2.2 Tool tips 529
5.140.14.2.3 Display 529
5.140.15 Printed output from Interactive Electronic Technical Publication (IETP). 529
5.140.15.1 Army business rules 529
5.140.15.2 Project decisions 530
5.141 S1000D Chapter 6.4 – Information presentation/use – Functionality. 530
5.141.1 Army business rules. 530
5.141.1.1 Use of the functionality matrix 530
5.141.2 Project decisions. 530
5.142 S1000D Chapter 6.4.1 – Functionality – Background and explanation. 530
5.142.1 Access. 530
5.142.1.1 Army business rules 530
5.142.1.1.1 Login 530
5.142.1.1.2 Session control 530
5.142.1.1.3 Suspend 530
5.142.1.1.4 Restart 530
5.142.1.1.5 Restart conditons 531
5.142.1.1.6 Exit 531
5.142.1.2 Project decisions 531
5.142.2 Annotations. 531
5.142.2.1 Army business rules 531
5.142.2.1.1 Global data annotation 531

Source: https://assist.dla.mil -- Downloaded: 2016-12-10T00:01Z
Check the source to verify that this is the current version before use.

CONTENTS

PARAGRAPH PAGE

5.142.2.2 Project decisions 531
5.142.3 Delivery and distribution. 531
5.142.3.1 Army business rules 531
5.142.3.1.1 Interactive Electronic Technical Publication (IETP) installation 531
5.142.3.1.2 Delverable media 532
5.142.3.1.3 Deliverable contents....532
5.142.3.2 Project decisions 532
5.142.4 Diagnostics....532
5.142.4.1 Army business rules 532
5.142.4.1.1 Non-automatic test equipment 533
5.142.4.1.2 Lookup tables and software 533
5.142.4.2 Project decisions 533
5.142.5 External processes....533
5.142.5.1 Army business rule 533
5.142.5.2 Project decisions 533
5.142.6 Graphics. 533
5.142.6.1 Army business rules 533
5.142.6.1.1 Photos....533
5.142.6.2 Project decisions 533
5.142.7 Linking. 533
5.142.7.1 Army business rules 533
5.142.7.2 Project decisions 533
5.142.8 Navigation and tracking. 533
5.142.8.1 Army business rules 533
5.142.8.1.1 Browse, general 533
5.142.8.1.2 Browse navigation, general....534
5.142.8.1.3 Browse navigation, logical....534
5.142.8.1.4 Browse, distinct visual indication 534
5.142.8.1.5 Voice navigation 534
5.142.8.2 Project decisions 534
5.142.8.2.1 Audit trail 534
5.142.9 Printing....534
5.142.9.1 Army business rules 534
5.142.9.2 Project decisions 534
5.142.10 Special content. 534
5.142.10.1 Army business rules 534
5.142.10.1.1 Multimedia 534
5.142.10.1.2 Animation 534
5.142.10.1.3 Classified information....535
5.142.10.1.4 Sounds....535
5.142.10.1.5 How to use this manual....535
5.142.10.2 Project decisions 535

Source: https://assist.dla.mil -- Downloaded: 2016-12-10T00:01Z
Check the source to verify that this is the current version before use.

CONTENTS

PARAGRAPH PAGE

5.142.11 Updates. 535
5.142.11.1 Army business rules....535
5.142.11.2 Project decisions 535
5.142.12 User operation mode. 536
5.142.12.1 Army business rules....536
5.142.12.2 Project decisions 536
5.143 S1000D Chapter 6.4.2 – Functionality – Functionality matrices.....536
5.143.1 Army business rules. 536
5.143.1.1 Mandatory funcitonalities 536
5.143.2 Project decisions. 536
5.143.2.1 Optional functionalities....536
5.144 S1000D Chapter 7 – Information processing. 536
5.145 S1000D Chapter 7.1 – Information processing – Introduction. 537
5.145.1 Army business rules. 537
5.145.1.1 Use of S1000D schemas 537
5.145.2 Project decisions. 537
5.146 S1000D Chapter 7.2 – Information processing – Basic concepts. 537
5.146.1 Army business rules. 537
5.146.1.1 Use of Extensible Markup Language (XML) 537
5.146.1.2 Extensible Markup Lanugage (XML) and the Common Source Data Base (CSDB)....537
5.146.1.3 Use of modularized or flattened schemas 537
5.146.2 Project decisions. 537
5.147 S1000D Chapter 7.3.3 – CSDB Objects – Multimedia. 537
5.147.1 Army business rules. 537
5.147.2 Project decisions. 538
5.147.2.1 Use of multimedia....538
5.147.2.2 Media player 538
5.147.2.3 Capture rates 538
5.147.2.4 Multimedia types 538
5.148 S1000D Chapter 7.4.1.1 – IETP – Generation process....538
5.148.1 Army business rules. 538
5.148.1.1 Transformation of references....538
5.148.1.2 Use of S1000D schemas 538
5.148.1.3 Resource Description Framework (RDF) metadata....538
5.148.1.4 Autogeneration of metadata....538
5.148.2 Project decisions. 538
5.149 S1000D Chapter 7.4.3 – Generation of publications – Inclusion of legacy information....538
5.149.1 Army business rules. 538
5.149.2 Project decisions. 538
5.149.2.1 Population of the element <**`externalPubCode`**>....538

Source: https://assist.dla.mil -- Downloaded: 2016-12-10T00:01Z
Check the source to verify that this is the current version before use.

CONTENTS

PARAGRAPH PAGE

5.149.2.2 Use of the attribute **pubCodingScheme** 539
5.149.2.3 Method to include legacy informaiton in an Interactive Electronic Technical Publication (IETP) 539
5.149.2.4 Interactive Electronic Technical Publication (IETP) reference format 539
5.150 S1000D Chapter 7.5.1 – Software interchange – File based transfer. 539
5.150.1 Army business rules. 539
5.150.2 Project decisions. 539
5.150.2.1 Use of file compression techniques 539
5.150.2.2 Defined file formats 539
5.150.2.3 Use of multimedia 539
5.150.2.4 Media options 539
5.150.2.5 Training Data Module Code (DMC) extensions 539
5.151 S1000D Chapter 7.5.3 – Information interchange – RDF/DC metadata. 539
5.151.1 Army business rules. 539
5.151.2 Project decisions. 539
5.151.2.1 Inclusion of Resource Description Framework/Dublin Core (RDF/DC) metadata 539
5.152 S1000D Chapter 7.6.2 – Software requirements – Resource resolution service. 540
5.152.1 Army business rules. 540
5.152.1.1 Resource resolution 540
5.152.2 P roject decisions 540
5.153 S1000D Chapter 7.8 – Information processing – Applicability. 540
5.153.1 Army business rules. 540
5.153.2 Project decisions. 540
5.153.2.1 Generation of display text 540
5.153.2.2 Format of generated display text 540
5.154 S1000D Chapter 8 – Standard numbering systems, information codes and learn codes. 540
5.155 S1000D Chapter 8.1 – SNS, information and learn codes – General. 540
5.155.1 Army business rules. 540
5.155.2 Project decisions. 540
5.155.2.1 Use of Standard Numbering System (SNS) 540
5.156 S1000D Chapter 8.2.1 – Maintained SNS – Generic 541
5.156.1 Army business rules. 541
5.156.1.1 Use of the generic Standard Numbering System (SNS) 541
5.156.2 Project decisions. 541
5.156.2.1 Use of the generic Standard Numbering System (SNS) 541
5.156.2.2 Definitions 541
5.157 S1000D Chapter 8.2.2 – Maintained SNS – Support and training equipment. 541
5.157.1 Army business rules. 541

Source: https://assist.dla.mil -- Downloaded: 2016-12-10T00:01Z
Check the source to verify that this is the current version before use.

CONTENTS

PARAGRAPH PAGE

5.157.2 Project decisions. 541
5.157.2.1 Use of the support and training equipment Standard Numbering System (SNS).....541
5.157.2.2 Defnitions.....541
5.158 S1000D Chapter 8.2.3 – Maintained SNS – Ordnance. 541
5.158.1 Army business rules.....541
5.158.2 Project decisions. 541
5.158.2.1 Use of the ordnance Standard Numbering System (SNS) 541
5.158.2.2 Defnitions.....541
5.159 S1000D Chapter 8.2.4 – Maintained SNS – General communications. 542
5.159.1 Army business rules.....542
5.159.2 Project decisions. 542
5.159.2.1 Use of the general communications Standard Numbering System (SNS).....542
5.159.2.2 Definitions.....542
5.*160 S1000D Chapter 8.2.5 – Maintained SNS – Air vehicle, engines and equipment.....542*
5.160.1 Army business rules.....542
5.160.2 Project decisions. 542
5.160.2.1 Use of the air vehicle Standard Numbering System (SNS) 542
5.160.2.2 Definitions.....542
5.161 S1000D Chapter 8.2.6 – Maintained SNS – Tactical missiles.....542
5.161.1 Army business rules.....542
5.161.2 Project decisions. 542
5.161.2.1 Use of the tactical missiles Standard Numbering System (SNS) 542
5.161.2.2 Definitions.....542
5.162 S1000D Chapter 8.2.7 – Maintained SNS – General surface vehicles.....542
5.162.1 Army business rules.....542
5.162.2 Project decisions. 543
5.162.2.1 Use of surface vehicle Standard Numbering System (SNS).....543
5.162.2.2 Definitions.....543
5.163 S1000D Chapter 8.2.8 – Maintained SNS – General sea vehicles. 543
5.163.1 Army business rules.....543
5.163.2 Project decisions. 543
5.163.2.1 Use of the sea vehicle Standard Numbering System (SNS) 543
5.163.2.2 Definitions.....543
5.164 S1000D Chapter 8.3 – SNS, information codes – Example SNS. 543
5.164.1 Army business rules.....543
5.164.2 Project decisions. 543
5.164.2.1 Use of the example Standard Numbering System (SNS) 543
5.165 S1000D Chapter 8.4 – SNS, information and learn codes – Information codes. 543
5.165.1 Army business rules.....543

Source: https://assist.dla.mil -- Downloaded: 2016-12-10T00:01Z
Check the source to verify that this is the current version before use.

CONTENTS

PARAGRAPH PAGE

5.165.1.1 Information codes 543
5.165.1.2 Use of unassigned information codes 543
5.165.1.3 Information code use with schema 544
5.165.1.4 Information code variants 544
5.165.1.5 Information names 544
5.165.2 Project decisions. 544
5.166 S1000D Chapter 9 – Terms and data dictionary. 544

6. NOTES 544
6.1 Intended use. 544
6.2 Acquisition requirements. 544
6.3 Associated Data Item Descriptions (DIDs). 544
6.4 Tailoring guidance. 545
6.5 Subject term (key word) listing. 545
6.6 Changes from previous issue. 545

APPENDIX A CONTENT SELECTION MATRICES 547
A.1 SCOPE. 547
A.2 APPLICABLE DOCUMENTS. 547
A.3 DEFINITIONS. 547
A.4 GENERAL REQUIREMENTS. 547
A.4.1 General. 547
A.4.2 Content selection. 547
A.4.3 Intended use. 547
A.4.3.1 Content that is not applicable 548
A.4.4 Acquisition requirements. 548
A.5 DETAILED REQUIREMENTS. 548
A.5.1 Tailoring requirements for technical manuals. 548
A.5.2 Front and rear matter. 548
A.5.3 Publication output types. 549
A.5.4 Publication titles. 549

APPENDIX B ARMY INFORMATION CODES 737
B.1 SCOPE. 737
B.2 APPLICABLE DOCUMENTS. 737
B.3 DEFINITIONS. 737
B.4 GENERAL REQUIREMENTS. 737
B.4.1 Information codes. 737
B.4.2 Information names. 737
B.4.3 Additional information codes. 737
B.4.4 Additional information variants. 737
B.5 DETAILED REQUIREMENTS. 739

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Check the source to verify that this is the current version before use.

CONTENTS

PARAGRAPH PAGE

APPENDIX C PROJECT DECISIONS TABLE 801
C.1 SCOPE. 801
C.2 APPLICABLE DOCUMENTS. 801
C.3 DEFINITIONS. 801
C.4 GENERAL REQUIREMENTS. 801
C.4.1 General. 801
C.4.2 Use of the project decision tables. 801
C.4.3 Intended use. 801
C.4.4 Business Rules EXchange (BREX). 802
C.5 DETAILED REQUIREMENTS. 802
C.5.1 General. 802

APPENDIX D IETP FUNCTIONALITY MATRIX 867
D.1 SCOPE. 867
D.2 APPLICABLE DOCUMENTS. 867
D.3 DEFINITIONS. 867
D.4 GENERAL REQUIREMENTS. 867
D.4.1 General. 867
D.4.2 Use of the matrix. 867
D.4.3 Collaboration. 867
D.4.4 Matrix input. 867
D.5 DETAILED REQUIREMENTS. 869

Source: https://assist.dla.mil -- Downloaded: 2016-12-10T00:01Z
Check the source to verify that this is the current version before use.

CONTENTS

FIGURE PAGE

FIGURE 1. Fuel flow chart 379
FIGURE 2. Maximum torque available chart. 380
FIGURE 3. Hover chart....381
FIGURE 4. Takeoff chart. 382
FIGURE 5. Drag chart....383
FIGURE 6. Cruise chart. 386
FIGURE 7. Climb-descent chart. 387
FIGURE 8. Airspeed calibration chart. 388
FIGURE 9. Airspeed-altimeter correction chart. 390
FIGURE 10. Crosswinds – takeoff and landing chart. 391
FIGURE 11. Torque available for takeoff chart....392
FIGURE 12. Takeoff – normal chart....393
FIGURE 13. Normal rotation/takeoff airspeed chart. 394
FIGURE 14. Acceleration check distance chart. 395
FIGURE 15. Accelerate-stop distance chart. 396
FIGURE 16. Accelerate after lift off chart. 397
FIGURE 17. Minimum single engine control airspeed chart. 398
FIGURE 18. Single engine climb chart....399
FIGURE 19. Cruise climb chart. 400
FIGURE 20. Cruise chart. 401
FIGURE 21. Climb/Descent chart....402
FIGURE 22. Approach speed chart. 403
FIGURE 23. Landing chart. 404
FIGURE 24. Main menu bar navigation icons. 517

Source: https://assist.dla.mil -- Downloaded: 2016-12-10T00:01Z
Check the source to verify that this is the current version before use.

CONTENTS

TABLE		PAGE
TABLE I.	Graphical line standards.	54
TABLE II.	Line definitions.	55
TABLE IIA.	Allowable prefixes for attributes **id** and **internalRefId**	70
TABLE IIB.	Values for the attribute **hotspotType**	74
TABLE III.	Attribute values – **accessPointTypeValue**.	98
TABLE IV.	Attribute values – **acronymType**.	99
TABLE V.	Attribute values – **cancelCaption**.	99
TABLE VI.	Attribute values – **caveat**.	99
TABLE VII.	Attribute values – **checkListCategory**.	100
TABLE VIII.	Attribute values – **color**.	100
TABLE IX.	Attribute values – **commentPriorityCode**.	100
TABLE X.	Attribute values – **crewMemberType**.	101
TABLE XI.	Attribute values – **crewStepCondition**.	102
TABLE XII.	Attribute values – **descrForItemCode**.	102
TABLE XIII.	Attribute values – **drillType**.	103
TABLE XIV.	Attribute values – **emphasisType**.	103
TABLE XV.	Attribute values – **function**.	104
TABLE XVI.	Attribute values – **installationLocationType**.	105
TABLE XVII.	Attribute values – **itemCharacteristics**.	106
TABLE XVIII.	Attribute values – **itemOriginator**.	106
TABLE XIX.	Attribute values – **listItemPrefix**.	106
TABLE XX.	Attribute values – **lowestLevel**.	107
TABLE XXI.	Attribute values – **maintLevelcode**.	108
TABLE XXII.	Attribute values – **partCharacteristic**.	108
TABLE XXIII.	Attribute values – **pmEntryType**.	109
TABLE XXIV.	Attribute values – **quantityType**.	109
TABLE XXV.	Attribute values – **reqCondCategory**.	110
TABLE XXVI.	Attribute values – **reqTechInfoCategory**.	110
TABLE XXVII.	Attribute values – **resetCaption**.	110
TABLE XXVIII.	Attribute values – **responseType**.	111
TABLE XXIX.	Attribute values – **securityClassification**.	111
TABLE XXX.	Attribute values – **significantParaDataType**.	111
TABLE XXXI.	Attribute values – **skillLevelCode**.	112
TABLE XXXII.	Attribute values – **skillType**.	113
TABLE XXXIII.	Attribute values – **submitCaption**.	113
TABLE XXXIV.	Attribute values – **thresholdUnitOfMeasure**.	114
TABLE XXXV.	Attribute values – **updateReasonType**.	115
TABLE XXXVI.	Attribute values – **verbatimStyle**.	116
TABLE XXXVII.	Issuing Authority Codes.	131
TABLE XXXVIII.	Joint Service Publication Codes.	132

Source: https://assist.dla.mil -- Downloaded: 2016-12-10T00:01Z
Check the source to verify that this is the current version before use.

CONTENTS

TABLE		PAGE
TABLE XXXIX.	**DELETED**.	299
TABLE XXXIXA.	Lubrication Intervals	299
TABLE XL.	**DELETED**.	302
TABLE XLI.	**DELETED**	303
TABLE XLII.	Identification data presentation	315
TABLE XLIII.	Army business rules – page layout of paper publications	488
TABLE XLIV.	Army business rules – header and footer of paper publications.	490
TABLE XLV.	Army business rules – page identification.	490
TABLE XLVI.	Army business rules – security markings.	492
TABLE XLVII.	Army business rules – logotype.	493
TABLE XLVIII.	Army business rules – End of.	494
TABLE XLIX.	Army business rules – folding and binding.	494
TABLE L.	Army business rules – font.	495
TABLE LI.	Army business rules – headings and titles.	496
TABLE LII.	Army business rules – paragraphs of text.	496
TABLE LIIA.	Army business rules - steps	497
TABLE LIII.	Army business rules – lists.	499
TABLE LIV.	Army business rules – footnotes.	499
TABLE LV.	Army business rules – tables	500
TABLE LVI.	Army business rules – figures.	501
TABLE LVII.	Army business rules – warnings, cautions, and notes.	502
TABLE LVIII.	Army business rules – change marks.	504
TABLE LIX.	Army business rules – references.	506
TABLE LX.	Army business rules – IETP output specification.	507
TABLE LXI.	Army business rules – title bar	508
TABLE LXII.	Army business rules – inner shell.	508
TABLE LXIII.	Army business rules – inner shell status bar.	509
TABLE LXIV.	Army business rules – table of contents panel.	509
TABLE LXV.	Army business rules – reset area.	510
TABLE LXVI.	Army business rules – navigation panel.	512
TABLE LXVII.	Session control icons	514
TABLE LXVIII.	Bookmark icons.	514
TABLE LXIX.	Annotation function icons.	515
TABLE LXX.	Redline function icons.	515
TABLE LXXI.	Browsing display icons.	515
TABLE LXXII.	Navigation icons.	516
TABLE LXXIII.	Army business rules – Style and format.	518
TABLE LXXIV.	Army business rules – Dialog boxes.	518
TABLE LXXV.	Army business rules – procedural steps.	521
TABLE LXXVI.	Army business rules – tables	521
TABLE LXXVII.	Army business rules – hyperlinks.	522
TABLE LXXVIII.	Army business rules – warnings, cautions, and notes.	523
TABLE LXXIX.	Army business rules – change marks.	528

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Check the source to verify that this is the current version before use.

CONTENTS

TABLE PAGE

TABLE LXXX. Army business rules – acronyms and abbreviations. 528
TABLE LXXXI. Army business rules – illustrations. 529
TABLE LXXXII. Army business rules – printed output from printed IETPs. 530
TABLE A-I. Publications Types, Titles and Associated Content Matrix Tables. 549
TABLE A-II. IETP Introductory Matter. 555
TABLE A-III. Page-Based Front Matter. 557
TABLE A-IV. Page-Based Front Matter – Reduced. 559
TABLE A-V. Page-Based Rear Matter. 561
TABLE A-VI. Operator's IETP requirements matrix for _____.....563
TABLE A-VII. Operator, Field & Sustainment Maintenance IETP requirements matrix for _____. 571
TABLE A-VIII. Field and Sustainment Maintenance Manual including Parts Information IETP requirements matrix for _____ 581
TABLE A-IX. DMWR & NMWR IETP requirements matrix for _____ 591
TABLE A-X. Operator's Manual (Excluding Conventional and Chemical Ammunition) requirements matrix for _____.....601
TABLE A-XI. Sustainment Maintenance Manual (Excluding Conventional and Chemical Ammunition) requirements matrix for _____. 615
TABLE A-XII. Field and Sustainment Maintenance Manual (Excluding Conventional and Chemical Ammunition) requirements matrix for _____. 625
TABLE A-XIII. Aviation Field Maintenance Manual (Excluding Conventional and Chemical Ammunition) requirements matrix for _____. 635
TABLE A-XIV. Parts and Special Tools List (Excluding Conventional and Chemical Ammunition) requirements matrix for _____.....643
TABLE A-XV. DMWR and NMWR (Excluding Conventional and Chemical Ammunition) requirements matrix for _____.....645
TABLE A-XVI. DMWR With Overhaul Standards (Excluding Conventional and Chemical Ammunition) requirements matrix for _____. 653
TABLE A-XVII. Aviation Field Troubleshooting (Excluding Conventional and Chemical Ammunition) requirements matrix for _____.....661
TABLE A-XVIII. Aircraft Preventive Maintenance (Excluding Conventional and Chemical Ammunition) requirements matrix for _____. 663
TABLE A-XIX. Aircraft Phased Maintenance Inspection Checklist (Excluding Conventional and Chemical Ammunition) requirements matrix for _____. 665
TABLE A-XX. Conventional and Chemical Ammunition Operator's Manual requirements matrix for _____.....667
TABLE A-XXI. Conventional and Chemical Ammunition Sustainment Maintenance Manual requirements matrix for _____. 677
TABLE A-XXII. Conventional and Chemical Ammunition Field & Sustainment Maintenance Manual requirements matrix for _____.....685

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Check the source to verify that this is the current version before use.

CONTENTS

TABLE PAGE

TABLE A-XXIII. Hand Receipt Technical Manual requirements matrix for _____. 693
TABLE A-XXIV. Supplemental Information for Commercial Off-the-Shelf (COTS) Manual requirements matrix for _____. 695
TABLE A-XXV. Preventive Maintenance Checklist requirements matrix for _____. 697
TABLE A-XXVI. Modification Work Order (MWO) requirements matrix for _____. 699
TABLE A-XXVII. Battle Damage Assessment and Repair (BDAR) requirements matrix for _____. 701
TABLE A-XXVIII. Preparation for Shipment of Army Aircraft Manual requirements matrix for _____. 703
TABLE A-XXIX. DMWRs for Maintenance/Demilitarization of Conventional and Chemical Ammunition requirements matrix for _____. 713
TABLE A-XXX. Munition Equipment and Ammunition Data Sheet Manual requirements matrix for _____. 715
TABLE A-XXXI. Aircraft Operator Manual requirements matrix for _____. 717
TABLE A-XXXII. Aircraft Operator Checklist requirements matrix for _____. 725
TABLE A-XXXIII. Maintenance Test Flight Manual requirements matrix for _____. 727
TABLE A-XXXIV. Demilitarization of Surplus Military Items Manual requirements matrix for _____. 729
TABLE A-XXXV. Warranty Technical Bulletin (WTB) requirements matrix for _____. 731
TABLE A-XXXVI. Destruction of Equipment to Prevent Enemy Use Manual requirements matrix for _____. 733
TABLE A-XXXVII. Test, Measurement and Diagnostic Equipment Manual requirements matrix for _____. 735
TABLE B-I. Function, data for plans and description information codes. 739
TABLE B-II. Operation information codes. 753
TABLE B-III. Servicing information codes. 761
TABLE B-IV. Examinations, tests and checks information codes. 765
TABLE B-V. Fault reports and isolation procedures information codes. 771
TABLE B-VI. Disconnect, remove and disassemble procedures information codes. 775
TABLE B-VII. Repairs and locally make procedures and data information codes. 777
TABLE B-VIII. Assemble, install and connect procedures information codes. 783
TABLE B-IX. Storage procedures and data information codes. 787
TABLE B-X. Miscellaneous information codes. 793
TABLE B-XI. Computer systems information codes. 797
TABLE C-I. Project business rule decision points - Information generation. 803
TABLE C-II. Project business rule decision points - Authoring. 805
TABLE C-III. Project business rule decision points - Identifiaction and status. 807
TABLE C-IV. Project business rule decision points - Common constructs. 811

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Check the source to verify that this is the current version before use.

CONTENTS

TABLE		PAGE
TABLE C-V.	Project business rule decision points - Content section, schema specific.	821
TABLE C-VI.	Project business rule decision points - Applicability, attribute values, & training.	829
TABLE C-VII.	Project business rule decision points - CSDB, DMC, ICN, & DM lists.	833
TABLE C-VIII.	Project business rule decision points - Comment, version control & interchange.	837
TABLE C-IX.	Project business rule decision points - PM, BREX, & information management.	841
TABLE C-X.	Project business rule decision points - Content.	845
TABLE C-XI.	Project business rule decision points - Page-based presentation.	857
TABLE C-XII.	Project business rule decision points - IETP presentation.	859
TABLE C-XIII.	Projct business rule decision points - Information processing.	863
TABLE C-XIV.	Project business rule decision points - SNS & information codes.	865
TABLE D-I.	S1000D Functionality Matrix.	869

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1. **SCOPE.**

1.1 Scope.

This standard establishes the business rules for technical content, style, format and functionality requirements for technical publications prepared using S1000D Issues 4.0/4.0.1 for major weapon systems, and their related systems, subsystems, equipment, assemblies, components, Shop Replaceable Units (SRUs) , and Line Replaceable Units (LRUs). The requirements are applicable for all maintenance levels through overhaul (depot) including Depot Maintenance Work Requirements (DMWRs) and National Maintenance Work Requirements (NMWRs). The requirements can be used to develop all new acquisition technical publications (page-oriented and Interactive Electronic Technical Publications (IETPs) for interactive screen presentations).

1.2 Paragraphs with limited applicability.

This standard contains paragraphs and specific requirements which are not applicable to all Services. Such paragraphs or requirements are prefixed to indicate the Services to which they pertain: (A) Army; (N) Navy; (MC) Marine Corps; and (F) Air Force. Portions not prefixed are applicable to all services.

1.3 Legacy data.

This standard is applicable to the development of technical data as part of new acquisition. Programs converting legacy data, or incorporating legacy data with new acquisition S1000D data may find this standard useful but may be unable to fully comply with all requirements. Business rule activities for programs involved in legacy data development are coordinated with LOGSA

1.4 Use of the technical content.

In addition to using the technical content requirements provided herein for the development of technical publications, the technical information developed in accordance with this standard, S1000D, and MIL-STD-3008 can be used to provide the necessary input to other external systems that are designed to collect and report operations, maintenance, historical, and parts requisition data required for efficient management and support of aviation and non-aviation weapon systems and their related systems, equipment, and components/modules.

1.5 Organization of the technical content.

S1000D is organized into nine primary chapters:

a. Chapter 1 Introduction to the specification
b. Chapter 2 Documentation process
c. Chapter 3 Information generation
d. Chapter 4 Information management
e. Chapter 5 Information sets and publications
f. Chapter 6 Information presentation/use
g. Chapter 7 Information processing
h. Chapter 8 Standard Numbering System and information codes
i. Chapter 9 Terms and data dictionary

Section 5 of this standard is organized in parallel to the S1000D chapter structure.

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1.6 Shall and must.

"Must," the emphatic form of the verb, is used throughout S1000D whenever a requirement is intended to express a provision that is binding. "Shall," the emphatic form of the verb, is used throughout this standard whenever a requirement is intended to express a provision that is binding.

1.7 Joint service business rules.

There are requirements in this document which have been coordinated with and received consensus from the Joint Services IETM (Interactive Electronic Technical Manual) Technology Working Group (JSITWG). The JSITWG requirements are identified by a "(JS-nnn)" designation immediately following the joint service business rule (JSBR).

1.8 Project decisions.

Paragraphs in this standard that are titled "Project decisions" and include the content "None" indicate that no project decisions are required by S1000D or this standard. Projects are encouraged to limit business rules to the decision points specified in this standard. This does not, however, preclude a project from making additional business rules if required by program or equipment peculiarities.

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2. APPLICABLE DOCUMENTS.

2.1 General.

The documents listed in this section are specified in sections 3, 4, and 5 of this standard. This section does not include documents cited in other sections of this standard or recommended for additional information or as examples. While every effort has been made to ensure the completeness of this list, document users are cautioned that they must meet all specified requirements documents cited in sections 3, 4, and 5 of this standard, whether or not they are listed.

2.2 Government documents.

2.2.1 Specifications, standards, and handbooks.

The following specifications, standards, and handbooks form a part of this document to the extent specified herein. Unless otherwise specified, the issues of these documents are those cited in the solicitation or contract.

STANDARDS

DEPARTMENT OF DEFENSE

MIL-STD-129 — Military Marking for Shipment and Storage

MIL-STD-882 — Systems Safety

MIL-STD-1686 — Electrostatic Discharge Control Program for Protection of Electrical and Electronic Parts, Assemblies, and Equipment (Excluding Electrically Initiated Explosive Devices) (Metric)

MIL-STD-3003 — Vehicles, Wheeled: Preparation for Shipment and Storage of

MIL-STD-3008 — Interactive Electronic Technical Manual (IETM) Technical Data Requirements for the Global Combat Support System - Army (GCSS-A)

SPECIFICATIONS

DEPARTMENT OF DEFENSE

MIL-PRF-32216 — Evaluation of Commercial Off-the-Shelf (COTS) Manuals and Preparation of Supplemental Data

MIL-PRF-63049 — Manuals, Technical: List of Applicable Publications (LOAP)

HANDBOOKS

DEPARTMENT OF DEFENSE

MIL-HDBK-113 — Guide for the Selection of Lubricants, Functional Fluids, Preservatives and Specialty Products for use in Ground Equipment Systems

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MIL-HDBK-263	—	Electrostatic Discharge Control Handbook for Protection of Electrical and Electronic Parts, Assemblies and Equipment (Excluding Electrically Initiated Explosive Devices) (Metric)
MIL-HDBK-275	—	Guide for Selection of Lubricants, Fluids, and Compounds for Use in Flight Vehicles and Components
MIL-HDBK-310	—	Global Climatic Data for Developing Military Products

(Copies of these documents are available at http://quicksearch.dla.mil/ or from the Standardization Document Order Desk, 700 Robbins Avenue, Building 4D, Philadelphia, PA 19111-5094.)

H4/H8	—	Commercial and Government Entity (CAGE) Codes
H6	—	Federal Item Name Directory

(Copies of Handbook H6 are available on CD-ROM from the Commander, Defense Logistics Services Center, Battle Creek, MI 49017-3084 or H6 search can be done at http://www.dlis.dla.mil/h6/search.asp. H4/H8 search can be done at http://www.dlis.dla.mil/cage_welcome.asp.)

2.2.2 Other Government documents.

The following other Government documents and publications form a part of this document to the extent specified herein. Unless specified otherwise, the issues are those cited in the solicitation or contract.

AR 25-30	—	The Army Publishing Program
AR 55-162	—	Permits for Oversize, Overweight, or Other Special Military Movements on Public Highways in the United States
AR 95-1	—	Flight Regulations
AR 385-10	—	The Army Safety Program
AR 700-82	—	Joint Regulation Governing Use and Application of Uniform Source, Maintenance, and Recoverability Codes
AR 750-1	—	Army Materiel Maintenance Policy
AR 750-10	—	Army Modification Program
AR 750-59	—	Corrosion Prevention and Control for Army Materiel
DA PAM 25-30	—	Consolidated Index of Army Publications and Blank Forms
DA PAM 385-63	—	Range Safety
DA PAM 385-64	—	Ammunition and Explosives Safety Standards
DA PAM 738-751	—	Functional Users Manual for The Army Maintenance Management System-Aviation (TAMMS-A)

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DA PAM 750-8	—	The Army Maintenance Management System (TAMMS) Users Manual

(Copies of these documents are available online at http://www.apd.army.mil/.)

AMC-P 25-31	—	Preparation of Plans for Technical Publications Verification
AMC-R 25-76	—	The U.S. Army Materiel Command (AMC) Equipment Publications Program

(Copies of AMC documents are available at https://hqamc.aep.army.mil/Pages/Home.aspx.)

DODM 5200.01 Volume 1	—	Information Security Program: Overview, Classification and Declassification
DODM 5200.01 Volume 2	—	Information Security Program: Marking of Classified Information
DODM 5200.01 Volume 3	—	Information Security Program: Protection of Classified Information
DODM 5200.01 Volume 4	—	Information Security Program: Controlled Unclassified Information (CUI)
DODD 5220.22-M	—	National Industrial Security Program Operating Manual (NISPOM)
DODI 5230.24	—	Distribution Statements on Technical Documents
DODD 5230.25	—	Withholding of Unclassified Technical Data From Public Disclosure

(Copies of DOD documents are available at http://www.dtic.mil/whs/directives/.)

FM 3-04.203	—	Fundamentals of Flight
FM 3-04.240	—	Instrument Flight for Army Aviators
Joint Pub 1-02	—	DOD Dictionary of Military and Associated Terms
TB 43-0213	—	Corrosion Prevention and Control (CPC) for Tactical Vehicles
TB 55-9150-200-24	—	Engine and Transmission Oils, Fuels, and Additives for Army Aircraft
TB 750-93-1	—	Functional Grouping Code, Combat, Tactical and Support Vehicles and Special Purpose Equipment
TC 3-04.7	—	Army Aviation Maintenance
TC 4-02.1	—	First Aid
TM 1-1500-204-23	—	Aviation Unit Maintenance (AVUM) and Aviation Intermediate Maintenance (AVIM) Manual for General Aircraft Maintenance (General Maintenance and Practices), Volumes 1-11
TM 1-1500-328-23	—	Aeronautical Equipment Maintenance Management Policies and Procedures
TM 1-1500-335-23	—	Nondestructive Inspection Methods, Basic Theory

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TM 1-1500-344-23	—	Cleaning and Corrosion Control, Volumes 1-4
TM 4-33.31	—	Operation and Maintenance of Ordnance Materiel in Cold Weather
TM 5-632	—	Military Entomology Operational Handbook
TM 38-250	—	Preparing Hazardous Materials For Military Air Shipments
TM 55-1500-342-23	—	Army Aviation Engineering Manual, Weight and Balance
TM 750-245-4	—	Quality Control Inspector's Inspection Criteria

(Copies of these publications are available from the U.S. Army Publications Distribution Center, 1655 Woodson Road, St. Louis, MO 63114-6181. Copies of TMs and TBs may be obtained from ETMs online on the LOGSA Web site https://www.logsa.army.mil/index.cfm. Copies of FMs, TCs, and TM 4-33.31 may be obtained from the TRADOC Web site www.ADTDL.Army.mil.)

EO 13526	—	Classified National Security Information

(Copies of these documents may be obtained at http://www.archives.gov/federal-register/codification/numeric.html.)

2.2.3 Non-Government publications.

The following documents form a part of this document to the extent specified therein. Unless otherwise specified, the issues of these documents are those cited in the solicitation or contract.

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION (ISO)

ISO 8601	—	Data Elements and Interchange Formats - Information Interchange - Representation of Dates and Times
ISO 9000 Series	—	Quality Management

(Copies of these documents can be obtained online at http://www.iso.org/iso/home.html. DOD users can obtain copes at https://www.us.army.mil/suite/page/468324.)

AEROSPACE AND DEFENCE INDUSTRIES ASSOCIATION OF EUROPE (ASD)

S1000D	—	International specification for technical publications utilizing a common source data base

(Application for copies should be addressed to the Aerospace and Defence Industries Association of Europe, 270 Avenue de Tervuren, B-1150 Brussels, Belgium, or available at http://www.s1000d.org.)

AMERICAN SOCIETY OF MECHANICAL ENGINEERS (ASME)

ASME Y14.38	—	Abbreviations for Use on Drawings and in Text

(Application for copies should be addressed to the American Society of Mechanical Engineers, 3 Park Avenue, New York, NY 10016-5990. DOD users can obtain copes at https://www.us.army.mil/suite/page/468324.)

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AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

ASTM-F856	—	Standard Practice for Mechanical Symbols, Shipboard Heating, Ventilation, and Air Conditioning (HVAC)

(Applications for copies should be addressed to the American Society for Testing Material, 100 Barr Harbor Drive, West Conshohocken, PA 19428-2959, or available at http://www.astm.org/. DOD users can obtain copes at https://www.us.army.mil/suite/page/468324.)

SOCIETY OF AUTOMOTIVE ENGINEERS INTERNATIONAL (SAE)

SAE GEIA-HB-0007	—	Logistics Product Data Handbook, GEIA Engineering Bulletin
SAE GEIA-STD-0007	—	Logistics Product Data, GEIA Standard

(Applications for copies should be addressed to the SAE International, 400 Commonwealth Drive, Warrendale, PA 15096. Copies can also be obtained at http://standards.sae.org/aerospace-standards/. DOD users can obtain copes at https://www.us.army.mil/suite/page/468324.)

WORLD WIDE WEB CONSORTIUM (W3C)

REC-xml-20001006	—	Extensible Markup Language (XML) 1.0 (Second Edition)

(Application for copies should be addressed to MIT, 32 Vassar Street, Room 32-G515, Cambridge, MA 02139 USA, or available at http://www.w3c.org.)

2.2.4 Order of precedence.

In the event of a conflict between the text of this document and the references cited herein, the text of this document takes precedence. Nothing in this document, however, supersedes applicable laws and regulations unless a specific exemption has been obtained.

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3. **DEFINITIONS**

3.1 General.

This standard is only applicable when used with S1000D Issues 4.0/4.0.1. Only acronyms and terms unique to this document (and not already defined by S1000D Chapter 9) are defined in 3.3 and 3.4. Terms that require special attention because they are altered from historically understood definitions are described in 3.4.

3.2 Acronyms used in this standard.

The acronyms used in this standard are defined as follows:

2D	Two Dimensional
3D	Three Dimensional
AAL	Additional Authorization List
ABCA	American, Canadian, British, Australian
AC	Alternating Current
ACT	Applicability Cross-reference Table
ADF	Automatic Direction Finder
AFTO	Air Force Technical Order
AMAC	Aviation Maintenance Allocation Chart
AMC	Aviation Maintenance Company (Maintenance)
	Army Materiel Command (Publication numbers)
AMCOM	Army Aviation and Missile Life Cycle Management Command
AMDF	Army Master Data File
AMSC	Acquisition Management System Control
Ao	Operational Availability
AOAP	Army Oil Analysis Program
APD	Army Publishing Directorate
APE	Ammunition Peculiar Equipment
APU	Auxiliary Power Unit
AR	Army Regulation
ARC	Accounting Requirements Code
ARDEC	Armament Research, Development, and Engineering Center
ARSOAC	Army Special Operations Aviation Command
ASB	Aviation Support Battalion
ASCC	Air Standardization Coordination Committee
ASD	AeroSpace and Defense Industries Association of Europe

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ASL	Authorized Stockage List
ASC	Aviation Support Company
ASME	American Society of Mechanical Engineers
ASSIST	Acquisition Streamlining and Standardization Information System
ASTM	American Society for Testing and Materials
ATTN	Attention
BDAR	Battle Damage Assessment and Repair
BII	Basic Issue Items
BIT	Built in Test
BITE	Built in Test Equipment
BOI	Basis Of Issue
BR	Business Rule
BREX	Business Rules EXchange
BTR	Ballistic Test Requirements
CAC	Common Access Card
CAGE	Commercial and Government Entity
CAGEC	Commercial and Government Entity Code
CALS	Continuous Acquisition and Life-cycle Support
CARC	Chemical Agent Resistant Coating
CATT	Computer Automated Transportation Tool
CBRNE	Chemical, Biological, Radiological, Nuclear, and Explosives
CCL	Crew Checklist
CCT	Conditions Cross-reference Table
CD	Compact Disk
CD-ROM	Compact Disk Read Only Memory
CECOM	Communications-Electronics Command
CFR	Code of Federal Regulations
CG	Center-of-gravity
CGM	Computer Graphics Metafile
CIR	Common Information Repository
CL	Component List (Sets, Kits, and Outfits)
	Checklist (Aviation)

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CM	Collateral Material
COEI	Component Of End Item
COMSEC	Communications Security
CONUS	Continental United States
COTS	Commercial Off The Shelf
CPC	Corrosion Prevention and Control
CPF	Change Proposal Form
CSDB	Common Source Database
CSI	Critical Safety Items
CSL	CSDB Status List
CSLA	CECOM Communications Security Logistics Activity
CSN	Catalog Sequence Number
CTA	Common Table of Allowance
CUI	Controlled Unclassified Information
DA	Department of the Army
DC	Dublin Core
	Disassembly Code
	Direct Current
DCV	Disassembly Code Variant
DDN	Data Dispatch Note
DFAR	Defense Federal Acquisition Regulation
DID	Data Item Description
DM	Data Module
DMC	Data Module Code
DMRL	Data Module Requirements List (S1000D)
	Depot Maintenance Reference List (Depot Maintenance)
DMWR	Depot Maintenance Work Requirement
DOD	Department of Defense
DODAC	Department of Defense Ammunition Code
DODD	Department of Defense Directive
DODI	Department of Defense Instruction
DODIC	Department of Defense Identification Code

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DODM	Department of Defense Manual
DOT	Department of Transportation
dpi	dots per inch
DR	Deficiency Report
DRMO	Defense Reutilization Marketing Office
DSN	Defense Switching Network
DVD	Digital Video Disk (alt: Digital Versatile Disk)
ECBC	Research, Development, and Engineering Command, Edgewood Chemical Biological Center
ECM	Electronic Countermeasures
ECP	Engineering Change Proposal
ECU	Environmental Control Unit
e.g.	exempli gratia (for example)
EIC	End Item Code
EIR	Equipment Improvement Recommendation
EMP	Electromagnetic Pulse
EP	Electronic Publication
ESD	Electrostatic Discharge
EST	Eastern Standard Time
ETM	Electronic Technical Manual
FAR	Federal Acquisition Regulations
FAT	Free Air Temperature (Aviation)
	Final Acceptance Test (QA)
FCF	Functional Check Flight
FEDLOG	Federal Logistics
FGC	Functional Group Code
FM	Field Manual
FOUO	For Official Use Only
FP	Foldout Page
FSC	Federal Supply Classification
GCSS-A	Global Combat Support System - Army
GEIA	Government Electronics and Information Technology Association
GIF	Graphics Interchange Format

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GUI	Graphical User Interface
HAP	Hazardous Air Pollutants
HAZMAT	Hazardous Material
HCI	Hardness Critical Item
HCP	Hardness Critical Process
HDBK (HB)	Handbook
HR	Hand Receipt
HVAC	Heating, Ventilation, and Air Conditioning
IAS	Indicated Air Speed
IAW	In accordance with
IC	Information Code
ICN	Information Control Number
ICV	Information Code Variant
ID	Identification
IGE	In Ground Effect
i.e.	id est (that is)
IEC	International Electrotechnical Commission
IEEE	Institute of Electrical and Electronics Engineers
IETM	Interactive Electronic Technical Manual
IETP	Interactive Electronic Technical Publication
ILSC-SBC	Integrated Logistics Support Center - Soldier, Biological, Chemical
IMC	Instrument Meteorological Conditions
IMN	Indicated Match Number
IPD	Illustrated Parts Data
IPDP	Illustrated Parts Data Publication
IPPN	Initial Provisioning Project Number
INS	Inertial Navigation System
IR	Infrared Radar
IRRD	Issue Receipt Release Document
ISO	International Organization for Standardization
ISPM	International Standard for Phytosanitary Measures
IUID	Item Unique Identification

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JDRS	Joint Deficiency Reporting System
JMC	Joint Munitions Command
JPEG	Joint Photographers Experts Group
JP	Joint Publication
JS	Joint Service
JSBR	Joint Service Business Rule
JSITWG	Joint Services IETM Technology Working Group
JTA	Joint Table of Allowances
JTCI	Joint Technical Committee for Information Technology
KIAS	Knots Indicator Air Speed
LADS	Locally Approved Disposition Services
LAN	Local Area Network
LCMC	Life Cycle Management Command
LO	Lubrication Order
LOAP	List of Applicable Publications
LOEDM	List of Effective Data Modules
LOGCOM	Logistics Communication
LOGSA	Logistics Support Activity
LOLO	Lift On/Lift Off
LOM	Learning Object Metadata
LPD	Logistics Product Data
LRU	Line Replaceable Unit
MAC	Maintenance Allocation Chart
MAP	Minor Alteration Procedure
MC	Marine Corps
M/DCCA	Maintenance/Demilitarization of Conventional and Chemical Ammunition
MDS	Mission Design Series
MEL	Maintenance Expenditure Limit
MFD	Multifunction Display
M/H	Manhour
M&O	Maintenance and Overhaul
MOC	Maintenance Operational Checks

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MOS	Military Occupational Specialty
MP	Multipurpose
MRP	Mandatory Replacement Part
MSL	Military Shipment Label
MSR	Materiel Status Record
MTBF	Meantime Between Failures
MTF	Maintenance Test Flight
MTMC	Military Transportation Management Command
MTOE	Modified Table of Organization and Equipment
MTTR	Mean Time to Repair
MWO	Modification Work Order
NATO	North Atlantic Treaty Organization
NAVMC	Navy Marine Corps
NDI	Non-Destructive Inspection
NEPR	Naval Environmental Production Research
NETR	Nationwide Environmental Title Research
NHA	Next Higher Assembly
NICP	National Inventory Control Point
NIIN	National Item Identification Number
NISPOM	National Industrial Security Program Operating Manual
NMC	Not Mission Capable
NMCM	Not Mission Capable due to Maintenance
NMCS	Not Mission Capable due to Supply
NMP	National Maintenance Program
NMWR	National Maintenance Work Requirement
NPSA	NATO Support and Procurement Agency
NSA	National Security Agency
NSN	National Stock Number
OCONUS	Outside the Continental United States
ODC	Ozone Depleting Chemical
ODS	Ozone Depleting Substances
OGE	Out of Ground Effect

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OIP	Overhaul Inspection Procedure
OJCS	Organization of the Joint Chiefs of Staff
OPI	Operator's Manual
OPPCL	Operating Procedures Precombat Checklist
OSD	Office of the Secretary of Defense
OSHA	Occupational Safety and Health Act
PAM	Pamphlet
PCB	Printed Circuit Boards
PCN	Publications Control Number
PCT	Product Cross-reference Table
PD	Project Decision
PDF	Portable Document Format
PDREP	Product Data Reporting and Evaluation System
PENTA	Pentachlorophenol
PI	Parts Information
PID	Personal Identification
PIN	Publication Identification Number
PLL	Prescribed Load List
PM	Phased Maintenance (Aviation)
	Publications Module (S1000D)
PMA	Portable Maintenance Aid
PMAC	Preliminary Maintenance Allocation Chart
PMC	Preventive Maintenance Checklist (Maintenance)
	Publications Module Code (S1000D)
PMCS	Preventive Maintenance Checks and Services
PMD	Preventive Maintenance Daily
PMI	Phased Maintenance Inspection
PMS	Preventive Maintenance Services
P/N	Part Number
POL	Petroleum, Oil, and Lubricant
PQDR	Product Quality Deficiency Report
PRF	Performance

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PSA	Preshop Analysis
PSI	Pounds per Square Inch
QA	Quality Assurance
QTY	Quantity
QTY RECM	Quantity Recommended
RAM	Reliability, Availability, Maintainability
RATO	Rocket Assisted Take-Off
RCM	Reliability Centered Maintenance
RDF	Resource Description Framework
RMDA	Records Management and Declassification Agency
RMS	Reliability, Maintainability, and Supportability
RORO	Roll On/Roll Off
RPC	Responsible Partner Company
RPM	Revolutions Per Minute
SAE	Society of Automotive Engineers International
SB	Supply Bulletin
SC	Supply Catalog
SCO	Sharable Content Object
SCORM	Sharable Content objective Reference Model
SDC	System Difference Code
SDDC	Surface Deployment and Distribution Command
SF	Standard Form
SGML	Standardized General Markup Language
SI	International System
SKO	Sets, Kits, and Outfits
SLAR	Side Looking Airborne Radar
SMR	Source, Maintenance, and Recoverability
SNS	Standard Numbering System
SOP	Standard Operating Procedure
SPC	Statistical Process Control
SPI	Special Packaging Instruction
SRA	Specialized Repair Activity

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SRU	Shop Replaceable Assembly
SSR	Supply System Responsibility
STANAG	NATO Allied Standardization Agreement
STD	Standard
TACAN	Tactical Air Navigation
TACOM	Tank-automotive and Armaments Command
TAMMS	The Army Maintenance Management System
TAMMS-A	The Army Maintenance Management System - Aviation
TASMG	Theater Aviation Sustainment Maintenance Group
TB	Technical Bulletin
TBO	Time Between Overhaul
TC	Training Circular
TDA	Tables of Distribution and Allowances
TEA	Transportation Engineering Agency
TM	Technical Manual
TMDE	Test, Measurement, and Diagnostic Equipment
TMSS	Technical Manual Specifications and Standards
TOC	Table of Contents
TOE	Table of Organization and Equipment
TP	Transportability Peculiar
TPDR	Technical Publication Deficiency Report
TRADOC	Training and Doctrine Command
U/I	Unit of Issue
UAS	Unmanned Aircraft System
UOC	Usable On Code
UN	United Nations
URL	Uniform Resource Locator
U.S.	United States
USAMC	United States Army Materiel Command
USBL EFF	Usable Effective
USN	United States Navy
USSMG	United States S1000D Management Group

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UURI	Using Unit Responsibility Items
UUT	Unit Under Test
VHF	Very High Frequency
W3C	World Wide Web Consortium
WARCO	Warranty Control Office
WPM	Wooden Packaging Materials
WRA	Weapons Replacement Assembly
WTB	Warranty Technical Bulletin
XML	Extensible Markup Language
XSL	Extensible Style sheet Language

3.3 Terms.

The terms used in this standard are defined as follows.

3.3.1 Acquiring Activity.

The DOD component, activity, or organization of a using military service, or that organization delegated by a using service that is responsible for the selection and determination of requirements for Technical Manuals (TMs). Also referred to as "the project" in this document.

3.3.2 Additional Authorization List (AAL) items.

Items are optional (discretionary), are not essential to operate the end item, and are not listed on engineering drawings. Items are not turned in with the end item.

3.3.3 Adjust.

To maintain or regulate within prescribed limits, by bringing into proper position, or by setting the operating characteristics to specified parameters.

3.3.4 Align.

To adjust specified variable elements of an item to bring about optimum or desired performance.

3.3.5 Deleted.

3.3.6 Army Master Data File (AMDF).

The files required to record, maintain, and distribute supply management data between and from Army commands to requiring activities.

3.3.7 Army Oil Analysis Program (AOAP).

Effort to detect impending equipment component failure and determine lubricant condition through periodic analytical evaluation of oil samples.

3.3.8 Assembled item.

An item has an "A" as the first letter of the source code in the SMR. This indicates the item is not stocked as an assembly but is assembled from its constituent repair parts.

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3.3.9 Assembly.

Two or more parts or subassemblies joined together to perform a specific function and capable of disassembly (e.g., brake assembly, fan assembly, audio frequency amplifier). Note that the distinction between an assembly and subassembly is determined by the individual application. An assembly in one instance may be a subassembly in another where it forms a portion of an assembly.

3.3.10 Auxiliary equipment.

Equipment, accessories, or devices which, when used with basic equipment, extend or increase its capability (e.g., Modified Table of Organization and Equipment (MTOE) items, etc.).

3.3.11 Basic Issue Items (BII).

The minimum essential items not listed in the drawings, but required to place the equipment in operation, to operate it, and to perform emergency repairs. Although shipped separately packaged, basic issue items should be with the equipment during operation and whenever it is transferred between property accounts. BII may be packed with Communication Security (COMSEC) equipment.

3.3.12 Basis of Issue (BOI).

The quantity of an item (special tool) authorized for the end item density spread or for the unit level specified.

3.3.13 Block diagram.

A modified schematic diagram in which each group of maintenance-significant components that together performs one or more functions is represented by a single symbol or block. The block or symbol representing the group of components shows simplified relevant input and output signals pertinent to the subject diagram.

3.3.14 Built-in Test Equipment (BITE).

Any identifiable device that is a part of the supported end item and is used for testing that supported end item.

3.3.15 Bulk material.

Material issued in bulk for manufacture or fabrication of support items (e.g., sheet metal, pipe tubing, bar stock, or gasket material); excludes expendable items.

3.3.16 Business Rules EXchange (BREX).

An S1000D-authored Extensible Markup Language (XML) file containing machine-verifiable Army decisions (extracted from this standard).

3.3.17 Calibrate.

To determine and cause corrections or adjustments to be made to instruments or test, measuring, and diagnostic equipment used in precision measurement. Consists of comparisons of two instruments, one of which is a certified standard of known accuracy, to detect and adjust any discrepancy in the accuracy of the instrument being compared.

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3.3.18 Callout.

Anything placed on an illustration to aid in identifying the objects being illustrated, such as index numbers, nomenclature, leader lines, and arrows.

3.3.18A Caution. Indicates a clear danger of damage to equipment or loss of mission capability.

3.3.19 Chemical, Biological, Radiological, Nuclear, and Explosives (CBRNE).

Reference to decontamination procedures performed on equipment and/or personnel exposed to chemical, biological, radiological, nuclear, and explosive weapons.

3.3.20 Commercial and Government Entity (CAGE) Code (CAGEC).

A five-character code assigned to commercial activities that manufacture or supply items used by the Federal Government and Government activities that control design or are responsible for the development of certain specifications, standards, or drawings which control the design of Government items. CAGEC assignments are listed in the H4/H8 CAGE Publications.

3.3.21 Complete repair.

Maintenance capacity, capability, and authority to perform all the corrective maintenance tasks of the repair function in a use or user environment in order to restore serviceability to a failed item. Excludes the prescriptive maintenance functions, overhaul, and rebuild.

3.3.22 Component.

A constituent part not normally considered to be capable of independent operation; a piece part.

3.3.23 Components of End Item (COEI).

Items identified on the engineering drawing tree, which are physically separated and distinct from the end item.

3.3.24 Comprehensibility.

The completeness with which a user in the target audience understands the information in the TM.

3.3.25 Computer Graphics Metafile (CGM).

Computer Graphics Metafile (CGM) is defined in ISO/IEC 8632. CGM provides a means of graphics data interchange for computer representation of 2D graphical information independent from any particular application, system, platform, or device. CGM contains a metafile that describes the content and additional function as in the standard. Basically, CGM is a wrapper for the data and the data is explained in the metafile.

3.3.26 Continuous Acquisition Life-cycle Support (CALS).

A DOD initiative to transition from paper-intensive, non-integrated weapon systems design, manufacturing, and support processes to a highly automated and integrated mode of operation. This transition will be facilitated by acquiring, managing, and using technical data in standardized digital form.

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3.3.27 Corrosion Prevention and Control (CPC).

Systematic maintenance steps/procedures taken to prevent or retard the gradual destruction and/or pitting of a metal surface or other materials, such as rubber and plastic, due to chemical attack.

3.3.28 Critical Safety Item (CSI).

CSI is a part, assembly, installation or production system with one or more critical or critical safety characteristics that, if missing or not conforming to the design data, quality requirements or overhaul and maintenance documentation, would result in an unsafe condition that could cause loss or serious damage to the end item or major components, loss of control, uncommanded engine shutdown or serious injury or death to personnel. Unsafe conditions relate to hazard severity categories I and II of MIL-STD-882 and include items determined to be "life-limited," "fracture critical," "fatigue-sensitive," etc. The determining factor in CSI is the consequence of failure, not the probability that the failure or consequence would occur. The term CSI is used throughout this standard.

3.3.29 Degradation.

The reduction in systems/subsystems/components performance capability.

3.3.30 Department of Defense (DOD).

The Office of the Secretary of Defense (OSD) (including all boards and councils), the Military Departments (Army, Navy, and Air Force), the Organization of the Joint Chiefs of Staff (OJCS), the Unified and Specified Commands, the National Security Agency (NSA), and the Defense Agencies.

3.3.31 Department of Defense Ammunition Code (DODAC).

An eight-character code developed to indicate interchangeability of ammunition and explosive items in Federal Supply Classification (FSC) Group 13. This eight-character code is divided into two parts. The two parts are separated by a hyphen. The first four digits represent the FSC; the letter and last three numerals represent the DOD Identification Code that is assigned to items that are interchangeable in function and use. The eight-character DOD ammunition code is used for such ammunition operations as worldwide stock status reporting and requisitioning when specific items are not required.

3.3.32 Depot-level maintenance.

Depot maintenance consists of material maintenance or repair requiring the overhaul, upgrading, or rebuilding of end items, parts, assemblies, or subassemblies and the testing and reclamation of equipment as necessary, regardless of source of funds for the maintenance or repair or the location at which the maintenance or repair is performed. This term is applicable for all maintenance and repair tasks for Class IX items designated or coded as depot (D or L) that are performed in field or other nondepot locations. Depot maintenance includes any software maintenance that is required to be performed by depot level maintainer.

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3.3.33 Depot Maintenance Work Requirement (DMWR).

A maintenance serviceability document for depot maintenance operations. The document prescribes the essential factors to ensure that an acceptable and cost-effective product is obtained.

3.3.34 Disassemble.

The step-by-step taking apart (or breakdown) of a spare or functional group-coded item to the level of its least componency identified as maintenance-significant (i.e., assigned a Source, Maintenance, and Recoverability (SMR) code for the category of maintenance under consideration).

3.3.35 Document instance.

The instance is the actual document text and its accompanying XML tags conforming to the specifications and restrictions set forth in the schema.

3.3.36 Electronic Countermeasures (ECM).

Electronic surveillance equipment for detecting and adverting threatening enemy weapons systems.

3.3.37 Electrostatic Discharge (ESD).

Static electricity. A transfer of electrostatic charge between objects of different potentials caused by direct contact or induced by an electrostatic field. Devices such as integrated circuits and discrete devices (e.g., resistors, transistors, and other semiconductor devices) are susceptible to damage from electrostatic discharge.

3.3.38 End Item Code (EIC).

A code representing a final combination of end products, component parts, or materials that is ready for its intended use (e.g., tank, mobile machine shop, aircraft, receiver, rifle, recorder).

3.3.39 Embedded.

Describes hardware and or software which forms an integral part/component of some larger system and which is expected to function without human intervention. An embedded system usually does not include peripherals (e.g., keyboard, monitor, storage etc.). Embedded systems most often will provide real-time response.

3.3.40 Equipment Improvement Recommendation (EIR).

Solicitation of suggestions from end item users/operators for means to improve the operation and effectiveness of equipment. The SF Form 368 is the instrument by which suggested improvements are forwarded to the cognizant agency.

3.3.41 Equipment nomenclature.

The official name of the equipment as shown in FEDLOG H6 listing.

3.3.42 Essential.

Those systems/subsystems/components that are required for a designated mission or system operation.

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3.3.43 Evacuation.

A combat service support function which involves the movement of recovered material from a main supply route; maintenance collection material may be returned to the user, to the supply system for reissue, or to property disposal activities.

3.3.44 Expendable items.

Items, other than repair parts, that are consumed in use (e.g., paint, lubricants, wiping rags, tape, cleaning compounds, sandpaper).

3.3.45 Extensible Markup Language (XML).

A set of rules for encoding documents electronically through the use of markup. Its primary purpose is to facilitate the sharing of structured data across different information systems. It is a product of the World Wide Web Consortium (W3C).

3.3.46 Extensible Style sheet Language (XSL).

A family of languages used to transform and render XML documents.

3.3.47 Field maintenance.

Field maintenance is on-system maintenance and is mainly replacement of defective parts and preventive maintenance. Field maintenance returns repaired equipment to the soldier. Some "off-system" maintenance can be done at field level if, based on task analysis, it is simple to complete or it is critical to mission readiness.

3.3.48 Follow-on maintenance.

Maintenance task(s) that must be accomplished sometime following the completion of a maintenance task(s). Follow-on maintenance is used to clean up or undo actions performed prior to or during a maintenance task and may be done directly after the task or after several tasks. For example, if a panel is removed to perform maintenance, it must be put back when the maintenance tasks is complete or may be done after several tasks requiring removal of the panel are completed.

3.3.49 Footer.

One or more lines of standard text that appear at the bottom of each page (also called feet and running feet).

3.3.50 Functional diagram.

A type of illustration in which symbols are connected by lines to show relationships among the symbols. The symbols may be rectangles or other shapes, standard electronic symbols representing components or functions, or pictorials representing equipment or components. Where appropriate, voltage readings are shown. The lines may represent procedures or processes, such as signal or logic flow, and physical items, such as wires. Functional diagram includes schematics, wiring and piping diagrams, logic diagrams, flow charts, and block diagrams.

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3.3.51 Functional Group Code (FGC).

A numeric or alphanumeric code assigned to identify major components, assemblies, and subassemblies to a functional system. Subordinate subfunctional groups/subassemblies are coded to relate back to the basic (top position) FGC in a sequential, Next Higher Assembly (NHA) relationship. For aviation systems, FGCs are prescribed by DA PAM 738-751. For tactical ground vehicles, refer to TB 750-93-1.

3.3.52 Graphic(s).

Any type of presentation or representation which gives a clear visual impression.

3.3.53 Hazardous Air Pollutants- (HAP-) Free.

HAP-free means a material that contains no more than 0.1 percent by mass of any individual HAP that is an Occupational Safety and Health Act- (OSHA-) defined carcinogen as specified in 29 CFR 1910.1200(d)(4) and no more than 1.0 percent by mass for any other individual HAP, as demonstrated by a specification or standard, or a manufacturer's representation, such as in a material safety data sheet or product data sheet.

3.3.54 Hardness Critical Item (HCI).

A support item that provides the equipment with special protection from Electromagnetic Pulse (EMP) damage during a nuclear attack.

3.3.55 Hardness Critical Process (HCP).

A process affecting a mission critical item which could degrade system survivability in a nuclear, biological, or chemical hostile environment if hardness were not considered. Nuclear HCPs are processes, finishes, specifications, manufacturing techniques, and/or procedures which are hardness critical, and which, if changed, could degrade nuclear hardness.

3.3.56 Hardtime scheduled maintenance.

Hardtime maintenance is scheduled maintenance conducted at predetermined fixed intervals because of age, calendar, or usage such as operating time, flying hours, miles driven, or rounds fired.

3.3.57 Hardware breakdown.

A breakdown accomplished by sequencing all parts comprising the end item in a lateral and descending "family tree/generation breakdown." This breakdown consists of the end item, including all components, listing every assembly, subassembly, and parts which can be disassembled, reassembled/replaced. All parts are listed in their relation to the end item, component, assembly, or installation system in which they are contained and to their own further sub-subassemblies and parts. This relationship is shown by means of an indenture code.

3.3.58 Header.

One or more lines of standard text that appear at the top of each page (also called heads and running heads).

3.3.59 Icon.

Pictorial representation; visual image to give immediate recognition of a hazard or to provide essential information.

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3.3.60 Illustration.

A general term meaning graphic presentations of all types. Illustrations include pictorials, functional diagrams, and line graphs. This term is used synonymously with figure, graphic, drawing, diagram, and artwork.

3.3.61 Index number/Item number.

Terms used interchangeably to mean a type of callout that is a number used to identify an item in an illustration or table.

3.3.62 Inspect.

To determine the serviceability of an item by comparing its physical, mechanical, and/or electrical characteristics with established standards through examination (e.g., by sight, sound, or feel).

3.3.63 Install.

Install may be the act of emplacing, seating, or fixing into position a spare, repair part, or module (component or assembly) in a manner to allow the proper functioning of equipment or a system.

3.3.64 Institute of Electrical and Electronics Engineers (IEEE).

Membership organization that includes engineers, scientists, and students in electronics and allied fields. Founded in 1963, it has over 300,000 members and is involved with setting standards for computers and communications.

3.3.65 Deleted. I

3.3.66 International Organization for Standardization (ISO).

Organization that sets international standards, founded in 1946 and headquartered in Geneva. It deals with all fields except electrical and electronics, which is governed by the older International Electrotechnical Commission (IEC), also in Geneva. With regard to information processing, ISO and IEC created Joint Technical Committee for Information Technology (JTCI).

3.3.67 Interchangeability.

Defined in this specification as above, the scope of classic interchangeability. The intent/purpose of this specification is to allow fully innovative fixes/repairs to the aircraft. This includes minor modifications that can be made to achieve interchangeability. Capable of being put or used in place of each other.

3.3.68 Legend.

A tabular listing and explanation of the numbers or symbols on a figure or an illustration.

3.3.69 Limited repair.

Scope of corrective repair authorized to be performed by a level of maintenance lower than the level of authorized complete repair.

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3.3.70 Linear data.

Linear data is technical data that is displayed in a sequential or document oriented manner. The sequence of the data presentation is largely determined by the data author. It is an organization of technical data that often replicates the order of information found in a page-based document. There is generally a default "path" through the technical data. Linear data should be used for information/tasks that must be done or must follow a certain order such as operating instructions, general information, some maintenance tasks, and simple troubleshooting tasks.

3.3.71 List of Applicable Publications (LOAP).

A separate listing of publications which are related to a specific piece of equipment, group of equipment, or system. For additional information refer to MIL-PRF-63049.

3.3.72 Logistics Product Data (LPD).

The LPD comprises the support and support-related engineering and logistics data acquired from contractors for use in materiel management processes such as those for initial provisioning, cataloging, and item management. Depending upon specific program requirements, this data may be in the form of summary reports, a set of specific data products, or both.

3.3.73 Maintenance Allocation Chart (MAC).

A list of equipment maintenance functions showing maintenance level, maintenance class, and corresponding man-hours required for each task. The MAC is arranged in functional group code sequence and uses the same FGCs as used in the parts information.

3.3.73A Maintenance class. Maintenance classes are subsets of field and sustainment maintenance levels. They identify and implement the specific activity, identified by the MAC, to perform the maintenance. The maintenance classes of both the field and sustainment maintenance levels are further separated by aviation and non-aviation and the corresponding classes are shown below:

a. Field level classes:

(1) Aviation

(a) AMC – corresponds to MAC code – O.
(b) ASB – corresponds to MAC code – F.

(2) Non-aviation

(a) Crew (operator) – corresponds to MAC code – C (can be O in joint service manuals).
(b) Maintainer – corresponds to MAC code – F.

b. Sustainment level classes:

(1) Aviation

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(a) TASMG – corresponds to MAC code – L.
(b) Depot – corresponds to MAC code – D.

(2) Non-aviation

(a) Below depot – corresponds to MAC code – H.
(b) Depot – corresponds to MAC code – D.

3.3.73B Maintenance function. Maintenance function is synonymous with maintenance tasks (refer to 3.3.75 for definition) and is used in the MAC and in maintenance policy documents

3.3.74 Maintenance level.

The separation of maintenance activities or functions in the U.S. Army according to the required skills and available facilities.

3.3.75 Maintenance task.

A group of instructions with supporting illustrations on how to perform a maintenance action such as remove or install, etc. Each task has a definite beginning and end. A task is made up of one or more procedures. The term "function" is synonymous with task and is primarily used in the maintenance allocation chart and in maintenance policy documents.

3.3.76 Deleted.

3.3.77 Mean Time Between Failures (MTBF).

Mean time between failure (MTBF) refers to the average amount of time that a device or product functions before failing. This unit of measurement includes only operational time between failures and does not include repair times, assuming the item is repaired and begins functioning again. MTBF figures are often used to project how likely a single unit is to fail within a certain period of time under specific conditions.

3.3.78 Mean Time to Repair (MTTR).

MTTR is a basic measure of the maintainability of repairable items. It represents the average (mean) time required to repair a failed component or device.

3.3.79 Modified Table of Organization and Equipment (MTOE).

A modified version of a TOE that authorizes the unit organization, personnel, and equipment needed to perform an assigned mission in a specific geographical or operational environment.

3.3.80 Modification Work Order (MWO).

Detailed instructions (including text and graphics) for making changes/improvements to a particular system in order to bring the system up to date and/or to improve its overall efficiency.

3.3.81 Module.

A self-contained assembly of electronic components and circuitry, such as a circuit board in a computer, that is installed as a unit.

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3.3.82 Mouse-over.

A program element that triggers a change on an item (typically a graphic change, such as making an image or hyperlink appear) in a viewer when the pointer passes over it. The change usually signifies that the item is a link to related or additional information. Mouse-overs are used in navigation bars, pop-up dialog boxes, window panes, and or in-form submissions.

3.3.83 National Item Identification Number (NIIN).

The last nine digits of the National/NATO (North Atlantic Treaty Organization) stock number. The first two digits of the NIIN identify the country assigning the number and the remaining seven digits are a serially assigned number.

3.3.84 National Maintenance Work Requirement (NMWR).

A maintenance serviceability standard for depot level reparable that does not have an existing depot maintenance work requirement and for field level reparable that are repaired by maintenance activities below the depot level maintainers for return to the Army supply system.

3.3.85 Next Higher Assembly (NHA).

Assembly or subassembly of which subject component(s) or subassembly are a subpart.

3.3.86 Nomenclature.

The approved name or alphanumeric identifier assigned to an item, equipment, or component in agreement with an organized designation system.

3.3.87 Non-Destructive Inspection (NDI).

Testing/inspection of a nature, which does not impair the usability of the item.

3.3.88 Non-linear data.

Non-linear data is technical data that is not displayed in a sequential fashion. There are high levels of interactivity between the data and the user. The order of presentation is dictated by inputs from the user, from external sources or from events (as in diagnostics). Non-linear organization of content does not follow a document or page-based layout. Non-linear data may be used for areas of the publication that do not require a specific order such as complex troubleshooting or maintenance tasks.

3.3.88A Note. Used to highlight essential information, conditions, or statements or convey important instructional data to the user.

3.3.89 On-condition maintenance.

Maintenance performed or an item replacement action performed based upon condition of the item as determined by an evaluation of each item on a scheduled basis.

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3.3.90 Operator (crew) maintenance. Operator and/or crew maintenance is the first and most critical operation of the Army Maintenance System. It is the cornerstone of Army maintenance and starts with the operator and/or crew performing PMCS using the applicable TM 10 series. The before and during PMC concentrate on ensuring equipment is fully mission capable. Maintenance operations normally assigned to operator and/or crew include the following:

a. Performance of PMCS.

b. Inspections by sight and touch of accessible components per TM 10 series and condition based maintenance indicators/ instrumentation.

c. Lubrication, cleaning (including corrective actions to repair corrosive damage), preserving (including spot painting), tightening, replacement, and minor adjustments authorized by the MAC.

h. Limited diagnosis and fault isolation as authorized by the MAC. This requires appropriate resources on-board the equipment or system to perform these tasks.

i. Replacement of combat spares (unserviceable parts, modules, and assemblies) as authorized by the MAC and carried on board the equipment or system.

3.3.91 Overhaul.

That maintenance effort (service/action) prescribed to restore an item to a completely serviceable/operational condition as required by maintenance standards in appropriate technical publications. Overhaul does not normally return an item to like new condition.

3.3.92 Overhaul Inspection Procedure (OIP).

Routine maintenance inspection conducted just prior to period specified for removal of aircraft for overhaul or retirement.

3.3.93 Part Number (P/N).

A primary number used to identify an item used by the manufacturer (individual, company, firm, corporation, or Government activity) that controls the design, characteristics, and production of the item by means of its engineering drawings, specifications, and inspection requirements.

3.3.94 Phased Maintenance Inspection (PMI) (aircraft).

A thorough and searching examination of the aircraft and associated equipment. Removal of access plates, panels, screens, and some partial disassembly of the aircraft is required to complete the inspection. Inspections are due after an appointed number of flying hours since new or from the completion of the last inspection.

3.3.95 Pictorial.

A type of illustration showing the physical appearance of equipment or component parts. This term is used instead of such general terms as illustration, drawing, and diagram.

3.3.96 Preshop analysis.

To determine, prior to beginning maintenance activities, the extent of maintenance required to return the end item, assembly, subassembly, or component to a serviceable condition as specified by the depot level maintenance instructions.

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3.3.97 Preventive maintenance (scheduled maintenance).

The performance of scheduled inspections and maintenance functions necessary to keep the equipment in serviceable condition and ready for its primary mission.

3.3.98 Preventive Maintenance Checklist (PMC).

A stand-alone publication which contains PMCS information for any or all maintenance levels and intervals that is performed by the operator and/or maintainer to ensure that the equipment is mission capable and in good operating condition. The information in the PMC is extracted from the associated operator and/or maintenance manuals.

3.3.99 Preventive maintenance daily (aircraft).

Inspection of aircraft and associated equipment after the last flight of the mission day or before the first flight of the next day. Some operational checks and removal of screens, panels, and inspection plates may be required to accomplish the inspection.

3.3.100 Preventive maintenance services inspection (aircraft).

Special recurring inspection of aircraft and associated equipment after an appointed number of flying hours or days whichever occurs first (e.g., 10 flying hours or 14 days). Some operational checks and removal of screens, panels, and inspection plates may be required to accomplish the inspection.

3.3.101 Preventive Maintenance Checks and Services (PMCS).

Periodic inspection and maintenance at scheduled intervals to ensure that the equipment and its components remain mission capable and in good operating condition. In aircraft, checks are required of mandatory safety-of-flight items. Lubrication is part of PMCS. PMCS procedures can be performed by maintainers at any level of maintenance, not just by operators.

3.3.102 Proponent.

An Army organization or staff, which has been assigned primary responsibility for material or subject matter in its area of interest.

3.3.103 Publication Identification Number (PIN).

A number (assigned by the Army Publishing Directorate (APD) to each publication) that can be found in DA PAM 25-30 and is composed of 6 numerals and a 3-digit "change number" field that permits ordering a specific change to the publication.

3.3.104 Publication type.

The type of publication (TM, DMWR, NMWR, MWO, SC, SB, TB, etc.). This does not include presentation types (IETP or page-oriented).

3.3.105 Quality Assurance (QA).

A planned and systematic pattern of all actions necessary to provide adequate confidence that the item or product conforms to established technical requirements.

3.3.106 Rebuild.

Consists of those services/actions necessary for the restoration of unserviceable equipment to a like new condition in accordance with original manufacturing tolerances.

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3.3.107 Reference designator.

Letters or numbers, or both, used to identify and locate discrete units, portions thereof, and basic parts of a specific equipment, assembly, or subassembly.

3.3.108 Reliability, Maintainability and Supportability (RMS) and Operational Availability (Ao).

Requirements imposed on materiel systems to ensure that they are operationally ready for use when needed, will successfully perform assigned functions, and can be economically operated and maintained within the scope of logistic concepts and policies.

3.3.109 Reliability Centered Maintenance (RCM).

A systematic approach for identifying preventive maintenance tasks for an equipment end item in accordance with a specified set of procedures and for establishing intervals between maintenance tasks.

3.3.110 Remove.

To remove an item when required to perform service or other maintenance functions. The act of taking a subcomponent off an asset to allow repair or replacement of that subcomponent or to facilitate other maintenance.

3.3.111 Repair.

The application of maintenance services (inspect, test, service, adjust, align, calibrate, and/or replace), including fault location/troubleshooting, removal/installation, and disassembly/ assembly procedures, and maintenance actions to identify troubles and restore serviceability to an item by correcting specific damage, fault, malfunction, or failure in a part, subassembly, module (component or assembly), end item, or system. Repair is authorized by the LPD/MAC and the assigned maintenance level is shown as the fourth position code of the SMR code.

3.3.112 Repair part.

Consumable items or material required for the maintenance, overhaul or repair of a system, equipment, or end item.

3.3.113 Replace.

To remove an unserviceable spare or repair part and install a serviceable counterpart in its place. Replace is authorized by the LPD/MAC and the assigned maintenance level is shown as the third position code of the SMR code.

3.3.114 Revision.

A revision is composed of corrected, updated, or additional pages or data modules to the current edition of a publication. It consists of replacement data modules that contain new or updated technical information, or improves, clarifies, or corrects existing information in the current edition of the publication.

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3.3.115 Schematic diagram.

A graphic representation showing the interrelationship of each component or group of components in the system/equipment. The essential characteristic of these diagrams is that every maintenance-significant functional component is separately represented. Also, where appropriate, voltage readings, hydraulic values, and pneumatic values should be shown.

3.3.116 Service.

Operations required periodically to keep an item operating, i.e., to clean (includes decontaminate, when required), to preserve, to drain, to paint, or to replenish fuel, lubricants, chemical fluids, or gases.

3.3.117 Set.

A unit and necessary assemblies, subassemblies, and parts connected together or used in association to perform an operational function (e.g., radio receiving set, measuring set, radar, or homing set which includes parts, assemblies, and units such as cables, microphones, and measuring instruments).

3.3.118 Source, Maintenance, and Recoverability (SMR) code.

This code is composed of four parts consisting of a two-position source code, a two-position maintenance code, a one-position recoverability code and a one-position Service option code. The first two positions of the SMR code indicate the source for acquiring the item for replacement purposes. The third position represents who can install, replace, or use the item. The fourth position dictates whether the item is to be repaired and identifies the lowest maintenance level with the capability to perform a complete repair action. The fifth position indicates the desired disposition of the support item. The sixth position is unique to each Service and is utilized to disseminate specific instructions to that Service's logistics business process.

3.3.119 Spare part.

Any reparable and recoverable component required for the maintenance or repair of an end item/equipment (will have a Recoverability Code other than "Z" and will be assigned an FGC/subfunctional group code in the MAC.)

3.3.120 Special tools.

Those tools that have single or peculiar application to a specific end item/system.

3.3.121 Specialized Repair Activity (SRA).

A level of maintenance usually characterized by the capability to perform maintenance functions requiring specialized skills, disciplined quality control, highly sophisticated and expensive special tools, and Test, Measurement, and Diagnostic Equipment (TMDE). Its phases normally consist of adjustments, calibration, alignment, testing, troubleshooting, assembly, disassembly, fault isolation, and repair of unserviceable parts, modules, and Printed Circuit Boards (PCBs).

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3.3.122 Subassembly.

Two or more parts that form a portion of an assembly or a component replaceable as a whole, but having a part or parts that are individually replaceable (e.g., gun mount stand, window recoil mechanism, floating piston, intermediate frequency strip, and mounting board with mounted parts).

3.3.123 Supply Catalog (SC).

The DA publication, which is the configuration control document that provides the user identification of Sets, Kits and Outfits (SKO) and its components. It also provides user supply management data and is an accountability aid. For Army, there is only one official SC with multiple component lists (CL).

3.3.124 Sustainment maintenance.

Sustainment is off-system maintenance and is mainly repair of defective equipment/parts. Sustainment maintenance returns repaired equipment/parts to supply system.

3.3.125 System.

A group of items united or regulated by interaction or interdependence to accomplish a set of specific functions.

3.3.126 Tags.

Descriptive markup, as in a start-tag and end-tag.

3.3.127 Tailoring (business rules).

The process of evaluating individual potential requirements to determine their pertinence and cost effectiveness. The tailoring of data requirements is limited to the exclusion of information requirement provisions and selecting or specifying applicable requirements.

3.3.128 Task.

A generic task is a procedure or set of procedures. Refer to definitions of operator (crew) maintenance and maintenance task. Refer to AR 750-1 for exact terms and definitions.

3.3.129 Technical Manual (TM).

A manual that contains instructions for the installation, operation, maintenance, and support of a weapon system, weapon system components, and support equipment. TM information may be presented, according to prior agreement between the contractor and the Government, in any form or characteristic, including hard printed copy, audio and visual displays, electronic imbedded media, disks, other electronic devices, or other media. They normally include operational and maintenance instructions, parts lists, and related technical information or procedures exclusive of administrative procedures.

3.3.130 Test.

To verify serviceability by measuring the mechanical, pneumatic, hydraulic, electrical, or electronic characteristics of an item and comparing those characteristics with prescribed standards.

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3.3.131 Test, Measurement, and Diagnostic Equipment (TMDE).

Any system or device used to evaluate the operational condition of an end item or subsystem thereof, or to identify and/or isolate any actual or potential malfunction. TMDE includes diagnostic and prognostic equipment, semiautomatic and automatic test equipment (with issued software), and calibration test or measurement equipment.

3.3.132 Time Between Overhaul (TBO) items.

Those items having a definite retirement schedule within a defined overhaul interval, e.g., those items, which are replaced within a system assembly, subassembly, or component between scheduled overhauls.

3.3.133 Top-down breakdown.

The pyramidal breakdown of an end item, with the top item being the complete end item. The process of breakdown is established from the engineering drawing structure in an NHA progression until the lowest reparable in each family tree group is identified. All nonreparables (spare parts) can be identified in like manner to establish their NHA relationships.

3.3.134 Usable On Code (UOC).

A one to four position alphanumeric code representing the applicable configuration in which an item is used.

3.3.135 User.

A person using the technical manual.

3.3.136 Viewer.

A program that allows a file to be displayed but not changed. Viewers are often freely distributable and platform independent, even when the editor application is not. This characteristic allows authors to create IETPs with an editor application and make the viewer, which displays the IETP, available to other users.

3.3.136A Warning. Highlights an essential operating or maintenance procedure, practice, condition, statement, etc, which, if not strictly observed, could result in injury or death during performance of the procedure or that could result in long term health hazards.

3.3.137 Wiring diagram.

Diagram illustrating signal flow or wiring connections. Where appropriate, voltage readings should be shown.

3.4 Special terms.

The following terms are unique to S1000D and identified here to draw comparisons and contrasts with terms used in legacy Army publications and standards.

3.4.1 Applicability.

The state or condition when associated data is valid (i.e., applying to a certain configuration, model, or even environmental condition). Applicability may also be used to describe how data modules pertain to different customers for delivery. The term "effectivity" is not used by S1000D.

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3.4.2 Filtering.

The process of applying criteria based on the applicability information to determine what data is valid for a certain situation. Data modules can be filtered based on tail numbers, serial numbers, modifications, configurations, etc.

3.4.3 Illustrated Parts Data (IPD).

Data modules that contain repair parts and special tools information.

3.4.4 Information set.

Information sets define content depth requirements. Information set requirements can be collected together to provide an author with content depth requirements for a subset of data to be authored or an entire publication.

3.4.5 Interactive Electronic Technical Publication (IETP).

The interactive presentation of data modules that are displayed on screen and are not page formatted. This is roughly equivalent to the more U.S.-common term Interactive Electronic Technical Manual (IETM). Refer to 3.3.64.

3.4.6 Page-formatted (or page-oriented) publication.

A presentation of data modules formatted as a printed page. This can be literally printed or presented on screen (as with Portable Document Format [PDF]).

3.4.7 Product.

The equipment or materiel that is the primary subject of the technical data. This is used in lieu of terms like "aircraft," "vehicle," or "ship" since the specification can apply to air, land, and sea products.

3.4.8 Publication.

A publication refers to the presentation of data modules regardless of its output format (e.g., screen or paper).

3.4.9 Reset area.

The reset area is a part of the IETP viewing area that contains access to functionality such as the ability to return the IETP view back to its default settings. This is sometimes referred to as the guidepost.

3.4.10 Standard Numbering System (SNS).

Consists of three groups of characters. Intended to provide standardization in the arrangement or addressing of the Product. It is part of the data module code.

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4. GENERAL REQUIREMENTS

4.1 General.

This standard establishes the business rules to be used with S1000D Issues 4.0/4.0.1 for the preparation of page-based technical publications and Interactive Electronic Technical Publications (IETPs) required to support the various types of equipment and weapon systems within the Department of the Army and the Department of the Marine Corps. The requirements contained in this standard cover operation and maintenance at all levels through overhaul (depot), including Depot Maintenance Work Requirements (DMWRs) and National Maintenance Work Requirements (NMWRs).

4.2 Types of technical publication.

This standard provides requirements for both page-oriented publications and IETPs. Appendix A, Content Selection Matrices, list specific technical content requirements for each type of maintenance manual, including multilevel publications, covered by this standard. Each type of publication shall provide in detail the maintenance coverage prescribed for the applicable maintenance level(s) by the Maintenance Allocation Chart (MAC) and Source, Maintenance, and Recoverability (SMR) coded items.

4.3 Selective application and tailoring.

This standard contains some requirements that may not be applicable to the preparation of all technical manuals. Selective application and tailoring of the business rules contained in this standard are the responsibility of the acquiring activity. The applicability of some requirements is also designated by one of the following statements: unless specified otherwise by the acquiring activity; as/when specified by the acquiring activity; or when specified by the acquiring or proponent activity; or following the heading "Project decisions."

4.4 Preparation of digital data for electronic delivery.

Technical manual data prepared and delivered digitally in accordance with this standard shall be Extensible Markup Language (XML) tagged using the S1000D schema and style sheets in accordance with S1000D. The schemas referenced in this standard interpret the technical content and structure for the functional requirements contained in this standard and S1000D and are mandatory for use. Development of publications is accomplished through the use of the schemas combined with the requirements contained in this standard and S1000D. For additional information on the schema, refer to S1000D. The schemas may be obtained from http://www.s1000d.org.

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5. **DETAILED REQUIREMENTS**

5.1 S1000D Chapter 1 – Introduction to the specification.

There are no Army business rules or project decisions in the following S1000D chapters:

a. Chapter 1 Introduction to the specification
b. Chapter 1.1 Purpose
c. Chapter 1.2 Scope
d. Chapter 1.3 How to use the specification

5.2 S1000D Chapter 1.4 – Introduction to the specification – How to tailor for a specific project.

5.2.1 Army business rules.

5.2.1.1 General.

The project shall develop business rules documenting the details of the tailoring of S1000D for a specific project. These rules shall include documented decisions for every decision point. (JS-001)

5.2.1.2 Order of precedence.

Project business rules shall not contradict or supersede higher-level DOD or Service business rules or requirements contained within S1000D. (JS-002)

5.2.1.3 Business rules sustainment.

Project business rules shall be developed prior to the start of development of technical data. Business rules shall be updated throughout the life of the project as necessary to reflect the project environment. (JS-003)

5.2.2 Project decisions.

None.

5.3 S1000D Chapter 1.5 – Introduction to the specification – Request for change.

5.3.1 Army business rules.

5.3.1.1 Changes to S1000D.

Programs may identify changes and needed improvements to S1000D. Programs shall submit all change requests to Army Logistics Support Activity (LOGSA) AMXLS-AP Redstone Arsenal, AL 35898. LOGSA will coordinate and assist with other appropriate actions to shepherd the Change Proposal Form (CPF) through the United States S1000D Management Group (USSMG) and international S1000D Steering Committee processes.

5.3.2 Project decisions.

None.

5.4 S1000D Chapter 2 – Documentation Process.

There are no Army business rules or project decisions in the following S1000D chapters:

a. Chapter 2 Documentation process
b. Chapter 2.1 Documentation process – Overview
c. Chapter 2.2 Documentation process – Use of standards

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d. Chapter 2.3 Documentation process – Relations to other processes and standards
e. Chapter 2.4 Documentation process – Implementation guide
f. Chapter 2.5 Documentation process – Business rules
g. Chapter 2.5.1 Business rules – Categories and layers
h. Chapter 2.5.2 Business rules – Generation and use

5.5 S1000D Chapter 3 – Information generation.

There are no Army business rules or project decisions in the following S1000D chapters:

a. Chapter 3 Information generation
b. Chapter 3.1 Information generation – Introduction
c. Chapter 3.2 Information generation – Data modules
d. Chapter 3.8 Information generation – Disassembly principles
e. Chapter 3.9 Information generation – Authoring
f. Chapter 3.9.2.5 Illustration rules and multimedia – Interactive 3D content
g. Chapter 3.9.2.6 Illustration rules and multimedia – e-learning and SCORM
h. Chapter 3.9.5 Authoring – Data modules
i. Chapter 3.9.5 Authoring – Data modules
j. DELETED
k. Chapter 3.9.5.2.1 Content section – Common constructs
l. Chapter 3.9.5.2.8 Content section – Battle damage assessment and repair information
m. Chapter 3.9.5.2.13.1 Learning data module – Learning plan information type
n. Chapter 3.9.5.2.13.2 Learning data module – Learning overview information type
o. Chapter 3.9.5.2.13.3 Learning data module – Learning content information type
p. Chapter 3.9.5.2.13.4 Learning data module – Learning summary information type
q. Chapter 3.9.5.2.13.5 Learning data module – Learning assessment information type
r. Chapter 3.9.6 Authoring – Attributes

5.6 S1000D Chapter 3.3 – Information generation – Information sets.

5.6.1 Army business rules.

5.6.1.1 Content selection matrices.

Content Selection Matrices list specific technical content requirements for each type of maintenance manual, including multilevel TMs/IETPs, covered by this standard. Each type of TM/IETP shall provide in detail the maintenance coverage prescribed for the applicable maintenance level(s) by the MAC and SMR-coded items. The Army S1000D content selection tables and the business rules provided in this standard list all applicable technical content breadth requirements for the development of S1000D TMs and IETPs. This is mandatory. The information contained herein is intended for compliance. Copies of the applicable tables shall be completed and added as an attachment to the Document Summary List of the contract. The content selection matrices and information sets described in this standard shall be used when preparing technical content for Army manuals. The example information sets provided in S1000D Chapter 5.2 do not sufficiently specify, and in some cases are in conflict with, Army content depth and breadth requirements and shall not be used.

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5.6.1.2 Content selection.

The tables in APPENDIX A simplify tailoring the technical content requirements of technical manuals prepared using this standard as a guide. The tables indicate which portions of this standard are applicable and list the content requirements for each type of TM/IETP. The content requirements for each applicable TM/IETP shall be arranged in the order presented in the tables.

5.6.1.3 Additional information sets.

When specified by the acquiring activity, additional data modules shall be prepared when the information sets described herein do not support the data/information to be presented. Projects that identify requirements for an information set not specified here shall coordinate with LOGSA to ensure consistent implementation across the Army.

5.6.2 Project decisions.

5.6.2.1 Definitions of information sets.

The project shall decide which information sets are used and the definition of their content.

5.6.2.2 Project specific information sets.

The project shall define all project specific information sets.

5.6.2.3 Content selection matrices.

The project shall complete the content selection matrices by indicating which conditional and optional content is required by the project.

5.7 S1000D Chapter 3.4 – Information generation – Zoning and access.

5.7.1 Army business rules.

5.7.1.1 Determine best zoning (granularity) methodology.

When zoning and access information is a requirement for data modules, zones and access points shall be determined in accordance with the principles, requirements, and coding as defined in S1000D. Full zoning and access point definitions shall be defined within project business rules. (JS-004)

5.7.2 Project decisions.

5.7.2.1 Use of zoning and access.

The project shall decide whether to use the zoning rules or not.

5.7.2.2 Methods for zoning air systems.

The project shall decide which method of zoning to use.

5.7.2.3 General identification of access points.

The project shall determine the identification system for those access points that do not have identifiers.

5.7.2.3.1 Identifying access points for air systems.

The project shall decide which method of zoning access to use, if needed.

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5.7.2.3.2 Identifying access points for surface ships and submarine systems.

The project shall decide which method of zoning access to use, if needed.

5.8 S1000D Chapter 3.5 – Information generation – Updating data modules.

5.8.1 Army business rules.

5.8.1.1 Change package.

Changes shall consist of the following:

a. Data Dispatch Note
b. All changes, including
    (1) Applicable publication modules
    (2) Changed front matter/rear matter
    (3) Changed/new data modules
    (4) Changed/new illustrations
    (5) Authentication page
    (6) The Publication Identification Number (PIN) shall be on the last page of the change package.
c. Change transmittal page (instructions for implementing the change)

5.8.1.2 Revisions.

With new revisions, all previous change information shall be removed, but should be maintained for configuration control of the previous revisions to the publication.

5.8.1.3 Changes to front and rear matter.

Changes to front and rear matter pages and all data module pages shall include the applicable issue number located on the outer edge of the page opposite the binding side.

5.8.1.4 Changed data modules.

Changed data modules shall conform to the style and format of the basic publication/IETP and shall incorporate all approved information.

5.8.1.5 Changes to identification and status section only.

All changed data modules, even if only identification and status section elements are changed, shall be distributed in a change/revision cycle.

5.8.2 Project decisions.

5.8.2.1 Frequency of updates.

The project shall decide on the frequency of updates.

5.8.2.2 Deleted data modules.

The project shall determine the method for handling and notification of deleted data modules.

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5.9 S1000D Chapter 3.6 – Information generation – Security and data restrictions.

5.9.1 Army business rules.

5.9.1.1 Classified data modules.

The project or organization business rules shall identify the latest instructions/directives at time of contract award. As of the release of this update to the standard, the current documents for classification are DODM 5200.01, volumes 1-4, and DODD 5220.22-M, and Executive Order 13526.

5.9.1.2 For official use only.

Army communications security (COMSEC) unclassified publications/IETPs shall contain the notice FOR OFFICIAL USE ONLY unless otherwise specified by the acquiring activity. Unclassified publications/IETPs shall contain the notice FOR OFFICIAL USE ONLY using the value "**`cv51`**" for the attribute **`caveat`**.

5.9.1.3 Presentation of commercial classification and/or caveat as security marking.

Neither commercial classification nor national caveat shall be used as an alternative to security classification. (JS-093).

5.9.1.4 Retention of security classifications.

The retention of security classification markings shall be in accordance with DOD information security program instructions/directives. The project or organization business rules shall identify the latest instructions/directives at time of contract award. (JS-094)

5.9.1.5 Marking of security classification.

Security classifications shall be marked in accordance with DOD information security program instructions/directives. The project or organization business rules shall identify the latest instructions/directives at time of contract award. (JS-095) As of the release of this update, current document for marking of classification is DODM 5200.01, volumes 1-4.

5.9.2 Project decisions.

5.9.2.1 For official use only.

The project shall determine the use of the protective marking "FOR OFFICIAL USE ONLY (FOUO)" for non-COMSEC publications.

5.9.2.2 Caveats.

Security code words applied to security classifications shall be defined within the project.

5.9.2.3 Use of export control.

Projects shall decide whether export control regulations apply in accordance with DOD information security program instructions/directives. The project or organization business rules shall identify the latest instructions/directives at time of contract award. (JS-023) As of the release of this update, current document for export control notice is DODI 5230.24.

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5.9.2.4 Use of the element **<exportControl>**.

Projects shall decide the export control statement (using the element **<exportControl>** within **<restrictionInstructions>**) as directed by DOD information security program instructions/directives. The project or organization business rules shall identify the latest instructions/directives at time of contract award. (JS-023). As of the release of this update, current document for export control notice is DODI 5230.24.

5.10 S1000D Chapter 3.7 – Information generation – Quality assurance.

5.10.1 Army business rules.

5.10.1.1 Final delivery of unverified data modules.

Final delivery to the customer shall not include unverified data modules. At a minimum, **<qualityAssurance>** shall be **<firstVerification>** (first verification or validation). (JS-005)

5.10.1.2 Verification rules.

The project verification rules shall comply with AMC-P 25-31.

5.10.1.3 Exchange of draft data modules.

See JS-106 in paragraph 5.16.1.2. (JS-108)

5.10.2 Project decisions.

5.10.2.1 Degree of the application of Quality Assurance (QA).

The project shall decide the degree of the application of QA.

5.10.2.2 Decide on which type of first verification to use.

The project shall decide which of the types of first verification are applied to data modules/technical publications.

5.10.2.3 Decide on the appropriate review cycle process.

The project shall decide on the most appropriate review cycle processes and procedures.

5.10.2.4 In process review.

The project shall determine the use of an in process review.

5.10.2.5 Applicability.

The project shall decide if it is permitted to differentiate QA information depending on product configuration.

5.10.2.6 Draft delivery of unverified data modules.

For other than final delivery, draft data modules (i.e., inwork not equal to "00") may only be exchanged for purposes of validation/verification and for other purposes expressly specified by the project office. (JS-006)

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5.11 S1000D Chapter 3.9.1 – Authoring – General writing rules.

5.11.1 Army business rules.

5.11.1.1 Descriptive text.

Explanatory, descriptive, or theoretical text shall not contain procedures.

5.11.1.2 Simple word order.

Narrative text (nonprocedural) will be written using simple word order (subject, verb, object) to the extent possible. Modifiers, including prepositional phrases, will be as close as possible to the word modified. Simple word order will ordinarily be used for description and discussion statements such as warnings, cautions, and notes.

5.11.1.3 Repeating information.

Duplicating information (i.e., authoring more than once) is discouraged. If it is necessary to repeat information to ensure completeness, references should be used to the maximum extent possible.

5.11.1.4 Neutral terms.

Technical data shall make no reference to age, gender, race, or national origin. Use gender neutral terms. Terms such as "midshipman" and "workman" are considered gender neutral. Terms such as male and female connectors, pins, etc., are acceptable.

5.11.1.5 National Stock Number (NSN) and part numbers.

NSN and part numbers are allowed in tables and lists. NSN and part numbers are prohibited in illustrations. NSN and part numbers are allowed in narrative text only when necessary for identification and parts ordering. When used, NSN and part numbers shall be referenced to the corresponding parts information data module.

5.11.1.6 Military terms.

Military terms used shall be in accordance with Joint Publication (JP) 1-02, or any approved dictionary or glossary of Army military terms.

5.11.1.7 Nomenclature.

Unless specified otherwise by the acquiring activity, only approved names and official nomenclature shall be used. Official nomenclature shall be the nomenclature used in the FEDLOG H6 listing (https://www.dlis.dla.mil/h6/search/aspx). If the acquiring activity approves unofficial nomenclature (common name), an appropriate nomenclature cross-reference list shall be prepared for the manual and placed in the general information data module. Shortened versions of the approved nomenclature are not considered deviations. Approved nomenclature shall be used wherever the use of a common name might be ambiguous.

5.11.1.8 Terminology data base.

The project shall produce a terminology database or project glossary containing all product-specific maintenance terminology. A list of abbreviations shall be included.

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5.11.1.9 Abbreviations.

The first use of abbreviations and acronyms within each data module shall have the word(s) spelled out completely with the abbreviation or acronym in parentheses immediately after the word(s). Acronyms such as "PMCS" shall be in all capital letters and shall contain no spaces or periods but abbreviations such as U.S., etc, e.g., etc may contain periods.

a. Acronyms, abbreviations, and unusual terms may be used in any data module text, when applicable.

b. Abbreviations and acronyms that are accepted as words (radar, sonar, laser, etc.) need not be spelled out completely.

c. All abbreviations and acronyms used in the publication, including those in tables or figures, shall be defined in the "list of abbreviations/acronyms" paragraph of the general data module (IC/V 010A).

d. Use of abbreviations and acronyms shall follow the following criteria:

(1) Common abbreviations and acronyms shall be taken from ASME Y14.38.
(2) DOD unique abbreviations and acronyms shall be taken from JP 1.02.
(3) Army abbreviations and acronyms shall be taken from https://www.rmda.army.mil/abbreviation.
(4) Any new abbreviations and acronyms shall be developed in accordance with AR 25-30.

e. When abbreviations or acronyms are used as markings on the equipment (placarding), the same abbreviations or acronyms shall be used in the manual.

f. When directed by the acquiring activity, the spelled-out version of the acronym or abbreviation can be displayed using a mouse-over technique or a link to the acronyms, abbreviations, and uncommon terms. Abbreviations may be plural (s) or possessive ('s).

5.11.1.10 Grammar and writing.

When using Standard American English, the U.S. Government Printing Office Style Manual (GP 1.23/4: ST 9/2008) shall be used as a general guide for Standard American English usage and punctuation. To determine and convey the proper spelling and meaning of words, the current version of Webster's International Dictionary of the English Language shall be used. (JS-007)

5.11.1.11 Use of equations.

The use of equations shall be held to the minimum use required by the needs of the user.

5.11.1.12 Language.

Data modules shall be produced in English.

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5.11.1.13 Proprietary names.

Trade names, copyrighted names, or other proprietary names applying exclusively to the product of one company shall not be used unless the items cannot be adequately described because of the technical involvement, construction, or composition. In such instances, lone, and if possible, several commercial products shall be listed, followed by the words "or equal." The same shall apply to manufacturers' part numbers or drawing numbers for minor parts where it is impractical to specify the exact requirements. If possible, the particular characteristics required for the "or equal" products shall be defined.

5.11.1.14 Advertising.

Publication material shall not contain advertising matter.

5.11.1.15 Special marking.

5.11.1.15.1 Nuclear hardness (Hardness-Critical Processes) marking.

All Hardness-Critical Processes shall be preceded with the acronym HCP (**`itemCharacteristic="ic01"`**), refer to 5.48.1.16. The acronym shall be prepared in boldface type and in the same style and size as the adjacent text. The acronym shall not be shown with the titles in the table of contents. Use of the acronym is as follows:

a. When the entire task and all subordinate paragraphs and steps relate to establishing nuclear hardness, the value of the attribute **`independentCheck`** on the element **`<mainProcedure>`** shall be "**`HCP`**" and the acronym HCP shall precede the task title (e.g., HCP DISASSEMBLY). This is necessary because the element **`<mainProcedure>`** does not have an attribute **`itemCharacteristic`**.
b. When the entire task and all subordinate paragraphs and steps do not contribute to establishing nuclear hardness, only those that do contribute shall be annotated with the acronym HCP. For example:

   "SERVICING
   1. _____
   2. HCP _____"
c. Operating or maintenance actions which could degrade hardness, but which are not directly involved in establishing nuclear hardness, shall not be annotated with the acronym, but shall be preceded by a caution.

5.11.1.15.2 Electrostatic Discharge (ESD) sensitive marking.

All paragraphs addressing handling or maintenance which could damage ESD sensitive parts shall be marked with the acronym ESD as shown in the following (**`itemCharacteristic="ic02"`**), refer to 5.48.1.16. The acronym shall be prepared in boldface type and in the same style and size as the adjacent text. The acronym shall not be shown with the titles in the table of contents. Use of the acronym is described in the following list:

a. When the entire task and all subordinate paragraphs and steps relate to ESD sensitive parts, the value of the attribute **`independentCheck`** on the element **`<mainProcedure>`** shall be "**`ESD`**" and the acronym ESD shall precede the task title (e.g., ESD DISASSEMBLY). This is necessary because the element **`<mainProcedure>`** does not have an attribute **`itemCharacteristic`**.

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b. When the entire task and subordinate paragraphs and steps are not directly related to ESD sensitive parts, only those which do apply shall be annotated with the acronym ESD. For example:

"REMOVAL

1. _____

2. ESD _____"

c. Handling or maintenance actions which could damage ESD sensitive parts, but which are not directly related to handling or maintenance of ESD sensitive parts, shall not be annotated with the acronym ESD, but shall be preceded by a caution.

d. Mark figures, drawings, and schematics with the ESD acronym in accordance with MIL-STD-1686.

5.11.1.15.3 Quality Assurance (QA).

Depot and aviation maintenance procedures, which have a QA impact, shall be identified by the acronym QA in boldface letters preceding the text (**`itemCharacteristic="ic03"`**), refer to 5.48.1.16. Only procedures at the step level shall be labeled with QA. For example:

"1. QA _____"

5.11.2 Project decisions.

5.11.2.1 Simplified Technical English.

The project shall decide whether to require the use of Simplified Technical English or not.

5.11.2.2 Measurements.

The project shall determine the primary and secondary units of measure for the technical publications including lubrication orders for their system/equipment.

NOTE

There is an error in S1000D Issue 4.0 regarding units of measure. The following text, to replace paragraph 2.5 in Chapter 3.9.1, was erroneously omitted from the specification:

"Units of measurement

Projects must determine the standard of measurement used (e.g., International System (SI) units, Imperial units, or U.S. customary units). The standard of measurement selected (the primary units) must be used consistently throughout all data modules for a given project. If the equipment, instrument, or tool, etc., is calibrated in alternate units, these must be presented as the primary units.

If an additional unit of measurement is selected by the project, the primary units must be followed by the secondary unit conversion in brackets [( )] unless the equipment, instrument, or tool, etc., is calibrated in the secondary units. In that case, the equipment-specific units must be presented first, followed by the primary units in brackets.

Any conversion necessary is to be rounded up or down to a corresponding number of significant figures. The one exception to this rule is the case of Nautical Miles."

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5.12 S1000D Chapter 3.9.2 – Authoring – Illustration rules and multimedia.

5.12.1 Army business rules.

None.

5.12.2 Project decisions.

5.12.2.1 Scope of printable data.

The project shall determine which parts of the documentation need to be printable.

5.12.2.2 Multimedia technologies and environment.

The project shall agree to the multimedia technologies used and the expected environment in which they will operate.

5.13 S1000D Chapter 3.9.2.1 – Illustration rules and multimedia – Illustrations, General.

5.13.1 Army business rules.

5.13.1.1 Illustration and multimedia scope.

Only uncommon or unusual uses and connections for test purposes shall be illustrated if it is essential to do so to avoid misunderstanding. Unusual operations shall also be illustrated. Special tools and test equipment shall be illustrated, as applicable. Standard tools and test equipment shall not be illustrated, nor shall self-evident or generally known uses be shown.

5.13.1.2 Digital graphic formats.

Use digital graphic formats that are native to a web browser such as Joint Photographers Experts Group (JPEG) or Graphics Interchange Format (GIF). The JPEG format is preferred for half-tone images and photographs. For print purposes, provide 150 or 300 dots per inch (dpi) resolution.

5.13.1.3 Use of human figures.

When necessary, illustrations may include parts of the human body such as a hand, arm, leg or foot. The human figure shall not contain any information that can identify the person including a face, rank insignia, identification numbers, unit/company/brigade patches, medals/wings, etc. Jewelry shall not appear in any illustration. The human figure shall not be permitted to obscure details of the equipment necessary for a complete understanding of its operation. The human figure shall be clothed as designated by the acquiring activity. A cross section of races and genders shall be used.

5.13.1.4 Procedural data in figures.

Figures shall not contain procedural steps. (JS-091)

5.13.1.5 Credit lines.

The photographer's or illustrator's name shall not appear on any illustration. A manufacturer's name, symbol, or trademark shall not appear on illustrations for the purpose of identifying the illustration.

5.13.1.6 Multisheet illustrations.

Multisheet illustrations may be used to clarify, identify significant features, or further detail equipment assemblies, subassemblies, and detailed parts.

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5.13.1.7 Placement.

Illustrations are placed as close as possible, immediately above or below, to the supporting text or the procedural step or group of steps. Whenever possible, place illustrations on the same or facing page of associated text. Illustrations may float on a page to reduce the white space on a page.

5.13.1.8 Landscape.

When inserting a figure into a publication in the horizontal (landscape) position, the preferred method is that the figure number and title is located at the bottom of the page as it exists before rotation.

5.13.1.9 Graphics size options.

Size options for graphics are full page, 1/2 page, 1/4 page, and 1/8 page.

5.13.1.10 Symbols.

All nonstandard symbols shall be defined in the list of abbreviations and acronyms contained in the General Information portion of the TM. New symbols shall not duplicate those presently listed in ASTM-F856 where possible.

5.13.1.11 Graphics in tables.

Use symbol to present graphics in a table. In S1000D, symbol is defined as "illustrations presented without a figure reference line and the information control number. The symbols may be presented inline with regular text."

5.13.1.12 Engineering drawings (**DMWR/NMWR only**).

Engineering drawings may be used with the approval of the acquiring activity. Engineering drawings are controlled documents and when used, they shall be used in their entirety, without modification. They shall be reduced or redrawn to meet page size restrictions. When the controlled elements of an engineering drawing (i.e., title block, sources of supply, revision data, etc.) are removed, leaving only the "field" of the drawing, it is treated as a typical line drawing.

5.13.1.13 Scale.

Graphics should be displayed to a scale at least as large as its designated minimum size so that all essential detail is legible. Ensure the graphical resolution is high enough that details of enlarged views (zoom-in) are legible.

5.13.1.14 Leader lines.

Leader lines shall be uniform, short, and as straight as possible; avoid the use of dogleg-shaped lines unless absolutely necessary. Arrowheads may be added for clarity. Do not allow leader lines to touch the callout. Do not allow arrowheads to enter the object to which they apply. If it is necessary to enter the object to provide for greater clarity, a break off symbol shall be used in lieu of an arrowhead.

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5.13.1.15 Index numbers.

Index numbers shall start with Arabic numeral 1 and continue consecutively within an illustration. For multisheet illustrations, index numbers continue in sequence from one sheet to another. The attribute "**applicationStructure**" shall be populated with the applicable callout (index number).

5.13.1.16 Index number order.

When index numbers are used to locate and identify equipment components or parts, the index numbers shall be presented of the following ways:

a. Assigned in clockwise sequence (beginning at 11 o'clock). This is the preferred method.

b. In inspection or disassembly/assembly order.

c. In the order mentioned in the text

d. If the manual is an IETP which is fully hotspotted and it will never be printed, index numbers may be omitted.

5.13.1.16A Nomenclature callouts. Nomenclature callouts may be used to identify items on a graphic. When used, they should follow the guidance below:

a. Nomenclature callouts should only be used for graphics with a small number of callouts (generally no more than 10). If there is a larger number of callouts (generally more than 10), numerical callouts (index numbers) should be used to avoid overcrowding and degrading readability.

b. Nomenclature callouts if used should not make the graphic look crowded or cluttered. They should be clear and easy to read.

c. When using nomenclature callouts, type size should not be reduced to accommodate more callouts. Reducing type size will degrade readability. Type size should be no smaller than 8 points.

5.13.1.17 Identification of significant features.

Index numbers, reference designators, nomenclature, leader lines, sweep arrows, legends, and other identifiers shall be used, when necessary, to identify significant features.

5.13.1.18 Index numbers and nomenclature.

Both index numbers and nomenclature can be used in the same document. However, they shall not be used together in the same illustration.

5.13.1.19 Index numbers in multisheet illustrations.

Within a multisheet illustration, if an item already assigned an index number is used in more than one illustration in that multisheet illustration, it shall retain the same index number.

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5.13.1.20 Legends.

Illustrations shall not contain legends. If a legend is required, it shall only be prepared using appropriate XML markup.

5.13.1.21 Cartoons.

Cartoon-type drawings and other similar visual techniques shall not be used.

5.13.1.22 Illustrations and graphs – Air crew manuals.

5.13.1.22.1 General.

Illustration formats shall be as specified by the acquiring activity in accordance with AR 25-30. Line drawings (black lines on white background) shall be used throughout the publication/IETP. Illustrations, including diagrams and schematics, shall be clear, simple, and complete, and shall contain all necessary callouts to support the text. The number of callouts on a single illustration or a single sheet of a multi-sheet illustration shall be 25 or less. If more than 25 callouts are required, the total number required shall be equally divided between two identical or similar illustrations. Broadsides (illustrations that have been turned 90 degrees on the page) shall not be used.

5.13.1.22.2 Lettering.

Lettering and type on original artwork shall be well-defined and large enough to be easily read when the illustration is reproduced at page size. Lettering and type shall be in capital letters. The minimum font size shall be eight point type. Spacing of letters and words shall be controlled to ensure clear, legible copy.

5.13.1.22.3 Keys for illustrations.

Keys shall, when feasible, be included on the illustration. Where keys are too numerous or the explanations too lengthy to fit within the illustration cropped area without crowding, they shall be placed in tabular form immediately above or below the illustration or on the facing page. These tables shall be considered as a text function.

5.13.1.22.4 Presenting data graphically.

Unless otherwise specified by the acquiring activity, data that includes more than three variables shall be presented graphically. Data with three variables shall be presented graphically if it represents continuous data (for example, torque available as a function of altitude and temperature).

5.13.1.22.5 Explanatory text.

A brief explanation shall be provided for each graphic presentation including, but not limited to, description, purpose, procedure for use, applicable conditions, and effects of their variations.

5.13.1.22.6 Priorities.

Unless otherwise specified by the acquiring activity, the following order of priorities shall be followed while preparing graphical presentations:

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a. Minimize the possibility of user mistakes.
b. Cover the full applicable range of data. Unless data ranges are specified in the illustration requirements of this standard, the maximum probable ranges to be expected in operation shall be used. MIL-HDBK-310 can be used for reference for ranges of climatic data.
c. Provide adequate accuracy. The graphical presentation shall be readable over all ranges of the data. It shall also duplicate the source data to at least one percent of the applicable range of the parameter (for example, a free air temperature range from -60°C to +50°C should be readable to at least 1°C).
d. Clarity and ease of use. Each graph shall be designed to directly provide the most commonly used parameters (for example, torque required to hover at known conditions of altitude, temperature, weight, and skid height). Less often used information, such as maximum temperature to hover at a given weight and altitude, shall be obtainable with additional effort.
e. Place the graphs on the minimal number of pages, consistent with the importance of clarity and ease of use.
f. General appearance, cost, and ease of production shall be given consideration, but only as three of the lesser priorities.

5.13.1.22.7 Titles for graphs.

Titles for graphs shall be the most succinct title that adequately indicates the nature of the graphical data.

5.13.1.22.8 Condition heading.

The range, parameter name, and units of each condition that apply to the data shall be listed with each condition separated. When abstract conditions (for example, clean configuration forward Center of Gravity (CG)) are used, they shall be described in detail and/or quantified in the accompanying text. Conditions that apply to more than three similar graphs shall be listed only on the first example and shall be referred to on all subsequent graphs in the series. General aircraft or system limits shall not be listed. Any condition known not to affect the data shall not be listed. The effect of variation of each listed condition on the data shall be discussed in the text. If the effect of condition variation is not known and cannot be estimated, it shall be so stated in the text. General conditions (for example, rigging, instrument errors, fuel types, etc.) applicable to all data in a chapter shall be discussed in a paragraph titled "General Conditions" which shall appear near the beginning of the chapter: The information in the "General Conditions" paragraph shall not be repeated on the graphs within the chapter.

5.13.1.22.9 Sub-graphs.

For some graphical data, it may be desirable to include separate sub-graphs with data on the same general subject. Titles and conditions differing from the main conditions shall be given for the sub-graphs.

5.13.1.22.10 Notes.

Notes should not be used on graphs. Notes may be placed on areas adjacent to charts, when absolutely necessary, in order to prevent misuse or misinterpretation of the data. If the note does not fit this condition, it should appear in the text.

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5.13.1.22.11 Data basis.

Data basis information shall include data type (for example, flight test, estimated, etc.) and each actual data source document used to compute the data presented.

5.13.1.22.12 Examples.

An example shall be provided on the graphical data to demonstrate primary use of each type of graph. If there are two equally important uses of the charts, a maximum of two examples may be presented on the graph. Additional examples (text only) of other uses or methods of use of the data, where applicable, shall be included in explanatory text. These examples shall be in the same format as those with the graphical data.

5.13.1.22.13 Example text.

The example text shall be clear yet succinct. Omit articles, conjunctions, prepositions, etc. Wanted parameter names shall only be used. A maximum of three parameters shall be used. If more wanted parameters are available, use additional examples in the explanatory text to explain them. Use one line each to list known parameters and values. If the known parameter value is obtained from elsewhere in the manual, or the source is not evident, parenthetically (below known parameter line) describe the most probable source, such as "from example 1" or "computed from winds aloft." The method for using the graph shall be described using one line per distinct step. Known values shall not be repeated in the method. If needed or useful intermediate values are obtained using the method, these values shall be stated. The example text shall be located on the left side of the graphical data. If multiple examples are used; each example shall be sequentially numbered using Roman numerals (for example, EXAMPLE I, EXAMPLE II, etc.). If a single example is used, it shall be identified by the heading "EXAMPLE."

5.13.1.22.14 Example values.

Example values shall be chosen to represent reasonably critical conditions. Standard and absolute extreme conditions shall not be used. If restricted or special conditions are shown on the chart, the example values shall be chosen to illustrate their effect. Values shall be chosen to require graphical interpolation on every parameter.

5.13.1.22.15 Scaling.

Scale and data line increments shall conform to the rule of 1, 2, 5, or 10 minor divisions per major division, except as noted here. The preferred scale grid shall be five minor divisions per major division along each axis. Ten division grids are undesirable and shall be used only when absolutely necessary. Four division grids shall be used only with the permission of the acquiring activity (6.2). Asymmetrical (4 * 5) grids are permitted. For highly nonlinear variations approximately equal increments of the dependent variable(s) shall be used. The minimal minor grid spacing shall be six points, unless otherwise specified by the acquiring activity.

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5.13.1.22.16 Units.

Each parameter on the graph and its corresponding unit of measure shall be those most commonly used for the subject aircraft. If the parameter is available on an aircraft indicator, the units used on the graph shall be the same as those on the indicator. If the parameter is not on an aircraft indicator, the units used shall be the same as those of the most often used source of the data. In some instances, two nearly equal common units may be in use or a transition may be in progress from an older model to a newer model. When this occurs, the primary unit of measure shall be that associated with the new model. Where practicable, the primary unit shall be used on the primary scale and the unit associated with the older model shall be presented on a (redundant) secondary scale. When scales or data include negative values, + and - prefixes shall be used with all numbers for that parameter. For data values on the graph, brackets shall be used around the prefixes.

5.13.1.22.17 Data range.

The data range presented shall cover the full applicable range of data. Scales shall extend to the next major division beyond the extreme or limit value(s) and no further, unless specified by the acquiring activity.

5.13.1.22.18 Grid.

The grid shall correspond to the primary scales. Grids shall be prepared to the graphical line standards.

5.13.1.22.19 Scales.

The scale title shall include the parameter name and units of measure. When used, multipliers shall be included with the units (for example, GROSS WEIGHT - pounds *1000). Multipliers shall be used only to meet specific illustration requirements in this specification for values with three zeros or more, or when significant improvement in the appearance of the graph would result. Resulting fractional values (for example, GROSS WEIGHT - 1000 pounds = 20.2) shall be avoided. Secondary scales should be located on the opposite side of the grid from the primary scale. Scale numbers shall be used for each major, or every other (most even value) major, scale increment, unless the secondary scale corresponds to markings on an aircraft indicator. In this case, the increment and value labeling shall be the same as those on the indicator.

5.13.1.22.20 Data lines and label values.

Labels for data lines shall include the parameter name, multiplier, if any, units, and corresponding value. They shall be located approximately at the midpoint of, and oriented parallel to, the data line, as read from the bottom of graph. Labels shall minimally obscure the grids. Data line labels and values shall be located according to the following order of preference:

a. Parallel centered interrupting the line, alternately staggered to avoid masking a continuous area of the grid (shall be used for primary data line numbers).
b. At the end of, and parallel to, the data line (suitable for secondary data lines).
c. Adjacent and parallel to the data line (suitable for secondary data lines).
d. Outside the data lines with leader lines to each data line (suitable for secondary data lines).

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5.13.1.22.21 Primary data lines.

Primary data lines shall be prepared in accordance with TABLE I and TABLE II. Scales shall be chosen so that the mid-range of approximately linear data are oriented at approximately 45°. Increments shall be chosen so that the majority of the data lines are separated by at least one minor grid width and no more than one major grid width. Converging data lines shall be truncated (alternately) when the separation decreases to ½-1 minor grid spacing, so that actual convergence does not occur.

5.13.1.22.22 Secondary data lines.

Operating limits, restricted operating conditions, and optimum, recommended, or critical operating conditions shall be depicted, as applicable, on each graph. Secondary data lines shall be prepared in accordance with TABLE I and TABLE II.

TABLE I. Graphical line standards.

	Use	Color	Length	Width	Remarks
1.	Primary Data	Black	To limits or operational range	1 0 .00	Most even value Alternate lines Use if increments change
2.	Grid Lines	Grey	Correspond to Primary scales	0 00	Major increments Minor increments
3.	Transfer Grid	Grey	1/3 to 1 major grid	0.00	Direction of transfer only
4.	Grid Border	Black	Primary scale length	1	Over outside grid
5.	Primary Scale Tick Marks	Black	1/2 to 1 minor grid division	1	Inside grid border major grid only
6.	Secondary Scale Tick Marks	Black	As required	0 (Major) 00 (Minor)	Outside grid border
7.	Limit Lines	Black	As required	1	
8.	Maximum Performance or Recommended Operation	Black	As required	1 0	Major lines Use if multiple lines
9.	Restricted or Time Limited Operation	Grey	As required	00 (Border shaded)	Shaded area with black border line

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TABLE I. Graphical line standards - Cont

Use	Color	Length	Width	Remarks	
10.	Extrapolated Data	Black Dashed	As required	1, 0, 00	Use for data beyond source data conditions
11.	Beyond Limit Data	Black Dashed	As required	1, 0, 00	Use for data beyond operating limits to aid interpolation

TABLE II. Line definitions.

Weight [1]	Number [2]	Width inches	Width millimeters
Very Fine	000	0.004	0.1
Fine	00	0.008	0.2
Medium	0	0.012	0.3
Heavy	1	0.016	0.4
Very Heavy	2	0.020	0.5
Dashed: 5 to 10 x width line lengths, 3 to 5 x width gap space			
Dotted: 1 to 2 x width line lengths, 2 to 3 x width gap space			

NOTES: 1 Line weight requirements apply to the final printed product. A 20% deviation is allowed; however, deviation on any page should be in the same direction.

2 Corresponds to Rapidograph pen numbering system.

5.13.1.22.23 Layout and sizing.

Scales and grid size shall be chosen to take maximum advantage of the available space to provide the most easily read graph, consistent with the previously specified range and readability requirements. Several single graphs on the same general subject may be included on a single page. For sequential graphs, the following requirements apply. The general layout shall have the example text near the upper left corner of the page. The first step graph shall be near the upper right corner. The sequence shall be for the user to enter on left of first graph, move right, reflect down at right angles, reflect left, and reflect down, etc., until the primary wanted parameter is read out on the final scale. A transfer grid (in the direction of transfer only) shall be provided between each step graph. Intermediate parameters may be provided on secondary scales by continuing through the reflector data lines or by reflecting in the opposite direction to the primary direction.

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5.13.1.22.24 Original graphical data designs.

For original (sequential) graphical designs, the following requirements also apply:

a. Each "known" parameter shall be used only once in the sequence, unless its use will simplify a procedure.
b. The sequence shall proceed from the best-known (or most certain) parameter to the least certain parameter consistent with technical requirements.
c. Each sequential stop shall reflect at right angles (90° parameter transfers only). "Paralleling" data transfers shall be avoided.

5.13.2 Project decisions.

5.13.2.1 Portrait.

For ease of reading and cross-reference, the preferred layout is portrait (IPD illustrations shall always be in portrait layout). Fold-outs or landscape shall only be allowed as exceptions, as defined in the project business rules.

5.13.2.2 Case.

The project shall decide on the use of sentence case or uppercase for text annotation.

5.13.2.3 Schematics.

The project shall decide if schematics derived from engineering drawings shall include the original drawing number and revision status within the illustration area.

5.14 S1000D Chapter 3.9.2.2 – Illustration rules and multimedia – Navigation and configuration.

5.14.1 Army business rules.

5.14.1.1 Hotspot explanation.

When hotspot techniques are used in conjunction with callouts, an explanation shall be provided in the "how to use" portion of the IETP.

5.14.1.2 Nested hotspots.

Hotspots shall not be nested.

5.14.1.3 Figure title.

The figure title format shall:

a. Include "Figure" in title case, followed by the figure number, a period, two spaces, and the title. (For example, "Figure 3. Fuel Indicator.")
b. Capitalize the first letter of the first and each major word of the title.
c. End with a period following the last word.
d. Identify illustrations applicable to one Service in a joint service TM. (For example, "Figure 3. Fuel Indicator (Army Only).")
e. Identify illustrations applicable to more than one Service in a joint service TM. (For example, "Figure 3. Indicator (Army and Air Force Only).")
f. When too long to fit on one line, align the second line with the first letter of the title.

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5.14.1.4 Multiple appearances of an assembly.

When an identical assembly appears subsequent times, the assembly item name shall appear in the description and shall be followed by the statement "See FIG ## FOR BREAKDOWN."

5.14.1.5 Figure numbers.

Figure numbers shall be included for all illustrations except inline graphics (example equation). Figures shall be numbered using Arabic numbers sequentially within each data module starting with the Arabic numeral 1. The figure number shall precede the title.

5.14.1.6 Identical parts in same figure.

Identical parts (same part number) appearing in a figure (illustration) shall have the same item number.

5.14.1.7 References.

Reference shall be made to parts on diagrams by enough of their description or reference designator to identify the item.

5.14.2 Project decisions.

None.

5.15 S1000D Chapter 3.9.2.3 – Illustration rules and multimedia – Use of color and photographs.

5.15.1 Army business rules.

5.15.1.1 Use of photographic illustrations.

Photographic illustrations shall not be used unless prior approval has been obtained from the acquiring activity. Photographs shall not be used in foldouts. (JS-008)

5.15.1.2 Digital photographs.

All photographs, regardless of source, shall be delivered as digital photographs. The acquiring activity shall determine acceptability of photographs and usage of line drawings.

5.15.2 Project decisions.

5.15.2.1 Color.

Unless specified otherwise by the acquiring activity, black and shades of black (one color) shall be used for paper publications. Prior approval for color will be obtained by the acquiring activity from the Logistics Support Activity (LOGSA). The acquiring activity will provide written approval, designating color(s) to be used. The use of some colors may not be appropriate for certain environmental conditions.

5.15.2.2 Photographs.

Photographic illustrations may be used only when prior approval has been obtained from the acquiring activity.

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5.16 S1000D Chapter 3.9.2.4 – Illustration rules and multimedia – Multimedia, General.

5.16.1 Army business rules.

5.16.1.1 Classified data files.

Audio and video shall not convey classified data.

5.16.1.2 Use of the attribute **`autoPlay`**.

Projects shall not use the attribute **`autoPlay`** on **`<multimediaObject>`**. (JS-106)

5.16.2 Project decisions.

5.16.2.1 General.

Audio, video clips and animations are not played automatically. The multimedia player is activated through a hotspot, inline with the narrative, or resident in a separate pane. Audio, video clips and animations are manually started by pressing "PLAY" on a multimedia player or plug-in control panel. Developers need to ensure that the technician can use the multimedia format being delivered.

5.16.2.2 Use of three-dimensional (3-D) illustrations.

The project shall decide if 3-D illustrations may be used, and if so for what purposes.

5.17 S1000D Chapter 3.9.3 – Authoring – Warnings, cautions and notes.

5.17.1 Army business rules.

5.17.1.1 Tank or reservoir.

The warnings and cautions to observe in servicing a particular tank or reservoir shall be stated clearly.

5.17.1.1A Definitions. Refer to Section 3 of this standard for definitions of warning, caution, and note.

5.17.1.2 Header.

When a warning, caution, or note consists of two or more paragraphs, the header WARNING, CAUTION, or NOTE shall not be repeated above each paragraph.

5.17.1.3 Page breaks.

Layout shall not result in warnings, cautions, and notes divided so first lines of text or groups of icons appear on one page and remaining lines or groups of icons on another page. Layout shall avoid warnings, cautions, and notes being placed on a different page than the paragraph to which they apply.

5.17.1.4 Warnings in separate data modules.

Delivered data modules with procedures that require warnings shall not reference warnings in a separate data module. Delivered data modules shall contain the warning content. (JS-010)

5.17.1.5 Cautions in separate data modules.

Delivered data modules with procedures that require cautions shall not reference cautions in a separate data module. Delivered data modules shall contain the caution content. (JS-011)

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5.17.1.6 Notes in separate data modules.

Delivered data modules that require notes shall not reference notes in a separate data module. Delivered data modules shall contain the note content. (JS-012)

5.17.1.7 Vital.

The attribute **`vitalWarningFlag`** on the element **`<warning>`** shall not be used.

5.17.1.8 First aid.

Warnings shall include basic first aid instructions/guidance in the event of exposure/injury.

5.17.1.9 Descriptive text.

Warnings and cautions shall not be used in descriptive data, except in the case of a publication's warning summary. (JS-009)

5.17.1.10 Use of notes.

Notes may be used in any data module type allowed by the schema.

5.17.1.11 Placement of notes.

Notes shall follow the title and precede the associated text.

5.17.1.12 Indenture.

Warning, caution, and note text shall be indented on the right and left.

5.17.1.13 Grouping alerts.

Warnings, cautions, and notes that pertain to the same task, procedure, or step(s) shall be grouped under respective headings. When grouping warnings, cautions, and notes, each shall be separated by at least one line and shall be bulleted and unnumbered. Multiple warnings shall be grouped first, followed by caution(s), and followed by note(s). If an individual warning, caution, or note contains multiple paragraphs, subsequent paragraphs shall not be bulleted.

5.17.1.14 Safety conditions.

The warnings and cautions listed in safety conditions (element **`<safetyRqmts>`**) of preliminary requirements shall include and be limited to only those safety conditions that must be met before the task is carried out (i.e., shall not be a general summary of all warnings and cautions contained with the procedure).

5.17.1.15 General warnings as individual data modules.

General warnings and cautions (e.g., safety summary) shall be prepared as individual data modules (IC 012) only as directed by these business rules and the content selection matrices located in A.5.

5.17.1.16 Use of attribute **`warningType`**.

The attribute **`warningType`** is allowed and shall only be used to indicate a warning for a procedural step that contains a critical safety item (CSI) (refer to 5.86.4.1.10.1).

5.17.1.17 Use of attribute **`cautionType`**.

The attribute **`cautionType`** shall not be used.

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5.17.1.18 Use of attribute **`noteType`**.

The attribute **`noteType`** shall not be used.

5.17.1.19 Warnings and cautions collections.

The use of the element **`<warningsAndCautions>`** (warning and caution collection) is disallowed. (JS-092)

5.17.1.20 Notes content.

A note shall be used to highlight essential information, conditions, or statements or convey important instructional data to the user. Notes shall not contain procedural steps and shall not be used to insert steps to avoid renumbering. Notes shall not be used for filtering. Notes shall not contain references to figures. Notes shall not contain references to steps except to indicate the steps that the note applies to when it applies to multiple steps.

5.17.2 Project decisions.

None.

5.18 S1000D Chapter 3.9.4 – Authoring – Front matter.

5.18.1 Army business rules.

5.18.1.1 Use of list of effective pages.

Publications shall not have a List of Effective Pages. (JS-014)

5.18.1.2 List of effective data modules content.

The List of Effective Data Modules (LOEDM) shall contain data module code, title, data module sequence number, and issue number. (JS-015)

5.18.2 Project decisions.

5.18.2.1 Use of the extended highlight data module.

The project shall decide whether to use an extended highlight data module or not.

5.19 S1000D Chapter 3.9.5.1 – Data modules – Identification and status section.

5.19.1 Army business rules.

5.19.1.1 Information name.

Use of the element **`<infoName>`** is mandatory. (JS-016)

5.19.1.2 Alternate information names.

The alternate Army information names provided in APPENDIX B shall be used with the corresponding information codes. All project-specific, or additional, information names shall be coordinated with LOGSA to ensure consistency across the Army.

5.19.1.3 Language.

The attribute **`languageIsoCode`** shall be set to English ("**`en`**") or Simplified Technical English ("**`sx`**") and the attribute **`countryIsoCode`** value shall be set to the United States ("**`US`**").

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5.19.1.4 Security classification element.

The attributes **`securityClassification`** and caveat on the element **`<security>`** shall contain the overall classification of the publication or data module as specified in DOD information security program instructions/directives. The project or organization business rules shall identify the latest instructions/directives at time of contract award. (JS-017) As the release of this update, the current document for security classification is DODM 5200.01, volumes 1-4.

5.19.1.5 Classification values.

Refer to 5.48.1.29.

5.19.1.6 North Atlantic Treaty Organization (NATO) classified data.

Foreign and NATO classified data shall not be used. (JS-018)

5.19.1.6A Use of the element **`<restrictionInstructions>`**.

The child elements of **`<restrictionInstructions>`** shall be used as directed by the applicable business rules for each child element, i.e., JS-022, JS-023, JS-024, JS-025, and JS-026. (JS-096)

5.19.1.6B Use of the element **`<restrictionInfo>`**.

The child elements of **`<restrictionInfo>`** shall be used as directed by the applicable business rules for each child element, i.e., JS-020, JS-021, and JS-029. (JS-097)

5.19.1.7 Data restrictions.

The optional element **`<dataRestrictions>`** shall be used for all publication modules and data modules. (JS-019)

5.19.1.7.1 Data distribution element.

The element **`<dataDistribution>`** within **`<restrictionInstructions>`** shall contain the appropriate distribution statement as selected from DOD information security program instructions/directives. The project or organization business rules shall identify the latest instructions/directives at time of contract award. (JS-022) As of this update, the current document for distribution statements is DODI 5230.24.

5.19.1.7.2 Export control.

Projects shall decide whether export control regulations apply in accordance with DOD information security program instructions/directives. The project or organization business rules shall identify the latest instructions/directives at time of contract award. (JS-023) As of this update, the current documents for export control are DODD 5230.25 and DODI 5230.24.

5.19.1.7.3 Handling.

Because handling information is typically presented as part of the export control notice and the destruction notice, the element **`<dataHandling>`** within **`<restrictionInstructions>`** shall not be used unless specified by the acquiring activity. (JS-026)

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5.19.1.7.4 Destruction notice element.

The element **<dataDestruction>** within **<restrictionInstructions>** shall contain the appropriate destruction notice as specified in DOD information security program instructions/directives. The project or organization business rules shall identify the latest instructions/directives at time of contract award. (JS-024)

5.19.1.7.4A Destruction notice.

For classified and unclassified Army documents, the element **<dataDestruction>** within **<restrictionInstructions>** shall contain the following text "Destroy by any means possible to prevent disclosure of contents or reconstruction of the document. Classified data must also be compliant with DODD 5220.22-M and DODM 5200.01, volumes 1-4."

5.19.1.7.5 Disclosure.

Because disclosure information is typically presented as part of the export control notice and the destruction notice, the element **<dataDisclosure>** within **<restrictionInstructions>** shall not be used unless specified by the acquiring activity. (JS-025)

5.19.1.7.6 Copyrighted material.

Publications should not contain copyrighted material except as specified in the Federal Acquisition Regulations (FAR) and Defense Federal Acquisition Regulation (DFAR) Supplement. When copyrighted or proprietary material is included in a publication, the author shall obtain prior written permission from the copyright owner or authorized agent for its use. The signed, written permission shall contain a statement declaring whether or not a copyright credit line is required. When a copyright credit line is required, the following information shall appear in the element **<copyright>** of the data module:

> "This document contains copyright or proprietary materials. Infringement of copyright or proprietary material may violate existing Federal laws and statutes and result in criminal penalties, imprisonment, or removal from office." (JS-029)

5.19.1.7.6.1 Lists in copyright statement.

If random lists are used in the element **<copyright>**, they shall contain only one level.

5.19.1.7.7 Policy statement element.

If required, the element **<policyStatement>** within **<restrictionInfo>** within **<dataRestrictions>** within **<pmStatus>** shall contain the classification source and reason for classification for the publication as specified in DOD information security program instructions/directives. The project or organization business rules shall identify the latest instructions/directives at time of contract award. (JS-020) As of the release of this update, the current document is DODM 5200.01, volumes 1-4.

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5.19.1.7.8 Data conditions element.

The element **<dataConds>** within **<restrictionInfo>** within **<dataRestrictions>** within **<pmStatus>** shall contain declassification and downgrade instructions for the publication as specified in DOD information security program instructions/directives. The project or organization business rules shall identify the latest instructions/directives at time of contract award. (JS-021) As of the release of this update the current document for declassification and downgrade is DODM 5200.01, volumes 1-4.

5.19.1.8 Originator Commercial and Government Entity (CAGE) values.

The project shall define a list of acceptable originator CAGE values. If the attribute **originatorName** is used, values shall also be included in the list.

5.19.1.9 Element **<authorityNotes>** with the element **<techStandard>**.

If **<techStandard>** is used, and there are no notes, projects shall populate the element **<authorityNotes>** in **<techStandard>** with the following text, "None." (JS-030)

5.19.1.10 Business Rules EXchange (BREX).

The project shall develop and use a project-specific set of business rules and, to that effect, develop their own BREX data module. The Project BREX shall use the layered BREX concept to extend the Army BREX. Project business rules shall not supersede or contradict Army business rules.

5.19.1.11 Element **<reasonForUpdate>** and change packages.

Reason for update **(<reasonForUpdate>)** shall be used (for all issues after 001) and it shall include the reasons for updates for each changed data module in the latest change package. It shall also include textual references to all appropriate reason for update documentation (e.g., engineering change proposals). (JS-027)

5.19.1.12 Element **<reasonForUpdate>** and highlights.

Reason for update (element **<reasonForUpdate>**) shall be used to automatically generate a highlights data module. It shall be used from issue "**002**" upwards.

5.19.1.13 Availability statement and general purpose notices.

The availability statement and any general purpose notices that apply to the entire publication shall be populated using the **<remarks>** element of the publication module. The availability statement shall be used **for DMWR/NMWR only**.

5.19.1.14 Content of **<supersedure>**.

When a publication is revised, a supersedure notice shall be included and an asterisk (*) shall prefix the supersedure notice and the Publication Module Code (PMC).

5.19.1.15 Publication title page.

Publication title pages shall be generated from the meta data contained in the publication module identification and status section.

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5.19.1.16 Element **<logo>**.

The use of **<logo>** is prohibited. (JS-098)

5.19.1.17 Skill level.

The element **<skillLevel>** (within element **<dmstatus>**) shall not be used.

5.19.1.18 Element **<productSafety>**.

Use of the element **<productSafety>** is prohibited. (JS-100)

5.19.1.18.1 Use of the attribute **safetyLabel**.

See JS 100, para 5.19.1.18. (JS-101)

5.19.1.19 Second verification.

Second verification (element **<secondVerification>** on element **<qualityAssurance>**) is mandatory for final delivery.

5.19.1.20 Issue type.

Use of the attribute **issueType** is mandatory.

5.19.1.21 Element **<funcitonalItem Code>**.

The element **<functionalItemCode>** is used to identify the FGC of the repair parts list. This is identified in the identification and status section and shall be populated for all parts data modules.

5.19.2 Project decisions.

5.19.2.1 Exchange of draft data modules within the project.

The project shall decide whether to allow the exchange of draft data modules or not.

5.19.2.2 Issue date.

The definition of the issue date for data modules is to be determined by the project in its business rules. This can be, for example, the input date (i.e., the release to Common Source Database (CSDB) date), or the cut-off date for the information.

5.19.2.3 Data module code extension.

The project shall decide if the extended data module identification scheme has to be applied to achieve unique data module instance identities.

5.19.2.4 Define a list of Commercial and Government Entity (CAGE) codes.

If the data module code extension is used, the project shall define a list of allowed CAGECs that can be used to populate the attribute **extensionProducer**.

5.19.2.5 Deleted data module retention.

The project shall decide on the length of time that they retain changed and deleted data modules.

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5.19.2.6 Responsible Partner Company (RPC) Commercial and Government Entity (CAGE) values.

Projects shall define a list of acceptable RPC CAGE values. Values shall also be included in the RPC list. RPC CAGE and RPC name shall be typed exactly as in the RPC list given in the business rules.

5.19.2.7 Originator Commercial and Government Entity (CAGE) values.

The project shall define a list of acceptable originator CAGE values. If the attribute **`enterpriseCode`** is used, values shall also be included in the list. Refer to 5.69.1.5.

5.19.2.8 Originator name.

The project shall decide the use of the element **`<enterpriseName>`** within the element **`<originator>`**. If used, then its use shall be consistent and made mandatory for the whole project. Refer to 5.69.1.5.

5.19.2.9 Applicability.

The project shall decide on how applicability is to be used. The project shall decide on the population of the elements and attributes of applicability and shall then enforce its consistency.

5.19.2.10 Technical standard.

Project shall decide the use of the element **`<techStandard>`**. If used, it shall be used consistently throughout the entire project.

5.19.2.10.1 Technical standard, details.

If used, the project shall decide the use of publications base line and authority exceptions within the element **`<techStandard>`**. The project shall decide the use of case, space, and punctuation with regard to **`<techStandard>`**.

5.19.2.11 Authority information values.

The project shall define the authority information values and their use shall be consistent for the whole project.

5.19.2.12 The element **`<authorityNotes>`**.

If used, the project shall decide on suitable entries for the element **`<authorityNotes>`**. Refer to 5.19.1.9.

5.19.2.13 Use of applicability information.

The project shall decide whether to use applicability on QA information.

5.19.2.14 System breakdown or functional breakdown codes.

The project shall decide on whether or not to use one of the elements **`<systemBreakdownCode>`** and **`<functionalItemRef>`**. When deciding the use of these elements, projects shall establish consistent population.

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5.19.2.15 Use of the attribute **`functionalItemNumber`** within the element **`<functionalItemRef>`**.

The project shall decide how attribute **`functionalItemNumber`** is to be populated when the element **`<functionalItemRef>`** is used.

5.19.2.16 Use of manufacturer code within the element **`<functionalItemRef>`**.

The project shall decide if attribute **`manufacturerCodeValue`** is used and the required contexts, when using the element **`<functionalItemRef>`**.

5.19.2.17 Standard reasons for update.

The project shall define standard reason for update sentences to be used.

5.19.2.18 Reason for update and the production process.

The project shall decide on whether the element **`<reasonForUpdate>`** is to be used during the production process.

5.19.2.19 Use of applicability information.

The project shall decide if it is permitted to differentiate reasons for update depending on Product configuration.

5.19.2.20 Definition of safety label attributes.

The project shall decide what safety label attributes to use and what their definitions are. Refer to 5.19.1.18.

5.19.2.21 Use of applicability information.

The project shall decide if it is permitted to differentiate general remarks depending on Product configuration.

5.20 S1000D Chapter 3.9.5.2.1.1 – Common constructs – Change marking.

5.20.1 Army business rules.

5.20.1.1 Deletion content.

Deleted content shall be marked accordingly within the data module. Content marked as deleted shall not be rendered for print or display. (JS-033)

5.20.1.2 Use of the attribute **`updateReasonType`**.

The attribute **`updateReasonType`** shall be used for each change in a data module.

5.20.2 Project decisions.

5.20.2.1 Use of the cross-reference method for the reason for update.

The project shall decide whether or not to use the cross-reference method for linking changes to reasons for update. The method used shall be applied consistently in the project.

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5.20.2.2 Types of changes to mark up.

The project shall decide if the update reason types (attribute **updateReasonType**) "**urt01**" (Editorial change), "**urt03**" (Markup change), and "**urt04**" (Applicability change) are to be used. Irrespective of the decision made, all projects shall follow the rules that change markers should only be included if the change is a technical change ("**urt02**"), and editorial changes shall not be marked. Further, no change markers shall appear if the issue type is not changed.

5.20.2.3 Definition of project-specific change types.

The project shall decide if any of the project-configurable attributes (values "**urt56**" to "**urt99**") are to be used on the element **<reasonForUpdate>**. The project shall apply meanings for them to ensure they are consistently used in the project.

5.20.2.4 Format of reason for update identifiers.

The project shall define and document a format for reason for update identifiers (for example: "**rfu-001**").

5.20.2.5 Standard statements for reason for update.

The project shall decide whether to use "standard reason for update" statements or not.

5.20.2.6 Use of reason for update.

The project shall decide on the use of reason for update which can be used to automatically generate the highlights data module.

5.20.2.7 Use of reason for update in conjunction with the production process.

The project shall decide if the element **<reasonForUpdate>** is to be used during the production process.

5.20.2.8 Use of applicability information.

The project shall decide if it is permitted to differentiate reasons for update depending on product configuration.

5.20.2.9 Use of the attribute **id** on the element **<changeInline>**.

The project shall decide if the attribute **id** is allowed to be used on the element **<changeInline>**. The purpose of the attribute shall be defined and it is considered good practice to define a format of the identifier.

5.20.2.10 Modify and add change markers.

The project shall decide the use of "**modify**" and "**add**" change markers.

5.20.2.11 Use of the value "**modify**."

Use of the value "**modify**" and the value "**add**" in change markers shall be consistent across the project. The rules for use shall be specified in the Project or the Organization's business rules documentation.

5.20.2.12 Display of change markings in tables.

The project shall decide if change markings are to be displayed for parts of a table; for page-oriented output, the change is displayed next to the row that contains the change.

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5.20.2.13 Relationship between the element **<reasonForAmendment>** and the element **<reasonForUpdate>**.

The project shall decide if the reason for amendment details for a figure (or the individual illustration sheets of a multi-sheet figure) are also reflected in the data module status element **<reasonForUpdate>** and subsequently used in the generation of the highlights data module.

5.20.2.14 Recording reason for amendment.

The project shall decide if the reason for amendment is to be recorded in addition to the reason for update. The use of "standard reason for amendment" statements should be considered.

5.20.2.15 Change attributes on individual sheets of a multi-sheet figure.

The project shall decide if change attributes are allowed on individual sheets of a multi-sheet figure.

5.21 S1000D Chapter 3.9.5.2.1.2 – Common constructs – Referencing.

5.21.1 Army business rules.

5.21.1.1 Minimum cross reference.

If a figure, table, paragraph, or step is referenced, the element **<internalRef>** shall be used to link to the target element. (JS-035)

5.21.1.2 Internal reference.

The element **<internalRef>** shall be used for all internal references. See 5.32.1.4 for the list of all referenceable objects. (JS-035)

5.21.1.3 Use of the attribute **internalRefTargetType**.

The attribute **internalRefTargetType** shall be used to identify the link type and to display captions as needed (e.g., "Fig," "Table").

5.21.1.4 Linking to list items.

A list item shall not be the destination of a link.

5.21.1.5 Presentation of cross references.

Cross references shall use the following type wording "(See Figure 1.)". The verb in the cross-reference statement (e.g., “See”, “Repeat”, “Skip”) shall be manually authored. If appropriate, the label (e.g.' “Figure”, “Para”, “Step”) shall be generated from the target element (e.g., **<levelledPara>** = “Para”) to avoid any risk of misidentification.. The number shall be auto-generated during the publication process. (JS-036)

5.21.1.6 Use of the element **<internalRef>** in titles.

Titles shall not contain references. (JS-103)

5.21.1.7 Data module references.

The element **<dmRef>** shall always include **<dmTitle>**. The element **<language>** shall not be used. For data module references in technical manual content, the elements **<issueInfo>** and **<issuedate>** shall not be used. For data module references in other contexts, such as front matter and publication modules, the elements **<issueInfo>** and **<issueDate>** are allowed.

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5.21.1.8 Use of the element **<dmRefAddressItems>**.

The element **<dmRefAddressItems>** shall be used.

5.21.1.9 Use of the element **<dmTitle>**.

The element **<dmTitle>** shall be used and shall contain the title of the referenced data module.

5.21.1.10 Publication module references.

The element **<pmRef>** shall include **<pmCode>** and **<pmTitle>** but shall not include any other authored information, e.g., **<issueInfo>** and **<issueDate>**, of the referenced publication module. (JS-102).

5.21.1.11 Use of the element **<pmRefAddressItems>**.

The element **<pmRefAddressItems>** shall be used.

5.21.1.12 Use of the element **<pmTitle>**.

The element **<pmTitle>** shall be used and shall contain the title of the referenced publication module.

5.21.1.13 External publication references.

The element **<externalPubRef>** shall include the element **<externalPubTitle>** and the element **<externalPubCode>**. All other information is optional.

5.21.1.14 Use of the element **<externalPubTitle>**.

The element **<externalPubTitle>** shall be used.

5.21.1.15 Use of the element **<behavior>**.

The element **<behavior>** shall not be used in any **<refs>** child elements.

5.21.1.16 Use of other information in data module references.

The data module reference shall not contain issue date, in-work numbers, language, or country codes, except in the case as used in front matter.

5.21.1.17 DELETED.

5.21.1.18 Use of cross-references from titles.

Refer to 5.21.1.6 (JS-104)

5.21.1.19 Element **<internalRef>** destination title when addressing graphical objects.

The use of the attribute **targetTitle** of element **<internalRef>** is prohibited.

5.21.1.20 Text in **<internalRef>** when addressing graphical objects.

Text is prohibited within the element **<internalRef>.**

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5.21.1.21 Format of cross-references.

The prefixes listed in TABLE IIA below shall be used for the attributes **`id`** and **`internalRefId`**.

TABLE IIA. Allowable prefixes for attributes `id` and `internalRefId`.

Prefix	Target Element
fig	Figures and alternates
tab	Tables
mma	Multimedia and alternatives
sup	Supplies
seq	Support equipment
spa	Spares
par	Levelled paragraphs and alternates
stp	Steps of procedure, fault isolation, etc. and alternatives
gra	Graphics (multiple sheets)
mmo	Multimedia objects
hot	Hotspots (e.g., fig-001-hot-002)
pme	Parameters
mat	Single material or material sets

5.21.2 Project decisions.

5.21.2.1 Use and format of the attribute **`referredFragment`** of element **`<dmRef>`**.

The project shall decide on the use of the attribute **`referredFragment`**. The project shall state in the business rules when **`referredFragment`** will be used and shall list the precautions if it is used.

5.21.2.2 Referenced technical publications.

The project shall decide the format of the referenced technical publications. For example, reference technical publications should be listed by their number, then a dash followed by the title. The project shall create business rules for this and shall define the use of punctuation.

5.21.2.3 Element **`<internalRef>`** target when addressing graphical objects.

The project shall decide the use of the optional attribute **`referredFragment`** of element **`<internalRef>`**.

5.21.2.4 DELETED.

5.21.2.5 DELETED.

5.21.2.6 Use of the element **`<externalPubIssueInfo>`**.

The project shall decide the use of the element **`<externalPubIssueInfo>`** and its child element **`<externalPubIssue>`**.

5.21.2.7 Use of the element **`<externalPubRefAddressItems>`**.

The project shall decide the use of the element **`<externalPubRefAddressItems>`**.

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5.21.2.8 Use of the element **<shortExternalPubTitle>**.

The project shall decide the use of the element **<shortExternalPubTitle>**.

5.22 S1000D Chapter 3.9.5.2.1.3 – Common constructs – Lists.

5.22.1 Army business rules.

5.22.1.1 Use of titles.

It is not required that titles be consistently used for lists. The project may decide on a case-by-case basis whether an individual list shall require a title.

5.22.1.2 Use of the definition list header.

It is not required that headers be consistently used for definition lists. The project may decide on a case-by-case basis whether an individual definition list shall require a header or not.

5.22.2 Project decisions.

5.22.2.1 Simple or unordered lists.

For random lists, the project shall define the use of simple and unordered lists.

5.23 S1000D Chapter 3.9.5.2.1.4 – Common constructs – Caption Groups.

5.23.1 Army business rules.

5.23.1.1 Caption group.

The optional element **<captionGroup>** shall not be used.

5.23.2 Project decisions.

5.23.2.1 Caption attributes.

Captions are used to describe the appearance of actual controls and indicators and present them within the technical data. If the element **<caption>** is used, the project shall decide applicable values for the following presentation attributes.

a. How to encode the attribute **systemIdentCode** if used.
b. Whether the attribute **tableOfContentType** is required.
c. If in-line captions affect the text line spacing.
d. If element **<captionLine>** text color should be adjusted depending on the caption color.

The presentation in the publication/IETP should match the equipment appearance/presentation as closely as possible.

5.24 S1000D Chapter 3.9.5.2.1.5 – Common constructs – Titles.

5.24.1 Army business rules.

5.24.1.1 Data module titles.

The data module title shall be derived from the element **<techName>** and the element **<infoName>** separated by a hyphen [-] surrounded by blanks. They shall be presented together as centerhead No. 1. (JS-067).

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5.24.1.2 Step titles.

Procedural steps shall not have titles.

5.24.1.3 Elements requiring a title.

When used, the elements **`<figure>`**, **`<multimedia>`**, and **`<levelledPara>`** shall include a **`<title>`**. All other elements which allow a title shall be decided by project office or organization decision. (JS-105)

5.24.2 Project decisions.

5.24.2.1 Use of titles.

The project shall decide on use of titles for elements other than **`<figure>`**, **`<multimedia>`**, and **`<levelledPara>`** (e.g.: attentionSequentialList, checkListInfo, checkListProcedure, commonInfo, commonInfoDescrPara, crewDrill, crewRefCard, definitionList, dialog, dialogGroup, maintAllocation, message, randomList, remarksList, sbTopic, sequentialList, subCrewDrill, table, toolsList.)

5.25 S1000D Chapter 3.9.5.2.1.6 – Common constructs – Tables.

5.25.1 Army business rules.

5.25.1.1 Graphics in tables.

The **`<graphic>`** branch of the element **`<table>`** shall not be used.

5.25.1.2 Table presentation settings.

The project shall apply the Continuous Acquisition and Life-cycle Support (CALS) table attributes **`frame`**, **`orient`**, **`pgwide`**, **`colsep`**, **`rowsep`**, etc., where they are appropriate, so that the table is displayed in accordance with the basic presentation styles given in S1000D Chapter 6.2.3 and these business rules. The presentation system shall faithfully render the tables using the presentation attributes found in the table.

5.25.2 Project decisions.

5.25.2.1 Table foldouts.

The project shall decide the use of the element **`<foldout>`** for tables.

5.25.2.2 Use of applicability information.

The project shall decide if the indication of applicability information is permitted on various table sub-elements depending on the Product configuration. If permitted, then the project shall also decide on the use of the attribute **`applicRefId`** for this purpose.

5.26 S1000D Chapter 3.9.5.2.1.7 – Common constructs – Figures and foldouts.

5.26.1 Army business rules.

None.

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5.26.2 Project decisions.

5.26.2.1 Use of applicability.

The project shall decide whether and how to use the attribute **applicRefId** for complete figures and illustration sheets.

5.26.2.2 Decide on the format of the entries in the legend.

The project shall define:

a. whether the text in the legend is in sentence case, upper case, or mixed case.
b. whether or not the element **<listItemTerm>** is to contain a leading zero when using callout/item numbers.
c. how hotspots are to be used.

5.26.2.3 Use of foldout.

The project shall decide whether the element **<foldout>** is used for IETP.

5.27 S1000D Chapter 3.9.5.2.1.8 – Common constructs – Hotspots.

5.27.1 Army business rules.

5.27.1.1 Use of attribute **hotspotTitle**.

The attribute **hotspotTitle** shall be populated with a human readable label that can be used as a tool tip.

5.27.1.2 Use of hotspots.

Hotspots may be used. Nested hotspots shall not be used. Raster graphics may have hotspots.

5.27.1.3 Hotspots for figures.

Figures containing callouts (or index numbers) that require hotspots shall include the element **<hotspot>** for each callout (or index number) depicted in the figure. When the figure source is a CGM, the attributes **applicationStructureIdent**, **applicationStructureName**, and **hotspotType** shall be populated.

5.27.1.4 Use of the attribute **applicatonStructureName** in CGM hotspot.

The attribute **applicationStructureName** on the element **<hotspot>** shall be populated with the corresponding callout (or index number). In CGM, the attributes value shall be the exact text of the callout on the graphic.

5.27.1.5 Use of the attribute **hotspotType**.

The attribute **hotspotType** shall be populated with one of the following (lowercase) values in TABLE IIB below:

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TABLE IIB. Values for the attribute `hotspotType`.

Value	When to use
callout	For a hotspot that indicates a reference to another hotspot on the graphic providing additional detail
detail	Used as identifier for a group of items that provide additional detail for a referencing callout
item	The identifier for a specific item on an illustration

5.27.1.6 Creation of generic hotspots.

Generic hotspots shall be created as follows:

a. The attribute **`id`** shall be structured using a fig-gra-hot sequence (e.g., <hotspot id="fig-0001-gra-00002-hot-00001">).

b. The attribute **`applicationStructureName`** of the element **`<hotspot>`** shall be obtained from the attribute **`applicationStructureName`** of the hotspot object defined in the CGM graphic. For **`<hotspot>`** elements that identify the same object within a **`<figure>`** (including multi-sheet figures using multiple **`<graphic>`** child elements), the **`applicationStructureName`** attribute within the CGM shall be identical. When developing CGM graphics, the **`applicationStructureName`** shall match the callout (the text, number, or letter) on the illustration.)

c. The attribute **`hotspotType`** shall identify the type of hotspot (item, callout, or detail). (e.g., <hotspot id="fig-0001-gra-00002-hot-00001" applicationStructureName="28" hotspotType="item"> or <hotspot id="fig-0001-gra-00001-hot-00009" applicationStructureName="A" hotspotType="callout">).

5.27.1.7 Use of hyperlinks.

Hyperlinks are required in IPD DMs from **`<hotspot>`**-to-**`ItemNo`**, **`ItemNo`**-to-**`<hotspot>`** and **`<hotspot>`**-to- **`<hotspot>`**. To enable each type of hyperlink, the cross referencing elements shall be constructed as follows:

a. To create a link from **`<hotspot>`**-to-**`ItemNo`**, the element **`<catalogSeqNumberRef>`** shall include the attribute **`catalogSeqNumberValue`** equal to the **`catalogSeqNumberValue`** of the intended target (e.g., <catalogSeqNumberRef catalogSeqNumberValue ="2505021B 009 "/> would link to <catalogSeqNumber catalogSeqNumberValue="2505021B 009 "> in the [tabular] list of parts items.)

b. To create a link from **`ItemNo`**-to- **`<hotspot>`**, the element **`<internalRef>`** shall include the attribute **`internalRefId`** equal to the id of the intended target (e.g., <catalogSeqNumber catalogSeqNumberValue="2505021B 001 " …><internalRef internalRefId="fig-0001-gra-00001-hot-00003" internalRefTargetType="hotspot"/> would link to the hotspot <hotspot id="fig-0001-gra-00001-hot-00003" applicationStructureName="1" hotspotType="item">.)

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c. To create a link from **<hotspot>**-to- **<hotspot>**, the element **<internalRef>** shall include the attribute **internalRefId** equal to the id of the destination **<hotspot>** (e.g., <internalRef internalRefId="fig-0001-gra-00002-hot-00032"/>). A **<hotspot>** with **hotspotType** "callout" shall cross reference their corresponding **<hotspot>** with **hotspotType** "detail". It is not required that **<hotspot>** with a **hotspotType**=”detail” link to their corresponding **<hotspot>** with **hotspotType**=”callout”.)

5.27.2 Project decisions.

5.27.2.1 Use of hotspots.

The project shall decide whether or not to use hotspots.

5.28 S1000D Chapter 3.9.5.2.1.9 – Common constructs – Preliminary requirements and requirements after job completion.

5.28.1 Army business rules.

5.28.1.1 Test equipment and tools setup information.

Test equipment and tools setup information shall be listed in support equipment (element **<reqSuportEquips>**) of preliminary requirements (element **<preliminaryRqmts>**).

5.28.1.2 Materials and parts setup information.

Materials and parts setup information shall not be combined. These shall be marked up as supplies (element **<reqSupplies>**) and spares (element **<reqSpares>**) of preliminary requirements.

5.28.1.3 References in preliminary requirements.

References that require the maintainer to physically obtain the reference material shall be documented in **<reqTechInfoGroup>**. References that only recap where additional information may be found shall be documented in the element **<refs>** prior to preliminary requirements.

5.28.1.4 Personnel.

The attribute **numRequired** on the element **<personnel>** shall be used when the number of personnel of a certain skill or category is necessary to perform the maintenance action.

5.28.1.5 Required persons.

The element **<reqPersons>** (and its child element **<personnel>**) shall be included, but not populated when it is not necessary to specify skill but only to indicate persons required ("As required").

5.28.1.6 Person.

The element **<person>** shall not be used.

5.28.1.7 Use of the element **<taskDuration>**.

The attribute **procedureDuration** of the element **<taskDuration>** shall be used to author elapsed time to complete a task. The attributes **startupDuration** and **closeupDuration** shall be authored by project decision.

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5.28.1.8 Man-Hours.

The element **<estimatedTime>** of the element **<personnel>** shall be used to author man-hours for a task.

5.28.1.9 National Stock Number (NSN).

NSNs shall not be used in preliminary requirements.

5.28.1.10 Use of the element **<partAndSerialNumber>**.

The element **<partAndSerialNumber>** shall not be used.

5.28.2 Project decisions.

5.28.2.1 Production management data.

The project shall decide whether or not to use the element **<productionMaintData>**.

5.28.2.2 Use of the element **<thresholdInterval>**.

The project shall decide whether or not to use element **<thresholdInterval>**.

5.28.2.3 Use of the element **<zoneRef>**.

The project shall decide whether or not to use the element **<zoneRef>** and how to use it.

5.28.2.4 Use of the element **<accessPointRef>**.

The project shall decide whether or not to use the element **<accessPointRef>** and how to use it.

5.28.2.5 Use of the attribute **lsarData**.

The project shall decide whether or not to use the attribute **lsarData**.

5.28.2.6 Use of the element **<workArea>**.

The project shall decide whether or not to use the element **<workArea>** and how to use it. If used, projects shall decide which data module types will use it.

5.28.2.7 Use of the attributes **startupDuration** and **closeupDuration**.

The project shall decide if and how the attributes **startupDuration** and **closeupDuration** shall be used.

5.28.2.8 Use of the attribute **reqCondCategory**.

The project shall decide the use of the attribute **reqCondCategory** (refer to 5.48.1.25).

5.28.2.9 Use of list of the element **<reqCondCircuitBreaker>**.

The project shall decide if a circuit breaker list is to be considered as part of preliminary conditions and thus the use of the element or if the circuit breaker settings are part of the steps.

5.28.2.10 Values for the attribute **personCategoryCode**.

The project shall define a list of categories (e.g., Electrician, Propulsion Engineer, Maintainer).

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5.28.2.11 Trade codes.

The project shall define a list of trades/trade codes.

5.28.2.12 Use of the element **<reqTechInfo>**.

The project shall decide whether or not to use the element **<reqTechInfo>**.

5.28.2.13 When to use the element **<reqTechInfo>**.

The project shall decide when to use the element **<reqTechInfo>**.

5.28.2.14 Listing of common and standard tools.

The project shall decide what types of common and standard tools or toolkits are to be identified and listed.

5.28.2.15 Use of the attribute **internalRefId** of element **<internalRef>** and the attribute **id** on element **<supportEquipDescr>**.

The project shall decide to make use of cross-references from the procedure to the support equipment listed in preliminary requirements. The attribute **internalRefId** on element **<internalRef>** and the attribute **id** on element **<supportEquipDescr>** are used to establish the link between the two and will guarantee consistent identification throughout the procedure. The use of cross-references is encouraged.

5.28.2.16 Use of identification.

The project shall decide which elements to use for identification and how to populate these elements.

5.28.2.17 Use of the attribute **internalRefId** of element **<internalRef>** and the attribute **id** on element **<supplyDescr>**.

The project shall decide to make use of cross-references from the procedure to the supplies listed in preliminary requirements. The attribute **internalRefId** on element **<internalRef>** and the attribute **id** on element **<supplyDescr>** are used to establish the link between the two and will guarantee consistent identification throughout the procedure. The use of cross-references is encouraged.

5.28.2.18 Use of the attribute **internalRefId** of element **<internalRef>** and the attribute **id** on element **<spareDescr>**.

The project shall decide to make use of cross-references from the procedure to the spares listed in preliminary requirements. The attribute **internalRefId** on element **<internalRef>** and the attribute **id** on element **<spareDescr>** are used to establish the link between the two and will guarantee consistent identification throughout the procedure. The use of cross-references is encouraged.

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5.29 S1000D Chapter 3.9.5.2.1.10 – Common constructs – Text elements.

5.29.1 Army business rules.

5.29.1.1 Size and scale of symbols.

Symbols used in inline text shall be large enough to be readable yet no larger than two times the line spacing within the normal text. (JS-037)

5.29.1.2 Footnotes.

Footnotes shall not be used in regular text. Footnotes are allowed in tables.

5.29.1.3 Use of the element **<inlineSignificantData>**.

The element **<inlineSignificantData>** shall not be used to identify an item that can be styled with existing tags.

5.29.1.4 Miscellaneous significant paragraph data.

The value definition "miscellaneous" (or anything similar) for **significantParaDataType** is prohibited.

5.29.2 Project decisions.

5.29.2.1 Index.

The project shall decide whether an index is required and to what level indexing should be made.

5.29.2.2 Subscript.

The project shall determine the use of the element **<subScript>**.

5.29.2.3 Superscript.

The project shall determine the use of the element **<superScript>**.

5.29.2.4 Acronym.

The project shall decide the use of the optional element **<acronym>**.

5.29.2.5 Use of attribute **verbatimStyle**.

The project shall decide the use of the available values for the attribute **verbatimStyle** (refer to 5.48.1.40) and allocate suitable definitions to them in the project or organization business rules.

5.29.2.6 Types of inline significant data to markup.

If using paragraph significant data markup, the project shall decide which types of data to mark up and in what contexts. Refer to 5.48.1.30 for values for the attribute **significantParaDataType**.

5.29.2.7 Level of implementation.

The project shall decide whether to use quantity data markup and to what extent it is used.

5.29.2.8 Types of quantity data to markup.

If using quantity data markup, the project shall decide which types of data to mark up and in what contexts.

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5.29.2.9 Use of unit of measure.

If using the value and tolerance decomposition, the project shall decide at which level of the markup that the unit of measure is to be applied.

5.29.2.10 Types of unit of measure.

If using the value and tolerance decomposition, the project shall decide which unit of measure types to allow.

5.29.2.11 Circuit breaker.

The project shall decide if a circuit breaker list is to be considered as part of preliminary conditions and thus the use of the element **`<reqCondCircuitBreaker>`** or if the circuit breaker settings are part of the steps. In the latter, the element **`<circuitBreakerDescrGroup>`** in steps content can be used.

5.29.2.12 Circuit breaker attributes.

The project shall decide whether to use the attributes **`circuitBreakerAction`** and **`checkSum`**. If the attribute **`checkSum`** is used, the project shall decide how it is to be populated. If the attribute **`circuitBreakerAction`** is used, the project shall establish writing rules to ensure that authors will be consistent in paragraph text and the value of the attribute itself.

5.29.2.13 Zones and access points.

The project shall decide whether or not to use the element **`<zoneRef>`** and the element **`<accessPointRef>`**.

5.29.2.14 Footnote marker type.

The project shall determine the type of footnote marker to be used.

5.29.2.15 Use of the attribute **`controlIndicatorNumber`**.

The project shall decide whether or not to use the attribute **`controlIndicatorNumber`**.

5.30 S1000D Chapter 3.9.5.2.1.11 – Common constructs – Controlled content.

5.30.1 Army business rules.

5.30.1.1 Use of controlled content.

The attributes **`authorityName`** and **`authorityDocument`** shall not be used.

5.30.2 Project decisions.

None.

5.31 S1000D Chapter 3.9.5.2.1.12 – Common constructs – Common information.

5.31.1 Army business rules.

5.31.1.1 Use of common information.

The element **`<commonInfo>`** shall be used when it is necessary to provide data to the user that applies to the entire data module.

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5.31.1.2 Markup method for common information.

The element **<commonInfo>** has one branch that contains **<note>**, **<para>**, and **<commonInfoDescrPara>** and one branch that contains only **<commonInfoDescrPara>**. The branch containing **<note>**, **<para>**, and **<commonInfoDescrPara>** shall not be used.

5.31.2 Project decisions.

None.

5.32 S1000D Chapter 3.9.5.2.2 – Content section – Descriptive information.

5.32.1 Army business rules.

5.32.1.1 Granularity.

The granularity of data modules shall be consistent with the granularity implied by the content selection matrices in A.5.

5.32.1.2 Paragraph depth.

Paragraph depth shall be limited to a primary paragraph plus four subparagraph levels.

5.32.1.3 Warnings and cautions.

Warnings and cautions shall not be used in descriptive data, except in the case of a publication's safety summary (e.g., IC 012J). (JS-009)

5.32.1.4 Use of the attribute **id**.

The use of the attribute **id** is required on the following items:

a. **<figure>**
b. **<graphic>**
c. **<table>**
d. **<levelledPara>**
e. **<proceduralStep>** and **<crewDrillStep>**
f. **<multimedia>**
g. **<multimediaObject>**

The attribute **id** values shall be unique within a data module. Projects may determine attribute **id** value format. (JS-038).

5.32.1.5 Additional Army requirements for attribute **id**.

For Army publications, the attribute **id** shall be used on the following items:

a. **<supportEquipDescr>**

b. **<supplyDescr>**

c. **<spareDescr>**

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5.32.2 Project decisions.

5.32.2.1 Single subparagraphs.

The schema allows for a single subparagraph under a parent. The project shall decide whether to allow this breakdown in their descriptive data modules or to insist on a minimum of two subparagraphs.

5.33 S1000D Chapter 3.9.5.2.3 – Content section – Procedural information.

5.33.1 Army business rules.

5.33.1.1 Step titles.

Steps shall not have titles.

5.33.1.2 Single step numbering.

A single step shall not be numbered.

5.33.1.3 Skill levels.

Only the defined values are allowed for the attribute **`skillLevelCode`**. Refer to 5.48.1.31.

5.33.1.4 Use of the optional attribute **`keepWithNext`**.

The attribute **`keepWithNext`** shall be used as appropriate.

5.33.1.5 Use of the optional attribute **`itemCharacteristic`**.

The attribute **`itemCharacteristic`** shall be used as appropriate.

5.33.2 Project decisions.

5.33.2.1 Use of the optional element **`<commonInfo>`**.

The project shall decide whether or not to use the element **`<commonInfo>`**, when to use the element, and give guidance and rules that will ensure it is consistently used.

5.33.2.2 Check.

The project shall decide whether or not to use the attribute **`independentCheck`** and how to use it.

5.33.2.3 Skill levels.

The project shall decide whether or not to use the attribute **`skillLevelCode`** and how to use it.

5.33.2.4 Maximum number of step levels.

The project shall decide on the maximum step levels allowed.

5.33.2.5 Use of single sub-step.

The schema allows for a single sub-step under a parent. The project shall decide whether to allow this breakdown in their procedural data modules or to insist on a minimum of two sub-steps.

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5.34 S1000D Chapter 3.9.5.2.4 – Content section – Fault information.

5.34.1 Army business rules.

5.34.1.1 Step titles.

Steps shall not have titles.

5.34.1.2 Skill levels.

Only the defined values are allowed for the attribute **skillLevelCode**. Refer to 5.48.1.31.

5.34.1.3 Preliminary requirements.

To avoid duplication, the element **<preliminaryRequirements>** shall not be used in the **<faultIsolation>** structure as it is required in the **<isolationProcedure>** structure.

5.34.2 Project decisions.

5.34.2.1 Use of correlation.

The project shall decide whether to use the correlated fault concept or not.

5.34.2.2 Correlated fault messages and warnings.

The project shall decide how to populate element **<warningMalfunction>**, element **<assocWarningMalfunction>**, and element **<bitMessage>** when using the correlated fault concept.

5.34.2.3 Population of detection and description information elements.

The project shall decide whether or not the repetition of the detection and description information for the basic fault which has been correlated (element **<faultDescr>** and element **<detectionInfo>**) is used.

5.34.2.4 Single fault isolation data module.

The project shall decide whether all isolation procedures should be kept in a single data module for an item or fault or whether to refer out to other data modules.

5.34.2.5 Use of attribute **skillLevelCode**.

The project shall decide whether or not to use the attribute **skillLevelCode** in the element **<isolationProcedure>**, the element **<isolationStep>**, and the element **<isolationProcedureEnd>**. Refer to 5.48.1.31.

5.34.2.6 Use of attribute **independentCheck**.

The project shall decide whether or not to use the attribute **independentCheck** in the element **<isolationProcedure>**, the element **<isolationStep>**, and the element **<isolationProcedureEnd>**.

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5.35 S1000D Chapter 3.9.5.2.5 – Content section – Maintenance planning information.

5.35.1 Army business rules.

5.35.1.1 Use of the element **<maintPlanning>**.

The element **<maintPlanning>** allows for several branch options. Only the use of **<commonInfo>**, **<maintAllocation>**, **<toolsList>**, and **<remarksList>** is allowed. The **<preliminaryRqmts>**, **<inspectionDefinition>**, **<taskDefinition>**, and **<timeLimitInfo>** branches of the schedule data module shall not be used.

5.35.1.2 Use of the element **<commonInfo>**.

If needed, introductory information shall be included by the use the element **<commonInfo>**.

5.35.1.3 Use of the element **<componentAssy>**.

The element **<componentAssy>** shall be used only within the element **<componentAssyGroup>** and not in a separate branch.

5.35.1.4 Use of the element **<componentAssyGroup>**.

The element **<componentAssyGroup>** shall be used when authoring component/assembly information.

5.35.1.5 Use of the element **<maintQualifier>**.

The element **<maintQualifier>** shall be used only within the element **<componentAssyGroup>** and not in a separate branch.

5.35.1.6 Use of the attribute **function**.

Only the defined values are allowed for the attribute **function**, refer to 5.48.1.14.

5.35.1.7 Use of the attribute **maintLevelCode**.

Only the defined values are allowed for the attribute **maintLevelCode**, refer to 5.48.1.21.

5.35.1.8 Use of the attribute **skillLevelCode**.

Only the defined values are allowed for the attribute **skillLevelCode**, refer to 5.48.1.31.

5.35.1.9 Use of the element **<timeLimitCategory>**.

The element **<timeLimitCategory>** shall not be used.

5.35.1.10 Values for the attribute **limitUnitType**.

The attribute **limitUnitType** shall not be used.

5.35.1.11 Values for the attribute **releaseEvent**.

The attribute **releaseEvent** shall not be used.

5.35.1.12 Values for the attribute **markerType**.

The attribute **markerType** shall not be used.

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5.35.1.13 Values for the attribute **taskCode**.

The attribute **taskCode** shall not be used.

5.35.1.14 Values for the attribute **relatedTaskDescr**.

The attribute **relatedTaskDescr** shall not be used.

5.35.1.15 Values for the attribute **sourceCriticality**.

The attribute **sourceCriticality** shall not be used.

5.35.1.16 Values for the attribute **sourceTypeCode**.

The attribute **sourceTypeCode** shall not be used.

5.35.1.17 Values for the attribute **supervisorLevelCode**.

The attribute **supervisorLevelCode** shall not be used.

5.35.1.18 Values for the attribute **inspectionTypeCategory**.

The attribute **inspectionTypeCategory** shall not be used.

5.35.1.19 Use of the attribute **sourceOfRqmt**.

The attribute **sourceOfRqmt** shall not be used.

5.35.1.20 Use of the attribute **approval**.

The attribute **approval** shall not be used.

5.35.1.21 Use of the attribute **skillType**.

The attribute **skillType** shall not be used.

5.35.1.22 Use of the attribute **worthinessLimit**.

The attribute **worthinessLimit** shall not be used.

5.35.1.23 Use of the attribute **reducedMaint**.

The attribute **reducedMaint** shall not be used.

5.35.1.24 Control of the names of equipment.

The control names concept shall not be used.

5.35.1.25 Task groupings.

The task grouping concept shall not be used.

5.35.1.26 Sequence.

The sequence of tasks concept shall not be used.

5.35.1.27 Sampling rates.

The element **<sampling>** shall not be used.

5.35.1.28 Trigger definitions.

The element **<trigger>** shall not be used.

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5.35.1.29 Threshold.

The element **<threshold>** shall not be used.

5.35.1.30 Use of the attribute **thresholdUnitOfMeasure**.

The attribute **thresholdUnitOfMeasure** is prohibited in the schedule schema for Army publications.

5.35.2 Project decisions.

5.35.2.1 DELETED.

5.35.2.2 Use of the attribute **skilllLevelCode**.

The project shall decide whether or not to use the attribute **skillLevelCode**. Refer to 5.48.1.31.

5.35.2.3 Use of the element **<commonInfo>**.

The project shall decide whether or not to use this element.

5.35.2.4 Use of the element **<typeDesignation>**.

The project shall decide whether or not the element **<typeDesignation>** shall be used. If used, it shall be used consistently throughout the MAC.

5.36 S1000D Chapter 3.9.5.2.6 – Content section – Crew/Operator information.

5.36.1 Army business rules.

5.36.1.1 Preparing data modules.

All aircrew descriptive information (except front and rear matter) shall be prepared with the Crew/Operator data module using the descriptive branch (element **<descrCrew>**). All aircrew procedural information shall be prepared with the Crew/Operator data module using the flight reference card branch (element **<crewRefCard>**). See TABLE A-XXXI, TABLE A-XXXII, and TABLE A-XXXIII.

5.36.1.2 Crew drill step levels.

Crew drill steps (**<crewDrillStep>**) shall not exceed seven levels.

5.36.1.3 Use of the element **<crewMemberGroup>**.

The element **<crewMemberGroup>** shall not be used.

5.36.1.4 Use of the element **<crewProcedureName>**.

The element **<crewProcedureName>** shall not be used.

5.36.1.5 Use of the element **<endMatter>**.

The element **<endMatter>** shall not be used.

5.36.1.6 Use of operators.

If operators (for example, Boolean, functional, string, etc.) are needed in operator data, then the process data module schema shall be used.

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5.36.1.7 Use of the attribute **skillLevelCode**.

Only the defined values are allowed for the attribute **skillLevelCode**. Refer to 5.48.1.31.

5.36.2 Project decisions.

5.36.2.1 Skill level.

The project shall decide whether or not to use the attribute **skillLevelCode**. Refer to 5.48.1.31.

5.36.2.2 Special conditions.

The project shall decide whether or not to use the attribute **crewStepCondition**.

5.36.2.3 Check.

The project shall decide whether or not to use the attribute **independentCheck**.

5.36.2.4 Use of the attribute **keepWithNext**.

The project shall decide whether and how to use the attribute **keepWithNext** or not.

5.36.2.5 Use of crew member types.

The project shall define needed values for the attribute **crewMemberType**. Refer to 5.48.1.9.

5.37 S1000D Chapter 3.9.5.2.7 – Content section – Parts information.

5.37.1 Army business rules.

5.37.1.1 Figures.

A single **<figure>** or element **<multimedia>** shall precede each parts list.

5.37.1.2 Callout placement.

When practical, all callouts shall be placed outside the boundaries of the parts illustrated so that parts are not obscured.

5.37.1.3 Number of callouts.

Whenever possible, the average maximum number of callouts within a 7-inch by 10-inch area should not exceed 70.

5.37.1.4 Leader lines.

Leader lines shall not cross another leader line.

5.37.1.5 Number of items.

A multiplier shall not be used to indicate the number of items.

5.37.1.6 Place nuts.

Place nuts shall be illustrated.

5.37.1.7 Hardness critical items.

When survivability considerations are specified and Hardness Critical Items (HCI) are identified on drawings and parts lists, the items shall be marked and identified in the "DESCRIPTION" entry. All changes to or proposed substitutions of HCIs shall be evaluated for hardness impacts

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by the engineering activity responsible for survivability. The introduction will include an explanation of the HCI symbol's usage and method of highlighting and other pertinent information as necessary to emphasize uniqueness of HCIs.

5.37.1.8 Electrostatic Discharge (ESD).

If electronic equipment to be handled, inspected, repaired or assembled is ESD sensitive, the items shall be marked and identified in the "DESCRIPTION" entry. The introduction will include an explanation of the ESD symbol's usage and method of highlighting and other pertinent information as necessary to emphasize uniqueness of ESD sensitive components.

5.37.1.9 Expendable and durable items.

Expendable and durable items shall not be listed in the IPD.

5.37.1.10 List order.

Items shall be listed in ascending alphanumeric sequence.

5.37.1.11 Nonstocked assembled items.

Spare and repair parts that are part of a nonstocked assembled item (source coded "AO," "AF," "AH," or "AD") shall be assigned item numbers on illustrations and shall be listed in item number sequence on the repair parts list. These items/parts shall be listed immediately below the item to be assembled on the repair parts list. When a particular illustration does not show the parts breakdown of the nonstocked assembly, reference shall be made to the breakdown illustration in the IPD.

5.37.1.12 Special tools.

All special tools shall be listed in one IPD data module.

5.37.1.13 Usable On Code (UOC).

UOC shall be placed on the last line under the item description. The letters "UOC:" followed by the applicable UOC shall be indented.

5.37.1.14 North Atlantic Treaty Organization (NATO) stock number.

The element **`<natoStockNumber>`** shall be used for all stocked parts that have an NSN.

5.37.1.15 National Stock Number (NSN) optional attributes.

The following attributes of the element **`<natoStockNumber>`** shall be used:

a. **`natoSupplyClass`** shall contain the four-digit Federal Supply Classification (FSC).
b. **`natoCodificationBureau`** shall contain the first two digits of the National Item Identification Number (NIIN).
c. **`natoItemIdentNumberCore`** shall contain the final seven digits of the NIIN. (JS-040)

5.37.1.16 Use of the element **`<fullNatoStockNumber>`**.

The element **`<fullNatoStockNumber>`** is prohibited.

5.37.1.17 Item entry for kits and sets.

When published, the Item entry shall contain "K" for KIT or "S" for set.

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5.37.1.18 Identical parts.

Identical parts (same part number) appearing in a figure (illustration) shall have the same item number.

5.37.1.19 Identical assemblies.

When an identical assembly appears subsequent times, the assembly item name shall appear in the description and shall be followed by the statement "See FIG ## FOR BREAKDOWN."

5.37.1.20 Functional group title.

Functional group title shall be "BASIC ISSUE ITEMS (REPAIR ITEMS) for basic issue items."

5.37.1.21 Bulk item functional group.

The functional group number and title shall be "BULK MATERIAL" for bulk items.

5.37.1.22 Bulk item presentation.

The next line(s) below shall be the figure number and the figure title and titled "FIG. BULK."

5.37.1.23 Part numbers.

When part numbers of spare/repair items are not the same for all serial numbered equipment of the same model, a statement identifying the Usable Effective (USBL EFF) serial numbers shall be added to the item description (e.g., USBL EFF SER NOS 1719-1941).

5.37.1.24 Quantities for basis of issue items.

The element **<quantityPerNextHigherAssy>** shall be left empty for special tools which include Basis of Issue (BOI).

5.37.1.25 Part characteristic.

The attribute **partCharacteristic** shall be used when appropriate conditions are present.

5.37.1.26 Depot level items.

A "D" shall be placed in the third position of the SMR code to represent a depot level item.

5.37.1.26A Service option code.

When used, the sixth position of the SMR code shall be populated with a value from the appropriate service option codes table in AR 700-82.

5.37.1.27 Special tool sets and kits.

Components of special tool sets and kits, in the description (element **<partIdentSegment>**), shall be listed in figure (attribute **catalogSeqNumberValue** in element **<catalogSeqNumber>**) and item number sequence (attribute **catalogItemNumber** or attribute **catalogSeqNumberValue** in element **<catalogSeqNumber>**).

5.37.1.28 Component indenture.

The component shall be indented two positions and listed by item name (element **<partIdentSegment>)**, the figure number (attribute **catalogSeqNumberValue** in element **<catalogSeqNumber>**), and the item numbers (attribute **catalogItemNumber** or attribute **catalogSeqNumberValue** in element **<catalogSeqNumber>**).

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5.37.1.29 Catalog sequence number indenture.

Catalog sequence number shall not exceed five levels of indenture (the value of the attribute **`indenture`** in **`<catalogSeqNumber>`** shall not exceed "**`5`**").

5.37.1.30 Catalog sequence number value.

The attribute **`catalogSeqNumberValue`** on the first occurrence of **`<catalogSeqNumber>`** in each IPD data module is required. It shall be used to generate IPD figure numbers.

5.37.1.31 Non-chapterized Catalog Sequence Number (CSN).

The use of non-chapterized CSNs is prohibited.

5.37.1.32 Quantities.

Quantities of components shall be included in BOI statement.

5.37.1.33 Kit identification.

The statement "part of Kit P/N (*insert kit P/N*)" shall follow item name **`<partIdentSegment>`**.

5.37.1.34 Bulk item lists.

Bulk items shall be listed alphabetically by name **`<partIdentSegment>`**.

5.37.1.35 Service.

The first two characters for the **`<service>`** code shall be US (for NATO projects the 2 digit code shall be “NA”). The third character shall specify the originating service for which the part data is applicable as follows:

a. A - Army
b. N - Navy
c. F - Air Force
d. M - Marine Corps
e. C - Coast Guard (JS-039)

5.37.1.36 Basis of Issue (BOI).

When authoring BOI data for special tools lists (IC 604B), BOI shall be recorded using the generic part data elements. The attribute **`genericPartDataName`** will be set to "**`basisOfIssue`**" and the value shall be identified using the element **`<genericPartDataValue>`**.

5.37.1.37 Quantity per end item.

Quantity per end item (**Marine Corps only**) shall be recorded using the generic part data elements. The attribute **`genericPartDataName`** shall be set to "**`qtyPerEndItem`**" and the value shall be identified using the element **`<genericPartDataValue>`**.

5.37.1.38 Use of the attribute **`genericPartDataName`**.

The attribute **`genericPartDataName`** shall contain only "**`qtyPerEndItem`**" or "**`basisOfIssue`**" as applicable.

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5.37.1.39 Part location data segment.

The element **<partLocationSegment>** shall be used as applicable.

5.37.1.40 Initial provisioning project number.

The element **<initialProvisioningProject>** and its attributes shall not be used.

5.37.1.41 Special storage.

The element **<specialStorage>** shall be used when there are special storage requirements for the part.

5.37.1.42 Fitment code.

The element **<fitmentCode>** shall be used when modification is required to fit the part to the equipment.

5.37.1.43 Calibration marker.

The element **<calibrationMarker>** shall be used when the part requires calibration.

5.37.1.44 Physical security.

The element **<physicalSecurityPilferageCode>** shall not be used in parts list data.

5.37.1.45 Usable on code equipment.

The usable on codes provided by the provisioning data shall be used for **<usableOnCodeEquip>**.

5.37.1.46 Usable on code assembly.

The usable on codes provided by the provisioning data shall be used for **<usableOnCodeAssy>**.

5.37.1.47 Interchangeability.

The element **<interchangeability>** shall be used when two or more parts have the same form, fit, and function.

5.37.1.48 Model version.

The allowable values for the element **<modelVersion>** shall match the allowable values for Usable Effective (USBL EFF) serial numbers, contained within **<effectivity>**.

5.37.2 Project decisions.

5.37.2.1 Item sequence number attributes.

The project shall decide the use of the optional attributes for the element **<itemSequenceNumber>**.

5.37.2.2 File identifier.

The project shall decide use of the optional file identifier element **<fileIdent>**.

5.37.2.3 Unit of issue.

The project shall decide use of the optional element **<unitOfIssue>**.

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5.37.2.4 Unit of issue qualification segment.

The project shall decide use of the optional element **`<unitOfIssueQualificationSegment>`**.

5.37.2.5 Use of the element **`<descrForItem>`**.

The project shall decide which project-specific values are needed, if any. The values shall be documented in the project business rules and BREX.

5.37.2.6 Unit of measure.

The project shall decide the list of allowable values for the attribute **`unitOfMeasure`**.

5.37.2.7 Select or manufacture from range.

The project shall decide the list of allowable values for the element **`<selectOrManufactureFromIdent>`**.

5.37.2.8 Service option code.

The project shall decide whether or not to use the sixth position of the SMR code. If used, the allowable value for the sixth character of the SMR code shall comply with the service option codes defined in AR 700-82.

5.37.2.9 Model version.

The project shall decide the list of allowable values for the element **`<modelVersion>`**.

5.37.2.10 Effectivity.

The project shall decide the list of allowable values for unit/engine numbers.

5.37.2.11 Hotspots mechanism.

The project shall decide if the generic hotspots mechanism is addressed within the IPD data module content.

5.38 S1000D Chapter 3.9.5.2.9 – Content section – Wiring information (and all sub-chapters).

5.38.1 Army business rules.

None.

5.38.2 Project decisions.

5.38.2.1 Use of the wiring data module.

The project may elect to use the wiring data module. If so, the project is required to coordinate efforts, including related business rules, with LOGSA.

5.39 S1000D Chapter 3.9.5.2.10 – Content section – Process data module.

5.39.1 Army business rules.

5.39.1.1 Use of the process data module.

The process data module shall be used when it is necessary to maintain state information or present data to the user in a logical order based on state information. Some examples of uses are troubleshooting, diagnostics, and training. (JS-041)

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5.39.1.2 Alternative data modules.

Alternative data module nodes shall be mutually exclusive. (JS-042)

5.39.2 Project decisions.

5.39.2.1 Use of the process data module.

The project shall decide when to use the process data module.

5.39.2.2 Level of context filtering.

The project shall decide the level at which to apply applicability for context filtering purposes.

5.39.2.3 Model structure or expression.

The project shall decide whether to use the applicability model structure for configuration items and applicability expressions for dynamic variables only or use the applicability expressions for both configuration items and dynamic variables.

5.39.2.4 Check.

The project shall decide on the use of the element **`<dmSeq>`** and the attribute **`checkQualification`** to indicate that the whole sequence shall be checked by a supervisor with a given qualification.

5.39.2.5 Skill level.

The project shall decide when the attribute **`skillLevelCode`** on element **`<dmSeq>`** is to be used.

5.39.2.6 Use of alternatives.

The project shall decide whether to use the alternative nodes construct or not.

5.39.2.7 Use of loops.

The project shall decide where and when to use the loop construct.

5.39.2.8 Dialogs associated with variables.

The project shall decide if they will provide dialogs for variables in the variable declaration markup or author explicit dialogs whenever a variable in an expression might not have a value.

5.39.2.9 Menu vs. **`<userEntry>`** dialogs.

The project shall decide when to use menu vs. fill-in type dialogs.

5.39.2.10 Dialog defaults.

The project shall decide whether or not to use default choices in menus and/or default values in **`<userEntry>`** dialogs.

5.39.2.11 Variable naming and typing.

The project shall determine authoring guidance about variable naming and typing.

5.39.2.12 Results receive method.

The project shall determine a consistent method of tagging variables being passed using element **`<receiveByName>`** and element **`<receiveByPosition>`**.

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5.40 S1000D Chapter 3.9.5.2.11 Content section – Technical information repository.

5.40.1 Army business rules.

5.40.1.1 Technical information repositories.

All delivered data shall include self-contained instances of the data modules (that is, free of unresolved technical information repository dependencies). This does not prohibit any of the following:

a. technical information repositories used in the development process,
b. delivery of technical information repository data modules as additional data, or
c. references to technical information repository data modules provided that the referencing data module is self contained and the reference is to a published technical information repository accessible to the user. (JS-044)

5.40.1.2 Internal and external use of Common Information Repository (CIR) data modules.

See JS-044 in 5.40.1.1. (JS-111).

5.40.2 Project decisions.

5.40.2.1 Use of technical information repository.

The project shall decide whether or not to require the delivery of technical information repository data modules (as additional data).

5.41 S1000D Chapter 3.9.5.2.12 – Content section – Container data module.

5.41.1 Army business rules.

5.41.1.1 Container data modules.

All delivered data shall include instances of the data modules that shall have no unresolved container data module dependencies. This does not prohibit container data modules being used in the development process, nor does it prohibit delivery of container data modules as additional data.

5.41.2 Project decisions.

None.

5.42 S1000D Chapter 3.9.5.2.13 – Content section – Learning data modules.

5.42.1 Army business rules.

5.42.1.1 Use of learning data modules.

If learning data modules are used, the project shall document a plan for implementing learning content using S1000D data modules and non-proprietary methods and tools. Projects shall coordinate learning data plans and related business rules with Training and Doctrine Command (TRADOC) and LOGSA.

5.42.2 Project decisions.

5.42.2.1 Use of learning data modules.

The project shall decide whether or not to use learning data modules.

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5.42.2.2 Use of the available branches.

If learning data modules are used, the project shall decide which of the five available branches is most appropriate for the intended content.

5.43 S1000D Chapter 3.9.5.2.14 – Maintenance Checklists and Inspections.

5.43.1 Army business rules.

None.

5.43.2 Project decisions.

5.43.2.1 Use of the attribute **`checkListCategory`**.

The project shall decide how to populate the enumerated attribute **`checkListCategory`** (refer to 5.48.1.5).

5.43.2.2 Checklist categories.

The project shall decide if business rules need to be created for which XML elements to use and how to markup checklists for each category type.

5.43.2.3 Use of the element **`<commonInfo>`**.

The project shall decide if the element **`<commonInfo>`** is used in the checklist data module.

5.43.2.4 Use of the element **`<preliminaryRqmts>`**.

The project shall decide if the element **`<preliminaryRqmts>`** is used in the checklist data module.

5.43.2.5 Use of the element **`<title>`**.

The project shall decide if the element **`<title>`** is used in the checklist data module.

5.43.2.6 Use of the element **`<checkListIntervals>`**.

The project shall decide if the element **`<checkListIntervals>`** is used in the checklist data module.

5.43.2.7 Use of the element **`<zoneRef>`**.

The project shall decide if the element **`<zoneRef>`** is used in the checklist data module and how it should be populated.

5.43.2.8 Use of the element **`<workArea>`**.

The project shall decide if the element **`<workArea>`** is used in the checklist data module and how it should be populated.

5.43.2.9 Use of the optional child elements of **`<checkListItem>`**.

The project shall decide which elements within **`<checkListItem>`** are used and how they should be populated.

5.43.2.10 Use of the element **`<itemNumbers>`**.

The project shall decide if the element **`<itemNumbers>`** is used in the checklist data module and how it should be populated.

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5.43.2.11 Use of the element **<threshold>**.

The project shall decide if the element **<threshold>** is used in the checklist data module and how it should be populated.

5.43.2.12 Use of the element **<equip>**.

The project shall decide if the element **<equip>** is used in the checklist data module and how it should be populated.

5.43.2.13 Use of the element **<name>**.

The project shall decide if the element **<name>** is used in the checklist data module and how it should be populated.

5.43.2.14 Use of the element **<remarks>**.

The project shall decide if the element **<remarks>** is used in the checklist data module and how it should be populated.

5.44 S1000D Chapter 3.9.5.3 – Data modules – Applicability.

5.44.1 Army business rules.

5.44.1.1 Applicability value clashes.

The project shall dictate all product attributes used in all applicability tables to avoid value clashes. The attributes shall be used consistently throughout the project.

5.44.1.2 Use of the element **<assign>**.

The first "assign" attribute in all Product Cross-reference Table (PCT) files shall serve as the unique identifier for the product as defined in the PCT. The applicability processor shall validate each PCT to ensure:

a. The first element **<assign>** for each product shall have the same value for attribute **applicPropertyIdent**.
b. The first element **<assign>** for each product shall have a unique value for attribute **applicPropertyValue**.

5.44.1.3 Obtaining a product value.

When a product value is obtained from the end-user, the PCT shall be used to match the entered value to a product defined in the PCT via the unique identifier. If found, the additional attribute values defined for that product shall be automatically obtained.

5.44.1.4 Product identifier type.

Each product listed in the PCT shall have the same applicability product identifier type. In other words, an Aircraft PCT that lists products by tail number cannot also list products by engine serial number.

5.44.1.5 Process data module variable mapping.

The project shall dictate the mapping scheme between process data module variables and applicability values, if applicability variables are used by the process data module. This mapping scheme shall be applied consistently throughout the project.

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5.44.1.6 Use of the attribute **applicProperty**.

The values for the attribute **applicPropertyValue** shall conform to the following rules:

a. Numeric value ranges shall be padded with zeros so the low number in the range contains the same number of characters as the high number in the range (for example "**0001~9999**").
b. Spaces (white space) shall not be used in any values.
c. Negative numbers shall be reversed (for example, the range of negative 50 though negative 99 shall be indicated as "**-50~-99**"
d. When decimals are required in the ranges, both sides of decimals shall be padded (for example, "**001.000~999.999**").
e. Date ranges shall use International Organization for Standardization (ISO) 8601 short notation (for example, "**2010-01-01~2010-12-31**")

5.44.1.7 Human readable display text.

If the human readable element **<displayText>** is not authored, the project shall predefine the applicability display text (**<displayText>**) for all possible applicability values.

5.44.1.8 Applicability statements.

Applicability statements shall be written in such a way to avoid excluded applicability values. S1000D applicability markup does not include a NOT operator.

5.44.2 Project decisions.

5.44.2.1 Applicability strategy.

The project shall determine the use of applicability and describe that approach in the business rules.

5.44.2.2 Population or generation of element **<displayText>**.

If using the human readable branch of applicability, the project shall decide whether the element **<displayText>** is populated by the technical author or generated from the computable branch or some other source.

5.44.2.3 Use of attribute **applicDisplayClass**.

If using the computable applicability annotation branch, the project shall decide whether to use the attribute **applicDisplayClass**. If the attribute **applicDisplayClass** is used, the allowable values and desired format for each value shall be documented in the project business rules.

5.44.2.4 Use of textual applicability annotations.

If using the computable applicability annotation branch, the project shall decide if textual applicability annotations are allowed in the element **<assert>** or if every element **<assert>** should reference a declared product attribute or condition.

5.44.2.5 Consistent population.

The project shall decide on the population of the elements and attributes of applicability and shall then enforce its consistency.

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5.44.2.6 Use of attribute **applicConfiguration**.

The project shall determine if the optional attribute **applicConfiguration** on element **<applic>** will be used for IPD data modules to qualify the type of applicability for a given part.

5.45 S1000D Chapter 3.9.5.3.1 – Applicability – Applicability cross-reference table.

5.45.1 Army business rules.

None.

5.45.2 Project decisions.

5.45.2.1 Use of pattern, enumeration, and open text.

Projects defining product attributes shall decide whether to specify the allowable values for a product attribute achieved by using a pattern, enumeration, or both or to allow open text by not using pattern and enumeration.

5.45.2.2 Method of defining multiple values or ranges.

If defining product attributes which contain multiple enumeration values or ranges, the project shall decide whether to use a single element **<enumeration>** containing the entire set or to use multiple elements **<enumeration>** which each contain only one value or range.

5.45.2.3 Use of display text.

Projects defining product attributes shall decide whether to fill the display text (element **<displayName>**).

5.46 S1000D Chapter 3.9.5.3.2 – Applicability – Conditions cross-reference table.

5.46.1 Army business rules.

None.

5.46.2 Project decisions.

5.46.2.1 Use of conditions cross-reference table.

The project shall decide whether to develop and deliver conditions cross reference table(s).

5.46.2.2 Use of multiple tables.

If used, the project shall decide whether to create one single technical conditions cross-reference table data module or several cross-reference table data modules divided by some logical criteria.

5.46.2.3 Use of attribute **valuePattern**.

A project defining conditions shall decide whether to further specify the allowable values for a condition type using the attribute **valuePattern** in addition to the mandatory element **<enumeration>**.

5.46.2.4 Method of defining multiple values or ranges.

A project defining product attributes which contain multiple enumeration values or ranges shall decide whether to use a single element **<enumeration>** containing the entire set or to use multiple elements **<enumeration>** which each contain only one value or range.

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5.46.2.5 Use of display text.

Projects defining conditions shall decide whether to fill the display text (element **`<displayName>`**).

5.47 S1000D Chapter 3.9.5.3.3 – Applicability – Product cross reference table.

5.47.1 Army business rules.

None.

5.47.2 Project decisions.

5.47.2.1 Use of the Product Cross-reference Table (PCT).

The project shall decide whether to develop and deliver PCT data modules. If used, the project shall decide which product sets are referenced in the PCT.

5.47.2.2 Product attributes and conditions to include.

A project using the PCT shall decide which product attributes and conditions to include in the PCT. Conditions that represent operational or environmental properties will usually not be included in the PCT as they are not associated with a product instance.

5.48 S1000D Chapter 3.9.6.1 – Authoring – Project configurable attributes.

5.48.1 Army business rules.

5.48.1.1 Access point type – attribute **`accessPointTypeValue`**.

Attribute values shall be used as defined in the following table.

TABLE III. Attribute values – accessPointTypeValue.

Allowable values	Army interpretation
`accpnl01`	Access is a door
`accpnl02`	Access is a panel
`accpnl03`	Access is an electrical panel
`accpnl04` – **`accpnl50`**	Not available for projects
`accpnl51`	Access is a cover
`accpnl52`	Access is a plate
`accpnl53`	Access is a screen
`accpnl54`	Access is an opening
`accpnl55` – **`accpnl65`**	Reserved for Army
`accpnl66` – **`accpnl99`**	Available for projects

5.48.1.2 Type of acronym or abbreviation – attribute **`acronymType`**.

Attribute values shall be used as defined in the following table.

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TABLE IV. Attribute values – acronymType.

Allowable values	Army interpretation
at01	Acronym
at02	Term
at03	Symbol
at04	Spec
at05 – **at50**	Not available for projects
at51 – **at55**	Reserved for Army
at56 – **at99**	Available for projects

5.48.1.3 Caption for dialog cancel function – attribute **cancelCaption**.

Attribute values shall be used as defined in the following table.

TABLE V. Attribute values – cancelCaption.

Allowable values	Army interpretation
ca01	Sets the caption to "CANCEL"
ca02	Sets the caption to "ABORT"
ca03	Not available for projects
ca04	Sets the caption to "END"
ca05	Sets the caption to "QUIT"
ca06 – **ca50**	Not available for projects
ca51 – **ca99**	Reserved for Army

5.48.1.4 National caveat – attribute **caveat**.

Attribute values shall be used as defined in the following table.

TABLE VI. Attribute values – caveat.

Allowable values	Army interpretation
cv01 – **cv50**	Not available for projects
cv51	For Official Use Only
cv52 – **cv55**	Reserved for Army
cv56 – **cv99**	Available for projects

5.48.1.5 Check list category – attribute **checkListCategory**.

Attribute values shall be used as defined in the following table.

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TABLE VII. Attribute values – checkListCategory.

Allowable values	Army interpretation
clc01	Preventive maintenance inspection form
clc02	Preventive Maintenance Checks and Services (PMCS)
clc03	Schematics
clc04 – **clc50**	Not available for projects
clc51	Checking unpacked equipment
clc52	Preventive Maintenance Checklist (PMC)
clc53 – **clc55**	Reserved for Army
clc56 – **clc99**	Available for projects

5.48.1.6 Caption color – attribute **color**.

Attribute values shall be used as defined in the following table.

TABLE VIII. Attribute values – color.

Allowable values	Army interpretation
co00	None
co01	Green
co02	Amber
co03	Yellow
co04	Red
co05	Not available for projects
co06	Not available for projects
co07	White
co08	Grey
co09	Clear
co10 – **co50**	Not available for projects
co51 – **co55**	Reserved for Army
co56 – **co99**	Available for projects

5.48.1.7 Priority level of a comment – attribute **commentPriorityCode**.

Attribute values shall be used as defined in the following table.

TABLE IX. Attribute values – commentPriorityCode.

Allowable values	Army interpretation
cp01	Routine
cp02	Emergency
cp03	Safety critical
cp04 – **cp50**	Not available for projects
cp51 – **cp55**	Reserved for Army
cp56 – **cp99**	Available for projects

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5.48.1.8 Commercial security classification – attribute **`commercialClassification`**.

Refer to 5.9.1.3.

5.48.1.9 Type of crew member required for drill or procedural step – attribute **`crewMemberType`**.

Attribute values shall be used as defined in the following table.

TABLE X. Attribute values – crewMemberType.

Allowable values	Army interpretation
`cm01`	All
`cm02`	Pilot
`cm03`	Co-pilot
`cm04`	Navigator
`cm05`	Engineer
`cm06`	Ground crew
`cm07`	Load master
`cm08`	Cabin supervisor
`cm09` – **`cm50`**	Not available for projects
`cm51`	Loader
`cm52`	Driver
`cm53`	Gunner
`cm54`	Commander
`cm55`	Crew chief
`cm56`	Technician
`cm57`	Installer
`cm58`	Maintainer
`cm59`	Officer
`cm60`	Operator
`cm61`	Crew member
`cm62`	Specialist
`cm63`	Repairer
`cm64`	Mechanic
`cm65`	Attendant
`cm66`	Handler
`cm67`	Machinist
`cm68`	Supervisor
`cm69`	Electrician
`cm70`	Chief
`cm71` – **`cm80`**	Reserved for Army
`cm81` – **`cm99`**	Available for projects

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5.48.1.10 Crew step condition – attribute **`crewStepCondition`**.

Attribute values shall be used as defined in the following table.

TABLE XI. Attribute values – crewStepCondition.

Allowable values	Army interpretation
`csc01`	Used to indicate if equipment is installed or available (O)
`csc02`	Used to indicate that a detailed procedure for the step is located in the performance section of the condensed checklist (★)
`csc03`	Used to indicate that performance of the step is mandatory for all through-flights used for combat/tactical operations (*)
`csc04`	Used for a step that is mandatory for night flights (N)
`csc05`	Used to indicate a task or step required by the operator's manual (T)
`csc06` – **`csc50`**	Not available for projects
`csc51`	Used to indicate duties that are the responsibility of the pilot (not on the controls) (④)
`csc52`	Used to indicate a task or step that requires a flight engineer function or response (F)
`csc53`	Used to indicate that the performance of the step is mandatory for all maintenance test flights (**)
`csc54` – **`csc60`**	Reserved for Army
`csc61` – **`csc99`**	Available for projects

5.48.1.11 IPD item description code – attribute **`descrForItemCode`**.

Attribute values shall be used as defined in the following table.

TABLE XII. Attribute values – descrForItemCode.

Allowable values	Army interpretation
`dic01`	Support Equipment
`dic02`	Not available for projects
`dic03`	Not available for projects
`dic04`	Not available for projects
`dic05` – **`dic21`**	Not available for projects
`dic22`	Special Tool

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TABLE XII. Attribute values – descrForItemCode - Cont.

Allowable values	Army interpretation
dic23	Part
dic24	Basic Issue Item (BII)
dic25	Components of End Item (COEI)
dic26	Tool
dic27	Additional Authorization List (AAL) item
dic28 – **dic50**	Not available for projects
dic51 – **dic55**	Reserved for Army
dic56 – **dic99**	Available for projects

5.48.1.12 Type of aircrew drill – attribute **drillType**.

Attribute values shall be used as defined in the following table.

TABLE XIII. Attribute values – drillType.

Allowable values	Army interpretation
dt00	None
dt01	Green
dt02	Amber
dt03	Yellow
dt04	Red
dt05	Orange
dt06	Blue
dt07-dt50	Not available for projects
dt51-dt55	Reserved for Army
dt56-dt99	Available for projects

5.48.1.13 Type of emphasis – attribute **emphasisType**.

Attribute values shall be used as defined in the following table.

TABLE XIV. Attribute values – emphasisType.

Allowable values	Army interpretation
em01	Bold
em02	Italic
em03	Underline
em04	Overline
em05	Strikethrough
em06 – **em50**	Not available for projects
em51	Small capitals
em52	Two line
em53	All capitals

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TABLE XIV. Attribute values – emphasisType - Cont.

Allowable values	Army interpretation
em54	Reverse
em55	Bold and italic
em56 – **em99**	Reserved for Army

5.48.1.14 Type of maintenance function – attribute **function**.

Attribute values shall be used as defined in the following table. The attribute **function** and these attribute values are applicable to MACs only.

TABLE XV. Attribute values – function.

Allowable values	Army interpretation
ft00	None
ft01	Inspect
ft02	Test
ft03	Service
ft04	Adjust
ft05	Align
ft06	Calibrate
ft07	Remove/Install
ft08	Replace
ft09	Repair
ft10	Overhaul
ft11	Rebuild
ft12 – **ft50**	Not available for projects
ft51	Paint
ft52	Demilitarize
ft53	Remove
ft54	Install
ft55	Prepare for Use
ft56	Disassemble
ft57	Clean
ft58	Non-Destructive Inspection
ft59	Lubricate
ft60	Assemble
ft61	Radio Interference Suppression
ft62	Place In Service
ft63	Preparation for Storage
ft64	Mark
ft65	Arm
ft66	Pack
ft67	Load

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TABLE XV. Attribute values – function - Cont.

Allowable values	Army interpretation
ft68	Unpack
ft69	Unload
ft70	Preserve
ft71	Tow
ft72	Jack
ft73	Park
ft74	Moor
ft75	Cover
ft76	Hoist
ft77	Sling
ft78	External Power
ft79	Install peripheral device
ft80	Other maintenance tasks
ft81	Preparation for Shipment
ft82	Transport
ft83	Uninstall peripheral device
ft84	Upgrade/patch
ft85	Configure
ft86	Debug
ft87-ft99	Reserved for Army

5.48.1.15 Type of equipment install location – attribute **installationLocationType**.

Attribute values shall be used as defined in the following table.

TABLE XVI. Attribute values – installationLocationType.

Allowable values	Army interpretation
instloctyp01	Zone
instloctyp02	Section
instloctyp03	Station
instloctyp04	Water line
instloctyp05	Buttock line
instloctyp06 – **instloctyp50**	Not available for projects
instloctyp51 – **instloctyp55**	Reserved for Army
instloctyp56 – **instloctyp99**	Available for projects

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5.48.1.16 Item characteristic – attribute **`itemCharacteristic`**. Attribute values shall be used as defined in the following table.

TABLE XVII. Attribute values – itemCharacteristics.

Allowable values	Army interpretation
`ic01`	Used to indicate steps related to hardness critical process
`ic02`	Used to indicate steps related to electrostatic discharge
`ic03`	Used to indicate steps with a quality assurance effect
`ic04` – **`ic50`**	Not available for projects
`ic51` – **`ic55`**	Reserved for Army
`ic56` – **`ic99`**	Available for projects

5.48.1.17 Origin of an equipment or harness or wire – attribute **`itemOriginator`**. Attribute values shall be used as defined in the following table.

TABLE XVIII. Attribute values – itemOriginator.

Allowable values	Army interpretation
`orig01`	Manufacturer
`orig02`	Vendor
`orig03`	Partner
`orig04` – **`orig50`**	Not available for projects
`orig51` – **`orig55`**	Reserved for Army
`orig56` – **`orig99`**	Available for projects

5.48.1.18 Limit type – attribute **`limitUnitType`**.

The attribute **`limitUnitType`** shall not be used.

5.48.1.19 Prefix of **`<randomList>`** items – attribute **`listItemPrefix`**.

Attribute values shall be used as defined in the following table.

TABLE XIX. Attribute values – listItemPrefix.

Allowable values	Army interpretation
`pf01`	Simple (No prefix, only indent)
`pf02`	Unorder [-], [•], [-]
`pf03`	Dash [-] (short dash)
`pf04`	Disc [⊙] (filled circle in circle)
`pf05`	Circle [○] (outline)
`pf06`	Square [□] (outline)
`pf07`	Bullet [•] (outline)

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TABLE XIX. Attribute values – listItemPrefix - Cont.

Allowable values	Army interpretation
pf08 – **pf50**	Not available for projects
pf51 – **pf55**	Reserved for Army
pf56 – **pf99**	Available for projects

5.48.1.20 Lowest authorized level – attribute **lowestLevel**.

Attribute values shall be used as defined in the following table.

TABLE XX. Attribute values – lowestLevel.

Allowable values	Army interpretation
la01	None
la02	Field (Service) level
la03	Field/ Aviation Support Battalion (ASB) maintenance can remove, replace, and use the item.
la04	Below depot sustainment maintenance can remove, replace, and use the item.
la05	Specialized Repair Activity (SRA)/Theater Aviation Support Maintenance Group (TASMG) can remove, replace, and use the item.
la06	Afloat and ashore intermediate maintenance can remove, replace, and use the item.
la07	Contractor facility can remove, replace, and use the item.
la08	Item is not authorized to be removed, replaced, or used at any maintenance level
la09	Depot can remove, replace, and use the item.
la10 – **la50**	Not available for projects
la51	Army Maintenance Company
la52 – **la60**	Reserved for Army
la61 – **la99**	Available for projects

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5.48.1.21 Maintenance level code – attribute **`maintLevelCode`**.

Attribute values shall be used as defined in the following table.

TABLE XXI. Attribute values – maintLevelcode.

Allowable values	Army interpretation
`ml01` – **`ml50`**	Not available for projects
`ml51`	Crew (C) (standard)
`ml52`	Maintainer (F) (standard)
`ml53`	SRA (L) (standard)
`ml54`	Below depot (H) (standard)
`ml55`	Depot (D) (standard)
`ml56`	AMC (O) (aviation)
`ml57`	ASB (F) (aviation)
`ml58`	TASMG (L) (aviation)
`ml59`	Depot (D) (aviation)
`ml60` – **`ml99`**	Reserved for Army

5.48.1.22 Part characteristic – attribute **`partCharacteristic`**.

Attribute values shall be used as defined in the following table.

TABLE XXII. Attribute values – partCharacteristic.

Allowable values	Army interpretation
`pc01`	Used to indicate a hardness critical item
`pc02`	Not available for projects
`pc03`	Used to indicate mandatory replacement parts
`pc04`	Used to indicate critical safety items
`pc05`	Used to indicate test equipment
`pc06`	Used to indicate parts with electrostatic discharge sensitivity
`pc07` – **`pc50`**	Not available for projects
`pc51` – **`pc55`**	Reserved for Army
`pc56` – **`pc99`**	Available for projects

5.48.1.23 Publication module entry type – attribute **`pmEntryType`**.

Attribute values shall be used as defined in the following table.

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TABLE XXIII. Attribute values – pmEntryType.

Allowable values	Army interpretation
pmt01 – **pmt50**	Not available for projects
pmt51	Front matter
pmt52	Chapter
pmt53	Section
pmt54	Sub-section
pmt55	Appendix
pmt56	Checklist
pmt57	Rear Matter
pmt58	Emergency procedures for aircrew
pmt59 – **pmt70**	Reserved for Army
pmt71 – **pmt99**	Available for projects

5.48.1.24 Quantity type – attribute **quantityType**.

Attribute values shall be used as defined in the following table.

TABLE XXIV. Attribute values – quantityType.

Allowable values	Army interpretation
qty01	Length
qty02	Price
qty03	Temperature
qty04	Time
qty05	Torque value
qty06	Voltage
qty07	Volume
qty08	Mass
qty09 – **qty50**	Not available for projects
qty51	Weight
qty52	Height
qty53	Pressure
qty54	Dimension
qty55	Clearance
qty56 – **qty60**	Reserved for Army
qty61 – **qty99**	Available for projects

5.48.1.25 Required condition category – attribute **reqCondCategory**.

Attribute values shall be used as defined in the following table.

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TABLE XXV. Attribute values – reqCondCategory.

Allowable values	Army interpretation
rcc01	Normal
rcc02	Special environmental conditions such as reduced lighting, ventilation, and temperature.
rcc03 – **rcc50**	Not available for projects
rcc51 – **rcc55**	Reserved for Army
rcc56 – **rcc99**	Available for projects

5.48.1.26 Required technical information category – attribute **reqTechInfoCategory**.

Attribute values shall be used as defined in the following table.

TABLE XXVI. Attribute values – reqTechInfoCategory.

Allowable values	Army interpretation
ti01	Publication module
ti02	Data module
ti03	Drawing
ti04	Electrical diagram
ti05	Schematic diagram
ti06	Safety sheet
ti07 – **ti50**	Not available for projects
ti51	External publication
ti52 – **ti55**	Reserved for Army
ti56 – **ti99**	Available for projects

5.48.1.27 Caption for Dialog reset function – attribute **resetCaption**.

Attribute values shall be used as defined in the following table.

TABLE XXVII. Attribute values – resetCaption.

Allowable values	Army interpretation
re01	Sets the caption to "RESET"
re02	Sets the caption to "CLEAR"
re03 – **re50**	Not available for projects
re51 – **re99**	Reserved for Army

5.48.1.28 Type of response to a comment – attribute **responseType**.

Attribute values shall be used as defined in the following table.

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TABLE XXVIII. Attribute values – responseType.

Allowable values	Army interpretation
rt01	Accepted
rt02	Pending
rt03	Partly rejected
rt04	Rejected
rt05 – **rt50**	Not available for projects
rt51 – **rt55**	Reserved for Army
rt56 – **rt99**	Available for projects

5.48.1.29 Security classification – attribute **securityClassification**.

Attribute values shall be used as defined in the following table. (JS-045)

TABLE XXIX. Attribute values – securityClassification.

Allowable values	Army interpretation
01	Unclassified
02	Not available for projects
03	Confidential
04	Secret
05	Top secret
06 - **10**	Not available for projects
11 - **50**	Not available for projects
51 – **99**	Not available for projects

5.48.1.30 Paragraph significant data type – attribute **significantParaDataType**.

Attribute values shall be used as defined in the following table.

TABLE XXX. Attribute values – significantParaDataType.

Allowable values	Army interpretation
psd01	Ammunition
psd02	Instruction disposition
psd03	Lubricant
psd04	Maintenance level
psd05	Manufacturer code
psd06	Manufacturers recommendation
psd07	Modification code
psd08	Qualification code
psd09	Training level
psd10	Control or indicator value
psd11 – **psd50**	Not available for projects

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TABLE XXX. Attribute values – significantParaDataType - Cont.

Allowable values	Army interpretation
psd51	Immediate emergency procedure checklist item
psd52	Placard
psd53	Test point
psd54	Critical safety item
psd55	Designator symbol
psd56	Graphical User Interface (GUI) item
psd57 – **psd65**	Reserved for Army
psd66 – **psd99**	Available for projects

5.48.1.31 Personnel skill level – attribute **skillLevelCode**.

Attribute values shall be used as defined in the following table.

TABLE XXXI. Attribute values – skillLevelCode.

Allowable values	Army interpretation
sk01	Basic
sk02	Intermediate
sk03	Advanced
sk04 – **sk50**	Not available for projects
sk51	Skill level 1
sk52	Skill level 2
sk53	Skill level 3
sk54	Skill level 4
sk55	Skill level 5
sk56 – **sk99**	Reserved for Army

5.48.1.32 Personnel skill category – attribute **skillType**.

Attribute values shall be used as defined in the following table.

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TABLE XXXII. Attribute values – skillType.

Allowable values	Army interpretation
st01	Airframe
st02	Electrical
st03	Avionic
st04	Engine
st05 – **st50**	Not available for projects
st51	Structural
st52	Armament
st53	Mechanical
st54 – **st60**	Reserved for Army
st61 – **st99**	Available for projects

5.48.1.33 Source criticality – attribute **sourceCriticality**.

The attribute **sourceCriticality** shall not be used.

5.48.1.34 Source type code – attribute **sourceTypeCode**.

The attribute **sourceTypeCode** shall not be used.

5.48.1.35 Caption for dialog submit function – attribute **submitCaption**.

Attribute values shall be used as defined in the following table.

TABLE XXXIII. Attribute values – submitCaption.

Allowable values	Army interpretation
ok01	Sets the caption to "OK"
ok02	Sets the caption to "SUBMIT"
ok03	Not available for projects
ok04	Sets the caption to "CONTINUE"
ok05	Sets the caption to "EXIT"
ok06 – **ok50**	Not available for projects
ok51 – **ok99**	Reserved for Army

5.48.1.36 Supervisor level – attribute **supervisorLevelCode**.

The attribute **supervisorLevelCode** shall not be used.

5.48.1.37 Task code – attribute **taskCode**.

The attribute **taskCode** shall not be used.

5.48.1.38 Unit of measurement for the threshold interval – attribute **thresholdUnitOfMeasure**.

Attribute values shall be used as defined in the following table.

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TABLE XXXIV. Attribute values – thresholdUnitOfMeasure.

Allowable values	Army interpretation
th01	Flight hours
th02	Flight cycles
th03	Months
th04	Weeks
th05	Years
th06	Days
th07	Supersonic cycles
th08	Pressure cycles
th09	Engine cycles
th10	Engine change
th11	Shop visits
th12	Auxiliary Power Unit (APU) charge
th13	Landing gear change
th14	Wheel change
th15	Engine start
th16	APU hours
th17	Engine hours
th18	Elapsed hours
th19	Landings
th20	Operating cycles
th21	Operating hours
th22	Supersonic hours
th23	A check
th24	B check
th25	C check
th26	D check
th27	Daily
th28	E check
th29	Overnight
th30	Preflight
th31	Routine check
th32	Structural "C" check
th33	Service check
th34	Transit
th35 – **th50**	Not available for projects
th51	Rounds
th52	Underway/Steaming Hours
th53	Arrestments
th54	Catapults
th55	Message units
th56	Cycles
th57	Minutes
th58	Hours

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TABLE XXXIV. Attribute values – thresholdUnitOfMeasure - Cont.

Allowable values	Army interpretation
th59	Kilometers
th60	Miles
th61	Starts
th62	Intermediate
th63	Periodic
th64	Before
th65	During
th66	After
th67	Weekly
th68	Monthly
th69	Quarterly
th70	Semiannually
th71	Annually
th72	Man-hour/day
th73	Phased
th74	Other
th75 – **th79**	Reserved for Army
th80 – **th99**	Available for projects

5.48.1.39 Update reason type for reason for update – attribute **updateReasonType**.

Attribute values shall be used as defined in the following table.

TABLE XXXV. Attribute values – updateReasonType.

Allowable values	Army interpretation
urt01	Editorial change (authored/technical content changed, but technically changes are deemed insignificant)
urt02	Technical change (authored/technical content has changed, changes are significant and should be reviewed)
urt03	Markup change (changes are solely related to XML markup)
urt04	Applicability change (only the applicability has changed)
urt05	Unique identifier of the referencing structure has changed
urt06 – **urt50**	Not available for projects
urt51 – **urt55**	Reserved for Army
urt56 – **urt99**	Available for projects

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5.48.1.40 Style/class of verbatim text – attribute **`verbatimStyle`**.

Attribute values shall be used as defined in the following table.

TABLE XXXVI. Attribute values – verbatimStyle.

Allowable values	Army interpretation
`vs01`	Generic verbatim
`vs02`	Filename
`vs03` – **`vs10`**	Not available for projects
`vs11`	XML/SGML markup
`vs12`	XML/SGML element name
`vs13`	XML/SGML attribute name
`vs14`	XML/SGML attribute value
`vs15`	XML/SGML entity name
`vs16`	XML/SGML processing instruction
`vs17` – **`vs20`**	Not available for projects
`vs21`	Not available for projects
`vs22`	User input
`vs23`	Computer output
`vs24`	Program listing
`vs25`	Program variable name
`vs26`	Not available for projects
`vs27`	Constant
`vs28`	Class name
`vs29`	Parameter name
`vs30` – **`vs50`**	Not available for projects
`vs51` – **`vs55`**	Reserved for Army
`vs56` – **`vs99`**	Available for projects

5.48.2 Project decisions.

5.48.2.1 Application of project specific values.

The project shall decide which project specific definitions of attribute values are needed. The project definitions shall be established and documented in the project business rules.

5.49 S1000D Chapter 3.9.6.2 – Attributes – Fixed Values.

5.49.1 Army business rules.

None.

5.49.2 Project decisions.

5.49.2.1 Use of project specific values.

The project shall decide if any project specific additions of attribute values are needed. If needed, the project definitions shall be established and made known to anyone who will need the definitions to be able to interpret the produced information properly.

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5.50 S1000D Chapter 3.9.7 – Authoring – Human performance technology and training.

5.50.1 Army business rules.

None.

5.50.2 Project decisions.

5.50.2.1 Scope information.

The project shall decide on the scope of training information provided.

5.50.2.2 Presentation.

The project shall make decisions concerning issues related to presentation of training information.

5.50.2.3 Scope of preplanning.

The project shall determine the scope of the preplanning guidance.

5.51 S1000D Chapter 4 – Information Management.

There are no Army business rules or project decisions in the following S1000D chapters:

a. Chapter 4 Information management
b. Chapter 4.1 Information management – Introduction
c. Chapter 4.2.2 Common source database – Related standards for the CSDB
d. Chapter 4.3.9 Data module code – Learning code
e. Chapter 4.3.10 Data module code – Learning event code
f. Chapter 4.3.11 Data module code – Summary
g. Chapter 4.5 Information management – Data module lists
h. Chapter 4.9 Information management – Publication and SCO management
i. Chapter 4.9.3 Publication and SCO management – Building of publications and SCOs
j. Chapter 4.9.4 Publication and SCO management – Updating of publications
k. Chapter 4.9.5 Publication and SCO management – SCO module
l. Chapter 4.10.3 Business rules exchange – The BREX default data module
m. Chapter 4.13 Information management – Optimizing and reuse

5.52 S1000D Chapter 4.2 – Information management – Common Source Data Base (CSDB).

5.52.1 Army business rules.

5.52.1.1 Data module size.

To facilitate usability or the revision process, data modules should not exceed the printed equivalent of 30 pages. A series of maintenance tasks can be divided into two or more data modules unless it is determined that separating the task information would degrade usability.

5.52.1.2 Use of optional elements.

Elements which are optional shall be agreed by the project and included in the project business rules.

5.52.2 Project decisions.

None.

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5.53 S1000D Chapter 4.2.1 – Common source database – Information objects.

5.53.1 Army business rules.

5.53.1.1 Use of Extensible Markup Language (XML).

Data modules shall be coded in XML. (JS-044)

5.53.2 Project decisions.

None.

5.54 S1000D Chapter 4.3 – Information management – Data module code.

5.54.1 Army business rules.

None.

5.54.2 Project decisions.

5.54.2.1 Data module coding strategy.

The project shall document the data module coding strategy which shall consist of all business rules associated with data module coding.

5.55 S1000D Chapter 4.3.1 – Data module code – Model identification code.

5.55.1 Army business rules.

5.55.1.1 Model identification code.

The model identification code shall be composed of the system designator (Mission Design Series (MDS) designator or equivalent) and an optional end item UOC.

5.55.1.2 Model identification code for general purpose data modules.

The model identification code for general purpose data modules shall be service or organization specific and shall not be the same model identification used for the equipment-specific data modules. General purpose data modules may include administrative and general information data modules (e.g., reporting errors and improvements, promulgation letters, etc.) that are not equipment-specific. Examples of general purpose model identification codes are: USN, US ARMY, etc.

5.55.1.3 Model identification registration with NATO (North Atlantic Treaty Organization) Support and Procurement Agency (NPSA).

The project shall register all new model identification code(s) with the NPSA and the project shall use AMC Form 1217 to coordinate the model identification code(s) with LOGSA.

5.55.2 Project decisions.

5.55.2.1 Allocation of model identification code.

The project shall decide on which model identification codes to use for the project.

5.55.2.2 Use of one or several model identification codes.

The project shall decide whether to allow the use of one or several model identification codes.

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5.55.2.3 Model identification code.

The project shall decide whether to use the end item UOC as part of the model identification code.

5.55.2.4 Model identification structure.

The project shall decide on, and document, the model identification structure used on a project (e.g., engines, common systems, etc.).

5.56 S1000D Chapter 4.3.2 – Data module code – System difference code.

5.56.1 Army business rules.

None.

5.56.2 Project decisions.

5.56.2.1 System difference code.

The project shall determine how to populate the system difference code and, if using Logistics Product Data (LPD) or a comparable process, define the relationship to LPD.

5.56.2.2 Usable On Code (UOC) as system difference code.

The project shall decide whether or not to use UOC as the system difference code.

5.57 S1000D Chapter 4.3.3 – Data module code – Standard numbering system.

5.57.1 Army business rules.

5.57.1.1 Standard Numbering System (SNS).

If Functional Group Code (FGC) data is available at the time of SNS development, the project SNS shall be derived from FGC. When FGC is used, the SNS breakdown shall follow the hardware breakdown as identified in the MAC and Parts List (refer to 3.3.57); and identified by the SAE GEIA-STD-0007 data element technical_manual_functional_group_code_Type (5260), if available. If FGC data does not exist at the time of SNS development, the project shall decide on the application of the SNS rule in S1000D Chapter 8.2 using another maintained standardized numbering system. If practicable, the project should convert SNS data to be consistent with FGC when FGC data is available. Refer to the Engineering Bulletin Logistics Product Data Handbook (SAE GEIA-HB-0007) as necessary.

5.57.1.2 Use of Functional Group Code (FGC).

The project shall use a consistent method of FGC assignment established by the acquiring authority. The FGC shall depict a top-down hardware breakdown structure (refer to 3.3.57). The maximum length of an FGC is 11 characters. However, projects are encouraged to limit FGCs to ten characters to allow for a straightforward mapping to SNS.

5.57.1.2A Illustrated parts data SNS.

The SNS used to identify parts data shall be consistent with the SNS assigned to other data modules (e.g. maintenance procedures) associated with the same end item

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5.57.1.3 Documentation of Standard Numbering System (SNS).

The SNS shall be documented in the project business rules and included in the BREX data module to the extent possible. (JS-047)

5.57.1.4 Documentation of Standard Numbering System (SNS) and technical names.

The project shall compile a list which defines the SNS and all technical names. (JS-048)

5.57.1.5 Use of technical names and Standard Numbering System (SNS).

Technical names used in content shall match the technical names used in the SNS.

5.57.1.6 Responsible Partner Company (RPC).

Single-character RPC codes shall not be used in IPD data module SNS codes.

5.57.1.7 Initial Provisioning Project Number (IPPN).

A four-digit IPPN shall not be used in IPD data module SNS codes.

5.57.1.8 Product Standard Numbering System structure.

See JS-048 in 5.57.1.4. (JS-112)

5.57.2 Project decisions.

5.57.2.1 Material item category code.

The project shall determine the use of the material item category code (to indicate different types of SNS applicable to an individual project).

5.57.2.2 Sub-subsystem Standard Numbering System (SNS) allocations.

The project shall determine the sub-subsystem SNS allocations.

5.57.2.3 Unit or assembly portion of the Data Module Code (DMC).

The allocation of the unit or assembly portion of the DMC shall be clearly defined in that project's business rules.

5.57.2.4 Number of characters in unit or assembly.

The project shall decide if 2 or 4 characters will be used for the unit or assembly portion of the DMC.

5.58 S1000D Chapter 4.3.4 – Data module code – Disassembly code.

5.58.1 Army business rules.

5.58.1.1 Alternate use of the disassembly code.

When multiple data modules are required to address a single content need (i.e., when the content is voluminous), the disassembly code may be used to establish data module code uniqueness. This use of the disassembly code is intended to be used to segment an otherwise too long data module (that covers a single topic) into multiple data modules. The use of this method shall be compliant with the following rules:

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a. This method shall only be used when all other components of the DMC (model identification, SDC, SNS, and IC) are the same.
b. The disassembly codes shall be a sequential number starting from "01" for each otherwise identical DMC.
c. This method shall only be used with descriptive data modules.
d. The data modules shall be segmented at logical content sections (e.g., sub-topics). Artificial breaks (e.g., after every 10 pages) shall not be used.
e. This method shall not be used when multiple topics are involved that have applicable topic-specific information codes. Information codes shall be the preferred method for identifying the topic of a data module.
f. This method shall not be used when the planned data module content is less than the equivalent of 30 printed pages.
g. This does not prohibit the use of disassembly code for other purposes in other data modules as defined by S1000D and these business rules.
h. For each DM where this method for coding the DC is used, the project shall assign an information name that corresponds to the specific content contained therein and extends the information name normally associated with the ICV. The information name, in these cases, shall be a sub topic of the information name (e.g., "Normal operation, Landing clearance"). (JS-050)

5.58.2 Project decisions.

5.58.2.1 Alternate use of the disassembly code.

Projects shall determine if and when the alternate use of disassembly code addressed in 5.58.1.1 is used.

5.58.2.2 Disassembly code linking.

The project shall determine if the disassembly code should be linked to figures in IPD.

5.59 S1000D Chapter 4.3.5 – Data module code – Disassembly code variant.

5.59.1 Army business rules.

None.

5.59.2 Project decisions.

5.59.2.1 Disassembly Code Variant (DCV).

The project shall decide whether to use one, two or three characters for the disassembly code variant.

5.60 S1000D Chapter 4.3.6 – Data module code – Information codes.

5.60.1 Army business rules.

5.60.1.1 Information codes and information names.

Information codes, information code variants, and information names shall be used as instructed in APPENDIX A, Content selection matrices, and APPENDIX B, Army information codes.

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5.60.1.2 "Available for projects" information codes.

When allocating project specific information codes ("Available for projects"), the hierarchy that is implied in Chapter 8.4 shall be followed. The project shall coordinate all project specific information codes with LOGSA and submit proposed information codes to S1000D via the CPF process described in 5.3.1.1.

5.60.2 Project decisions.

None.

5.61 S1000D Chapter 4.3.7 – Data module code – Information code variant.

5.61.1 Army business rules.

5.61.1.1 Information code variants.

The project shall coordinate all information code variants with LOGSA. Efforts will be made to consistently use information code variants across Army projects. For truly project-unique variants, the digits 1 through 9 are reserved for project use.

5.61.2 Project decisions.

None.

5.62 S1000D Chapter 4.3.8 – Data module code – Item location code.

5.62.1 Army business rules.

None.

5.62.2 Project decisions.

5.62.2.1 Allocation of the item location code "T."

The project shall decide to use the item location code "T" or to use the learn type information.

5.63 S1000D Chapter 4.4 – Information management – Information Control Number.

5.63.1 Army business rules.

5.63.1.1 Information Control Number (ICN).

ICN shall be consistent with the rules in S1000D except in cases where legacy graphics are used which already contain the ICN and the project would encounter expense to remove it.

5.63.1.2 Presentation of Information Control Number (ICN).

The ICN shall be placed outside the graphic except in cases where legacy graphics are used which already contain the ICN within the graphic and the project would encounter expense to remove it. The ICNs are normally derived from the XML attribute **`infoEntityIdent`** and put in place by the page layout system. (JS-052)

5.63.1.3 Identification code, system difference code, and Standard Numbering System (SNS).

The model identification code, system difference code, and SNS for ICN shall be populated in a manner consistent with the project data module coding strategies. (JS-051)

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5.63.1.4 Use of Commercial and Government Entity (CAGE) code or model identification code based Information Control Number (ICN).

The project is not required to decide which method is used for the ICN. Both methods can be used. (JS-119)

5.63.1.5 Unique identifier.

The illustration originator shall determine how to populate the unique identifier of the ICN.

5.63.1.6 Security classifications to be used for CAGE code based and model identification based Information Control Number (ICN).

Only the following values for ICN security classifications shall be used:

a. 01 - unclassified.

b. 01 - not allowed.

c. 03 - confidential.

d. 04 - secret.

e. 05 - top secret.

f. 06-50 - not allowed.

g. 51-99 - not allowed. (JS-119)

5.63.1.7 Security classifications to be used for model identification based Information Control Number (ICN).

See JS-119 in 5.63.1.6. (JS-120)

5.63.2 Project decisions.

5.63.2.1 Responsible Partner Company (RPC).

The project shall determine how to populate RPC in an ICN for model identification code based ICNs.

5.63.2.2 Commercial and Government Entity Codes (CAGECs) for originator.

The project shall define a list of valid CAGECs for originator in ICN.

5.63.2.3 Illustration variant code.

The project shall define the use of the illustration variant code.

5.63.2.4 Issue number.

The project shall define the use of the issue number.

5.63.2.5 Security classification.

The project shall decide whether to use the project security classifications or whether the originator's classifications are allowed to be used.

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5.64 S1000D Chapter 4.5.1 – Data module lists – Data module requirement list.

5.64.1 Army business rules.

5.64.1.1 Data Module Requirements List (DMRL).

A DMRL shall identify the required data modules for a project. The DMRL shall be maintained throughout the project enabling a mechanism to ensure that only data modules that support the maintenance philosophy are produced. The update schedule for the DMRL shall be documented in the project business rules.

5.64.1.2 Population of **`modelIdentCode`** in the data module requirements list.

The model identification code of the data module requirements list identification code shall be populated in conformance with the rules for **`modelIdentCode`** in the data module code.

5.64.1.3 Change markers.

Change markers shall be included in the DMRL.

5.64.1.4 Data module title.

Data module title shall be included in the DMRL.

5.64.1.5 Issue date.

Issue date shall be included in the DMRL.

5.64.1.6 Security classification.

Security classification shall be included in the DMRL.

5.64.2 Project decisions.

5.64.2.1 Data Module Requirements List (DMRL) format.

The project shall decide if the DMRL will be prepared and delivered as recommended using the S1000D DMRL schema or if some alternative, such as a spreadsheet, will be used.

5.64.2.2 Commercial and Government Entity (CAGE) codes for Data Module Requirements List (DMRL) senders.

The project shall define the valid CAGE codes for DMRL senders for a project.

5.64.2.3 Issue date.

The project shall decide whether the issue date of a DMRL should be the input date (i.e., the release to CSDB date), the cut-off date for the information, the planning date or some other more appropriate date.

5.64.2.4 Use of data restriction.

The project shall decide whether or not to use the element **`<dataRestriction>`** in the DMRL status section.

5.64.2.5 Use of reference.

The project shall decide whether or not to use the element **`<dmlRef>`** in the DMRL status section.

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5.64.2.6 Use of data module code extension.

The project shall decide whether or not to use the element **<identExtension>** in the DMRL.

5.64.2.7 Use of data module issue number.

The project shall decide whether or not to use the element **<issueInfo>** in the DMRL.

5.64.2.8 Use of data module requirement answer.

The project shall decide whether or not to use the element **<answer>** in the DMRL.

5.64.2.9 Use of data module requirement remarks.

The project shall decide whether or not to use the element **<remarks>** in the DMRL.

5.64.2.10 Deleted Data Modules (DMs).

The project shall specify whether deleted data modules should appear in the DMRL (value "**d**" of attribute **dmEntryType** in element **<dmEntry>**) or if the entries should be deleted from the DMRL entirely.

5.65 S1000D Chapter 4.5.2 – Data module lists – CSDB status list.

5.65.1 Army business rules.

5.65.1.1 CSDB (Common Source Data Base) Status List (CSL) delivery.

The CSL shall be provided, at minimum, with each data delivery.

5.65.1.2 Data deliverable dates.

The project shall specify dates for data deliverables.

5.65.2 Project decisions.

5.65.2.1 Data module issues.

The project shall specify in the content of the CSL whether to list all issues of data modules or just the latest issues.

5.65.2.2 CSDB (Common Source Data Base) Status List (CSL) delivery.

The project shall decide if CSL deliveries are required at intervals in addition to when data is delivered (e.g., weekly, monthly, etc.).

5.66 S1000D Chapter 4.6 – Information management – Comment.

5.66.1 Army business rules.

5.66.1.1 Department of the Army (DA) Form 2028.

DA Form 2028 shall be used for commenting in page-based manuals.

5.66.1.2 Use of comment schema.

If the S1000D comment schema is used with IETPs, data equivalent to DA Form 2028 shall be collected.

5.66.2 Project decisions.

The following comment business rule options are only applicable to IETP implementations.

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5.66.2.1 Use of comment.

The project shall specify whether comments should be used.

5.66.2.2 Workflow.

The project shall specify workflow for commenting.

5.66.2.3 Model information code.

The project shall specify how to populate model identification code in comments.

5.66.2.4 Commercial and Government Entity Codes (CAGECs) for issuing authority.

The project shall define the valid CAGECs for the issuing authority of comments.

5.66.2.5 Use of titles.

The project shall specify whether comment titles are required or not. If required, the project shall provide rules for establishing titles.

5.66.2.6 Originator.

The project shall specify rules for population of **`<originator>`**, accounting for any data protection act issues with respect to content that includes names, phone numbers, etc.

5.66.2.7 Data restrictions.

The project shall specify whether **`<dataRestriction>`** is required or not.

5.66.2.8 Priority codes.

The project shall define the rules for priority codes.

5.66.2.9 Use of response codes.

The project shall specify whether response codes should be used.

5.66.2.10 Rules for response codes.

The project shall define the rules for response codes.

5.66.2.11 Remarks.

The project shall specify whether remarks should be used.

5.66.2.12 References to attachments.

The project shall specify whether reference to attachment should be used.

5.66.2.13 Allowed file types.

The project shall determine the allowed file types that are supported by the viewing systems.

5.67 S1000D Chapter 4.7 – Information management – Version control of data modules.

5.67.1 Army business rules.

5.67.1.1 Data Dispatch Note (DDN).

Changes to printed manuals shall consist of a DDN (including a **`<deliveryList>`** of changed/new/deleted files), instructions for implementing the change, changed publication modules, changed data modules, affected illustrations, and an authentication page.

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5.67.1.2 Revision summary (Change transmittal page).

A revision summary (change transmittal page) shall be prepared for each change to a publication and shall be included in the change package. The change transmittal page shall not be numbered and shall be located following the warning summary. When updates are prepared, the change date shall be shown on the change transmittal page. Unless specified otherwise by the acquiring activity, the change date shall be the date at which the material to be included was received (copy freeze date, provided by the acquiring activity).

5.67.1.3 Authentication block.

An authentication block shall be included on the change transmittal sheet(s). The authentication block shall be placed after all of the other information on the change transmittal sheet(s).

5.67.1.4 Interactive Electronic Technical Publication (IETP) updates.

Updates to IETP shall consist of a release of the complete IETP with latest change marks visible.

5.67.1.5 Printed publication changes.

Printed publications shall be revised when a proposed change (or the accumulation of existing and proposed changes) would alter 75 percent or more of its printed pages. If the printed output of an entire publication is eight or fewer pages, it shall always be revised when changed.

5.67.1.6 Printed publication revisions.

A complete revision of a publication requires rewrite and reorganization of the technical content of the data. All existing changes to the publication will be merged. All change dates and change symbols will be removed, and page numbering will be revised.

5.67.2 Project decisions.

5.67.2.1 Data module revisions.

The project shall decide when data modules will be revised.

5.67.2.2 Delivery of inwork Data Modules (DMs).

The project shall specify whether inwork data modules should be delivered.

5.68 S1000D Chapter 4.8 – Information management – Interchange of data modules.

5.68.1 Army business rules.

5.68.1.1 Data Dispatch Notes (DDNs).

The use of DDNs is required.

5.68.2 Project decisions.

5.68.2.1 File formats.

The project shall define which packaging file formats may be used to deliver change packages between vendor and customer.

5.68.2.2 Procedures for data exchange.

The project shall define the procedures for exchange of deliverables (e.g., periodicities, media, etc.).

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5.68.2.3 Inclusion of graphics.

The project shall specify whether all graphics referenced have to be included in the exchange package.

5.68.2.4 Non-sequential numbering.

The project shall specify whether numerical gaps are allowed in data modules and/or illustration numbering, or if non-sequential numbering is allowed.

5.68.2.5 Mixed data.

The project shall specify whether the content of exchange packages can include mixed data or if it should be limited to only content-related deliverables. It is conceivable that vendors include other documents (e.g., schedules, invoices, etc.) in exchange packages.

5.68.2.6 Use of photographs.

The project shall decide for what purposes photographs will be used, if at all.

5.68.2.7 Use of multimedia formats.

The project shall decide which multimedia formats will be used, if any at all.

5.68.2.8 Raster graphic resolution.

The project shall decide the resolution to use for raster graphics.

5.69 S1000D Chapter 4.9.1 – Publication management – Publication module.

5.69.1 Army business rules.

5.69.1.1 Publication module definitions.

Two uses of publication modules are relevant to S1000D:

a. Parent publication modules are the publication modules used to produce complete manuals and IETPs.
b. Nested publication modules are the publication modules used to produce subsets of complete manuals and IETPs (e.g., chapters, sections, etc.). (JS-054)

5.69.1.2 Use of publication modules.

Publication modules shall be used to sequence data modules for the preparation of all page-oriented and interactive electronic publications. (JS-055)

5.69.1.3 Language.

Within the element **`<language>`**, the country code shall specify United States and the language code shall specify English (**`<language countryIsoCode="US" languageIsoCode="en"/>`**) or Simplified Technical English (**`<language countryIsoCode="US" languageIsoCode="sx"/>`**).

5.69.1.4 Data restrictions.

The optional element **`<dataRestrictions>`** shall be used for all publications and for data modules.(JS-019) Refer to 5.19.1.6 for more information.

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5.69.1.5 Use of originator and responsible partner company.

Projects shall decide the responsible partner company and the originator for each data module and publication module.

a. The originator for data modules and publication modules shall be the company or organization that originally authored the object. For conversion projects, the organization shall decide whether to make the originator the conversion company or the organization responsible for maintaining the object.
b. The responsible partner company for data modules and nested publication modules shall be the company or organization responsible for maintaining the data module or nested publication module.
c. The responsible partner company for parent publication modules shall be the publication issuing authority (e.g., "Headquarters, Department of the Army"). (JS-056)

5.69.1.6 Use of the element **<enterpriseName>** in parent publication modules.

For parent publication modules, the element **<enterpriseName>** (within the element **<responsiblePartnerCompany>**) shall be used. It shall contain "Headquarters, Department of the Army" for all Department of the Army (DA) authenticated publications. The attribute **enterpriseCode** (in the element **<responsiblePartnerCompany>**) shall not be used in DA authenticated parent publication modules. For all command authenticated publications (parent publication modules), the element **<enterpriseName>** and attribute **enterpriseCode** shall be respectively populated with the command name and appropriate command CAGEC.

5.69.1.6.1 Use of the element **<responsiblePartnerCompany>** with the element **<enterpriseName>** and/or the attribute **enterpriseCode**.

See JS-056 in para 5.69.1.5. (JS-113)

5.69.1.6.2 Use of the element **<originator>** with the element **<enterpriseName>** and/or the attribute **enterpriseCode**.

See JS-056 in para 5.69.1.5. (JS-114)

5.69.1.7 Use of media.

The element **<pubMedia>** shall be used for parent publication modules. It shall not be used for nested publication modules (refer to 5.69.1.1).

5.69.1.8 Publication media type.

The attribute **pubMediaType** shall be populated with the appropriate text from the list below:

a. "Not specified"
b. "PDF – Optimized for Standard page size"
c. "PDF – Optimized for Double standard page size"
d. "PDF – Optimized for Logbook page size"
e. "PDF – Optimized for Pocket page size"
f. "PDF – Optimized for Operator checklist page size"
g. "PDF – Optimized for Operator MTF page size"
h. "PDF – Other"
i. "IETP – Optimized for CD"

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j. "IETP – Optimized for DVD"
k. "IETP – Optimized for web browser"
l. "IETP – Other"

Unless the publication module is specifically designed for a particular restricted output use, the value for the attribute pubMediaType shall not be b, c, d, e, f, g, or k.

5.69.1.9 Publication media code.

The attribute value for **pubMediaCode** shall be set at "00" because the metadata it is intended for has no use in the Army and could potentially harm the ability to reuse the publication module.

5.69.1.10 Location.

The attribute **mediaLocation** shall not be used.

5.69.1.11 System breakdown code and functional item code.

Neither the system breakdown code nor the functional item code shall be used in the publication module status.

5.69.1.12 Use of the element **<reasonForUpdate>**.

Reason for update (**<reasonForUpdate>**) shall be used (for all issues after 001) and it shall include the reasons for updates for each changed data module in the latest change package. It shall also include textual references to all appropriate reason for update documentation (e.g., engineering change proposals). (JS-027)

5.69.1.13 Remarks.

The element **<remarks>** shall be used only for critical information about the publication module that cannot be recorded in a specific element. For example: "The content of this publication module is intended to be produced only on double standard size pages. Correct formatting cannot be guaranteed on other page sizes." The contents of the element **<remarks>** shall not be presented to the user.

5.69.1.14 Titles for multi-volume publications.

The information in the publication title area shall be the same for all volumes of a multivolume set.

5.69.1.15 Nomenclature.

The nomenclature of the equipment, type, model, part number, or subject (blocks, serial numbers, or registration numbers, if appropriate) shall be positioned below the words identifying the publication type or maintenance level, if applicable.

5.69.1.16 Use of the element **<issueDate>**.

For classified documents, the element **<issueDate>** shall contain the date of the document as specified in DOD information security program instructions/directives. The project or organization business rules shall identify the latest instructions/directives at time of contract award. For unclassified documents, the process for determining the dates of issue for publications and data modules shall be decided by the project. (JS-057)

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5.69.1.17 Logo.

The element **<logo>** shall not be used.

5.69.2 Project decisions.

5.69.2.1 Volume.

The project shall specify whether (and how) the attribute **volumeNumber** should be used in the element **<pubMedia>** in the publication module status section. A single volume (i.e., 1 CD or 1 DVD) is preferred.

5.69.2.2 Short publication module title.

The project shall determine the use and population of the element **<shortPmTitle>**.

5.70 S1000D Chapter 4.9.2 – Publication management – Coding of publications.

5.70.1 Army business rules.

5.70.1.1 Publication numbering.

Publication module codes for publications shall consist of the following components:

5.70.1.1.1 Model identification code.

The values for the attribute **modelIdentCode** in the element **<pmCode>** shall be populated in a manner consistent with the rules for the attribute **modelIdentCode** in the data module code. (JS-058)

5.70.1.1.2 Issuing authority.

The attribute **pmIssuer** shall be populated with a value that combines a single character issuing authority code selected from TABLE XXXVII and a four-character category code assigned at the service level by a business rule. (JS-115)

TABLE XXXVII. Issuing Authority Codes.

Code	Proponent
0	Tank-automotive and Armaments Command (TACOM)
1	Army Materiel Command (AMC)
2	Aviation and Missile Command (AMCOM)
3	Armament Research, Development, and Engineering Center (ARDEC)
4	Communications-Electronics/Life Cycle Management Command (CECOM)
5	CECOM Communications Security Logistics Activity (CSLA)
6	Integrated Logistics Support Center-Soldier Biological Chemical (ILSC-SBC)
7	Research, Development, and Engineering Command, Edgewood Chemical Biological Center (ECBC)
8	Joint Munitions Command (JMC)
9	Reserved
A	Army Special Operations Aviation Command (ARSOAC)

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The four-digit category code is equal to the applicable FSC available from https://www.dla.mil/H2/H2home.aspx. Refer to AMC-R 25-76 for additional information about proponents.

5.70.1.1.3 Publication number.

The attribute **pmNumber** shall be populated with a value that combines a three-digit joint service publication code found in column one of Table XXXVIII and a two-character sequence number assigned by the project. (JS-058)

TABLE XXXVIII. Joint Service Publication Codes.

Publication code	Definition	Legacy publication type
OPI	Operator's Manual	10
MM3	Operator and Field Maintenance Manual	13
M3B	Operator and Field Maintenance Manual including Parts List	13&P
MM1	Operator, Field, and Sustainment Maintenance Manual	14
M1B	Operator, Field, and Sustainment Maintenance Manual including Parts List	14&P
MM2	Field Maintenance Manual	23
M2B	Field Maintenance Manual including Parts List	23&P
M2P	Field Maintenance Parts List	23P
MM4	Field and Sustainment Maintenance Manual	24
M4B	Field and Sustainment Maintenance Manual including Parts List	24&P
M4P	Field and Sustainment Maintenance parts list	24P
MM0	Sustainment Maintenance Manual	40
M0B	Sustainment Maintenance Manual including Parts List	40&P
M0P	Sustainment Maintenance Parts List	40P
BDR	Battle Damage Assessment and Repair	BDAR
DWR	Depot Maintenance Work Requirement	DMWR
DWP	DMWR including Parts List	DMWR w/Parts
DWO	DMWR containing National Maintenance Repair Standards	DMWR Containing Overhaul Standards
DOR	DMWR containing National Maintenance Repair Standards including Parts List	DMWR Containing Overhaul Standards w/Parts
NWR	National Maintenance Work Requirement	NMWR
NWP	NMWR including Parts List	NMWR w/Parts

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TABLE XXXVIII. Joint Service Publication Codes - Continued.

Publication code	Definition	Legacy publication type
TTM	Test/Troubleshooting Manual	Aircraft Troubleshooting
PMD	Preventive Maintenance Daily Manual	Aircraft PMD
MSM	Preventive Maintenance Services Manual	Aircraft PMS
PMI	Phased Maintenance Inspection Checklist	Aircraft PM
DTM	Destruction of Equipment to Prevent Enemy Use	Destruction TMs
LAP	List of Applicable Publications	L
CLG	Cargo Loading Manual	S (Prep for Shipment)
CCL	Pilot/Crew checklist (aircraft)	CL
HDR	Hand receipt	HR
FMM	Flight Maintenance Manual (aircraft)	MTF
PCL	Operating procedures (communications security equipment) precombat checklist	OPPCL
PMC	Preventive Maintenance Checklist	PMC
MWO	Modification Work Order	MWO
WTB	Warranty Technical Bulletin	WTB
LBO	Lubrication Order	LO
TEB	Technical Bulletin	TB
SUB	Supply Bulletin	SB
DRL	Depot Maintenance Reference List	DMRL

5.70.1.1.4 Volume.

The value of the attribute **`pmVolume`** shall be populated with a two-digit volume number. If no volume identification is needed, the default value shall be "**`00`**." (JS-058)

5.70.1.2 Numbering nested publication modules.

Publication module codes for nested publication modules that are not also used as stand-alone publications shall consist of the following components:

5.70.1.2.1 Model identification code.

The values for the attribute **`modelIdentCode`** in the element **`<pmCode>`** shall be populated in a manner consistent with the rules for the attribute **`modelIdentCode`** in the data module code.

5.70.1.2.2 Issuing authority.

The attribute **`pmIssuer`** shall be populated with a value that combines a single digit issuing authority code selected from Table XXXVII and a four-digit category code. The four-digit category code is equal to the applicable FSC available from https://www.drms.dla.mil/asset/fsclist.html.

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5.70.1.2.3 Publication number.

The attribute **pmNumber** shall be assigned by the project.

5.70.1.3 Chapters.

Chapters shall be used to divide publication data into specific functional information groups.

5.70.1.4 Chapter and section identification.

Chapters and sections within manuals shall be referenced using either a nested publication module or a nested **<pmEntry>**.

5.70.1.5 Chapter numbers.

Chapters shall be numbered in sequential order throughout the publication using Arabic numerals. Sequential numbering shall continue from volume to volume.

5.70.2 Project decisions.

5.70.2.1 Applicability.

The project shall specify whether applicability should be used in publication module status.

5.70.2.2 Publication number.

The project shall document the method used for populating the attribute **pmNumber** for nested publication modules.

5.70.2.3 Nested publication module volume.

The project shall determine the use of the attribute **pmVolume** for nested publication modules.

5.70.2.4 Chapter and sections identification.

Projects shall decide whether to use nested publication modules, **<pmEntry>**, or a combination to identify chapter and section content in publication modules.

5.71 S1000D Chapter 4.10 – Information management – Business rules exchange.

5.71.1 Army business rules.

5.71.1.1 Layered project BREX.

Projects shall create and use a project-BREX. The project BREX shall use the layered BREX concept to include all higher level BREX. (JS-059)

5.71.1.2 Use of layered Business Rules Exchange (BREX) data modules.

See JS-059 in para 5.71.1.1. (JS-116).

5.71.2 Project decisions.

5.71.2.1 Simplified Technical English.

The project shall decide if Simplified Technical English is to be used in the narrative content of the BREX file.

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5.72 S1000D Chapter 4.10.1 – Information Business rules exchange – Coding of BREX data modules.

5.72.1 Army business rules.

5.72.1.1 Business rules reference.

The BREX file shall contain a reference to each external document that contains project business rules. Each reference shall include any identification or tracking numbers necessary to identify the correct version of the business rules document.

5.72.2 Project decisions.

5.72.2.1 Applicable sets of business rules.

The project shall decide which set or sets of business rules are allowed within the given project. Accordingly, it shall decide which BREX data module or modules will be used to reflect those business rules.

5.73 S1000D Chapter 4.10.2 – Information Business rules exchange – The BREX data module.

5.73.1 Army business rules.

5.73.1.1 Exchange of Standard Numbering System (SNS) using the BREX data module.

The project shall use the BREX data module for exchange of information on the applied SNS to the greatest extent possible.

5.73.1.2 Use of the element **`<snsDescr>`**.

Projects shall use the element **`<snsDescr>`** to provide a description for each specific SNS system.

5.73.1.3 Use of the **`<snsRules>`** branch.

Projects shall document their SNS and technical names using the **`<snsRules>`** branch.

5.73.1.4 Standard Numbering System (SNS) titles.

Projects shall include the SNS title identical to the technical name for that SNS.

5.73.2 Project decisions.

5.73.2.1 Notations.

The project may decide to exclude one or several of the notations (element **`<notationRule>`**) allowable by S1000D. These restrictions are to be included in the BREX data module.

5.73.2.2 System documentation.

Projects shall document all applicable system (1st level breakdown) codes using the element **`<snsSystem>`**.

5.73.2.3 Subsystem documentation.

Projects shall document all applicable subsystem (2nd level breakdown) codes using the element **`<snsSubSystem>`**.

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5.73.2.4 Sub-subsystem documentation.

Projects shall document all applicable sub-subsystem (3rd level breakdown) codes using the element **<snsSubSubSystem>**.

5.73.2.5 Assembly documentation.

Projects shall document all applicable assembly (4th level breakdown) codes using the element **<snsAssy>**.

5.74 S1000D Chapter 4.11 – Information management – Process data module.

5.74.1 Army business rules.

5.74.1.1 Process data module.

The project shall determine the use of the process data module and describe that approach in the business rules.

5.74.2 Project decisions.

5.74.2.1 Use of the process data module.

The project shall decide whether to use the process data module or not.

5.74.2.2 Variable naming conventions.

The project shall decide on a variable naming convention which will eliminate or lessen confusion surrounding process data module variables as different authors at possibly different sites create process data modules which will work together.

5.75 S1000D Chapter 4.12 – Information management – Multiple instances of data modules.

5.75.1 Army business rules.

5.75.1.1 Use of several instances per data module.

Multiple instances of any one data module issue shall not be allowed.

5.75.2 Project decisions.

None.

5.76 S1000D Chapter 4.13.1 – Optimizing and reuse – Paragraph significant data and quantity data.

5.76.1 Army business rules.

None.

5.76.2 Project decisions.

5.76.2.1 General use of paragraph significant data elements.

The paragraph significant data elements are optional, and the project shall decide to use all or part of them, or not to use them.

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5.77 S1000D Chapter 4.13.2 – Optimizing and reuse – Technical information repository data module.

5.77.1 Army business rules.

Refer to 5.40.1.1.

5.77.2 Project decisions.

5.77.2.1 Use of technical information repository.

The project shall decide whether or not to require the delivery of technical information repository data modules (as additional data).

5.78 S1000D Chapter 4.13.3– Optimizing and reuse – Container data module.

5.78.1 Army business rules.

None.

5.78.2 Project decisions.

5.78.2.1 Use of container data module.

The project shall decide if container data modules are used.

5.78.2.2 Identification of container data module.

The project shall choose the container identification method. The chosen method shall be used systematically.

5.78.2.3 Use of applicability within container data module content.

The project shall decide if applicability annotations are duplicated from the referenced data modules to the container data module or not.

5.79 S1000D Chapter 4.14 – Information management – Applicability.

5.79.1 Army business rules.

None.

5.79.2 Project decisions.

5.79.2.1 Providing the human readable part of applicability.

The project shall decide whether to provide the human readable part of applicability or rely on the viewer to build the human readable part.

5.79.2.2 Level of applicability lifecycle.

The project shall decide to what level to implement the life cycle of applicability.

5.79.2.3 Product attribute, conditions naming and identification scheme.

If using the Applicability Cross-reference Table (ACT) and Conditions Cross-reference Table (CCT) data modules, the project shall define a consistent naming and identification scheme for product attributes and conditions.

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5.79.2.4 Method of displaying invalid content.

The project shall specify the method that content is presented which is not valid for the current maintenance context.

5.79.2.5 Number of Applicability Cross-reference Table (ACT), Conditions Cross-reference Table (CCT), and Product Cross-reference Table (PCT) data module instances.

A project shall decide whether to provide one instance of each data module type or to segregate the project into multiple instances of each data module type, and the method for segregation.

5.80 S1000D Chapter 4.14.1 – Information management – Applicability cross-reference table.

5.80.1 Army business rules. None.

5.80.2 Project decisions.

5.80.2.1 Use of product attributes versus conditions.

The project shall decide what types of properties about the product become product attributes (in the ACT data module) versus conditions (in the CCT data module).

5.80.2.2 Configuration management of product attributes.

The project shall decide to what extent they configuration manage and limit editing access to the product attributes. The modification of an existing product attribute can have a significant affect to existing data.

5.81 S1000D Chapter 4.14.2 – Information management – Conditions cross-reference table.

5.81.1 Army business rules.

None.

5.81.2 Project decisions.

5.81.2.1 Use of product attributes versus conditions.

The project shall decide what types of properties about the Product become product attributes (in the ACT data module) versus conditions (in the CCT data module).

5.81.2.2 Use of the pattern.

The project shall decide if enumeration provides enough information specifying the allowable values for a condition or whether the pattern is also needed.

5.81.2.3 Configuration management of the conditions.

The project shall decide to what extent they configuration manage and limit editing access to the conditions. The modification of an existing condition may have a very extensive affect to existing data.

5.81.2.4 Use of the incorporation list.

The project shall decide whether to use the incorporation status list.

5.82 S1000D Chapter 4.14.3 – Information management – Products cross-reference table.

5.82.1 Army business rules.

None.

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5.82.2 Project decisions.

5.82.2.1 Use of a published or a transient data module.

The project shall decide whether to publish a static issue of the data module or use the data module as a transient transfer mechanism between an external system and a viewer.

5.82.2.2 Scope of the product instances.

The project shall decide how many product instances are contained in a data module.

5.82.2.3 Configuration management of the product instances.

The project shall decide how to configuration manage the list of product instances and associated values for product attributes and conditions.

5.83 S1000D Chapter 5 – Information sets and publications.

There are no Army business rules or project decisions in the following S1000D chapters:

a.	Chapter 5	Information sets and publications
b.	Chapter 5.1	Information sets and publications – General
c.	Chapter 5.2	Information sets and publications – Information sets
d.	Chapter 5.2.1.3	Common information sets – Maintenance information
e.	Chapter 5.2.2	Information sets – Air specific information sets
f.	Chapter 5.2.2.2	Air specific information sets – Structure repair information
g.	Chapter 5.2.3	Information sets – Land/Sea specific information sets
h.	Chapter 5.3	Information sets and publications – Publications
i.	Chapter 5.3.1	Publications – Common requirements
j.	Chapter 5.3.1.2	Common Requirements – Technical content

5.84 S1000D Chapter 5.2.1 – Information sets – Common information sets.

5.84.1 Army business rules.

5.84.1.1 Content depth and breadth.

When combined with content selection, information sets define the depth and breadth of technical content. An information set can describe the content of an entire manual (or IETP), or an information set can define a subset of content. An information set is the author's view that is realized by the production of data modules.

5.84.1.2 Maintenance concepts.

Technical manual data developed in accordance with S1000D shall be task oriented and fully consistent with the maintenance concepts derived from the baseline documents described below.

a. LPD. The technical data and instructions developed by the requirements of LPD and DOD Requirements for LPD, (including the MAC) shall be used as the baseline to prepare TMs/IETPs.

b. MAC. For equipment that does not have LPD data available, either a Preliminary Maintenance Allocation Chart (PMAC) or the MAC shall be used as the baseline to prepare TMs/IETPs.

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c. Additional source data. Available engineering drawings shall be used with the other required data. Sound engineering principles and techniques, available engineering analyses, service experience, performance data on the item and on similar items, and all other Reliability, Maintainability, Supportability (RMS) and Operational Availability (Ao) data available shall be used in the preparation of specific instructions.

5.84.1.3 Standard information.

Standard information specified data shall have no deviation to the content requirements including the use of standard headings, number of columns, the titles in the column headings, and required format. The standard information shall be presented (i.e., table, form, etc.) as prescribed by the acquiring activity. The list below is the standard information types (refer to each standard information type for the data requirements).

a. Controls and Indicators
b. Checking Unpacked Equipment
c. Preventive Maintenance Checks and Services (PMCS)
d. Classification of Material Defects
e. Overhaul and Retirement Schedule
f. Depot Mobilization Requirements
g. Repair Parts List
h. Special Tools List
i. Repair Parts Cross-Reference Index
j. Standard Maintenance Allocation Chart (MAC)
k. Aviation Maintenance Allocation Chart (AMAC)
l. Tools and Test Equipment Requirements for (MAC/AMAC)
m. Remarks (MAC/AMAC)
n. Expendable and Durable Items List
o. Mandatory Replacement Parts List
p. Component of End Items (COEI) List
q. (MC) Supply System Responsibility (SSR)
r. Basic Issue Items (BII) List
s. Additional Authorization List (AAL)
t. (MC) Using Unit Responsibility Items (UURI)
u. (MC) Collateral Material (CM) list
v. Tools Identification List
w. Critical Safety Items (CSI)

5.84.2 Project decisions.

None.

5.85 S1000D Chapter 5.2.1.1 – Common information sets – Crew/Operator information.

5.85.1 Army business rules.

5.85.1.1 Scope.

This section contains content requirements for the following information sets:

a. Description and use of controls and indicators (refer to 5.85.3)
b. Operation under usual conditions (refer to 5.85.4)

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c. Operation under unusual conditions (refer to 5.85.5)
d. Operation under emergency conditions (refer to 5.85.6)
e. Stowage and decal/data plate guide (refer to 5.85.7)

5.85.1.2 General.

Operator instructions shall be prepared for weapon systems, major equipment, components, and applicable support and interface equipment. Operating instructions shall describe the operation authorized for the operator/crew. Procedures and supporting illustrations shall be prepared so that personnel can prepare the weapon system/equipment for operation, identify and locate operational controls and indicators, and operate the weapon system/equipment safely and efficiently in both normal and emergency conditions. Unless otherwise specified, an operator instructions chapter shall be used for operator data. Multiple chapters should only be used for equipment that is very complex or that has multiple configurations.

5.85.1.3 Preparation of operator instructions.

Operator instructions shall be prepared and subdivided into individual data modules that provide the operator of the weapon system/equipment with descriptions and use of controls and indicators and operation of the weapon system/equipment under usual, unusual, and emergency conditions.

5.85.2 Project decisions.

5.85.2.1 Types.

The project shall determine which optional operator instruction information sets apply.

5.85.3 Controls and indicators.

Data Module Type: Descriptive Information Code: 111A

5.85.3.1 Army business rules.

5.85.3.1.1 General.

Information shall be prepared for the description and use of all system or equipment controls and indicators. A description and use of controls and indicators shall be prepared for each equipment, assembly, or control panel having controls and indicators. Controls and indicators shall be described using either the tabular or narrative option and shall be used consistently throughout the operator instructions.

5.85.3.1.2 Controls and indicators description tabular option.

This option shall describe each control and indicator in a tabular format. The information set shall start with a short introduction that identifies the basic system, area, or other breakdown. The introduction shall be followed by one or more controls and indicators with an associated illustration for each control and indicator. For each control and indicator, the following entries shall be provided.

a. An index number is used on the illustration to locate and identify the control or indicator on the illustration.

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b. The name (nomenclature) of the control or indicator as it appears on the equipment. Controls and indicators that are not labeled, such as the accelerator or brake pedals, shall be identified. Each control and indicator shall be clearly labeled as it appears on the equipment.
c. The function of the control or indicator shall be described.

5.85.3.1.3 Controls and indicators description narrative option.

This option provides a narrative approach to describe each control and indicator. This textual approach shall begin with a figure illustrating the control or indicator that is being described. The figure shall be followed by paragraphs describing each control or indicator shown in the figure. The narrative option for controls and indicators shall contain the same items as given in the tabular option described above. More than one figure and controls and indicators description may be used to improve user understanding.

5.85.3.2 Project decisions.

5.85.3.2.1 Use of the technical information repository.

The project shall determine whether controls and indicators are prepared with descriptive DMs or technical information repository DMs.

5.85.3.2.2 Use of the tabular format.

If the descriptive data module method is selected, the project shall determine whether controls and indicators are prepared in a tabular format or in a narrative format (paragraphs and figures).

5.85.3.2.3 Multiple data modules.

If the technical information repository data module method is selected, the project shall decide whether one single data module or multiple data modules are used depending on the SNS.

5.85.3.2.4 Use of the control indicator number attribute.

If the technical information repository data module method is selected, the project shall decide whether or not to use the attribute **`controlIndicatorNumber`** when referring to the technical information repository (element **`<controlIndicatorRef>`**).

5.85.4 Operation under usual conditions.

5.85.4.1 Army business rules.

5.85.4.1.1 General.

Instructions to operate the weapon system/equipment and auxiliary equipment in all modes of operation shall be prepared. Any combination of control settings that will create a hazard to personnel or cause damage to equipment shall be preceded by a warning or caution. Instructions to ensure proper grounding of equipment shall be prepared.

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5.85.4.1.2 Security measures for electronic data.

Data Module Type: Descriptive Information Code: 990D

Instructions for handling, loading, purging, overwriting, or unloading classified electronic data under usual conditions shall be developed when the systems are classified or have non-volatile on-board memory that requires to be cleared prior to transportation or other action that allows the data to be accessed by unauthorized personnel. Instructions shall meet the requirements of current regulations as they pertain to automation security.

5.85.4.1.3 Siting.

Data Module Type: Procedural Information Code: 122A

When siting instructions peculiar to the equipment exist, those requirements shall be prepared. Note that "siting" refers to the physical site for the equipment and not to "line of sight." Operational features shall be considered, such as the following.

a. Location.
b. Proximity to power sources.
c. Effective ranges.
d. Terrain requirements to avoid screening reflections, ground clutter, and other poor operational conditions due to terrain.
e. Technical requirements.
f. Shelter locations.
g. Compensating for adverse siting conditions.
h. Orientation to a baseline during siting when the equipment contains large components, such as towers and antennas.
i. Mobile equipment oriented during installation.

5.85.4.1.4 Shelter.

Data Module Type: Procedural Information Code: 123A

For equipment normally housed in a permanent or semi-permanent shelter (other than a military truck, van, or transportable shelter) during use, the following information shall be prepared.

a. Amount of floor, wall, and height space required.
b. A plan for a typical layout.
c. Required weight capacity of the building floor.
d. Dimensions required for installed equipment.
e. Total weight that the floor shall support and the area in square feet over which the total weight will be distributed.
f. Environnemental conditions (e.g., venting).
g. Power requirements.
h. Unusual requirements specific to equipment, such as air-conditioning.
i. Architectural and engineering data on beam sizes, lengths, bending moments, and required supports shall not be included.

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5.85.4.1.5 Assembly and preparation for use.

Data Module Type: Procedural Information Code: 710B

Procedures shall be prepared for unpacking, assembly, and installation. When the equipment is shipped or delivered in specially designed containers, unpacking instructions shall be prepared. If the containers are to be used again, kept for future use, turned in to supply, or if any special disposition is required, the necessary procedures shall be prepared. Assembly and installation procedures shall be prepared when needed. These instructions shall be supported by illustrations. As applicable, power requirements, connections, and initial control settings needed for installation purposes shall be included.

5.85.4.1.6 Initial adjustments, before use, and self-test.

Data Module Type: Procedural Information Code: 121B

Procedures shall be prepared for any routine checks, self-test, or adjustments that the operator shall make before putting the equipment in operation is required.

5.85.4.1.7 Normal operation procedures.

Data Module Type: Procedural Information Code: 131A

The following operating instructions shall be prepared, as applicable.

a. All steps necessary to bring the equipment from OFF through STANDBY condition to full operation, including all necessary warnings and cautions.
b. Procedures for each mode of operation, e.g., manual, automatic, local, remote, etc. The use and relative advantage of each mode shall also be described.
c. Description of the equipment anti-jamming and interference reduction features (if installed), the advantage of each feature, and the operating procedures to be followed. Supporting illustrations (such as indicator displays, waveforms, etc.) shall be included which provide typical observations of jamming and interference for evaluation by the operator.
d. Operator turn-off procedures, including all steps necessary to bring the equipment from full operation through STANDBY to OFF condition.
e. Operating instructions for misfire, hang fire, and other procedures applicable to ammunition.
f. Operating procedures explaining how the equipment is operated in conjunction with auxiliary equipment or how it operates when integrated with other equipment.
g. If equipment requires operator to install, initialize or download software, procedures containing the appropriate instructions shall be prepare. Identification of the software shall include the purpose, configuration applicability, and version information. Procedures that verify that the proper software has been loaded and is operating properly shall also be included. Examples of specific types of data that may be applicable to these information sets are:

    (1) Descriptions of screen data and interpretation of message formats.
    (2) Operator actions based on screen display.
    (3) Data entry by the Operator.
    (4) Saving or purging data.

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(5) Processing of messages.
(6) Software transfer procedures.
(7) Reviewing message and entry formats.

5.85.4.1.8 Operating procedure considerations.

The following considerations should be taken into account when preparing operating procedures.

a. Initial safety requirements (actions, inspections, and emergency turn-off procedures).
b. If a particular operating procedure or step is assigned to a specific crew-served position (e.g., gunner), the assignment shall be indicated.
c. Connection of any accessory equipment not permanently connected.
d. Instructions for obtaining or confirming the presence of all critical inputs such as power, coolant, air, signal, air-conditioning, etc. Specific values for critical inputs (power, coolant, air, etc.) shall also be included.
e. Procedures for setting controls and making adjustments which shall be accomplished by the operator prior to equipment turn-on.
f. Procedures for determining operational readiness and the acceptable indications expected from built-in indicators, such as meters, lamps, gauges, displays, and recorder readouts.
g. Milestones in the operational status of the equipment, indicated by brief statements, such as "The generator is now in STANDBY."
h. Visual or audible observations which occur as a result of an operator action, such as boom lowering, sweep rotation, blower motor running, etc.

5.85.4.1.9 Normal operation procedures (Operating auxiliary equipment).

Data Module Type: Procedural Information Code: 131A

If applicable, procedures shall be prepared for putting the auxiliary equipment into operation, operating it, and putting it in standby or shutdown status. If these procedures are published in another TM/IETP covering the auxiliary equipment, reference shall be made to that TM/IETP.

5.85.4.1.10 Preparation for movement.

Data Module Type: Procedural Information Code: 131S

Preparation for movement procedures shall be prepared if the equipment is designed for movement and it can be readied for movement by the operator. Procedures shall be prepared for actions such as disassembly, folding, and telescoping. Illustrations shall be prepared, as required, to support the text. This information shall not duplicate the "assembly and preparation for use" requirements.

5.85.4.1.11 Decals and instruction plates.

Data Module Type: Descriptive Information Code: 067A

Decals and operating instruction plates located on the equipment, which are essential for operation, shall be clearly illustrated, so that all information is legible. Related warning and caution decals and plates shall be included. An illustration(s) shall be prepared to show the location of all applicable decals and plates including item unique identification (IUID) markings.

5.85.4.2 Project decisions.

5.85.4.2.1 Optional siting features.

The project shall determine optional siting features.

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5.85.4.2.2 Optional operating procedures.

The project shall decide if operating procedures containing the identification, loading, initializing, and downloading of applicable operational and diagnostic software shall be included.

5.85.5 Operation under unusual conditions.

5.85.5.1 Army business rules.

5.85.5.1.1 Security measures for electronic data (Unusual conditions).

Data Module Type: Descriptive Information Code: 990C

Instructions for handling, loading, purging, overwriting, or unloading classified electronic data under unusual conditions. These instructions shall be developed when the systems are classified or have non-volatile on-board memory that requires to be cleared prior to transportation or other action that allows the data to be accessed by unauthorized personnel. Instructions shall meet the requirements of current regulations as they pertain to automation security. If the security measures for electronic data for unusual conditions are the same as security measures for electronic data for usual conditions (refer to 5.85.4.1.2), the data module(s) for security measures for electronic data (IC 990D) shall be used in this section.

5.85.5.1.2 Unusual environment/weather.

Data Module Type: Procedural Information Code: 142B

Procedures shall be prepared for operation under conditions of extreme moist heat, extreme dry heat, extreme cold, salt air, sea spray, dust storms, sand storms, high altitudes, snow, mud, and other similar conditions. Ranges of environmental/weather operating conditions considered for the system addressed shall be defined. Preventive or protective measures to be taken beyond the operator's capabilities shall be identified. Instructions to ensure proper grounding of equipment shall be prepared, as applicable.

5.85.5.1.3 Fording and swimming.

Data Module Type: Procedural Information Code: 131R

If applicable, procedures for fording and swimming the equipment shall be provided.

5.85.5.1.4 Interim Chemical, Biological, Radiological, Nuclear, and Explosives (CBRNE) decontamination procedures.

Data Module Type: Procedural Information Code: 139B

As applicable and specified by the acquiring activity, interim general Biological, Radiological, Nuclear, and Explosives (CBRNE) decontamination procedures to be performed until CBRNE decontamination facilities are available shall be prepared. Other decontamination TMs/IETPs shall be referenced only when necessary.

5.85.5.1.5 Jamming and Electronic Countermeasures (ECM) procedures.

Data Module Type: Procedural Information Code: 144A

As applicable, procedures shall be prepared for operation of the equipment in a Jamming and Electronic Countermeasures (ECM) environment through transmitted and reflected deception signals and through transmitted and reflected jamming.

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5.85.5.1.6 Degraded operation procedures.

Data Module Type: Procedural Information Code: 142C

When operation of the equipment in a degraded condition is required, procedures shall be prepared for temporarily adapting the equipment and the operating procedures to meet the reduction of power, partial failure, failure of a portion of the equipment, or similar conditions.

5.85.5.2 Project decisions.

None.

5.85.6 Operation under emergency conditions.

Data Module Type: Procedural Information Code: 140B

5.85.6.1 Army business rules.

5.85.6.1.1 General.

As applicable, emergency procedures using, but not limited to, the operating and shutdown shall be prepared.

5.85.6.1.2 Operation of the equipment during emergency conditions.

Emergency operating instructions (control failure, air failure, lube oil failure, loss of cooling water, etc.) shall be included. Warning or caution to return the equipment to proper operation when the emergency is over shall also be included.

5.85.6.1.3 Shut down procedures.

Procedures to turn the equipment off during an emergency (fire, water, smoke, hazard to personnel, loss of coolant, normal power, etc.) shall be included.

5.85.6.1.4 Vehicle recovery.

For vehicle manuals, information related to vehicle recovery and towing shall be included in the operation under emergency conditions data module.

5.85.6.2 Project decisions.

None.

5.85.7 Stowage and decal/data plate guide.

Data Module Type: Descriptive Information Code: 067B

5.85.7.1 Army business rules.

5.85.7.1.1 General.

Stowage and decal/data plate guide data module shall be prepared as directed by the acquiring activity. The guide plan shall include information provided by the acquiring activity.

5.85.7.1.2 Scope.

A brief scope statement shall be prepared explaining the purpose of the Stowage and decal/data plate guide.

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5.85.7.1.3 Location of decals.

Data on the location of all decals and data plates shall be prepared. As applicable, illustrations detailing the locations of the decals and data plates including IUID markings shall be included.

5.85.7.2 Project decisions.

5.85.7.2.1 Preparation instructions and information.

The project shall determine preparation instructions and information for stowage and decal/data plate guide(s).

5.86 S1000D Chapter 5.2.1.2 – Common information sets – Description and operation.

5.86.1 Army business rules.

5.86.1.1 Scope.

General information, equipment description, and theory of operation data shall be developed and divided into the following types of information sets. Nomenclature used to identify the weapon system, major equipment, components, and applicable support and interface equipment shall remain consistent throughout and between all data modules.

a. General data (refer to 5.86.3).
b. General information (refer to 5.86.4).
c. Equipment description and data (refer to 5.86.5).
d. Theory of operation (refer to 5.86.6).
e. General information (**Preventive Maintenance Service Manual only**) (refer to 5.86.7).
f. General information (**Phased Maintenance Inspection Manual only**) (refer to 5.86.8).

5.86.1.2 General.

Descriptive information with theory of operation shall be prepared for weapon systems, major equipment, components, and applicable support and interface equipment. Information required to provide the user with a physical description and functionally explain how the weapon system or equipment operates shall be included.

5.86.1.3 Preparation of general information, equipment description, and theory of operation.

General information, equipment description and theory of operation chapter shall be prepared and subdivided into individual information sets to provide the user with information for general requirements, descriptive data about the weapon system or equipment, and an explanation of how the weapon system or equipment works. Weapon system and equipment description and theory of operation data shall be developed in narrative or tabular form, or by whatever method is most simple or effective to convey the specific TM/IETP application. Descriptive information shall not contain any procedural data or warnings, cautions or notes. When necessary for clarity or improved understanding, illustrations shall be used to support the narrative or tabular information.

5.86.2 Project decisions.

None.

5.86.3 General data.

Data Module Type: Descriptive Information Code: 010A

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5.86.3.1 Army business rules.

5.86.3.1.1 General.

A single descriptive data module shall be used to prepare the following general data:

5.86.3.1.2 Scope.

A brief statement shall be prepared to tell what is covered in the TM/IETP. As applicable, the following information shall also be included.

a. Type of manual.
b. Model number(s) and equipment name(s).
c. Purpose of equipment.
d. Special inclusions in the manual, such as drill procedures or on-vehicle loading plans.

5.86.3.1.3 Ozone Depleting Substances (ODS).

The use of Class 1 ozone depleting substances (ODS) for new acquisitions has been curtailed by Section 326 of the National Defense Authorization Act of Fiscal Year 1993 (Public Law 102, 484) and related Army policy. Ozone depleting substances are listed in Title VI of the Clean Air Act. For systems procured and fielded prior to the effectiveness of the above law (June 1993) that use a Class 1 ODS, a listing of those substances required to operate and maintain the system shall be included in the manual. This requirement applies to any system procured or fielded after June 1993 that requires the use of a Class 1 ODS, where the use of the ODS has been properly documented and waived. The procuring activity will provide a list of Class 1 ODS on request.

5.86.3.1.4 Destruction of Army materiel to prevent enemy use.

Reference shall be made to the appropriate data modules covering the destruction of Army materiel to prevent enemy use as provided by the proponent activity.

5.86.3.1.5 Preparation for storage or shipment.

Reference shall be made to the preparation for storage data module and preparation for shipment data module found in the TM. If the relevant data modules are in another DA-authenticated publication, reference shall be made to that publication. Reference shall not be made to any Surface Deployment and Distribution Command (formerly Military Traffic Management Command)/Transportation Engineering Agency (SDDC/TEA) (formerly MTMC/TEA) publications.

5.86.3.1.5A Transportability guidance. Reference shall be made to the transportability guidance data modules in the manual and/or to applicable DA-authenticated publications containing this guidance. Reference shall not be made to any Surface Deployment and Distribution Command (formerly Military Traffic Management Command)/Transportation Engineering Agency (SDDC/TEA) (formerly MTMC/TEA) publications.

5.86.3.1.6 Nomenclature cross-reference list.

A cross-reference list shall be prepared when unofficial nomenclature (common name) is approved by the proponent activity. A statement on how to access the nomenclature cross-reference list shall be included.

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5.86.3.1.7 List of abbreviations/acronyms.

A list of all abbreviations, acronyms, signs, or symbols used in the manual shall be prepared. Warning icons are defined in the Warning Summary. For **aircraft only**, a statement shall be prepared that abbreviations are in accordance with abbreviations contained in the Records Management and Declassification Agency (RMDA) at https://www.rmda.army.mil/abbreviation/mainmenu.asp, except when the abbreviation stands for a marking actually found in the aircraft.

5.86.3.1.8 Safety, care, and handling.

The following general precautions and safety regulations shall be prepared.

a. **For ammunition TMs/IETPs**, information shall be prepared to comply with DA PAM 385-63. References to applicable Army Regulations (ARs) for range safety and danger zones during training and combat shall be included. Explanations and official definitions shall be prepared for such safety-related terms as "misfire," "hang fire," and "cook-off," which describe characteristics associated with the specific items(s) covered by the TM/IETP under preparation. A reference to AR 385-64 and DA PAM 385-64 shall be made for general ammunition care, handling, and safety.
b. **For TMs/IETPs covering equipment with radioactive parts or components**, information shall be prepared to comply with Nuclear Regulatory Commission provisions, and references to applicable ARs and safety TMs/IETP on radioactive materials shall be included. If additional coverage on radioactive materials is needed, but is not included in applicable TMs/IETPs, instructions shall be prepared as required. In addition, the following information shall be prepared for inclusion throughout the TM/IETP.

    (1) Nuclear warning notices shall be placed at the beginning of any instruction covering procedures that will expose personnel to a nuclear radiation hazard.
    (2) Procedures to be followed prior to maintenance actions, or in the event of breakage of radioactive parts or components, including safety, care, and handling instructions.
    (3) Radioactive parts or components shall be shown and identified on a parts location diagram or illustration, and warning notices.
    (4) A list of radioactive parts or components and the type and quantity of radioactive material involved shall be included as part of equipment data.
    (5) Instructions for the disposal of radioactive material, such as the requirement to double bag all broken tritium sources in plastic.

c. ESD control standards for the protection of electrical and electronic parts, assemblies, and equipment shall be prepared. The ESD classes shall be identified. Refer to MIL-STD-1686 and MIL-HDBK-263, which contains ESD control procedures and material necessary to protect these items. For classifications of ESD marking procedures, refer to 5.11.1.15.2.
d. (**DMWRs/NMWRs only**) When applicable, reference shall be made to the electromagnetic compatibility standards that apply to the equipment covered in the DMWR/NMWR.

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5.86.3.1.9 Calibration.

Equipment requiring calibration shall be identified, and reference shall be made to the publication containing the applicable calibration procedure.

5.86.3.1.10 Supporting information for repair parts, special tools, Test Measurement and Diagnostic Equipment (TMDE), and support equipment **(Field level only)**.

When applicable, the following information shall include a reference to the common tools and equipment; special tools, TMDE, and support equipment; and the repair parts as shown below. (Applies only to maintainer/AMC maintenance).

5.86.3.1.10.1 Common tools and equipment.

The following statement shall be included:

> "COMMON TOOLS AND EQUIPMENT
>
> For authorized common tools and equipment, refer to the Modified Table of Organization and Equipment (MTOE), CTA 50-970, Expendable/Durable Items (Except: Medical, Class V, Repair Parts, and Heraldic Items), CTA 50-909, Field and Garrison Furnishings and Equipment or CTA 8-100, Army Medical Department Expendable/Durable Items, as applicable to your unit."

5.86.3.1.10.2 Special tools, Test Measurement and Diagnostic Equipment (TMDE), and support equipment.

A reference to the Illustrated Parts List information set and MAC shall be included. When no special tools or equipment are required, it shall be so stated. If tools are to be fabricated, reference to the Illustrated List of Manufactured Items information set shall be made.

5.86.3.1.10.3 Repair parts.

The following statement shall be included.

> "Repair parts are listed and illustrated in the parts information (*insert appropriate data module title*) of this (TM/IETP)."

5.86.3.1.11 Copyright credit line.

TMs/IETPs should not contain copyrighted material except as specified in the FAR and DFAR Supplement. When copyrighted material is included in a TM/IETP, the author shall obtain prior written permission from the copyright owner or authorized agent for its use. The written permission shall contain a statement declaring whether or not a copyright credit line is required. When a copyright credit line is required, the information shall appear as the last paragraph of the general information data module.

5.86.3.1.12 Item unique identification (IUID). If the equipment covered by the manual or any of its components/parts has IUID markings, a statement similar to the following shall be included:

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"**ITEM UNIQUE IDENTIFICATION**
This equipment and/or its components/parts are marked with item unique identification (IUID) markings such as data plates, decals, or etchings. These markings must be scanned during performance of procedures to remove and replace the items marked or when turning in items or receiving them from supply or another unit. For information on location of the IUID marking for the equipment, refer to the decal/data plate guide contained in the operator manual for the equipment."

5.86.3.2 Project decisions.

None.

5.86.4 General information.

Data Module Type: Descriptive Information Code: 010B

5.86.4.1 Army business rules.

5.86.4.1.1 General.

A single descriptive data module shall be used to prepare the following general information:

5.86.4.1.2 Maintenance forms, records, and reports.

a. The following statement shall be included in Army-only TMs/IETPs:

"MAINTENANCE FORMS, RECORDS, AND REPORTS

Department of the Army forms and procedures used for equipment maintenance will be those prescribed by (as applicable) DA PAM 750-8, Functional Users Manual for the Army Maintenance Management System (TAMMS); DA PAM 738-751, Functional Users Manual for the Army Maintenance Management Systems - Aviation (TAMMS-A); or AR 700-138, Army Logistics Readiness and Sustainability."

b. The following statement shall be included in Marine Corps-only TMs/IETPs:

"MAINTENANCE FORMS, RECORDS, AND REPORTS

Maintenance forms and records used by Marine Corps personnel are prescribed by DA Pam 750-8."

c. The following statements shall be included only for multi-service technical publication and use only applicable services (e.g., if the Navy does not use the publication, do not include a statement for that Service):

"MAINTENANCE FORMS, RECORDS, AND REPORTS

(Army) Department of the Army forms and procedures used for equipment maintenance will be those prescribed by (as applicable) DA PAM 750-8 Functional Users Manual for the Army Maintenance Management System (TAMMS); DA PAM 738-751, Functional Users Manual for the Army Maintenance Management Systems - Aviation (TAMMS-A); or AR 700-138, Army Logistics Readiness and Sustainability.

(Marine Corps) Maintenance forms and records used by Marine Corps personnel are prescribed by DA Pam 750-8.

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(Air Force) Maintenance forms and records used by Air Force personnel are prescribed in AFI 21-101 and the applicable TO 00-20 Series Technical Orders.

(Navy) Navy users should refer to their service peculiar directives to determine applicable maintenance forms and records to be used."

d. The following statement shall be added for Army ammunition:

"Accidents involving injury to personnel or damage to material will be reported on DA Form 285, U.S. Army Accident Report in accordance with AR 385-10. Explosives and ammunition malfunctions will be reported in accordance with AR 75-1."

e. When applicable, add references to SB 742-1, Inspection of Supplies and Equipment Ammunition Surveillance Procedures.

5.86.4.1.3 Reporting equipment improvement recommendations.

The following statement shall be included (italicized text within parentheses shall be replaced with the appropriate information):

"REPORTING EQUIPMENT IMPROVEMENT RECOMMENDATIONS (EIR)
If your (*insert equipment short item name*) needs improvement, let us know. Send us an EIR. You, the user, are the only one who can tell us what you do not like about your equipment. Let us know why you do not like the design or performance. "

(A) For aviation and missiles systems add the following:

"All AMCOM (Aviation and Missile Command) Deficiency Reports (DRs), (Warranty, EIR, and PQDRs) must be submitted through the Joint Deficiency Reporting System (JDRS) at https://jdrs.mil/."

(A) For all equipment other than missile or aviation systems add the following:

"All non-Aviation/Missile EIRs and PQDRs must be submitted through the Product Data Reporting and Evaluation Program (PDREP) Web site. The PDREP site is: https://www.pdrep.csd.disa.mil/."

(MC) The following statement shall be added for Marine Corps TMs:

“SF Form 368, Product Quality Deficiency Report can be found at http://www.logcom.marines.mil/centers/Generalstaff/Lsmc/pqdr.aspx and should be submitted as an email attachment to smblogcompqdrstracking@usmc.mil, (GAL display name SMB LOGCOM PQDRs Tracking).”

(A) Add the following at the end after the above information:

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"If you do not have internet access, you may submit your information using an SF 368 (Product Quality Deficiency Report). You can send your SF 368 using email, regular mail, or fax using the addresses/fax numbers specified in (*DA PAM 750-8, The Army Maintenance Management System (TAMMS) Users Manual* OR *DA PAM 738-751, Functional Users Manual for the Army Maintenance Management Systems - Aviation (TAMMS-A) for aviation systems*). We will send you a reply."

5.86.4.1.3.1 DELETED.

5.86.4.1.4 Hand Receipt (HR) manuals (**Field**).

If hand receipt information exists and is included with the TM/IETP on the disc, the following statement shall be included in the general information data module. A separate PDF file shall be used for hand receipt information contained on the IETP disk. Hand receipt information shall not be used in place of COEI, BII, and AAL information. A link/instructions shall be provided to access the information:

"HAND RECEIPT (HR) MANUALS

This IETP contains hand receipts that list end item related equipment (i.e., COEI, BII, and AAL) that shall be accounted for."

If hand receipt information exists but is not included with the TM/IETP, the following statement shall be included in the general information data:

"HAND RECEIPT (HR) MANUALS

This manual has a companion document (*insert external document reference number*) that consists of preprinted hand receipts that list end item related equipment (i.e., COEI, BII, and AAL) that shall be accounted for. As an aid to property accountability, additional HR manuals may be requisitioned through normal publication channels."

5.86.4.1.5 Corrosion prevention and control (CPC).

5.86.4.1.5.1 CPC structure. CPC information shall be included in the general information work package. Refer to AR 750-59 for further information on CPC. CPC information shall consist of the following:

a. CPC boiler plate statement.
b. SF 368 boiler plate statement.
c. References to relevant maintenance tasks, data modules, or DA publications.

5.86.4.1.5.2 CPC boiler plate statement. A statement similar to the following shall be prepared:

"CORROSION PREVENTION AND CONTROL (CPC)
Corrosion prevention and control of Army materiel is a continuing concern. It is important that any corrosion problems with this item be reported so that the problem can be corrected and improvements can be made to prevent the problem in future items. The term “corrosion” means the deterioration of a material or its properties due to a reaction of that material with its chemical environment. An example is the rusting of iron. Corrosion damage in metals can be seen, depending on the metal, as tarnishing, pitting, fogging, surface residue, and/or cracking. Plastics, composites, and rubbers can also

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degrade (also considered to be corrosion based on the above definition of corrosion). Degradation is caused by thermal (heat), oxidation (oxygen), solvation (solvents), or photolytic (light, typically ultraviolet) processes. The most common exposures are excessive heat or light. Damage from these processes will appear as cracking, softening, swelling, and/or breaking. The US Army has defined the following nine (9) forms of corrosion used to evaluate the deterioration of metals. These shall be used when evaluating and documenting corrosion.
UNIFORM (or general attack): Affects a large area of exposed metal surface, like rust on steel or tarnish on silver. It gradually reduces the thickness of the metal until it fails.
CREVICE: Occurs in crevices created by rubber seals, gaskets, bolt heads, lap joints, dirt or other surface deposits. It will develop anywhere moisture or other corrosive agents are trapped and unable to drain or evaporate.
SELECTIVE LEACHING: One element, usually the anodic element of an alloy, corrodes away, leaving the cathodic element. This can create holes in metal.
INTERGRANULAR: Metal deterioration caused by corrosion on the bonds between or across the grain boundaries of the metal. The metal will appear to be peeling off in sheets, flaking, or being pushed apart by layers. A particular type of intergranular corrosion is exfoliation.
PITTING: This can result from conditions similar to those for crevice corrosion. Pits can develop on various materials due to their composition. Rifle boxes are big victims of pitting.
EROSION: Results when a moving fluid (liquid or gas) flows across a metal surface, particularly when solid particles are present in the fluid. Corrosion actually occurs on the surface of the metal, but the moving fluid washes away the corrosion and exposes a new metal surface, which also corrodes.
FRETTING: Occurs as a result of small, repetitive movements (e.g., vibration) between two surfaces in contact with each other. It’s usually identified by a black powder corrosion product or pits on the surface.
GALVANIC: Occurs when two different types of metal come in contact with each other, like steel bolts on aluminum, for example. This is a common problem on aircraft because of their mix of metals.
STRESS: Term used to describe corrosion cracking and corrosion fatigue.
Where an item is not ready/available due to one of these forms of corrosion, it shall be recorded as a corrosion failure in the inspection record and the appropriate code (170) for corrosion shall be used when requesting/performing maintenance."

5.86.4.1.5.3 SF 368 boiler plate information. One of the following statements shall be included verbatim in the CPC information after the CPC boiler plate information:

a. For non-aviation systems:

" If a corrosion problem is identified, it can be reported as an EIR or PQDR. Use of key words such as "corrosion," "rust," "deterioration," or "cracking" will ensure that the information is identified as a CPC problem. SF 368, Product Quality Deficiency Report should be submitted to the address specified in DA PAM 750-8, The Army Maintenance Management System (TAMMS) Users Manual. "

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b. For aviation systems:

" If a corrosion problem is identified, it can be reported as an EIR or PQDR. Use of key words such as "corrosion," "rust," "deterioration," or "cracking" will ensure that the information is identified as a CPC problem. SF 368, Product Quality Deficiency Report should be submitted to the address specified in DA PAM 738-751, Functional Users Manual for The Army Maintenance Management System-Aviation (TAMMS-A)."

5.86.4.1.5.4 References to relevant tasks, data modules, and DA publications. References may be included to relevant tasks, data modules and DA publications. For aviation systems reference shall be included to TM 1-1500-344-23, volumes 1-4 (Cleaning and Corrosion Control). For wheeled vehicle TMs, reference shall be included to TB 43-0213 (Corrosion Prevention and Control (CPC) for Wheeled Vehicles). If applicable, reference to TM 43-0139 shall be included.

5.86.4.1.6 Warranty information.

When the TM/IETP covers equipment that is under warranty and a Warranty Technical Bulletin (WTB) is published, the applicable WTB shall be referenced. When a WTB is not published, the following statement shall be included.

"WARRANTY INFORMATION

The (*insert name of equipment*) is warranted for (*insert miles or other timeframe as appropriate*). The warranty starts on the date found in block 23 of DA Form 2408-9, Equipment Control Record. Report all defects to your supervisor, who will take appropriate action."

5.86.4.1.7 Quality of material (not required for operator’s manuals).

A statement(s) similar to the following shall be included.

"Material used for replacement, repair, or modification shall meet the requirements of this (*insert TM/IETP*). If quality of material requirements are not stated in this (*insert TM/IETP*), the material shall meet the requirements of the drawings, standards, specifications, or approved engineering change proposals applicable to the subject equipment."

5.86.4.1.8 Nuclear hardness.

If equipment covered in the TM/IETP has nuclear survivability requirements (i.e., overpressure and burst, thermal radiation, electromagnetic pulse, or transient radiation effects on electronics), it shall be so stated. The following statement shall be included.

"NUCLEAR HARDNESS

All hardness critical procedures in this manual are marked with the acronym HCP as follows:

1. When an entire task, including all paragraphs and procedures, is considered hardness critical, only the task title will be marked by the acronym HCP, placed before the title.

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2. When only certain processes and steps within the data module are hardness critical, only the applicable processes and steps will be marked by placement of the acronym HCP between each applicable step number and the text."

5.86.4.1.9 Quality Assurance (QA) **(DMWR/NMWR and aviation only)**.

When specified by the acquiring activity, reference shall be made to the pertinent QA or include the appropriate general QA information. If QA information is not referenced but is included in the manual/IETP, it shall be stated that the text of each quality assurance procedure or step in the manual is preceded (and highlighted) by the addition of "QA check." For aircraft maintenance TMs/IETPs, include a reference to TC 3-04.7. The abbreviation "QA" shall be defined either in a note or in the text.

5.86.4.1.10 Critical Safety Items (CSIs) .

The following statement shall be included for critical safety items (CSI):

"CRITICAL SAFETY ITEMS (CSI) PROGRAM

Parts, assemblies, or installations identified under the CSI program require special handling during maintenance and overhaul (M&O). Throughout the M&O procedures, warnings are included emphasizing critical instructions to be followed. These warnings are identified as CSI warnings.

A critical safety item is defined as:

A part, assembly, installation or production system with one or more critical or critical safety characteristics that, if missing or not conforming to the design data, quality requirements or overhaul and maintenance documentation, would result in an unsafe condition that could cause loss or serious damage to the end item or major components, loss of control, uncommanded engine shutdown or serious injury or death to personnel. Unsafe conditions relate to hazard severity categories I and II of MIL-STD-882 and include items determined to be "life-limited," "fracture critical," "fatigue-sensitive," etc. The determining factor in CSI is the consequence of failure, not the probability that the failure or consequence would occur.

All CSIs shall be handled and managed as prescribed in DOD 4140.1R and DA PAM 95-9.

Throughout the maintenance tasks, ‘CRITICAL SAFETY alerts will precede the procedural step that includes a CSI, emphasizing that this part or parts require(s) special handling during maintenance."

5.86.4.1.10.1 Identification of procedural steps involving critical safety items (CSI).

For each procedural step that includes CSI, the critical safety item alert shall be presented as a warning. The attribute **`warningType`** shall be used and its value shall be "csiWarning". The contents if the child element **`<warningAndCautionPara>`** of the element **`<warning>`** shall be preceded by the following text which shall be generated by the stylesheet: "CRITCAL SAFETY ITEM".

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5.86.4.1.11 Engineering Change Proposals **(ECPs) (DMWR/NMWR only).**

The following statement shall be included (**DMWR/NMWR only**):

"ENGINEERING CHANGE PROPOSALS

Engineering Change Proposals (ECPs) will be submitted in accordance with AR 70-1 directly to (*insert the name and address of the responsible command or activity*) A reply will be furnished to you."

5.86.4.1.12 Modification list **(DMWR/NMWR only).**

MWOs and ECPs shall be identified for all modifications which have been incorporated into the work required by the DMWR/NMWR. MWOs shall be reported as outlined in DA PAM 750-8. The applicable MWOs and the ECPs shall be listed (title and number). This listing shall be supplied by the Life Cycle Management Command (LCMC). Alternatively, a statement shall be made stating that the modifications shall be applied during the overhaul of the item. For example:

"MODIFICATIONS

All Modification Work Orders (MWOs), all minor alteration procedures (MAP) specified in the contract/work directive, and all ECPs listed in the (*insert DMWR or NMWR*) shall be applied during the overhaul of the item."

5.86.4.1.13 Deviations and exceptions **(DMWR/NMWR only).**

The following statement shall be included (**DMWR/NMWR only**):

"DEVIATIONS AND EXCEPTIONS

Requests for deviations or exceptions to this (*insert Depot Maintenance Work Requirement (DMWR) or National Maintenance Work Requirement (NMWR)*) will be processed in accordance with ISO 9000 Series standards, or equivalent."

5.86.4.1.14 Mobilization requirements **(DMWR/NMWR only).**

The following statement shall be included (**DMWR/NMWR only**):

"MOBILIZATION REQUIREMENTS

All requirements of this (*insert DMWR or NMWR*) will be exempted or revised in the event of mobilization. Only those procedures necessary to return the (*insert equipment name*) to a serviceable condition will be performed. The exemptions and revisions are explained in supporting information set (*insert appropriate data module title*)."

5.86.4.1.15 Cost considerations **(DMWR/NMWR only)**. The following statement shall be included (**DMWR/NMWR only**):

"COST CONSIDERATIONS

This work requirement shall be the basis for establishing the extent of overhaul while taking into consideration cost factors. A determination shall be made on all subassemblies/assemblies to replace worn or damaged components which are available in supply, if acquisition cost is less than the cost to repair and restore to the (*insert DMWR or NMWR*) standard. The cost to repair/restore any individual item with an

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established Maintenance Expenditure Limit (MEL) to the (*insert DMWR or NMWR*) standard shall not exceed the MEL, unless a waiver has been approved in accordance with AR 750-1. This requirement does not apply to items exempted from MEL in accordance with AR 750-1."

5.86.4.2 Project decisions.

5.86.4.2.1 References to Quality Assurance (QA).

The project shall determine if a reference shall be made to the pertinent QA or included directly (refer to 5.86.4.1.9).

5.86.4.2.2 Separate Hand Receipt (HR).

The project shall determine if Hand Receipts will be part of the publications or referenced as a separate document.

5.86.5 Equipment description and data.

Data Module Type: Descriptive Information Code: 000B

5.86.5.1 Army business rules.

5.86.5.1.1 General.

If the descriptive data is provided in a separate operator's manual, a paragraph referencing the equipment description and data in the operator's manual shall suffice. Additional equipment description and data required for a higher maintenance level, but not included in the operator's manual, shall be included. This information set shall not contain any operator or maintenance procedures.

5.86.5.1.2 Equipment characteristics, capabilities, and features.

An overall description of the equipment shall be prepared, including general capabilities, special features, and other like information (e.g., applications, limitations) which will be helpful in the operation and maintenance of the equipment. Unless otherwise directed, the information may be in narrative or tabular format.

a. The equipment type shall be stated, as shall the following equipment features: portability or mobility, operational and special environment, and remote control.
b. Components and their functions shall not be described unless essential to continuity. For functional data, reference shall be made to theory of operation.
c. When equipment covered varies in scope and application or has several applications within an end item, a brief explanation of the multiple usages and a simple diagram showing all aspects of a typical application shall be prepared.
d. **For ammunition TMs/IETPs**, packing and packaging information shall be prepared, including number of rounds per pack.

5.86.5.1.3 Location and description of major components (**except Conventional Ammunition and Chemical Manuals only**).

Equipment location information shall be prepared including external and internal views of the equipment used to show general features and all major components. This information shall not duplicate information contained in the equipment data requirements and the equipment characteristics, capabilities, and features.

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a. The equipment and weapon systems configuration shall be described as follows:

(1) A description of system areas and compartments shall be prepared, and the system equipment and components contained in the areas shall be identified. To identify and locate the listed system equipment the configuration description shall be supported by separate illustrations of each compartment and area. For aircraft only, a station diagram showing fuselage station, water line, and butt line, etc. shall be included.

(2) The subsystems or equipment comprising the system shall be identified and described. Other equipment which is installed in the subject system compartments and areas need not be listed in the text or called out in the illustrations if they do not directly affect the operation or maintenance of the subject system. Descriptions of operator-attended equipment shall include general statements about the nature and purpose of the controls and indicators. The text shall be supported by illustrations.

(3) Descriptions and illustrations of associated-system equipment shall be limited to the major units of that equipment. The descriptions shall be more concise than those of the subject system equipment; otherwise, the same requirements shall apply. In the descriptions, emphasis shall be placed on associated systems equipment that constitutes operational or functional interfaces with the subject system. Such units shall be included in the system illustrations.

b. Illustrate the use of the equipment. Only information pertaining to the user shall be prepared.

c. Location and contents of end item and major component identification plates shall be illustrated. Modification information, and warranty plates, stencils, or location of serial numbers shall be illustrated.

5.86.5.1.4 Equipment differences.

Equipment differences shall be prepared and shall include the following:

a. Differences between models that affect operation, maintenance or interchangeability shall be described to allow for easy identification by the user.

b. Differences within the same model e.g. options, upgrades etc., shall be related explicitly to equipment part number, or serial number ranges to allow for easy identification of the specific equipment configuration involved.

Non-specific terms such as "on later equipment," “on later models,” and "on early serial numbers" shall not be used. References to other data modules such as “Decals and instruction plates” and content filtering through applicability may be used to supplement the above requirements. If there are no differences in the equipment the following statement shall be included:

"There are no equipment variations within (*insert system name*).".

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5.86.5.1.5 Equipment data.

a. Performance data shall be prepared, including numerical and other standard-related data applying to operational and maintenance functions. The equipment data shall summarize the specific capabilities and limitations of the equipment and other critical data needed by the TM/IETP user for maintenance of the equipment. Vehicle and cargo space dimensions and metric and other equivalents shall be included.
b. For systems, a list of the environmental control requirements, such as limited temperature, humidity, or other limited conditions shall be prepared. Reference shall be made to the data module(s) containing information on damage to be expected from exceeding these limits and procedures for minimizing the damage.
c. A summary shall be prepared that lists the effects of weather conditions on equipment affecting system capability or causing equipment damage. This summary shall include references to any special servicing procedures that shall be accomplished because of climatic changes, such as adding antifreeze to coolants.
d. The energy efficiency rating shall be included for products that directly consume energy in normal operations and that commonly have a method of expressing energy efficiency.

5.86.5.1.6 Instructions for the use, transportation, handling, storage, or disposal.

Data Module Type: Procedural Information Code: 800L

Instructions for the use, transportation, handling, storage, or disposal of such substances as fuels, toxic and hazardous substances, chemicals, ordnance, and munitions shall be prepared. These instructions shall meet the applicable requirements of the Federal Environmental Protection Standards (standards to be provided by the acquiring activity).

5.86.5.2 Project decisions.

None.

5.86.6 Theory of operation **(except Conventional and Chemical Ammunition only)**.

Data Module Type: Descriptive Information Code: 042F

5.86.6.1 Army business rules.

5.86.6.1.1 General.

Theory of operation shall be prepared to provide the user with adequate background information to support and perform maintenance tasks and troubleshooting on the weapon system, equipment, or components. DMWR/NMWR shall include this information set as required by the acquiring activity. The amount of detail and complexity of the theory of operation presentation shall be in accordance with the LPD maintenance concept, the MAC, or an approved maintenance plan. This information set shall not contain any operator or maintenance procedures.

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5.86.6.1.2 Scope.

Theory of operation shall consist of a functional narrative to explain the weapon system, equipment, and component operation (electrical/electronic, hydraulic, pneumatic, and mechanical). Block diagrams, functional flow diagrams, schematics, and other illustrations shall be included to support the text. Basic theory, normally found in textbooks, shall not be included. If the TM/IETP covers more than one model of equipment, or more than one configuration of weapon system, differences shall be explained or separate data modules may be used.

a. When necessary, introductory general information may precede the theory of operation narrative.
b. For simple systems or equipment/components, all theory may be included in a single data module.
c. If the relative complexity of the weapon system/equipment is such that it is reasonable to first present the theory of the end item as a unit and then present the theory of its major system, subsystems, and component, it shall be presented in a series of data modules. A separate theory of operation data module shall be developed for each system. The data module may contain the functional operation for the system, its subsystems and its components (line replaceable units (LRUs) and shop replaceable units (SRUs)), or when necessary for usability or clarity, subsystem and component theory of operation may be provided in separate data modules. Subsystem component theory of operation may be included in either the subsystem theory of operation data module or in a separate component theory of operation data module. Detailed component functional operation, common circuitry and wiring diagrams shall not be included unless necessary to understand system/subsystem function.
d. Theory narrative shall be to a depth necessary to support the technician in fault isolation to the level directed by the LPD and/or maintenance plan. The operation of the weapon system and related systems/components shall be presented in a logical flow. Significant input, output, and control signals, supply voltages, and power supply output voltages shall be identified. If the equipment operates in more than one mode, each mode shall be explained and supported by functional block diagrams. Theory of operation shall describe detailed circuitry of all repairable components as directed by the LPD/maintenance plan. Internal circuits, their relationship to each other, input and output signals, waveforms, and time-phase relationship to significant waveforms shall be included when required to understand detailed equipment operation. Theory shall not be prepared for non-repairable, throw-away components.

5.86.6.2 Project decisions.

5.86.6.2.1 DMWR/NWMR.

The project shall decide if DMWR/NMWR will include theory of operation data modules.

5.86.6.2.2 Introductory general information.

The project shall decide if introductory general information will precede the theory of operation narrative.

5.86.7 General information **(Preventive Maintenance Services Manual only)**.

Data Module Type: Descriptive Information Code: 010D

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5.86.7.1 Army business rules.

5.86.7.1.1 General.

Preventive Maintenance Services manuals and Preventive Maintenance Daily manuals shall contain the content requirements provided in 5.86.7.1.3. The italicized text shall be deleted, and as applicable, replaced with the appropriate information. A single descriptive data module shall be used.

5.86.7.1.2 Maintenance activities.

The general information data module shall include the following verbatim scope information:

"SCOPE

The Preventive Maintenance Services Inspection Checklist contains complete requirements for a (*insert specific inspection interval(s) here)* for the (*insert specific equipment here*). It does not contain instructions for repair, adjustment, or other means of rectifying conditions, nor does it contain instruction for troubleshooting to find causes for malfunctioning. Specific tolerances, limits, etc., can be found in the applicable maintenance manuals. Use of the alphabetical index in the applicable manuals will facilitate locating the required information."

5.86.7.1.3 General information.

The general information data module shall include the following verbatim information:

"INSPECTION REQUIREMENTS.

The inspection requirements contained in here are stated in such a manner as to establish when certain equipment is to be inspected and what conditions are desired/undesired. Compliance with the provisions outlined herein is required in order to ensure that latent defects are discovered and corrected before malfunctioning or serious trouble results. Inspection requirements are arranged, as nearly as possible, according to the manner in which they will be performed. The requirements are divided into groups and listed under area heading in the "How To Use This Manual" portion of this manual and Figure (*insert figure number here*).

INSPECTION INTERVALS

The (*insert inspection interval here) inspection will be performed every (insert the specific aircraft hours here*) flight hours or (*insert specific calendar days here*) days, whichever comes first. The (*insert the specific aircraft hours here*) will not be extended except in actual operational emergencies. In no case shall the aircraft intentionally be scheduled for a flight that will cause it to exceed the (*insert the specific aircraft hours here*) inspection due time. The (*insert specific calendar days here*) interval is a full (*insert the number of weeks here if applicable*) weeks. That is, if a (*insert specific calendar days here*) is done on Tuesday, the next (*insert specific calendar days here*) days inspection will not be due until (*insert the specific day here*) (*insert the specific number of weeks here*) later.

SPECIFIC NON-INSTALLED EQUIPMENT ON AIRCRAFT

This data module may contain inspection requirements applicable to specific equipment not installed on your aircraft. Those requirements should be disregarded.

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DA FORMS

DA Form 2408-13-1 will be used to record all deficiencies or shortcomings discovered during the (*insert specific inspection interval here*). Use DA PAM 738-751 to properly complete this form.

SPECIAL INSTRUCTIONS

The (*insert inspection interval here*) will not be exceeded except in actual operational emergencies. When operational emergencies require aircraft operation beyond the normal inspection due-time, a circled red X status symbol and an appropriate statement (to include authority) shall be entered in Part I, Fault Information block of DA Form 2408-13-1 (Aircraft Inspection and Maintenance Record) until such time as the inspection is complete. When inspections are delayed to meet emergency requirements, commanders will assure that the aircraft status symbol reverts to a red "X" and that delayed inspections are accomplished immediately upon termination of the actual emergency. When unusual local conditions of environment, utilization, mission, experience of flight crew and maintenance personnel, periods of inactivity, etc., are encountered, the maintenance officer will, at his discretion, increase the scope and/or frequency of maintenance of inspections as necessary to ensure safe flight.

Aircraft that are down, Not Mission Capable due to Supply (NCMS), or Not Mission Capable due to Maintenance (NMCM), are deferred from the (*insert inspection interval here*) inspection until the aircraft is return to flyable status. When the NMCS and/or NMCM condition is cleared from the aircraft that has been deferred, the (*insert inspection interval here*) shall be done before the first flight. It is the maintenance office's responsibility to determine those inspections necessary during NMCS and/or NMCM to preserve the aircraft. Maintenance situations and climates vary too much to permit a definition of an adequate inspection of the aircraft in NMCS and/or NMCM status.

Accessing procedures and detailed inspection criteria can be found in the applicable maintenance manuals. Use the alphabetical index in the applicable manuals. Unless otherwise directed, removed panels and opened doors will be reinstalled and closed upon completion of each area inspection.

The total man-hour (M/H) requirements for a complete (*insert inspection interval here*) inspection is (*insert total number of man-hours here*) M/H.

REPORTING ERRORS AND RECOMMENDING IMPROVEMENTS

You can help improve this IETP. If you find any mistakes or if you know of a way to improve the procedures, please let us know. Mail the DA Form 2028 directly to: (*insert mailing address*). You may also send in your recommended changes via e-mail, by fax, or by the World Wide Web. Our fax number is (*insert DSN and commercial number of proponent*). Our e-mail address is (*insert e-mail address of proponent*). Instructions for sending an electronic DA Form 2028 may be found at the back of the applicable technical manual. For World Wide Web use https://amcom2028.redstone.army.mil. A reply will be furnished to you.

OZONE DEPLETING CHEMICALS

(*insert appropriate ODC statement here*)

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HAZARDOUS MATERIALS (HAZMAT)

(*insert appropriate HAZMAT statement here*)

INSPECTION AREAS

Inspection areas are shown in (*insert data module(s) title and figure number*)."

5.86.7.2 Project decisions.

None.

5.86.8 General information **(Phased Maintenance Inspection Manual only)**.

Data Module Type: Descriptive Information Code: 010E

5.86.8.1 Army business rules.

5.86.8.1.1 General.

A single descriptive data module shall be used. The verbatim the text below, within the quotation marks except for the information indicated by italicized text, shall be included. Italicized text shall be replaced with the appropriate information.

"PHASED SCHEDULE

The phased maintenance inspection checklist contains requirements for inspection of the (*insert aircraft model*) aircraft on a phased schedule having a (*insert flight hour cycle*) hour (flight hours) cycle with (*insert phase hours*) hour phases. Each requirement included herein is designated for accomplishment at least once, but not more than (*insert number of phases*) times during the (*insert flight hour cycle*) hour cycle."

OR

"PROGRESSIVE PHASED MAINTENANCE SCHEDULE

The progressive phased maintenance inspection checklist contains requirements for inspection of the (*insert aircraft model*) aircraft on a phased schedule of (*insert inspection interval*) hours intervals."

5.86.8.1.2 Additional general information.

The following additional text shall be included verbatim (italicized text within parentheses shall be replaced with the appropriate information):

"EXCEEDING THE PHASED SCHEDULE

The phased maintenance inspection intervals designated are the maximum and shall not be exceeded except in actual operational emergencies as explained herein. It is the Commander's responsibility to determine (on an individual aircraft basis) when inspection intervals may be exceeded. For this purpose, operational emergencies are conditions of combat, or conditions of disaster which necessitate flight to evacuate aircraft or personnel. When aircraft are operated beyond the normal inspection due time because of such emergency situations, a circled red X status symbol and an appropriate statement (to include authority) shall be entered on the appropriate aircraft form as specified in DA PAM 738-751 until such time as the inspection is complete. When inspections are delayed to meet emergency requirements, Commanders will assure that the aircraft status symbol reverts to a red X and that delayed inspections are accomplished immediately upon termination of the actual emergency. When unusual

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local conditions (utilization, type of mission, personnel, periods of inactivity, environmental conditions, etc.) dictate, it is the prerogative and responsibility of the Maintenance Officer to increase the scope and/or frequency of maintenance or inspection as necessary to ensure safe operation (TM 1-1500-328-23).

MAINTENANCE ACTIVITIES

The inspections prescribed by this checklist will be accomplished at specified phases by Aviation Maintenance Company (AMC) activities with assistance of Aviation Support Battalion (ASB) and Depot Maintenance activities when required. The inspection of the part/component is visual unless stated otherwise.

LIMITATIONS

The checklist does not contain instructions for repair, adjustment or other means of rectifying conditions. Neither does it contain special tolerances, limits, or instructions for special troubleshooting to find causes for malfunctions. Such data will be obtained from the latest issue of the aircraft (*insert applicable aircraft technical manuals*) series Maintenance Manuals.

CHANGEOVER TO THE PHASED MAINTENANCE SYSTEM

Changeover shall be accomplished in accordance with instructions provided in *(insert appropriate TM/TB*) entitled, "*Insert title*." The requirements of this TM/TB shall be accomplished prior to implementation of Phase 1 inspection requirements specified in this checklist.

PRE-INSPECTION MAINTENANCE TEST FLIGHT (MTF)

A pre-inspection MTF to duplicate non-hazardous equipment problems, determine unsatisfactory conditions, determine equipment operation problems, etc., is recommended prior to start of aircraft disassembly for phased maintenance inspection. The decision to perform the pre-inspection MTF, however, shall be the responsibility of the unit Maintenance Officer.

SPECIAL INSPECTIONS, CALENDAR INSPECTIONS, AND LUBRICATION REQUIREMENTS

Special inspections, calendar inspections, and lubrication requirements contained in (*insert applicable aircraft technical manual*) and those listed on the aircraft's DA Form 2408-18 shall be reviewed and accomplished in accordance with the "inspection due" requirements specified in those documents.

TIME BETWEEN OVERHAUL (TBO) AND RETIREMENT LIFE ITEMS CHECK

Prior to start of the applicable phased maintenance inspection, a check will be made of components and their remaining operating hours prior to removal. The latest issue of the aircraft's (*insert applicable aircraft technical manual*) and DA Form 2408-16 shall be referred to for a complete listing of components and their TBO and retirement life.

USING THE PHASED INSPECTION CHECKLIST

A new checklist shall be used each time phased maintenance is due on the aircraft. This checklist is arranged such that it can be separated by area and distributed to the maintenance crew. For use of the checklist refer to DA PAM 738-751.

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FINAL RECORDS CHECK

After all corrective actions have been completed and following completion of the phased inspection, the Technical Inspector, or designated supervisor shall verify that all applicable forms and records have been properly updated. All uncorrected faults shall be entered on applicable aircraft forms in accordance with DA PAM 738-751. A Final Records Checklist shall be used is to ensure forms and records have been inspected for completeness and accuracy prior to release of the aircraft from the phased maintenance inspection. The PID of the inspector verifying the final records check shall be entered adjacent to the indicated form or record on the Final Records Checklist. The PID entered shall be registered on the Signature Sheet adjacent to that person's signature.

MAINTENANCE OPERATIONAL CHECKS

After the completion of any required corrective actions to any of the components of a functional system of the aircraft, maintenance operational checks (MOC) shall be performed on that system to determine the effectiveness of the maintenance actions performed and to verify the proper operation of that system. These MOC shall be performed in accordance with TM 1-1500-328-23. DA Form 2408-13-1 may be used to record and sign off the Maintenance Operational Checks performed.

MAINTENANCE TEST FLIGHT

When all required inspections have been accomplished and initialed in accordance with the above procedure, the MTF shall be performed in accordance with the requirements of (*insert applicable aircraft technical manuals*) and TM 1-1500-328-23 using the MTF form in the MTF technical manual.

CHECKLIST DISTRIBUTION

The completion of each phased maintenance inspection shall be recorded on applicable forms as prescribed by DA PAM 738-751. The signed checklist, together with all forms prescribed by DA PAM 738-751, will be filed. Disposition will be in accordance with DA PAM 738-751 or specific instructions in the applicable aircraft technical manual.

INSPECTION AREAS

(*Insert data module title and figure number) reflects the inspection areas of the (insert applicable aircraft model*) aircraft. Those areas are titled as shown. Figure (*insert number*) shows the location of access doors and panels which require removal at various phased maintenance inspections.

REPORTING ERRORS AND RECOMMENDING IMPROVEMENTS.

(*insert appropriate reporting errors statement here*)"

5.86.8.2 Project decisions.

None.

5.87 S1000D Chapter 5.2.1.3.1 – Maintenance information – Maintenance procedures.

5.87.1 Scope.

This section contains content requirements for the following information sets:

a. Service upon receipt (refer to 5.87.3)
b. PMCS including lubrication instructions (refer to 5.87.4)
c. Preventive maintenance checklist (refer to 5.87.7)

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d. Maintenance tasks (refer to 5.87.8)
e. Follow-on maintenance (refer to 5.87.9)
f. General maintenance (refer to 5.87.10)
g. Lubrication instructions (refer to 5.87.11)
h. Preservation, packaging, and marking (refer to 5.87.11A)
i. Facilities (refer to 5.87.12)
j. Overhaul and retirement schedule (refer to 5.87.13)
k. Overhaul inspection procedures (refer to 5.87.14)
l. Depot mobilization requirements (refer to 5.87.15)
m. QA requirements (refer to 5.87.16)
n. Illustrated list of manufactured items (refer to 5.87.17)
o. Torque limits (refer to 5.87.18)
p. Ammunition maintenance (refer to 5.87.19)
q. Ammunition marking information (refer to 5.87.20)
r. Foreign ammunition (refer to 5.87.21)
s. Maintenance/Demilitarization of conventional and chemical ammunition (refer to 5.87.22)
t. Daily preventive maintenance checklist (refer to 5.87.23)

5.87.2 General.

5.87.2.1 Army business rules.

5.87.2.1.1 General.

Maintenance instructions shall be prepared for all items comprising the weapon system/equipment, such as assemblies, subassemblies, components, wiring, junction boxes, and accessories. Tasks shall be presented in the order in which they are performed. Sound engineering principles and techniques, approved LPD, service experience, performance data on similar equipment, and all other RMS and Ao data available shall be used in the preparation of specific maintenance instructions. Maintenance data modules shall be arranged to coincide with the FGC sequence followed in the MAC or parts information.

5.87.2.1.2 Maintenance information sets.

Individual maintenance information sets shall be developed for the overall weapon system/equipment and each maintainable system, subsystem, shop replaceable unit (SRU), line replaceable unit (LRU), or component for each applicable maintenance level as indicated in the approved MAC or maintenance plan.

5.87.2.1.3 Preliminary requirements.

When preliminary requirements information differs for specific maintenance tasks, additional data modules shall be developed.

5.87.2.1.4 Procedural data modules.

Procedural data modules shall stand-alone and contain a single start-to-finish maintenance procedure. A link to the applicable data module shall be provided for any follow-on maintenance that shall be performed after maintenance procedures are completed.

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5.87.2.2 Project decisions.

None.

5.87.3 Service upon receipt **(Field only)**.

5.87.3.1 Army business rules.

5.87.3.1.1 General.

Service upon receipt information sets shall be prepared and contain information required for the user to ensure that the equipment will be adequately inspected, serviced, and operationally tested before it is subjected to use. For equipment that requires extensive service upon receipt, this information set shall be further subdivided into the following tasks which may be contained in multiple service upon receipt data modules:

5.87.3.1.2 Service upon receipt of materiel.

The following information shall be prepared:

5.87.3.1.2.1 Unpacking.

Data Module Type: Procedural Information Code: 840B

As a minimum, the following information shall be prepared.

a. Any special sequence of action necessary to protect the equipment.
b. If a special design reusable container is involved for either the end item or components which are authorized for replacement, instructions shall be prepared to report or reenter the empty container through supply channels. Instructions shall be prepared on how to package the unserviceable component in the empty container in the same manner that the new component was packaged if a component is being replaced.
c. Man-hour requirements and total man-hours required for unpacking the equipment.

5.87.3.1.2.2 Checking unpacked equipment.

Data Module Type: Checklist Information Code: 870B

Instructions shall be prepared for a condition check of the shipment (including that of pallets, containers, boxes, and legibility of markings). The following data shall be included.

a. Packaging material. For each item of a component requiring inspection, acceptable, reparable, and non-reparable conditions shall be provided.
b. Equipment components. A table shall be provided that lists, by location, each item of a component requiring inspection. For each of these items an action shall be provided and, if applicable, a reference made to another data module.
c. Damage. In addition, the following shall be inserted exactly as stated here.

"Inspect the equipment for damage incurred during shipment. If the equipment has been damaged, report the damage on DD Form 361, Transportation Discrepancy Report. Check the equipment against the packing slip to see if the shipment is complete. Report all discrepancies in accordance with applicable service instructions (e.g., for Army instructions, refer to DA PAM 750-8).

Check to see whether the equipment has been modified."

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5.87.3.1.2.3 Processing unpacked equipment.

Data Module Type: Procedural Information Code: 870C

Instructions shall be prepared for processing the unpacked equipment, as long as they do not conflict with any warranty provisions. The following information shall be prepared, as applicable.

a. Any special skills required by processing personnel.
b. All caustic, corrosive, and/or toxic material used during processing shall be identified and applicable warnings and cautions given.
c. Instructions on safe disposal of waste products generated during processing actions.
d. Man-hour requirements and total man-hours required for processing the equipment.

5.87.3.1.3 Installation instructions.

a. Instructions shall be prepared to install the equipment properly, including use of tools; to make the necessary interconnections; and to lubricate, calibrate, and adjust the equipment.
b. Cable diagrams shall be included or referenced as necessary. When cable assemblies are not supplied but are required for bench test setup, instructions shall be prepared for fabricating interconnecting cable assemblies from spares and bulk supplies. The part number, drawing number, and manufacturer or designer for each part of the cable assembly shall be shown, and wires, connectors, pin connections, and letters or other designators shall be identified.
c. Instructions shall be prepared for any mating connectors that call for a special procedure either to make the proper connection or to prevent damage to the connector. Cautions shall be included where necessary.
d. A wiring diagram shall be prepared which fully identifies each wire to be connected, by color code or wire number if applicable. This diagram shall show the location of each pertinent terminal, which shall be identified by number or other marking, if available, or by position if neither is available. Where appropriate, voltage readings shall be annotated.
e. All alternate connection patterns required for various modes of operation shall be shown and explained.
f. Only one diagram shall be used to illustrate interconnection patterns which appear more than once within the same equipment.
g. For installation of plug-in items, diagrams shall be prepared or referenced showing the location of items that are not installed in the equipment when received. Instructions shall be prepared whenever special techniques or connections are required.

5.87.3.1.3.1 Assembly of equipment.

Data Module Type: Procedural Information Code: 710C

a. Instructions shall be prepared for assembling equipment that has been shipped unassembled. When the equipment is to be shelf or rack mounted, instructions shall also be prepared for assembly of the rack, if necessary, and installation of the equipment in the rack. As applicable, power requirements, connections, and initial control settings needed for installation purposes shall be included.

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b. When the equipment is shipped or delivered in specially designed containers, unpacking instructions shall be prepared. If the containers are to be used again, kept for future use, turned in to supply, or require a special disposition method, the necessary procedures to restore the containers shall be included.
c. For security measures for electronic data, instructions shall be prepared for handling, loading, purging, overwriting, or unloading classified electronic data under usual conditions. Instructions shall meet current security regulations as they pertain to automation security.

5.87.3.1.3.2 Install procedure.

Data Module Type: Procedural Information Code: 720A

a. Installation instructions shall be prepared for all of the following actions (including placing, mounting, and attaching).

   (1) Cable and wiring interconnections.
   (2) Proper use of special tools.

b. Installation instructions shall identify all dimensions that shall be maintained in placing, mounting, or attaching items.
c. When initial adjustments can be made efficiently during installation, such adjustments shall be included.
d. For equipment designed and intended for use in more than one type of installation (e.g., field, fixed station, and mobile), instructions shall be prepared for each type of installation involved.
e. If performance of any step in the installation instructions requires the assistance of personnel from a higher level of maintenance, this shall be stated in a note similar to that below.

"NOTE

The following installation procedure shall be made with the assistance of (*insert level*) maintenance personnel (include Military Occupational Specialty (MOS), if applicable)."

f. Installation instructions shall be considered complete only when they include instructions for:

   (1) All required installation options (e.g., ESD control requirements).
   (2) Accessory items.
   (3) Auxiliary items (those that extend or increase equipment capability).
   (4) Grounding of the equipment for both safety and proper operation.
   (5) Torque requirements.

5.87.3.1.3.3 Special application installation instructions.

Data Module Type: Procedural Information Code: 720B

Installation instructions, which are common to all special applications of a system, shall be prepared. Details resulting from the installation but peculiar only to the equipment into which the system is being installed shall be omitted (e.g., special treatment required when installing the system in a vehicle or aircraft).

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5.87.3.1.3.4 Van and shelter procedure.

Data Module Type: Procedural Information Code: 123C

The following information shall be prepared only to the extent required for the applicable level of maintenance.

a. Instructions shall be prepared for the removal and replacement of each nonpermanent unit.
b. Installation instructions shall not be prepared when the equipment is permanently installed in vans or shelters.
c. Diagrams and instructions shall be prepared which pertain to electrical and interconnection wiring, exclusive of wiring peculiar to the equipment on which the installation is being made (e.g., headlight, ignition wiring).
d. Instructions shall be prepared for cable run locations, equipment locations, circuit breaker panels, and other similar details.

5.87.3.1.4 Preliminary servicing.

Data Module Type: Procedural Information Code: 200F

Instructions for all lubrication required on newly installed equipment shall be prepared.

5.87.3.1.5 Preliminary checks and adjustment of equipment.

Data Module Type: Procedural Information Code: 271B

Instructions for all checks and adjustments to be made on newly installed equipment shall be prepared. Information on the location of items such as controls and check points shall be prepared or referenced. Instructions shall be prepared for checks and adjustments that shall be made before equipment is put into operation and for all other checks required to ensure proper operation of the equipment. These instructions shall include the following, as applicable:

a. Checks for interconnections.
b. Checks for grounding, including earth ground connections, earth conditioning for conduction, as well as a check of the grounding circuit for negligible resistance.
c. Checks for adequate clearance for rotating or moving devices.
d. Checks of initial settings of all controls that shall be preset before power is to be applied.
e. All other checks needed to determine that power can be applied without injuring personnel or damaging the equipment.
f. Firm seating and connection of all plug-in parts, mating connectors, jacks, and plugs.
g. Cable and wire harness routing, dressing, and fastening.
h. Cautions against damaging transistors, diodes, and other electrically sensitive items.
i. Replacement of all covers, inspection and access doors, and plates.
j. Operation of safety interlocks and switches.
k. Operation of ventilating louvers and intake and exhaust ports.
l. Operation and content of liquid cooling systems.
m. Lubricants and CPC procedures.
n. Switch and control settings that are preset at installation (installer's adjustments).
o. Presetting and adjustment of automatic controls.
p. Terminal connections.
q. Required terminal or capacitor strapping.
r. Preliminary test measurements.

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s. Presetting operator's controls.
t. Normal operating checks.
u. After-installation orientation.
v. Burn-in of parts.
w. ESD control standards.
x. After operations, shutdown, checks, and inspections.

5.87.3.1.6 Preliminary calibration of equipment.

Data Module Type: Procedural Information Code: 273D

Instructions for all calibration to be made on newly installed equipment shall be prepared.

5.87.3.1.7 Circuit alignment.

Data Module Type: Procedural Information Code: 272B

Instructions shall be prepared for circuit alignment procedures. Applicable instructions shall be prepared in the following order.

a. External connections. Connections to external lines required for each installation option shall be included. Connection instructions shall conform to the requirements for installing wiring and cabling interconnections.
b. Switch settings, patch panel connections, and internal control settings. Instructions shall be prepared for all switch settings, patch panel connections, and internal control settings required for each installation option and mode of operation.
c. Alignment procedures. Instructions shall be prepared for all alignment procedures, including any variations required for different installation options and modes of operation.

5.87.3.1.8 Ammunition service upon receipt tasks.

Procedures shall be prepared for performing visual inspection of ammunition received from the ammunition supply facility. This inspection shall include verification that ammunition received was that requisitioned. Instructions shall be prepared for a condition check of the shipment (pallets, containers, boxes, and legibility of markings). Instructions shall be prepared to note the quantity of each lot for recording purposes.

5.87.3.1.9 Ammunition marking.

Data Module Type: Procedural Information Code: 067C

Instructions shall be prepared for marking ammunition and ammunition containers. Procedures shall include inspections to verify that ammunition received was requisitioned. Instructions shall be prepared to record the quantity of ammunition for recordkeeping purposes. In addition the following shall be inserted into the TM verbatim:

> "If the markings on packaging conflict with nomenclature of item requisitioned, check with supply personnel to determine if an error has been made.
>
> Specific inspection criteria and identification of defects are outlined in the Inspection of Ammunition data module and the Inspection of Packaging data module."

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5.87.3.1.10 Classification of defects.

Data Module Type: Procedural Information Code: 350C

Procedures shall be prepared for performing visual inspection of ammunition/containers (pallets, boxes, etc.) and shall include classification and disposition of defective ammunition/containers.

5.87.3.1.11 Handling ammunition.

Data Module Type: Procedural Information Code: 170E

Procedures shall be prepared for handling ammunition:

a. Unpacking. As a minimum, the following information shall be prepared.

(1) Any special sequence of action necessary to protect the ammunition.
(2) If a special design reusable container is involved for either the end item or components, which are authorized for replacement, instructions shall be prepared to report or reenter the empty container through supply channels.
(3) Man-hour requirements and total man-hours required for unpacking the ammunition.

b. Packing. As a minimum, the following information shall be prepared.

(1) Any special sequence of action necessary to protect the ammunition.
(2) Instructions shall be prepared on how to package defective ammunition.
(3) Man-hour requirements and total man-hours required for packing the ammunition.

5.87.3.1.12 Procedures to activate ammunition.

Data Module Type: Procedural Information Code: 120G

Procedures shall be prepared for activation of ammunition, mines, etc., preparatory to detonation.

5.87.3.1.13 Other service upon receipt task.

Additional service upon receipt task may be developed when the specific type of service upon receipt tasks are not covered in these business rules. If additional service upon receipt tasks are used, proponent shall submit to LOGSA the requirements for this service upon receipt task type (including proposed information codes) for possible incorporation within future revisions to this standard.

5.87.3.2 Project decisions.

5.87.3.2.1 Other service upon receipt task.

The project shall determine if additional service upon receipt task data modules shall be developed.

5.87.4 Preventive Maintenance Checks and Services (PMCS), including lubrication instructions **(except for Conventional and Chemical Ammunition, aircraft TMs, DMWR and NMWR only).**

5.87.4.1 Army business rules.

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5.87.4.1.1 Reliability Centered Maintenance (RCM).

Preventive maintenance checks and services (PMCS) shall be prepared and based upon the principles of RCM logic and shall include PMCS information, periodic lubrication instruction (extensive lubrication instructions may be included in a lubrication data module), and applicable scheduled corrosion inspections. An introduction for PMCS shall also be prepared.

5.87.4.2 Project decisions.

None.

5.87.5 Preventive Maintenance Checks and Services (PMCS) introduction.

Data Module Type: Descriptive Information Code: 018F

5.87.5.1 Army business rules.

5.87.5.1.1 General.

PMCS introduction data module shall explain the purpose and use of the PMCS data. A single descriptive data module shall be used. The PMCS introduction data module shall not contain any maintenance tasks. The PMCS introduction data module may contain reference/links to the PMCS data by interval but shall not contain reference/links to any other maintenance tasks

5.87.5.1.2 Preventive Maintenance Checks and Services (PMCS) data.

a. An explanation shall be prepared for each PMCS entry and any general checks/services that are common to the entire piece of equipment. The explanation for the item numbers shall detail how the item numbers are used when recording results of PMCS on DA Form 2404, Equipment Inspection and Maintenance Worksheet.
b. If lubrication instructions are included in the PMCS data, general statement(s) shall be prepared which apply to the overall understanding of lubrication requirements.
c. If lubrication instructions are included in the PMCS data, lubricants shall be identified by standard military symbols in accordance with MIL-HDBK-113 and MIL-HDBK-275. The following lubrication interval symbols shall be used, as applicable.

    (1) D daily
    (2) W weekly
    (3) M monthly
    (4) Q quarterly
    (5) S semiannually
    (6) A annually
    (7) B biennially
    (8) H hours (operated)
    (9) MI miles (operated)
    (10) KM kilometers (operated)
    (11) RDS rounds fired
    (12) OC on-condition
    (13) MRA maintenance repair action

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d. A statement concerning CPC shall be prepared. This statement shall contain maintenance instructions or reference CPC requirements contained in the applicable maintenance instructions. In addition, if the inclusion of such instructions are applicable, a statement shall be prepared which states that the instructions are mandatory.

(1) Oil filter statement. As applicable, the following statement shall be included verbatim:

"Oil filters shall be serviced/cleaned/changed, as applicable, when:

a. They are known to be contaminated or clogged,

b. Service is recommended by AOAP laboratory analysis, or

c. At prescribed hard time intervals."

(2) Army Oil Analysis Program (AOAP) sampling interval statement. The following statement shall be inserted:

"Engine oil/transmission oil/hydraulic fluids shall be sampled at (*insert applicable hour/mileage time frame*) as prescribed by (*insert DA PAM 738-751, Functional Users Manual for the Army Maintenance Management Systems – Aviation (TAMMS-A) or DA PAM 750-8, The Army Maintenance Management System (TAMMS) Users Manual*)."

(3) AOAP not available/non-enrolled statement. When a component/equipment is not enrolled in the AOAP or oil analysis support is not available, the following statement shall be inserted:

"This (*insert name of component/equipment*) is not enrolled in the Army Oil Analysis Program. HARDTIME INTERVALS APPLY."

(4) Warranty hardtime statement. The following statement shall be used, as applicable:

"For equipment under manufacturer's warranty, hardtime oil service intervals shall be followed. Intervals shall be shortened if lubricants are known to be contaminated or if operation is under adverse conditions (such as longer-than-usual operating hours, extended idling periods, extreme dust)."

e. When the equipment contains fluids, such as lubrication oil or hydraulic fluid, leakage criteria shall be prepared for the PMCS introduction as follows and referred to in the NOT MISSION CAPABLE IF: column.

"FLUID LEAKAGE

It is necessary for you to know how fluid leakage affects the status of the (*insert component/equipment name*). Following are types/classes of leakage you need to know to be able to determine the status of the (*insert component/equipment name*). Learn these leakage definitions and remember - when in doubt, notify your supervisor.

Equipment operation is allowed with minor leakage's (Class I or II). Consideration shall be given to fluid capacity in the item/system being checked/inspected. When in doubt, notify your supervisor.

When operating with Class I or II leaks, continue to check fluid levels as required in the PMCS.

Class III leaks should be reported immediately to your supervisor.

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(1) Class I Seepage of fluid (as indicated by wetness or discoloration) not great enough to form drops.
(2) Class II Leakage of fluid great enough to form drops but not enough to cause drops to drip from item being checked/inspected.
(3) Class III Leakage of fluid great enough to form drops that fall from item being checked/inspected."

5.87.5.2 Project decisions.

None.

5.87.6 Preventive Maintenance Checks and Services (PMCS).

Data Module Type: Checklist Information Code: 200B

5.87.6.1 Army business rules.

5.87.6.1.1 General.

The PMCS procedures shall include the checks and services data described below. When specified by the acquiring activity, an illustration of the equipment shall be included. This illustration shall include a routing diagram by which the PMCS will be performed.

5.87.6.1.2 Preventive Maintenance Checks and Services (PMCS) data preparation.

PMCS data shall consist of the entries described below.

a. Item number. Item numbers (ITEM NO) shall be assigned to the PMCS procedures. The PMCS procedures shall be arranged in a logical sequence requiring minimum time and motion on the part of the person(s) performing them and shall be so arranged that there will be minimum interference between persons performing the checks simultaneously on the same end item.
b. Intervals. The designated interval (INTERVAL) (i.e., "before," "during," "after," "weekly," etc.) when each check is to be performed shall be included. Procedures done first or most frequently (i.e., "before" checks and services) shall appear prior to "during" and "after" checks and services. When more advantageous to the user, intervals shall be sub grouped by crewmember(s). PMCS shall be arranged by interval. The PMCS intervals may be split into separate data modules. The PMCS intervals which can be used are as follows:

(1) Before
(2) During
(3) After
(4) Daily
(5) Weekly
(6) Monthly
(7) Quarterly
(8) Semiannually
(9) Annually
(10) Biennially
(11) Periodic
(12) Intermediate (**Aviation only**)
(13) Man-hour/day (**Aviation only**)

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(14) Phased (**Aviation only**)
(15) Other

c. Man-hours. When specified by the acquiring activity man-hours (MAN-HOUR) required to complete all prescribed services shall be included. Man-hours shall be stated to the nearest 10th of an hour.

d. Item to be checked or serviced. The items listed (ITEM TO BE CHECKED OR SERVICED) shall be identified in as few words as possible to clearly identify the item. Usually the common name (e.g., bumper, gas can and mounting bracket, front axle, etc.) will be enough.

e. Procedures. The procedure (PROCEDURE) by which each check is to be performed, as well as any information required to accomplish each check or service, including lubrication, appropriate tolerances, adjustment limits, and instrument gauge readings shall be provided. Illustrations shall be prepared to identify the location or the process of the task being performed and shall be integrated with the procedures. Whenever replacement or repair is recommended, the maintenance task shall be included or the applicable maintenance instruction data module may be referenced. Any periodic/scheduled lubrication procedures required for the equipment may be included in the PMCS procedures and shall meet the following requirements:

(1) Lubrication procedures shall be prepared including information on authorized lubricants, lubrication intervals, man-hour requirements, and the AOAP. Lubrication instructions shall be prepared so as to enable the user to receive, lubricate, and return to an acceptable performance standard all components of the equipment in a minimum of time with the skills, tools, test equipment, and spare parts authorized by the LPD, or MAC. Information shall be included for any special lubrication required under extreme temperature, altitude, and humidity conditions within the limits established by the design specification for the equipment.

(2) Lubricant types and abbreviations for flight vehicles and components shall be identified by standard military symbols as specified in MIL-HDBK-275; lubricant types and abbreviations for ground equipment systems, lubricants, functional fluids, preservatives, and specialty products shall be identified by standard military symbols in accordance with MIL-HDBK-113.

(3) Lubrication instructions shall include all applications, procedures, lubricants, and lubrication points. When grouped lubrication points require the same lubricant at the same interval, the type and number of points shall be identified and described by one of the following methods.

(a) Multi-headed arrows. Multi-headed, solid-shafted arrows shall point to each of the lubrication points.

(b) Lubrication point notes. Lubrication point notes shall contain instructions for applying lubricants, taking into account the following factors: type, grade, availability, and properties of the prescribed lubricant; expected temperature; lubrication guns and tools available to authorized maintenance level; types of lubrication fittings; and possible ill effects of excessive or insufficient lubrication. Caution shall be stressed where over- or under-lubrication of a part will damage that part or closely associated parts.

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(4) Disassembly and hand-packing instructions shall be prepared for medium- and high-speed antifriction bearings that are sensitive to the amount of lubrication applied and do not have bleed holes or relief valves.
(5) Cleaning, disassembling, and assembling instructions required before or after lubrication shall be prepared or referenced.
(6) Instructions shall be prepared for washing and natural drying of finely machined and dirt-sensitive parts before relubricating. Use of compressed air jets or temperatures above 212° F shall not be prescribed.

(7) Instructions shall not specify a coating of preservative material, either before or after packing parts that are lubricated with grease; nor shall they specify an application of oil, solvent, or additional grease to a "sealed-for-life" or prepackaged antifriction bearing.
(8) Where applicable, the statement "For Arctic operation, refer to TM 4-33.31, Operations and Maintenance of Ordnance Materiel in Cold Weather." shall be inserted as a note. When specific restrictions, preferred grades of lubricant, and other conditions exist, notes shall be made. For example,

"NOTE
When MIL-PRF-2104 lubricant is authorized, use 15W-40 (OE/HDO-15/40) when available and applicable temperature range exists."

Or

"NOTE
15W-40 oil is not authorized in this particular (*insert component name*)."

f. Not mission capabile if. A brief statement of the condition (NOT MISSION CAPABLE IF:)(e.g., malfunction, shortage) that would cause the equipment to be less than fully ready to perform its assigned mission shall be provided. If the procedure contains detail steps the statement shall be placed opposite the applicable step.

5.87.6.1.3 Mandatory replacement parts.

All items that shall be replaced during PMCS whether they have failed or not shall be identified in the preliminary requirements of the PMCS data modules and shall be referenced/linked to the mandatory replacement parts list in the supporting information.

5.87.6.2 Project decisions.

5.87.6.2.1 Man-hours required.

The project shall determine if man-hours required to complete all prescribed lubrication services shall be included.

5.87.7 Preventive Maintenance Checklist (PMC).

5.87.7.1 Army business rules.

5.87.7.1.1 General.

A PMC shall be prepared when specified by the acquiring activity. The acquiring activity shall specify those inspection intervals for the PMC using those intervals as stated in 5.87.6.1.2.

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5.87.7.1.2 National Stock Numbers (NSNs) and Part Numbers (P/Ns).

NSNs shall not be used in procedural steps in the PMC. P/Ns shall not be used in procedural steps except when absolutely necessary for identification.

5.87.7.1.3 Front matter.

Refer to 5.128.1.

5.87.7.1.3A PMCS introduction data module. The PMC shall contain a PMCS introduction data module. Refer to 5.87.5

PMCS data modules.

Data Module Type: Checklist Information Code: 200J

The PMC shall contain all items for the interval of inspections determined by the acquiring activity. The specified inspections shall be taken directly from the applicable PMCS table (refer to 5.87.6.1.2) in the operator or field level manual containing the inspection. PMC shall be broken into data modules by interval.

5.87.7.1.4 Rear matter.

The PMC shall contain rear matter as prescribed in 5.128.3.l.

5.87.7.1.5 Deleted.

5.87.7.2 Project decisions.

None.

5.87.8 Maintenance information sets (**Not required for aircraft PM and PMS manuals**).

5.87.8.1 Army business rules.

5.87.8.1.1 General.

Maintenance information shall be prepared and functionally divided into individual maintenance information sets. The technical content structure for these information sets shall be consistent. Illustrations shall be prepared to identify the location or the process of the task being performed and shall be integrated with the procedures.

a. Each maintenance information set shall include all authorized maintenance tasks. Tasks shall consist of complete start-to-finish maintenance procedures in a logical sequence of occurrence. Task titles shall be identical to FGC titles as used in the applicable MAC and IPD.
b. Maintenance instructions shall reference or contain all procedures required for any unusual or critical steps such as specifying QA checks (**depot and aviation only**), care and handling of ESD sensitive items and all hazardous material. Visual inspection and safety criteria shall be prepared to determine item serviceability. Instructions shall also contain procedures for disposition of defective ammunition. Procedures shall be prepared for use of cleaning materials and paint authorized for use in the specified maintenance operations.
c. When peculiar to the equipment, applicable CPC procedures shall be included, or the data module shall reference applicable CPC publications.

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d. NSNs shall not be used in procedural steps, illustrations, or legends of maintenance information sets.
e. Part numbers shall not be used in procedural steps, illustrations, or legends, except when essential for identification.
f. Aviation maintenance TMs/IETPs shall reference procedures in TM 1-1500-204-23, as applicable.
g. The maintenance instructions shall be prepared to include required environmental control data and information. Instructions shall be prepared for information on any special maintenance required under extreme temperature, altitude, and humidity conditions within the limits established by the design specification for the equipment.
h. (**DMWRs/NMWRs only**) A Reliability, Availability, and Maintainability (RAM) table shall be prepared listing the pertinent measurable RAM ranges for the major overhauled components. The RAM requirements shall be prescribed by maintenance engineering of the acquiring activity and when established by maintenance engineering shall include critical measurement factors, such as Meantime Between Failures (MTBF), Mean Time to Repair (MTTR), availability, and maintenance ratio. The reliability and availability portion of the table shall give the minimum acceptable values while the maintainability portion shall provide the maximum allowable rates. Availability may be expressed as a probability versus a qualified number. When specified by maintenance engineering of the acquiring activity, the RAM information may be prepared in a narrative format.

5.87.8.1.2 Maintenance tasks.

Maintenance tasks shall be prepared for each authorized maintenance level in the general order listed below. For each maintenance task, illustrations shall be used to support or clarify the text, including schematics, wiring diagrams, parts location drawings and other visual aids.

a. Inspection (refer to 5.87.8.1.4)
    (1) Test and inspection
    (2) Inspection of conventional and chemical ammunition or components containing radioactive materials
    (3) Pre-embarkation inspection of material in units alerted for overseas movement
    (4) Inspection of installed items
    (5) Inspection-acceptance and rejection criteria
b. Testing (refer to 5.87.8.1.5)
c. Servicing (refer to 5.87.8.1.6)
d. Adjust (refer to 5.87.8.1.7)
e. Align (refer to 5.87.8.1.8)
f. Calibrate (refer to 5.87.8.1.9)
g. Removal procedure (refer to 5.87.8.1.10)
h. Install procedure (refer to 5.87.8.1.11)
i. Replace (refer to 5.87.8.1.12)
j. Repair (refer to 5.87.8.1.13)
k. Painting (refer to 5.87.8.1.14)
l. Overhaul procedure (refer to 5.87.8.1.15)
m. Rebuild (refer to 5.87.8.1.16)
n. Lubrication (refer to 5.87.8.1.17)

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o. Mark (refer to 5.87.8.1.18)
p. Pack procedure (refer to 5.87.8.1.19)
q. Unpacking (refer to 5.87.8.1.20)
r. Preservation procedure (refer to 5.87.8.1.21)
s. Assembly and preparation for use (refer to 5.87.8.1.22)
t. Assemble procedure (refer to 5.87.8.1.23)
u. Disassembly procedure (refer to 5.87.8.1.24)
v. Cleaning (refer to 5.87.8.1.25)
w. Non-destructive Inspection (NDI) (refer to 5.87.8.1.26)
x. Radio interference suppression (refer to 5.87.8.1.27)
y. Placing in service (refer to 5.87.8.1.28)
z. Ground handling (refer to 5.87.8.1.29)

(1) Towing
(2) Jacking
(3) Parking
(4) Mooring
(5) Covering
(6) Hoisting
(7) Sling loading
(8) External power

aa. DELETED
ab. Preparation for storage (refer to 5.87.8.1.31)
ac. Preparation for shipment (refer to 5.87.8.1.31A)
ad. Transport (refer to 5.87.8.1.31B)
ae. Arm (refer to 5.87.8.1.32)
af. Load (refer to 5.87.8.1.33)
ag. Unload (refer to 5.87.8.1.34)
ah. Install peripheral device (refer to 5.87.8.1.35)
ai. Uninstall peripheral device (refer to 5.87.8.1.36)
aj. Upgrade/patch (refer to 5.87.8.1.37)
ak. Configure (refer to 5.87.8.1.38)
al. Debug (refer to 5.87.8.1.39)
am. Additional maintenance task (refer to 5.87.8.2.2)

5.87.8.1.3 Maintenance task requirements.

Additional mandatory or unique technical information or additional explanations may be required to be included in maintenance tasks listed above. The following general requirements apply to most maintenance tasks.

a. Peculiar instructions shall be prepared for lock wiring, installing cotter pins, use of sealing compounds, lubricants, or corrosion prevention compounds and similar operations with applicable references to the expendable and durable items list.
b. Procedures shall not be prepared for separation of bonded, press-fitted, soldered, welded, or riveted parts, or the removal of electronic circuitry parts, unless such removal is necessary to clean, inspect, or test separately.

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c. If servicing (i.e., pressurizing and charging with gas, lubrication, etc.) is required upon completion of a maintenance task, include this information as part of the task.
d. Warnings and cautions shall be included whenever chemicals or cleaning compounds are used or combined which may result in a dangerous or hazardous mixture. Whether the danger is to personnel or equipment, it shall be identified and the effect shall be stated.
e. For aircraft, instructions shall be prepared for cleaning and washing the entire aircraft. Instructions shall be prepared for the removal of the battery, relief tube, power plant, and armament exhaust deposits, or other items or material as necessary. Instructions shall also be prepared regarding components which require relubrication after the aircraft has been washed or steam cleaned.
f. Any mandatory replacement parts required shall be indicated in the preliminary requirements of the maintenance data modules and reference and/or link made to the mandatory replacement parts data module in supporting information.
g. Torque requirements, values, and sequences shall be indicated. Only critical torques shall be indicated in task steps. All noncritical torques will be covered by the Torque Limits data module and a reference thereto. Torque values shall be given for all structural attaching hardware, fluid couplings (fuel, oil, hydraulic, pneumatic, etc.), and connections. Torque values shall include torque correction factors when crowfoot extensions, thread lubricants, and cadmium-plated screws or nuts are used. Torque values identified in the tasks shall reflect torque wrenches authorized to personnel targeted to perform tasks. Upon completion of torque action, instructions shall be prepared on use of an orientation mark (striping).
h. Such terms as "reverse the disassembly procedures" or "installation is the reverse of removal" shall not be used in any maintenance task.
i. (**Depot and aviation maintenance only**) Maintenance procedures or steps that have a major quality assurance effect shall be preceded by a statement such as "QA check", to identify them.
j. (**DMWRs/NMWRs only**) For items that have parts with specific characteristics, wear limits, specified performance requirements, or fatigue characteristics or tolerances, overhaul inspection procedures (OIP), shall be included, in any applicable maintenance task. The OIP shall consist of the characteristics being inspected for, inspection methods, and the acceptance/reject criteria that shall be met. For characteristics having a major quality assurance effect, a statement such as "QA check" shall be placed immediately preceding the characteristic to which it applies. Unless otherwise specified by the acquiring activity, an illustration shall accompany the OIP. Illustrations for OIPs are strongly encouraged and shall only be omitted for very simple systems/parts. A reference letter may be included on the illustration to aid in locating the critical inspection characteristics of the parts. The OIPs shall be placed immediately after the maintenance step for which it applies. When a maintenance task contains an excessive number of parts requiring OIPs, the OIPs may take the form of a consolidated table or list. A separate OIP table or list shall be provided for each part of the item that requires a critical inspection. OIP tables may be placed in a separate data module. If separate OIP data modules are developed, they shall be referenced within the procedural step where they apply.

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5.87.8.1.4 Inspect.

Instructions detailing all required inspections to determine the serviceability of an item by comparing its physical, mechanical, and/or electrical characteristics with established standards through examination (e.g., by sight, sound, or feel) shall be prepared. Special inspection requirements cited below shall be included as necessary.

5.87.8.1.4.1 Test and inspection.

Data Module Type: Procedural Information Code: 300B

Instructions shall be prepared for testing and inspection during or after assembly to ensure proper assembly of the item.

Correct methods of testing, instructions for making tolerance checks, and instructions for inspection of distance measurements (e.g., clearance, end play, backlash) shall be prepared. Measurement criteria and tolerances shall reflect the Test Measurement and Diagnostic Equipment (TMDE) available to the user**.**

5.87.8.1.4.2 Inspection of conventional and chemical ammunition or components containing radioactive materials **(Maintainer, below depot sustainment, or ASB only)**.

Data Module Type: Procedural Information Code: 310A

The following information shall be prepared for conventional and chemical munitions or components that contain radioactive material:

a. A statement shall be included that inspection criteria are provided to ensure that performed maintenance will restore items to an acceptable level. At a minimum, the types of inspection procedures shall include a pre-maintenance inspection to be conducted during unpacking, in-process inspections, and final acceptance inspection. Regulations and technical publications relating to policy responsibility and procedures applicable to ammunition stockpile reliability, ammunition surveillance, radioactive materials procedures, and quality evaluation programs shall be referenced. When approved by the acquiring activity, these procedures contained in other publications shall be included in the task.
b. Visual inspection criteria shall be prepared for the packing of the items in conformance with the inspection criteria noted in a above.
c. Detailed instructions and criteria shall be prepared for function testing. When test fixtures must be fabricated, diagrams and instructions for the fabrication shall be prepared. Where ammunition is required for function testing weapons, it shall be identified by Department of Defense Ammunition Code (DODAC), NSN, and nomenclature. This shall also include dummy rounds.

5.87.8.1.4.2.1 Specific instructions for inspection of radioactive ammunition, chemical ammunition or components.

a. Regulations and technical publications relating to policy responsibility and procedures applicable to radioactive materials procedures shall be referenced.

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b. Instructions shall be prepared for inspection methods or techniques used to detect defective components or end items being processed. Classification of Materiel Defects tables shall be prepared for ammunition components and packaging material. A classification of defects (e.g. minor, major, or critical) for both functioning and nonfunctioning categories shall be included. The tabulated data shall include the following entries:

(1) A list of categories of defect (critical, major, minor) by the defects attributable to each component.
(2) The corrective action to be taken or a reference to the corrective action.
(3) The inspection methods used to determine if corrective action was accomplished.
(4) The acceptable quality level established for each defect.

c. Instructions shall be prepared to establish a uniform system of examination for deterioration or damage. Definitions shall be prepared to explain minor, major, and critical defects. When appropriate, lower maintenance levels/classes shall be included.

d. Instructions for disposition of lots shall be prepared and shall be as specified by the acquiring activity. The following statements shall be included in the TM verbatim (italicized text in parenthesis shall be replaced with the appropriate information):

(1) "Each lot of material shall be inspected and screened 100 percent if one critical nonfunctioning defect is observed. If a critical functioning defect occurs, save the remaining pieces and components; suspend the lot from local issue and use. Submit malfunction reports as prescribed in AR 75-1. Disposition instructions will be furnished by the U.S. Army Materiel Command.
(2) A lot of materiel is acceptable for issue if the acceptable criteria as indicated in (*insert applicable table number*) are met.
(3) Report all lots of materiel rejected under applicable serviceability table for disposition instructions to: Commander, U.S. Army TACOM Life Cycle Management Command, Chemical/Biological Defense, ATTN: AMSTA-LCW-C, 6501 E. 11 Mile Road, Warren, MI 48397-5000. Include a statement describing the capability and workload situation of your organization as to whether you are capable of reworking/demilitarizing the item."

5.87.8.1.4.2.2 <u>Specific instructions for inspection of non-radioactive ammunition, chemical ammunition or components</u>.

a. Criteria shall be prepared for inspection methods used to detect defective components or end items that have corrective action (every corrective action will have a corresponding data module). An Acceptable, Reparable, Irreparable Criteria table shall be prepared for ammunition components and packaging material. The default method for inspection is visual. If a method other than visual is required, it will be annotated in the defects column with a superscript. The tabulated data shall include the following entries:
(1) A list of components that have a correction action data module associated with it.
(2) The condition that is acceptable.
(3) The condition that requires repair.

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(4) Reference to the corrective action.
(5) The conditions that is irreparable.

b. The following statement shall be included in the TM verbatim:
"For pass/fail inspection criteria on a specific Department of Defense Identification Code (DODIC), consult Munitions History Program, Inspection Module or SB 742-1."
c. Instructions for disposition of lots shall be prepared and shall be as specified by the acquiring activity. The following statement shall be included in the TM verbatim:
"Disposition of each lot of material, including reporting, shall be in accordance with SB 742-1."

5.87.8.1.4.3 Pre-embarkation inspection.

Data Module Type: Procedural Information Code: 310N

Pre-embarkation inspection procedures for material in units alerted for overseas movement shall be prepared, if applicable, and shall be as specified by the acquiring activity.

5.87.8.1.4.4 Inspection of installed items.

Data Module Type: Procedural Information Code: 310J

Instructions shall be prepared for inspection of components, assemblies, or parts installed on the equipment. Procedures shall indicate that inspection will be performed with the item in its normally installed position or condition, considering accessibility and visibility of the item being inspected. The purpose of the inspection (to determine if the item is damaged, deteriorated, or incomplete to the extent that it should be replaced or repaired) shall be stated. Procedures shall be prepared for inspecting solder joints on an electronic item, welds on an armored vehicle, fluid leakage on vehicles, connectors on electronic devices, and other items to identify defects that shall be corrected.

5.87.8.1.4.5 Inspection-acceptance and rejection criteria.

Data Module Type: Procedural Information Code: 310D

Inspection requirements shall be prepared to include acceptance and rejection information sufficient to determine that new, repaired, and used components, assemblies and subassemblies conform to wear limits, fits, and tolerances established.

5.87.8.1.5 Testing.

Data Module Type: Procedural Information Code: 340C

a. Instructions shall be prepared, as applicable, to verify serviceability by measuring the mechanical, pneumatic, hydraulic, electrical, or electronic characteristics of components, assemblies, and subassemblies and comparing those characteristics with prescribed standards before installation in the end item. For software, instructions shall be prepared as applicable to verify usability/operability/functionality of the software.
b. (**DMWR/NMWR only**) Information shall be prepared for final testing of the highest assembly or equipment/end item involved to ensure the parameters of RAM and durability are met. The following procedures shall be prepared:

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(1) Inspection. Inspection procedures (refer to 5.87.8.1.4) shall be prepared that are required before final testing to ensure the item is complete and ready for final testing. Instructions shall be prepared for any minor preparation tasks needed before final testing.

(2) Lubrication. Any final lubrication procedures (refer to 5.87.8.1.17) that need to be done before final testing shall be prepared.

(3) Final test procedures. Test procedures, performance standards, and tolerances shall be prepared to establish that the equipment is adequately overhauled and ready for issue without qualifications. The procedures shall list all tools, TMDE, jigs, fixtures, and other support items required for the test in the preliminary requirements information. Operating instructions shall be prepared for special test equipment where necessary. Procedures shall be prepared for minor adjustments that can be done without disassembling equipment. Complete procedures shall be prepared for burn-in or run-in tests.

(4) Final painting, refinishing, and marking. Procedures shall be prepared for any final painting (refer to 5.87.8.1.14), refinishing, and marking (refer to 5.87.8.1.18) that could not be done during the overhaul procedures. The materials and tools required to do the job shall be identified. Depot level maintenance shall include data plate replacement data. For data plates which require replacement, the type of material shall be indicated. Detailed preparation and attachment instructions shall be prepared. The instructions for stamping data plates shall include the initials of the facility performing the overhaul or modification, the contact number (if applicable), the date of overhaul or modification, the part number, and the total operating time since new (if applicable). The instructions shall specify the letter and figure sizes and indicate their placement (adjustment to manufacturer's data). The following statement shall be inserted:

> "When sufficient space is not available on the existing data plate to add information, the plate shall be replaced and all pertinent data transferred to the new plate. Data shall not be stamped directly on any part, assembly, or item of equipment except when approved by the Government."

5.87.8.1.6 Servicing.

Data Module Type: Procedural Information Code: 200A

a. Instructions shall be prepared for replenishment of fuel; oil; hydraulic or other fluids; oxygen, nitrogen, other gases; and tire pressure, plus any other such items and materials (except for lubricants) required for complete servicing of the equipment.

b. Servicing instructions shall be supplemented with a diagram showing locations of regular and emergency servicing points. Items located on each side of the equipment which require servicing will be illustrated and identified as right and left side. NO STEP areas on walkways leading to any tank (in an aircraft) shall be indicated and necessary cautions included.

c. All expendable and durable items used in the servicing instructions shall be referenced and contained in the expendable and durable items list by military and federal standard nomenclature, part number (MIL-STD), and CAGEC. A servicing diagram shall be referenced or included to support the procedures when required.

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d. The warnings and cautions to observe in servicing a particular tank or reservoir (e.g., grounding and prevention of fire hazards) shall be stated clearly.
e. Instructions shall be prepared regarding access to any out-of-the-way or unusual places requiring service.

5.87.8.1.7 Adjust.

Data Module Type: Procedural Information Code: 271A

Adjustment instructions shall be prepared for the item to maintain or regulate, within prescribed limits, by bringing into proper position, or by setting the operating characteristics to specified parameters before operating the part, system, or end item.

5.87.8.1.8 Align.

Data Module Type: Procedural Information Code: 272A

Detailed instructions shall be prepared for alignment procedures to adjust specified variable elements of an item to bring about optimum or desired performance.

5.87.8.1.9 Calibrate.

Data Module Type: Procedural Information Code: 273A

Instructions to determine and cause corrections to be made or to be adjusted on instruments of test, measuring, and diagnostic equipment used in precision measurement shall be prepared. It consists of comparisons of two instruments, one of which is a certified standard of known accuracy, to detect and adjust any discrepancy in the accuracy of the instrument being compared. Equipment that requires calibration after assembly or installation shall be indicated. If the calibration may be performed by the user (i.e., the equipment does not need to be sent to a certified calibration facility), a reference shall be made to the publication containing the applicable calibration procedure. **TEXT DELETED**

5.87.8.1.10 Removal procedure.

Data Module Type: Procedural Information Code: 520A

Instructions to take a sub-component off an asset to allow repair or replacement of that sub-component, or to facilitate other maintenance shall be prepared.

a. Instructions shall be prepared to take a component off an asset to facilitate other maintenance on a different component or on the same component (except for replace and repair.) If a component is removed only to repair or replace it, the remove procedure shall be incorporated into the repair or replace task, rather than using a separate remove task. A remove task typically requires an install task. The remove task is authorized by the LPD/MAC and the assigned maintenance level is shown as the third position code of the SMR code

b. Instructions shall be prepared in the logical removal sequence. Illustrations shall be used to support and clarify the text. Instructions shall be prepared for checking and recording gear wear patterns, backlash, ESD protective control measures, measurements and tolerances for determining thickness of shims and purpose for shims, and separating and indexing parts for the assembly. Procedures shall identify items which must be matched or precision-mated when installed at a later time.

c. (**DMWR/NMWR only**) Instructions shall be prepared for recording the condition of the item/assembly, marking, handling, and storing the item.

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d. **(Software only)** The remove task shall not be used for removing software from work station/viewing hardware. The unload task shall be used for that.

5.87.8.1.11 Install.

Data Module Type: Procedural Information Code: 720A

Instructions shall be prepared for the placing, positioning, or otherwise locating a component or sub-component to make it part of a higher level end item. If a component is only installed after repair or to replace it, a separate install task shall not be prepared . The install procedure shall be incorporated into the repair or replace task. Installation can be to install a new asset for the first time or reinstall an asset previously removed. The install task is authorized by the LPD/MAC and the assigned maintenance level is shown in the third position in the SMR code. Illustrations shall be used to support and clarify the text.

a. Instructions shall be prepared for painting, refinishing, and marking the item prior to its installation in the next higher assembly of the equipment.
b. Inspection procedures shall be prepared for checking alignment and adjustment of the item during the installation sequence. These instructions shall include a statement that adjustment, servicing, testing, and/or an operational check is required.
c. Instructions such as "reverse the removal procedure," shall not be used.
d. Peculiar instructions shall be prepared for lock wiring, installing cotter pins, use of sealing compounds, lubricants, or corrosion prevention compounds and similar operations with applicable references to the expendable and durable items list.
e. Information shall be prepared for shelf-life items, mandatory replacement parts, etc.
f. Instructions shall be prepared for pressurizing and charging with gas, including all safety requirements.
g. **(Software only)** The install task shall not be used for installing software to work station/viewing hardware. The load task shall be used for that.

5.87.8.1.12 Replace.

Data Module Type: Procedural Information Code: 685C

Instructions to take off an unserviceable component and put a serviceable component in its place. Replace may contain references to separate remove and install tasks if the component is removed/installed for purposes other than to replace it with a new component. The replace task is authorized by the LPD/MAC and the assigned maintenance level is shown as the third position code of the SMR code. Replace shall not be used for software to remove an old version and replace with new version. Load/unload and/or upgrade shall be used for this purpose.

5.87.8.1.13 Repair.

Data module type: Procedural Information code: 685A

Instructions for repair actions required to restore a piece of hardware or software to a completely serviceable or fully mission capable status. Repair may contain references to separate remove (unload for software) and install (load for software) tasks if the component is removed/installed for purposes other than to repair it. Repair shall not be used for replacement action. The repair task is authorized by the LPD/MAC and the assigned maintenance level is shown as the fourth position code of the SMR code.

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5.87.8.1.14 Painting.

Data Module Type: Procedural Information Code: 257B

Instructions shall be prepared for required painting, refinishing, and marking of assembled components, assemblies, subassemblies, or end item. Reference may be made to TM 55-1500-345-23, TM 1-1500-204-23, SB 11-573,TB 43-0209, TB 43-0118, TM 43-0139, or others as appropriate. Instructions shall also be prepared for any final painting, refinishing, and marking that could not be done during the overhaul procedures.

5.87.8.1.15 Overhaul procedure.

Data Module Type: Procedural Information Code: 664B

Instructions shall be prepared to restore an item to a completely serviceable/operational condition as required by maintenance standards in the appropriate technical publications. Overhaul is normally the highest degree of maintenance performed by the Army. Overhaul does not normally return an item to a like new condition.

5.87.8.1.16 Rebuild.

Data Module Type: Procedural Information Code: 664C

Instructions shall be prepared for the restoration of unserviceable equipment to a like new condition in accordance with original manufacturing standards. Rebuild is the highest degree of material maintenance applied to Army equipment. The rebuild operation includes the act of returning to zero those age measurements (e.g., hours/miles) considered in classifying Army equipment/components.

5.87.8.1.17 Lubrication.

Data Module Type: Procedural Information Code: 240A

Pertinent mandatory lubrication instructions, CPC procedures, and general lubrication instructions not contained elsewhere shall be prepared and appear here.

5.87.8.1.18 Mark.

Data Module Type: Procedural Information Code: 067D

a. For non munitions, instructions shall be prepared placing identifying information on the equipment or item. This may be done after repair or when required due to normal wear.
b. For munitions not covered in a separate ammunitions data module, the following information shall be prepared as a minimum:

   (1) Any special sequence of action necessary to protect the ammunition.
   (2) Detailed step-by-step instructions shall be provided on the proper method to mark the ammunition and/or packaging.
   (3) The appropriate references, i.e., drawings, specifications, etc., shall be provided to ensure correct color, location, and size of markings

c. For DMWRs/NMWRs, a reference to the preservation, packaging, and marking general information data module shall be included.
d. For DMWR/NMWRs, this data module shall be used if instructions for marking IUID are required.

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5.87.8.1.19 Pack procedure.

Data Module Type: Procedural Information Code: 713A

Instructions shall be prepared detailing how to place an item into a container for either storage or shipment after service and other maintenance operations have been completed.

a. For munitions, the following information shall be prepared as a minimum:
   (1) Any special sequence of action necessary to protect the ammunition.
   (2) If a specially designed reusable container is involved for either the end item or components that are authorized for replacement, instructions shall be prepared to report or reenter the empty container through supply channels.
   (3) When providing packaging instructions, the following information shall be included: part number/drawing number, CAGEC, and drawing title.
   (4) Instructions shall be prepared on how to package defective ammunition. In addition, the following statement shall be inserted, “Defective ammunition shall be handled, packaged, and stored in accordance with local Standard Operating Procedure.
b. For DMWR/NMWRs, a reference to the preservation, packaging, and marking general information data module shall be included

5.87.8.1.20 Unpacking.

Data Module Type: Procedural Information Code: 840B

Instructions shall be prepared detailing how to remove an item from a storage or shipping container or other shipping device prior to service or other maintenance operations. If the containers are to be used again, kept for future use, turned into supply, or require a special disposition method, the necessary procedures for reassembly of the container shall be prepared. These instructions shall be supported by illustrations.

a. For munitions, any special sequence of action necessary to protect the ammunition.
b. For munitions, if a specially designed reusable container is involved for either the end item or components that are authorized for replacement, instructions shall be prepared to report or re-enter the empty container through supply channels.

5.87.8.1.21 Preservation procedure.

Data Module Type: Procedural Information Code: 810A

Instructions shall be prepared for all authorized methods to treat systems and equipment whether installed or stored, to keep them in a satisfactory condition.

5.87.8.1.22 Assembly and preparation for use.

Data Module Type: Procedural Information Code: 710B

a. As applicable, instructions shall be prepared for assembly or other tasks required to prepare the equipment for use after it has been unpacked such as power requirements, connections, and initial control settings needed for installation purposes.
b. For security measures for electronic data, instructions shall be prepared for handling, loading, purging, overwriting, or unloading classified electronic data under usual conditions. Instructions shall meet current security regulations as they pertain to automation security.

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5.87.8.1.23 Assemble procedure.

Data Module Type: Procedural Information Code: 710A

a. Step-by-step procedures shall be prepared for assembling items disassembled or removed that make up the components, assemblies, or subassemblies. Illustrations shall be used to support and clarify the text.
b. Instructions shall be prepared for assembling precision-matched or mated parts marked during disassembly.
c. Instructions shall be prepared for checking and recording gear wear patterns, backlash, shimming requirements, and the indexing of parts to ensure proper alignment during assembly. The purpose of shims shall be given.
d. Torque requirements, values, and sequences shall be indicated. Only critical torques shall be indicated in task steps. All non-critical torques will be covered by the Torque Limits data module. Torque values shall be given for all structural attaching hardware, fluid couplings (fuel, oil, hydraulic, pneumatic, etc.), and connections. Torque values shall include torque correction factors when crowfoot extensions, thread lubricants, and cadmium-plated screws or nuts are used. Torque values identified in the tasks shall reflect torque wrenches authorized to personnel targeted to perform tasks. Upon completion of torque action, instructions shall be prepared on use of an orientation mark (striping).
e. Instructions such as "reverse the disassembly procedure," shall not be used.
f. ESD standards, ESD sensitive items along with the protective and control measures to be taken, and CPC procedures shall be identified.
g. For munitions, direction shall be provided if the assembly procedure results in a logistics change (NSN, DODIC, etc.) to the end item

5.87.8.1.24 Disassembly procedure.

Data Module Type: Procedural Information Code: 530A

Instructions shall be prepared for disassembly of components, assemblies, or subassemblies to the extent specified by the MAC and SMR coded items. Illustrations shall be used to support and clarify the text. Instructions shall be prepared for precision matched or mated components, assemblies, subassemblies, or parts (other than common hardware), including ESD sensitive items, to ensure they will be marked, handled, and stored to preclude damage and to ensure assembly and installation in their matched positions. For munitions, direction shall be provided if the disassembly procedure results in a logistics change (NSN, DODIC, etc.) to the end item or component(s).

5.87.8.1.25 Cleaning.

Data Module Type: Procedural Information Code: (multiple)

There are seven information code variants that can be used when preparing data modules containing cleaning procedures, depending on method used:

a. 250A Clean and apply surface protection
b. 251A Clean with chemical agents
c. 252A Clean by abrasive blast
d. 253A Clean by ultrasonic
e. 254A Clean mechanically
f. 255A Purge

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g. 256A Polish and apply wax
h. 258A Other procedures to Clean

Cleaning procedures, methods, special equipment, and materials that are required shall be specified. Instructions shall be prepared for corrosion prevention treatment of metal parts after cleaning.

a. All materials used in the cleaning and corrosion prevention of equipment, components, or parts shall be referenced and contained in the expendable and durable items list.
b. Cleaning materials used for the cleaning of systems, subsystems, and components in order to prepare them for painting, bonding, applying sealants or adhesives, and the removal thereof shall be Hazardous Air Pollutant (HAP) Free. The use of HAP containing cleaner(s) is considered a serious risk to human health and the environment due to potential impacts on installations that are required to perform the specific cleaning tasks. If a HAP containing cleaner(s) shall be used due to performance/technical requirements, then it shall be formally approved by the risk acceptance authority for serious-level risks as identified in the System Safety program and MIL-STD-882.
c. Instructions shall include cautions to avoid damage of components and to prevent the entrance of water or other solvents into electrical components, ducts, or similar openings.
d. Warnings and cautions shall be prepared whenever chemicals or cleaning compounds are used or combined which may result in a dangerous or hazardous mixture. Whether the danger is to personnel or equipment shall be identified and the effect (e.g., gases, fumes, caustic, and fire) shall be stated.
e. For aircraft, detailed instructions shall be prepared for cleaning and washing the entire aircraft. Instructions shall be prepared for the removal of the battery, relief tube, power plant, and armament exhaust deposits, or other items or material as necessary.
f. Cleaning methods or materials shall not cause corrosion, create conditions that promote corrosion, or remove/negate any in-place corrosion prevention methods. If normal cleaning (e.g. pressure washing) has the potential to remove coatings, CPCs or other corrosion prevention materials instructions (or reference to the appropriate methods) shall be provided on how to properly restore the corrosion prevention to the affected system(s).
g. The standard cleaning practice shall include instructions for proper cleanout and draining of enclosed areas. This shall include but is not limited to cleaning drain holes; removing drain plugs; and opening covers, hatches, etc. The procedure should clearly state when to open access points; how to clean enclosed areas; how to verify that such spaces are clean and dry; and how to reinstall drain plugs, covers, hatches, etc

5.87.8.1.26 Non-Destructive Inspection (NDI).

Data Module Type: Procedural Information Code: 350B

a. The reject criteria shall be specified in all cases. This shall be done by means of a blanket statement, individual criteria for a part, or a combination of both.
b. When several NDI methods are permitted, the relative order of preference shall be specified.
c. Instructions shall be prepared for removing primer and/or paint for TMs that require the removal process as part of NDI procedures. If a part requires a special process, this procedure must be contained within the NDI procedure for that part.

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d. Cleaning requirements before, during, and after NDI shall be specified. If a part has a built-in bearing, then a procedure shall be prepared to ensure protection of the bearing for the NDI procedure.
e. The following requirements apply to **aircraft NDI TMs only.**

(1) Instructions for use of visible dye penetrants shall not be included as part of NDI instructions unless specified otherwise by the proponent activity. When required, refer to TM 1-1500-335-23 for preparation of those instructions.
(2) When specified by the acquiring activity, TM 1-1500-335-23 shall be the only NDI document referenced in the NDI procedures. The technical provisions of this TM shall be followed. Individual NDI procedures shall be specified for each part requiring NDI. In order to satisfy this requirement, the following shall be prepared:

(a) If penetrant is required, the applicable process in TM 1-1500-335-23 shall be identified.
(b) If magnetic particle inspection is required, the specific TM 1-1500-335-23 method, the type of magnetization, and amount of current or ampere turns shall be provided.

5.87.8.1.27 Radio interference suppression.

Data Module Type: Procedural Information Code: 143A

a. Instructions shall be prepared for primary components in the suppression system and replacement of these primary components.
b. Secondary components shall be referenced to pertinent maintenance procedures containing removal and installation instructions.
c. Instructions shall be prepared for testing radio interference suppression component

5.87.8.1.28 Placing in service.

Data Module Type: Procedural Information Code: 870P

Instructions shall be prepared for actions not previously provided in a service upon receipt data module that may be required for an assembly, component, or end item. Instructions shall be prepared such as removal of an item from storage and preparation for installation on an end item. Final servicing checks, calibration, leak checks, charging, pressurizing, and operational checks shall be prepared.

5.87.8.1.29 Ground handling.

Descriptions, instructions, and necessary cautions and warnings for ground handling of the aircraft/equipment, including any information needed in extreme cold, heat, humidity, dust, or other unusual or extreme conditions shall be prepared. Instructions for folding and unfolding appropriate parts such as rotor blades or wings, rudders, and fans shall also be included. For aircraft, instructions shall be prepared that are required for blocking and supporting the aircraft during performance of the operation or procedure involved. The following ground handling procedures shall be provided.

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5.87.8.1.29.1 Towing.

Data module type: Procedural Information Code: 174A

Instructions shall be prepared to connect one vehicle to another for the purpose of having one vehicle moved through the motive power of the other vehicle.

5.87.8.1.29.2 Jacking.

Data module type: Procedural Information Code: 172A

Instructions shall be prepared to mechanically raise or lift a vehicle to facilitate maintenance on the vehicle.

5.87.8.1.29.3 Parking.

Data module type: Procedural Information Code: 170J

Instructions shall be prepared to safely place a vehicle in a lot, ramp area, or other designated location.

5.87.8.1.29.4 Mooring.

Data module type: Procedural Information Code: 17AA

Instructions shall be prepared to secure a vehicle by chains, ropes, or other means to protect the vehicle from environmental conditions or secure for transportation.

5.87.8.1.29.5 Covering.

Data module type: Procedural Information Code: 170B

Instructions shall be prepared to place a protective wrapping over a vehicle to protect it from environmental conditions or to hide (e.g., camouflage) it.

5.87.8.1.29.6 Hoisting.

Data module type: Procedural Information Code: 171B

Instructions shall be prepared to allow a vehicle to be raised by cables or ropes through attaching points.

5.87.8.1.29.7 Sling loading.

Data module type: Procedural Information Code: 178B

Instructions shall be prepared to place a sling around a vehicle to allow it to be raised.

5.87.8.1.29.8 External power.

Data module type: Procedural Information Code: 170C

Instructions shall be prepared on how to apply electrical power from any authorized power source (e.g., external generator or facility power).

5.87.8.1.30 DELETED (Moved to 5.87.11A).

5.87.8.1.31 Preparation for storage.

Data Module Type: Procedural Information Code: 810C

The following instructions shall be prepared and as applicable shall include requirements for both short-term and long-term storage:

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a. Security procedures and special transportation requirements for sensitive items (security, terrorists, etc.).
b. Instructions for preservation, packaging, packing, marking, ESD protective and control measures, and shipping instructions, including use of special design reusable containers.
c. Instructions on special use of corrosion-preventive compounds, moisture barriers, and desiccant materials.
d. Instructions for applying special identifying, shipping, and cautionary markings to shipping containers; including security classification, special temperature requirements, and shelf life.
e. Instructions will be provided by the proponent activity for placing equipment in, and for removing it from, administrative storage.
f. Deleted.
g. (**Conventional and chemical ammunition only**) Basic load storage, quantity-distance class, storage compatibility groupings, storage temperatures, stacking limits, and other pertinent storage requirements.
h. For aviation ground support equipment, a reference to TM 1-1500-204-23 for general technical information for preparation for storage or shipment.
i. For wheeled and tracked vehicles refer to MIL-STD-3003 for further guidance related to storage.

If there are no requirements related to storage for the equipment the following shall be inserted into the preparation for storage data module: "There are no requirements related to storage for (*insert equipment name*)."

5.87.8.1.31A <u>Preparation for shipment.</u>

Data module type: Procedural Information Code: 811C, 830C

A data module for this task shall be prepared and as applicable, shall include the following:

a. Instructions for security procedures and special transportation requirements for sensitive items (security, terrorism, etc.) related to shipping the equipment.
b. Instructions for preservation, packaging, packing, marking, ESD-protective and control measures, and shipping. These shall include the use of specially designed reusable containers.
c. Instructions on special use of corrosion-preventive compounds, moisture barriers, and desiccant materials required for shipping.
d. Instructions for applying special identifying, shipping, and cautionary markings to shipping containers. These shall include security classification, special temperature requirements, and shelf life.
e. Instructions should cover any component removal, fluid removal, etc required to ship/transport the item.
f. (**Conventional and chemical ammunition only**) Instructions for basic load shipping, quantity-distance class, shipping compatibility groupings, shipping temperatures, stacking limits, and other pertinent shipping requirements.

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g. Instructions for aviation ground support equipment requirements to include a reference to TM 1-1500-204-23 for general technical information for preparation for shipment.

h. For wheeled and tracked vehicles refer to MIL-STD-3003 for further guidance related to shipment.

If there is no requirements related to preparation for shipment for the equipment the following shall be inserted in the data module: "There are no requirements related to preparation for shipment for *(insert equipment name)*."

5.87.8.1.31B Transport.

Data module type: Procedural Information Code: 831

A data module for this task shall be prepared and as applicable, shall include the following:

a. Requirements for dimensions, weights, and types of transport that can/can't be used.

b. Instructions for transporting the equipment via air, sea, land, and rail. For vehicles, this includes instructions for self-transport (i.e., it can be driven, flown, or sailed to its destination). Instructions should cover any chocking, bracing, tiedown, etc. required to ship/transport the item.

c. Instructions for loading and unloading the equipment.

d. Instructions for procedures on the proper handling, blocking, and bracing of basic load ammunition when being transported in trucks and other tactical vehicles.

e. (**Conventional and chemical ammunition only**) Instructions for basic load shipping, quantity-distance class, shipping compatibility groupings, shipping temperatures, stacking limits, and other pertinent shipping requirements.

If the transportability information is contained in another document, reference may be made in this data module to the document containing the information. Reference shall not be made to any Surface Deployment and Distribution Command (formerly Military Transportation Management Command) Transportation Engineering Agency (SDDC/TEA) (formerly MTMC/TEA) publications. If there is no requirements related to transport of the equipment the following shall be inserted in the data module: "There are no requirements related to transport of *(insert equipment name)*."

5.87.8.1.32 Arm.

Data Module Type: Procedural Information Code: 120G

Procedures shall be prepared for arming/activation of munitions (e.g., ammunition, mines, etc.) prior to use.

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5.87.8.1.33 Load.

Data module type: Procedural Information Code: 831A (vehicle)
725A (ammo)

Instructions for placing assets onto a transportation medium (e.g., pallet, truck, container) or munitions into a weapon/weapon system shall be prepared as required to support the specific equipment.

a. For transportation, the act of placing assets onto a transportation medium (e.g., pallet, truck, container).
b. For munitions, the act of placing munitions onto a vehicle or aircraft.

5.87.8.1.34 Unload.

Data module type: Procedural Information Code: 841A (vehicle)
525A (ammo)

Instructions for removing assets from a transportation medium (e.g., pallet, truck, container) or munitions from a weapon/weapon system shall be prepared as required to support the specific equipment.

a. For transportation, the act of removing assets from a transportation medium (e.g., pallet, truck, container).
b. For munitions, the act of removing munitions from a vehicle or aircraft.

5.87.8.1.35 Install peripheral device.

Data module type: Procedural Information Code: C96

Instructions for installing peripheral device such as printers, scanners, modems, etc.

5.87.8.1.36 Uninstall peripheral device.

Data module type: Procedural Information Code: C96

Instructions for uninstalling peripheral device such as printers, scanners, modems, etc.

5.87.8.1.37 Upgrade/patch.

Data module type: Procedural Information Code: C96

Instructions for performing software upgrades and/or installing patches.

5.87.8.1.38 Configure.

Data module type: Procedural Information Code: C96

Instructions for configuring the software for different uses/purposes and/or different users.

5.87.8.1.39 Debug.

Data module type: Procedural Information Code: C96

Instructions for locating software bugs/errors and removing those bugs/correcting errors.

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5.87.8.2 Project decisions.

5.87.8.2.1 Cleaning information codes.

The project shall determine the information codes used for cleaning procedure data modules.

5.87.8.2.2 Additional maintenance task.

Additional maintenance task may be developed when the specific type of maintenance tasks are not covered as described. If additional maintenance tasks are used, proponent shall submit to LOGSA the requirements for this maintenance task type for possible incorporation within future revisions to this standard.

5.87.9 Follow-on maintenance.

5.87.9.1 Army business rules.

5.87.9.1.1 General.

As applicable, instructions shall be prepared for follow-on maintenance and it shall be the last task in the data module. Follow-on is a maintenance condition which shall be accomplished sometime following the completion of a task to clean up or undo actions performed during the task. Follow on maintenance may be in a separate referenced procedural data module with and information code appropriate to the task performed. For example, in order to fix a component a task might require that an access panel be removed. The panel would then need to be replaced as a follow-on action. This task might be performed sometime after the repair task is completed, but not immediately after the repair task. Other maintenance tasks might be performed in the same area before the follow-on task is accomplished.

5.87.9.2 Project decisions.

5.87.9.2.1 Follow-on maintenance.

The project shall decide what follow-on maintenance instructions will be prepared.

5.87.10 General maintenance.

5.87.10.1 Army business rules.

5.87.10.1.1 General.

General maintenance information set shall be prepared as directed by acquiring activity and contain common, general, or standard maintenance procedures applicable to other maintenance information sets contained within the TM/IETP that require the general maintenance procedures to complete the tasks.

5.87.10.2 Project decisions.

5.87.10.2.1 General maintenance instructions.

The project shall decide what general maintenance instructions will be prepared.

5.87.11 Lubrication instructions.

Data Module Type: Procedural Information Code: 240B

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5.87.11.1 Army business rules.

5.87.11.1.1 General.

Lubrication schedules shall be prepared to present all applications and procedures, lubricants, and lubrication points to completely lubricate equipment.

5.87.11.1.2 Lubrication charts.

a. Lubrication charts shall consist of a main drawing prepared as a three-dimensional diagram, and such enlarged or detailed views as are considered necessary to identify items which otherwise would be obscured. They shall show all lubrication requirements for all parts of the equipment requiring periodic lubrication, other than those lubricated by the main engine oil system. The charts shall also indicate type of lubricant, method of application, and frequency.
b. Use of black silhouette figures representing a likeness of the tool used in the application (oil can, grease gun, brush, or hand) shall be the accepted means of presenting application methods on the lubrication chart.
c. Abbreviations, as specified in MIL-HDBK-275 (aviation) and MIL-HDBK-113 (Nonaviation), shall be used to present lubricant types. In the event a lubricant does not have an abbreviation listed in MIL-HDBK-275 or MIL-HDBK-113, the abbreviation shall be provided by the acquiring activity. Assigned application symbols, type abbreviations, and frequency shall be placed within the standard lubrication symbols.
d. Each application symbol and lubricant abbreviation used shall be defined. Notes may be used to specify requirements other than normal.

5.87.11.2 Project decisions.

None.

5.87.11A Preservation, packaging, and marking data module **(DMWR/NMWR only)**.

Data Module Type: Descriptive Information Code: 810H

The following instructions shall be prepared and included in the preservation, packaging, and marking data module.

5.87.11A.1 Packaging information.

The packaging requirements for all components and end items under maintenance shall be requested from the items' source of supply, packaging management activity during the document's initial development and any revisions. The following packaging information shall be included verbatim in the preservation, packaging, and marking data module:

"PACKAGING

Military preservation, Level A packing, and marking shall be accomplished in accordance with the specific packaging instructions contained in Data Module (*insert data module code*).

MARKING FOR SHIPMENT AND STORAGE

a. Storage: In addition to any special markings called out on the special packaging instruction (SPI) or in the packaging requirements code, all unit packages, intermediate packs, exterior shipping containers, and, as applicable, unitized loads shall be marked in accordance with MIL-STD-129 including bar coding. The repair facility is responsible

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for application of special markings as required by MIL-STD-129 regardless of whether specified in the contract/order or not. Special markings include, but are not limited to, Shelf-life markings, structural markings, and transportation special handling markings. The marking of pilferable and sensitive materiel will not identify the nature of the materiel.

b. Shipment: The repair facility shall apply identification and address markings with bar codes in accordance with MIl-STD-129. A Military Shipment Label (MSL) is required for all shipments except contractor to contractor. The MSL will include both linear and 2D bar codes per the standard. Military Shipping Label: Military Shipment Labels may be created using the Computer Automated Transportation Tool Military Shipment Label/Issue Receipt Release Document (CATT MSL/IRRD).

HEAT TREATMENT AND MARKING OF WOOD PACKAGING MATERIALS

Wood Packaging Materials (WPM) (i.e., boxes, crates, skids, pallets, and any wood used as inner packaging made of non-manufactured wood) shall be constructed of lumber that has been heat-treated in accordance with the requirements of International Standard for Phytosanitary Measures (ISPM) –15. The WPM manufacturer shall be affiliated with an inspection agency accredited by the board of review of the American Lumber Standard Committee. The WPM manufacturer shall ensure traceability to the original source of heat treatment. Each piece of WPM shall be marked to show the conformance to the International Plant Protection Convention Standard. Certification markings shall be indelible and permanent. They may be stamped, stenciled, or branded directly onto or into the WPM. Certification marks shall be applied in a visible location on at least two opposite sides of the wood packaging product, but are not required on each individual component piece of a wood packaging product. On dunnage, the marking shall be applied every two feet to opposite surfaces of each piece. If possible, the mark shall be visible when the dunnage is placed in the load to enable inspectors to verify the WPM’s compliance without unloading or unstuffing the container. Foreign manufacturers shall have the heat treatment of WPM verified in accordance with their National Plant Protection Organization’s compliance program.

ALTERNATIVES

The packaging requirements have been validated and the method of preservation/packing has proven successful in meeting the needs of the military distribution system, including undefined storage and shipment throughout the world. Tailoring of the packaging instructions may only be authorized by the packaging requirements developer. If tailored, prototype package is required to validate the sizes and fit requirements. Minor dimensional and size changes are acceptable provided email notification is provided to the packaging requirements developer. Any design changes or changes in the method of preservation that provide a cost savings without degrading the method of preservation or packing or affecting the serviceability of the item will be considered and responded to within 10 days of submission. The equipment proponent reserves the right to require testing to validate alternate preservation methods, materials, alternates, blocking, bracing, cushioning, and packing.

REUSE OF PACKAGING MATERIALS

The cushioning material and the fiberboard boxes may be reused provided:

a. There is no visible damage to material.

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b. The foam cushioning has not taken a permanent set.
c. The fiberboard has no punctures, delaminating, or crushed flutes.

The water vapor proof barrier bag shall never be reused. Always use new barrier material, evacuate air from the barrier bag, and conduct a snap test after two hours on each bag to ensure seal is holding. All components of the wood box/crate shall be present, properly secured in position, and not broken. Splits are acceptable provided the boards remain secured and not loose. When reapplying the lid, fasteners shall be placed 1/2 inch away from the previous fastener hole. Strapping shall be applied per MIL-STD-147.

CONTAINER REPAIR

Each long life metal reusable container will be inspected and reconditioned in accordance with TB 9-289 or SB 725-92-1 and the applicable container-drawing package. Container drawings are available upon request from the packaging requirements developer. This reconditioning effort includes mandatory replacement of breather valves, humidity indicators, data plates, sealing gaskets, and desiccant, plus all shear mounts with an age factor of five years or older. It also includes a leak test after reconditioning, inspection, and replacement of unserviceable wood skids, and touch up or total stripping and refinishing of the container surfaces with CARC paint."

5.87.11A.2 Special instructions.

Instructions shall be prepared for any special or unique preservation, packaging, or marking instructions that apply to the equipment. These instructions shall include warnings, cautions, or references concerning ESD, nuclear material, hazardous substances, special marking instructions, or any other instructions required that are not covered in the standard packaging and preservation information.

5.87.12 Facilities **(DMWR/NMWR only)**.

Data Module Type: Descriptive Information Code: 915A

5.87.12.1 Army business rules.

5.87.12.1.1 General.

Facilities data module (**DMWR/NMWR only**) shall be prepared as directed by acquiring activity. A description of all facilities, such as test stands, test tracks, clean rooms, shielded rooms, or other facilities that are required to do the maintenance work shall be included. Reference shall be provided for any specifications or standards that these facilities shall meet. When approved by the acquiring activity, data from these standards may be included in the procedures.

5.87.12.2 Project decisions.

None.

5.87.13 Overhaul and retirement schedule **(aircraft only)**.

Data Module Type: Descriptive Information Code: 288A

a. This data module shall include the following statement and associated table and may include an introduction.

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"OVERHAUL AND RETIREMENT SCHEDULE

Units of operating equipment that are to be overhauled or retired at the period specified are listed here. Unless otherwise specified in TM 1-1500-328-23, Aeronautical Equipment Maintenance Management Policies and Procedures, removal of equipment for overhaul may be accomplished at the inspection nearest the time when overhaul is due."

b. The overhaul and retirement schedule shall consist of the entries described below. The overhaul and retirement schedule may be prepared as a table.

(1) Part name. The name of the part shall be listed. An asterisk (*) shall precede the part name if the part is an indentured subassembly.
(2) Part number. The official part number of the part listed.
(3) Overhaul interval hours. The maximum operating time allowed on the part before it is to be overhauled.
(4) Overhaul interval notes. Any additional information required on the part's overhaul interval.
(5) Retirement interval hours. Maximum operating time allowed on the part before it is removed and condemned.
(6) Retirement interval notes. Any additional information required on the part's retirement interval.

5.87.14 Overhaul Inspection Procedures (OIP) **(DMWRs/NMWRs only)**.

Data Module Type: Procedural Information Code: 310C

5.87.14.1 Army business rules.

5.87.14.1.1 General.

Unless otherwise specified by the acquiring activity, OIP data modules (**DMWRs/NMWRs only**) shall be prepared for items that have parts with specific characteristics, wear limits, specified performance requirements, or fatigue characteristics or tolerances. A separate data module shall be provided for each item containing such parts. Within each data module, a separate OIP shall be provided for each part of the item that requires a critical inspection.

5.87.14.1.2 Scope.

OIP shall contain the characteristics being inspected for, inspection methods, and the acceptance/reject criteria that shall be met. For characteristics having a major quality assurance effect, the acronym "QA" shall be placed immediately preceding the characteristic to which it applies. Unless otherwise specified by the acquiring activity, an illustration shall accompany the OIP. Illustrations for OIPs are strongly encouraged and shall only be omitted for very simple systems. A reference letter may be included in the OIP to locate the critical inspection characteristics of the parts on the illustrations. The OIPs may be contained in a table or a list. References to these OIP data modules shall be included within the applicable maintenance procedural step (i.e., disassembly, reassembly, testing, etc.) or preshop analysis procedural step where they apply.

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5.87.14.2 Project decisions.

5.87.14.2.1 Overhaul Inspection Procedures (OIP) data modules.

The project shall determine if and when OIP data modules shall be prepared.

5.87.15 Depot mobilization requirements **(DMWR/NMWR only)**.

Data Module Type: Descriptive Information Code: 800K

5.87.15.1 Army business rules.

5.87.15.1.1 General.

When specified and provided by the acquiring activity, the modifications, deletions, or additions to the preshop analysis or overhaul procedures required during mobilization shall be included in this information set. The following data shall be included.

5.87.15.1.2 Introduction for depot mobilization requirements.

The following text shall be included verbatim.

"DEPOT MOBILIZATION REQUIREMENTS INTRODUCTION

Scope

The purpose of this is to streamline and accelerate the overhaul process during the mobilization of the depot.

Explanation of Mobilization Requirements

The mobilization requirements include a list of instructions for modifying preshop analysis and/or overhaul procedures. The pertinent procedures to be modified are referred followed by the action to be taken."

5.87.15.1.3 Mobilization requirements.

Mobilization requirements consist of a list of actions that shall be in effect during depot mobilization. The data modules that are modified by these actions shall be noted. This data can be in provided in a table. Alternatively, if the actions are already listed in another data module, a statement shall be made that includes references to those actions.

5.87.15.2 Project decisions.

5.87.15.2.1 Mobilization requirements.

The project shall determine if the modifications, deletions, or additions to the preshop analysis or overhaul procedures required during mobilization shall be included in the depot mobilization requirements information set.

5.87.16 Quality Assurance (QA) requirements **(DMWR/NMWR only)**.

Data Module Type: Descriptive Information Code: 315A

5.87.16.1 Army business rules.

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5.87.16.1.1 Statement of responsibility.

The following information shall be included in the QA Requirements data module.

"STATEMENT OF RESPONSIBILITY

The depot/contractor is responsible for complying with the quality assurance requirements contained here in accordance with ISO 9000 Series standards or equivalent. The commodity manager reserves the right to perform inspections or make changes that ensure the depot work being done meets the quality standards of the DMWR and preserves the inherent reliability of the item."

5.87.16.1.2 Definitions.

Definitions shall be prepared for all QA terms extensively used in the DMWR and NMWR. Alternatively, if the definitions are listed in another location, that publication or data module shall be referenced.

5.87.16.1.3 Special requirements for inspection tools and equipment.

Any special requirements for the maintenance and calibration of tools and test equipment used for QA inspections shall be listed.

5.87.16.1.4 Certification requirements.

Any certification or licensing requirements for processes, procedures, materials, equipment, or personnel skills shall be listed. The list shall include appropriate standards, specifications, regulations, or laws that apply. The list shall reference the text in the DMWR/NMWR where there is a requirement for a soldering, welding, or magnetic particle inspection certification, radioactive substance, or test driver licenses.

5.87.16.1.5 Quality program.

Any requirements for a quality program shall be listed.

5.87.16.1.6 In-process inspections.

The following statement shall be included.

"IN-PROCESS INSPECTIONS

In-process quality assurance inspections are contained throughout the overhaul procedures of this DMWR. These inspections are immediately preceded by a statement such as "QA check" to identify them, and they are the minimum inspections required. Additional quality assurance inspections may be established by the depot or the commodity manager."

5.87.16.1.7 Acceptance inspections.

The following statement shall be included.

"ACCEPTANCE INSPECTIONS

Items overhauled in accordance with this DMWR will be accepted based on the following criteria:

a. Conformance to quality of material requirements.
b. Conformance to all in-process quality assurance inspections.
c. Conformance to all final assembly testing requirements.

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d. Conformance to the preservation, packaging, and marking requirements."

5.87.16.1.8 First article inspection.

When applicable, first article inspection/test shall be prepared for the DMWR/NMWR in accordance with ISO 9000 Series standards or equivalent.

5.87.16.2 Project decisions.

None.

5.87.17 Illustrated list of manufactured items **(Field level or above only)**.

Data Module Type: Descriptive Information Code: 670E

5.87.17.1 Army business rules.

5.87.17.1.1 General.

The illustrated list of manufactured items information shall be prepared as directed by acquiring activity and identify and shall contain introduction and manufacturing procedures information which identifies and includes technical information for each item authorized to be manufactured or fabricated by field or sustainment personnel. When applicable, links may be made to fabrication instructions for tools and equipment.

5.87.17.1.2 Introduction for illustrated list of manufactured items data module.

The following introduction (text below within the quotation marks) shall be prepared and included verbatim.

"ILLUSTRATED LIST OF MANUFACTURED ITEMS

INTRODUCTION

Scope

This includes complete instructions for making items authorized to be manufactured or fabricated at the (*insert applicable maintenance level*).

How to Use the Index of Manufactured Items

A part number index in alphanumeric order is provided for cross-referencing the part number of the item to be manufactured to the information which covers fabrication criteria.

Explanation of the Illustrations of Manufactured Items

All instructions needed by maintenance personnel to manufacture the item are included on the illustrations. (When applicable, a reference to the associated IPD shall be entered here.) All bulk materials needed for manufacture of an item are listed by part number or specification number in a tabular list on the illustration."

5.87.17.1.3 Index of manufactured items.

An index of part numbers or drawing numbers shall be prepared which lists part numbers and/or drawing numbers, in alphanumeric order, along with the name of the part for all items illustrated in this data module. If applicable, the illustration figure number containing the manufacturing data shall be included.

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5.87.17.1.4 Illustrations of manufactured items.

The following information shall be prepared:

a. As required, illustrations shall be prepared which contain sufficient views to portray all features of the item.
b. All instructions (explanatory text and list of bulk materials) needed by maintenance personnel to manufacture the item shall supplement the illustrations and shall contain the following data.

    (1) All dimensional, location, and processing instructions needed to manufacture the item shall be included (e.g., 30-in. long, top surface, primer coating).
    (2) A description of the item to be manufactured, including the P/N and name.
    (3) A list of bulk materials needed to manufacture the item shall be prepared. The list of bulk materials shall consist of the P/N, CAGE number and NSN, or specification number of the raw bulk material to be used in manufacture of the item and shall cite the technical characteristics (i.e., standards, specifications, conditions, dimensions, and any other pertinent data).
    (4) When applicable, a link shall be made to the associated parts information.

5.87.17.2 Project decisions.

None.

5.87.18 Torque limits **(Field/AMC level or above only)**.

Data Module Type: Procedural Information Code: 711B

5.87.18.1 Army business rules.

5.87.18.1.1 General.

This data module shall be prepared as directed by acquiring activity using information prepared to provide applicable torque values (expressed in foot or inch pound terms and/or metric terms), data as to bolt grade markings and their proper identification such as SAE markings, and specific torque sequencing requirements.

5.87.18.1.2 Introduction.

Information shall be prepared to include the scope or how to use the torque limits data module.

5.87.18.1.3 Torque instructions.

Specific instructions such as torque limits for dry and wet fasteners, fastener sizes and thread patterns, etc., shall be prepared.

5.87.18.2 Project decisions.

None.

5.87.19 Ammunition maintenance.

Data Module Type: Procedural Information Code: 200K

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5.87.19.1 Army business rules.

5.87.19.1.1 General.

This information set shall be prepared as directed by acquiring activity and reference or contain the following.

5.87.19.1.2 Care and handling.

All procedures required for care and handling of ammunition, including hazard distances, storage, special requirements, prevention of deterioration due to rough handling, exposure to adverse weather conditions or other hazards. Visual inspection criteria shall be prepared to determine item serviceability.

5.87.19.1.3 Defective.

Procedures shall be prepared for disposition of defective ammunition.

5.87.19.1.4 Cleaning and painting.

Use of cleaning materials and paint authorized for use in the specified maintenance operations shall be specified.

5.87.19.2 Project decisions.

None.

5.87.20 Ammunition marking.

Data Module Type: Procedural Information Code: 067C

5.87.20.1 Army business rules.

5.87.20.1.1 General.

Ammunition marking information data module shall be prepared as directed by acquiring activity and shall provide applicable information on ammunition marking, classification, identification, care and handling, preservation, transportation, authorized rounds, preparation for firing, fuses, and packing. Reusable original packaging and containers shall be identified for return or temporary storage of ammunition in its original configuration. Information on classifying, identifying, caring for, handling, etc., non-ammunition Class V items shall be prepared, when applicable. Individual paragraphs shall be prepared for each ammunition type/classification.

5.87.20.2 Project decisions.

None.

5.87.21 Foreign ammunition (NATO).

Data Module Type: Procedural Information Code: 011B

5.87.21.1 Army business rules.

5.87.21.1.1 General.

Foreign ammunition (NATO) data module(s) to describe foreign ammunition shall be prepared when applicable.

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5.87.21.2 Project decisions.

None.

5.87.22 Maintenance/Demilitarization of Conventional and Chemical Ammunition (M/DCCA) (**DMWR/NMWR only**).

5.87.22.1 Army business rules.

5.87.22.1.1 General.

Maintenance/Demilitarization of Conventional and Chemical Ammunition (M/DCCA) information sets shall be prepared using the data module types and information codes specified in the corresponding content selection matrix in A.5.

5.87.22.1.2 Front matter.

Refer to 5.128 for front matter content requirements.

5.87.22.1.3 Maintenance/Demilitarization of Conventional and Chemical Ammunition (M/DCCA) Chapter 1 – Introduction (General information and scope).

Data Module Type: Descriptive Information Code: 018A

The M/DCCA introduction shall consist of the following information as required:

5.87.22.1.3.1 Scope.

The scope shall be a brief narrative portraying the purpose of the DMWR. This paragraph shall identify the ammunition to be worked on and the work that will be accomplished.

5.87.22.1.3.2 Forms, records, and reports.

All forms, records, and reports that are required during the performance of depot maintenance shall be referenced. Instructions shall be provided for their use and disposition as provided by the contracting activity.

5.87.22.1.3.3 Deviations, waivers, and exceptions.

Requests for deviations, waivers, or exceptions shall be obtained from the publication proponent agency.

5.87.22.1.3.4 Corrosion Prevention and Control (CPC).

The CPC information provided shall contain numbered subparagraphs similar to the following:

> "Corrosion Prevention and Control (CPC) of material is a continuing concern. It is important that any corrosion problems with this item be reported so that the problem can be corrected and improvements made to prevent the problem in future items.
>
> While corrosion is typically associated with rusting of metals, it can also include deterioration of other materials, such as rubber and plastic. Unusual cracking, softening, swelling, or breaking of these materials may be a corrosion problem.
>
> If a corrosion problem is identified, it shall be reported to the proponent agency."

5.87.22.1.3.5 Work planning.

Accumulation of excess ammunition items, removal of line rejects or explosive waste/hazardous waste, and removal of items containing precious metals shall be addressed.

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5.87.22.1.3.6 Disposition guidance.

Disposition guidelines for serviceable and unserviceable components and materials shall be included as a part of each operation description, and also shall address removal of hazardous materials or components and inspection of salvaged materials prior to transfer to the Locally Approved Disposition Services (LADS). Reference may be made to publications for information on packing, marking, and shipping generated assemblies, components, and materials.

5.87.22.1.3.6A Equipment.

The equipment information provided shall contain, but not be limited to, the following paragraph:

“Equipment cited herein for the various operations has been approved for the operations specified. Activities intending to use other equipment for these operations must obtain approval from the publication’s proponent agency by filing a deviation, waiver, or exception.
Transfer and materials handling equipment must conform to requirements set forth in AR 385-10. The Approved Intraplant Transfer Equipment Data Module lists preferred approved Ammunition Peculiar Equipment (APE) for moving and handling ammunition and components.

Use of APE or nonstandard APE is governed by AR 700-20. All modifications to existing APE and locally fabricated nonstandard APE must have prior approval in accordance with AR 700-20. Locally designed and fabricated equipment, other than APE or nonstandard APE, must be approved by the local safety office and the commander of the installation.

APE and associated kits must be operated in accordance with the applicable operation and maintenance manual.”

5.87.22.1.3.7 Safety requirements.

The safety requirements information provided shall contain, but not be limited to, the following paragraph:

"Guidance for safety requirements as prescribed by current safety directives and regulations shall be addressed."

5.87.22.1.3.8 Protection against general hazards.

Guidance for general hazards shall be addressed for the ammunition and materials requiring protection against the general hazards. Additionally, requirements for handling of ammunition, requirements for wearing of suitable protective clothing, and precautions when handling PENTA-treated packing materials and pallets shall be included. Reference shall be made to the PENTA-Treated Packing Materials Data Module for additional data on personal hygiene requirements, working with PENTA-treated wood, and the disposition of contaminated clothing.

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5.87.22.1.3.9 Protection against specific hazards.

Specific hazards shall be listed in each applicable operation for the ammunition and materials requiring protection against the specific hazards.

5.87.22.1.3.9A Hazard analysis.

As a minimum, the Hazard Analysis information provided shall contain the following statement and shall reference the Hazard Analysis appendix.

"A hazard analysis identifies potential hazards associated with these operations and countermeasures to mitigate these hazards, and assesses the probability and effect of occurrence."

5.87.22.1.3.10 Environmental regulation compliance.

Environmental regulations implemented by federal, state, and local governments, shall be addressed.

5.87.22.1.3.11 Resource conservation and recovery regulations.

The provisions of the Resource Conservation and Recovery Act (PL 89-272), as amended by (PL 91-512), (PL 93-611) and (PL 94-58), shall be addressed. Resource recovery shall contain a paragraph similar to the following:

> "All items of salvageable value will be salvaged as scrap or reusable material. All explosives and hazardous materials that can be successfully recovered and reused will be recovered; otherwise, the materials will be disposed of by an environmentally safe and approved method."

5.87.22.1.3.11A Reporting requirements.

Guidance for reporting work accomplishments shall be addressed.

5.87.22.1.3.12 Tabulated data.

Reference shall be made to the tabulated data, military specifications, and drawings appendix for the tabulated data.

5.87.22.1.3.12A Flowchart.

A flowchart for the overview of all operations may be included but is not mandatory.

5.87.22.1.4 Maintenance/Demilitarization of Conventional and Chemical Ammunition (M/DCCA) Chapter 2 – Operational requirements.

Data Module Type: Descriptive Information Code: 130E

Chapter 2 shall contain the specific operational steps, including safety warnings, caution, notes, and inspections and requirements for special safety, equipment, material, and facilities. The chapter may contain a flowchart for each specific operation, but it is not mandatory.

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5.87.22.1.5 Maintenance/Demilitarization of Conventional and Chemical Ammunition (M/DCCA) Chapter 3 – Quality acceptance requirements.

Data Module Type: Descriptive Information Code: 315A

This chapter shall contain either the QA requirements for demilitarization or maintenance of ammunition, but shall not contain information for both. The quality acceptance requirements chapter shall address the quality acceptance requirements in a and b below:

a. Demilitarized ammunition. The quality acceptance requirements for ammunition subject to demilitarization shall address the QA plan, inspection, and random sampling of salvaged materiel.

b. Maintenance of ammunition. The quality acceptance requirements for ammunition subject to maintenance shall address ballistic test requirements (BTRs), product defect criteria, or site defect criteria identified in the operation requirements data module(s) to include defect classification or to incorporate appropriate statistical process control (SPC) statements for performing activities.

5.87.22.1.6 List of terms.

Data Module Type: Descriptive Information Code: 006A

All quality assurance terms used in the DMWR shall be listed and defined in the QA requirements. Alternately, if the definitions are listed in another publication, that publication shall be referenced

5.87.22.1.7 Maintenance/Demilitarization of Conventional and Chemical Ammunition (M/DCCA) Chapter 4 - Supporting Information.

Supporting information data modules shall be added to a DMWR as applicable, in the order in which they are presented herein, for purposes of illustration, application, and general information. Supporting information data module identification shall be referenced in the text by data module code followed by the title. Each individual supporting information data module shall begin on a right-hand page.

5.87.22.1.7.1 References.

Data Module Type: Descriptive Information Code: 017B

This data module shall consist of all publications referenced in the DMWR (except military specifications and drawings which are listed in the Tabulated data, military specifications, and drawings data module). The publications shall be listed in groups by publication type. If nongovernmental, the source shall be provided. The complete name and number of each publication shall be used.

5.87.22.1.7.2 Consumable materials.

Data Module Type: Descriptive Information Code: 101B

This data module shall consist of a list in tabular format and shall contain as a minimum this data: item number, NSN, federal item name and description if needed, part number, CAGEC, and unit of issue.

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5.87.22.1.7.3 Equipment and special facilities.

Data Module Type: Descriptive Information Code: 105B

This data module shall consist of a list of equipment and special facilities required to perform the operations described in the DMWR.

5.87.22.1.7.4 Tabulated data, military specifications, and drawings.

Data Module Type: Descriptive Information Code: 00VA

This data module shall consist of a list of tabulated data extracted from Army Data Sheets, and/or major specifications and drawings applicable to the DMWR operations.

5.87.22.1.7.5 Approved intraplant transfer equipment.

Data Module Type: Descriptive Information Code: 104B

This data module lists suggested or commonly available equipment. If the DMWR operations require no intraplant Ammunition Peculiar Equipment (APE), this appendix should be omitted.

5.87.22.1.7.6 Pentachlorophenol (PENTA)-treated packing materials.

Data Module Type: Descriptive Information Code: 820B

When specified by the contracting activity, this data module shall be used to include the latest PENTA-treated packing materials requirements in all DMWRs.

5.87.22.1.7.7 Environmental requirements.

Data Module Type: Descriptive Information Code: 030B

This data module shall be used to include the latest requirements. As a minimum, this data module shall include air, noise, and emission problems and controls as applicable.

5.87.22.1.7.8 Hazard analysis.

Data Module Type: Descriptive Information Code: 012B

This data module shall contain a hazard analysis updated to include the latest requirements. Potential hazards which may result in injury or death with appropriate countermeasures shall be identified.

5.87.22.1.7.9 Other data modules.

Data Module Type: Descriptive Information Code: (unspecified)

When specified by the contracting activity, other data modules shall be added to the DMWR.

5.87.22.1.8 Authentication page.

Data Module Type: Descriptive Information Code: 023C

An authentication page shall be included after the last appendix of the DMWR if produced as a stand-alone TM/IETP.

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5.87.22.2 Project decisions.

5.87.22.2.1 Stand alone.

Maintenance/Demilitarization of Conventional and Chemical Ammunition information sets may be produced as either a stand-alone TM/IETP or as part of a more comprehensive publication. If this content is produced as a stand-alone publication, the chapter/section/paragraph numbering requirements apply. If the content is included in a publication with a larger scope, the content requirements apply but the chapter/section/paragraph numbering requirements do not.

5.87.22.2.2 PENTA-treated packaging.

The project shall determine the use of the PENTA-treated packing materials appendix.

5.87.22.2.3 Additional data modules.

The project shall determine the requirements for other data mdoules, if they exist.

5.87.22.2.4 Approved intraplant transfer equipment.

The project shall decide on the need for the Intraplant transfer equipment data module.

5.87.23 Preventive maintenance checklist.

Data Module Type: Checklist Information Code: 200J

5.87.23.1 Army business rules.

5.87.23.1.1 General.

Daily preventive maintenance checklist information sets shall be prepared using the data module types and info codes specified in the corresponding content selection matrix in A.5. Refer to 5.87.7.1.3 and 5.87.7.1.4 for further requirements.

5.87.23.1.2 Scope.

The checklist shall consist of required items from the validated and verified PMCS table in the associated operator's and/or maintenance manual. The PMCs may cover any/all intervals and maintenance levels containing PMCS information.

5.87.23.1.3 Item numbers.

Item numbers in the checklist shall be the same as those assigned to the procedures in the operator's PMCS table.

5.87.23.1.4 Checks and services procedures.

The checks and services procedures in the checklist shall be presented in the same sequence and include the same crewmember headings, if any, as those in the associated operator's or maintenance PMCS table. Appropriate interval headings shall precede each group of procedures.

5.87.23.1.5 Type size.

Type size shall not be smaller than 8 point for the vertical pocket manual format.

5.87.23.1.6 Technical content.

The checklist shall consist of any required intervals from the PMCS procedures contained in the validated and verified PMCS table in the associated operator's and/or maintenance information sets.

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5.87.23.1.7 Item numbers.

Item numbers in the checklist shall be the same as those assigned to the procedures in the PMCS table.

5.87.23.1.8 Sequence.

The checks and services procedures in the checklist shall be presented in the same sequence and include the same crewmember headings, if any, as those in the associated PMCS table. Appropriate interval headings shall precede each group of procedures.

5.87.23.1.9 Not Mission Capable (NMC) faults.

Any check that could reveal an NMC fault shall be identified by placing an asterisk by that item number. Each page containing an asterisk shall have a note explaining its meaning and instructing the operator to report the NMC fault using the appropriate forms. The note shall appear at the bottom of the page.

5.87.23.1.10 Warnings and cautions.

All warnings and cautions applicable to the checks and services procedures extracted from the PMCS table in the associated operator's manual shall be included in the checklist in their entirety.

5.87.23.2 Project decisions.

5.87.23.2.1 Stand alone.

Daily preventive maintenance checklist information sets may be produced as either a stand-alone TM/IETP or as part of a more comprehensive publication. If this content is produced as a stand-alone publication, the chapter/section/paragraph numbering requirements apply. If the content is included in a publication with a larger scope, the content requirements apply but the chapter/section/paragraph numbering requirements do not.

5.88 S1000D Chapter 5.2.1.3.2 – Common information sets – Fault isolation.

5.88.1 Army business rules.

5.88.1.1 Scope.

This section contains content requirements for the following information sets:

a. Troubleshooting index (refer to 5.88.4)
b. Preshop analysis (refer to 5.88.5)
c. Component checklist (refer to 5.88.6)
d. Operational checkout (refer to 5.88.7)
e. Troubleshooting (refer to 5.88.8)

5.88.1.2 General.

Troubleshooting procedures shall be prepared for weapon systems, major equipment, components, and applicable support and interface equipment. Troubleshooting procedures and supporting illustrations shall be prepared so that operator/crew and maintenance personnel can perform all required operator through depot level (overhaul) troubleshooting.

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5.88.1.3 Troubleshooting scope.

Troubleshooting instructions shall cover all items comprising the weapon system/equipment, such as assemblies, subassemblies, components, wiring, junction boxes, and accessories. Troubleshooting procedures shall isolate faults to the part(s) authorized by the parts list for repair or replacement at the maintenance level addressed. Tasks shall be presented in the order in which they are performed. Approved LPD, service experience, performance data on similar equipment, other RMS and Ao data available shall be used in the preparation of specific troubleshooting procedures. Troubleshooting procedures shall begin with testing, observed problems, a fault symptom or malfunction and shall diagnose to a single fault/failure. Troubleshooting shall refer to specific maintenance or repair tasks to correct the fault. Instructions, where applicable, shall flow from operator level through field and sustainment until the fault is isolated. Procedures shall include schematics and illustrations as needed (or shall reference to required schematics, etc.). Troubleshooting data shall be test and fault-isolation oriented. Troubleshooting instructions shall include detailed inspection and troubleshooting information. Instructions shall include or reference to functional descriptions of subsystems being diagnosed to aid the operator/technician. The method used for identifying system equipment test points, including the requirements and methods of determining defects through visual inspection, shall be explained

5.88.1.4 Testing and troubleshooting philosophy.

Testing and troubleshooting data shall be developed to the extent required to maintain aircraft and other major weapon systems, equipment, components and support equipment at the authorized maintenance level in accordance with the LPD or MAC and the SMR codes developed for the weapon system/equipment. Other factors to be considered in the development of troubleshooting procedures include, but are not limited to, the following:

a. Technical experience (target audience).
b. User environment.
c. System quick-turnaround requirements.
d. Test equipment requirements and availability.
e. Automated versus manual testing.
f. Replaceable component and part reliability.
g. Ease of testing.
h. Test access time.
i. Test time.

5.88.1.5 Information to be provided.

Troubleshooting information shall be provided in combination with test procedures. This testing and troubleshooting information shall guide the technician, in as practical a manner as possible, to the system, subsystem, equipment, WRA, shop replacement assembly, or further to the replaceable part, interconnecting wire, or mechanical linkage which caused the malfunction or failure. All information required to perform the tests and evaluate probable malfunctions of the assembled systems or equipment shall be provided.

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5.88.1.6 Methods of testing and troubleshooting.

The number of interrelated systems, assemblies, subassemblies, and components, types of equipment, and maintenance plan shall be taken into consideration as to the type and depth of testing and troubleshooting instructions to be developed. Based on the complexity of the system or equipment, manual (non-automatic), semi-automatic or automatic testing and troubleshooting methods shall be used. Functional testing is usually performed using a test set or test console whereby technicians make end-to-end checks of the system or equipment to ensure it will perform the function it was intended to do.

5.88.1.7 Manual (non-automatic) troubleshooting.

Troubleshooting procedures using non-automatic test equipment shall be established on a system test concept. To meet the objectives of reduced maintenance downtime and decreased fault detection time, malfunction symptoms shall be identified to specific points of entry into the testing/troubleshooting cycle. Every effort shall be employed to avoid repetition of the time consuming end-to-end test.

5.88.1.8 Semi-automatic or automatic testing and troubleshooting.

Many high performance systems have been designed to accept the use of semi-automatic/automatic test equipment. These systems are designed and programmed for rapid electronic test in the interest of reducing maintenance downtime to fault isolate and repair.

5.88.1.9 Testing and troubleshooting using Built-In-Test (BIT) equipment.

Built-In-Test (BIT) capabilities are designed to operate in various formats. One of these formats is built-in-test using diagnostic software; another is the incorporation of electronically controlled sensors within the systems to be tested. Testing procedures shall identify the software required for test performance.

5.88.1.10 Sensor derived failures.

Sensors, installed at critical points shall be used to detect discrepancies in system operation.

5.88.1.11 Failure interpretation.

Lookup tables for manually tested systems or software coding for semi-automatic and automatic systems shall be prepared so the maintenance technician may properly interpret these displays and isolate and correct malfunctions.

5.88.1.12 Types of testing and troubleshooting information.

Testing and troubleshooting information includes fault reporting/fault isolation data and detailed testing and troubleshooting procedures for each weapon system equipment, systems, components and support equipment. When applicable, integrated system testing and troubleshooting for aircraft and major weapon systems shall also be included.

5.88.1.13 Fault reporting/fault isolation information.

Fault reporting information provides crew members or other operating personnel with a standardized means for reporting malfunctions and fault symptoms. Fault isolation information is designed for use in rapid isolation of faults revealed during an operational mission or when the aircraft/weapon system is in an operational configuration on the ground. This data shall instruct maintenance personnel as to what maintenance actions to perform and/or what procedures to use

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to correct reported faults. Fault reporting information and the fault isolation data are designed to be used together. Fault isolation information coverage shall be limited to faults identified in the fault reporting data, which require specific procedures to isolate the cause. Fault reporting data shall reference the fault isolation data to the maximum extent practical for isolation of indicated malfunctions.

5.88.1.14 Integrated system testing and troubleshooting.

When several systems are dependent upon each other for proper operation, the interdependent systems, as a unit, are identified as an integrated system. The testing of an integrated system is a checkout of the interdependent systems and shall reflect the assumption that the technician performing the check is qualified and is familiar with its systems and subsystems. Development and content of testing and troubleshooting for integrated systems shall be determined based on the systems having self-test or built-in test capabilities or requiring the use of a system peculiar test set or common test equipment. These compound applications require more specifics on the criteria of which components or signals are tested by which method. In addition to coverage of the integrated system, the associated systems making up the integrated system shall be covered separately.

5.88.1.15 Integrated systems having self-test or built-in test capability.

Testing and troubleshooting procedures shall identify the components or functions that are tested, and any user inputs required for proper testing (power parameters, signals, motion, air, hydraulic, etc.). If wiring tests are included they should have defined testing parameters (which wires are tested, resistance tolerances, open definitions, wire-to-wire and wire-to-ground resistances, and any peculiar wire criteria) and what fault verification is required for a failure indication.

5.88.1.16 Integrated systems requiring the use of system peculiar test sets.

Testing and troubleshooting procedures shall include identical parameters as those in 5.88.1.15 with the additional requirement for special cables or support equipment that may be required.

5.88.1.17 Integrated systems requiring the use of common test equipment.

Testing and troubleshooting procedures shall focus on actual readings or signal requirements so sources of common test equipment will not be restricted.

5.88.1.18 Troubleshooting procedures content.

Troubleshooting procedures shall contain all essential and pertinent information that would be included in any other form of maintenance procedure. This includes warnings, cautions, notes, power turn-on procedures, precheckout procedures, reference diagrams, and initial switch settings. In addition to external causes for malfunctions, troubleshooting should also identify symptoms resulting from failure of every spare and repair part authorized for replacement at user level. Troubleshooting procedures shall be prepared assuming one malfunction at a time is being corrected. The operator/technician shall be instructed to perform any applicable self-tests, alignments, and inspections before beginning any other troubleshooting procedures. As applicable, an operational check shall be specified to be performed after the fault is corrected to ensure correct operation of the system. Troubleshooting procedural instructions shall be prepared following these general requirements.

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a. A concise explanation of the testing and troubleshooting format and an explanation on how to use the testing and troubleshooting procedures with the malfunction/symptom index, when applicable.
b. The location for each component, accessory, connector, or junction box in the system under test shall be provided or a reference to the equipment description and data module shall be included. The text and illustrations, as necessary, shall identify every test connector or other test point to be used in the test.
c. A complete list of test options shall be stipulated by the troubleshooting procedure. List any self-tests that are associated with the system. Self-test schemes shall be described as the prime troubleshooting tool, with manual or automatic troubleshooting repaired to supplement the instructions where the self-test leaves off or fails to locate the malfunction. Build the procedure using system self-tests before using external test equipment.
d. Test setup procedures and post-test teardown procedures.
e. Complete step-by-step troubleshooting procedures, including instructions required for use and application of installed on-line testing equipment. Procedures shall take into account controls, test point accessibility, indicator displays, and the feasibility of using BITE or automated test equipment where available.
f. Test procedures (e.g., system turn on, identification of time required to run and complete the system test, and an indication of any possible mid-test interruptions or stoppages and how to respond to them).
g. Backup diagrams showing all test points, input and output signals, logic charts, schematics, signal flow diagrams, tables, and other illustrations as required for comprehensible understanding of the procedures.
h. Include any information that will aid the operator/technician, such as waveforms; resistance data; fluid pressures; voltage levels; references to test diagrams, functional diagrams, text, etc.; and alignment procedures, checkout procedures, or other scheduled maintenance procedures. Connector numbers, pin designations, etc., shall be identified.
i. Special attention shall be given to interface wiring fault isolation procedures. Wiring fault isolation procedures shall include the following types of data, as applicable:

    (1) Specific wire reading access points and resistances for wiring components (where practical).
    (2) Wire-to-wire and wire-to-ground criteria for circuit integrity.
    (3) Special wire definition where required (including interconnecting criteria for proper sealing or terminal application), and special notations where wire harnesses should be completely replaced and not repaired.
    (4) It is also essential when developing fault isolation procedures, to provide or refer to ground stud tables, which include type, location, and wires connected, charts for both connectors and terminal boards, and a wire number log to identify any wire to its prime wiring diagram.

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5.88.1.19 Aviation testing and troubleshooting category **(Aircraft Troubleshooting TMs only)**.

When developing Aircraft Troubleshooting TMs/IETPs, the following information sets shall be developed, as applicable.

a. Introduction.
b. Technical description.
c. Troubleshooting index.
d. Operational checkout.
e. Troubleshooting.
f. Diagnostic (**IETP only**).

5.88.1.20 Standard testing and troubleshooting category.

When developing TMs/IETPs with maintenance level below depot, the following information sets shall be developed, as defined by the content selection matrices (refer to A.5).

a. Troubleshooting index
b. Operational checkout
c. Troubleshooting
d. Diagnostic (**IETP only**).

5.88.1.21 DMWR/NMWR testing and troubleshooting category **(depot only)**.

When developing DMWRs or NMWRs, the following information sets shall be developed, as defined by the content selection matrices (refer to A.5).

a. Troubleshooting index
b. Preshop analysis
c. Component checklist
d. Operational checkout
e. Troubleshooting
f. Diagnostic (**IETP only**).

5.88.1.22 Master index testing and troubleshooting category.

When developing a TM/IETP with a master troubleshooting index section, the Troubleshooting index data module shall be developed.

5.88.1.23 Testing and troubleshooting.

Testing and troubleshooting information sets shall be developed for the overall weapon system/equipment and each maintainable system, subsystem, and WRA/shop replacement assembly for each applicable maintenance level as indicated in the approved MAC.

5.88.1.24 Information set content.

Troubleshooting information sets shall include preliminary requirements information, and all required testing and troubleshooting information. When preliminary requirements information differs for specific testing and troubleshooting procedures, additional data modules shall be developed. Any follow-on maintenance that shall be performed after troubleshooting is completed shall be included (e.g., disconnect external power, perform operational checks, etc.). When the follow-on maintenance is extensive and is contained in a separate data module, a reference shall be made to the applicable data module.

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5.88.1.25 Safety devices and interlocks.

Information shall be prepared pertaining to the purpose and location of all safety devices and interlocks in conjunction with the pertinent procedures.

5.88.2 Project decisions.

None

5.88.3 Troubleshooting introduction.

Data Module Type: Descriptive Information Code: 018C

5.88.3.1 Army business rules.

5.88.3.1.1 General.

A single descriptive data module shall be used.

5.88.3.1.2 Scope.

This data module is required for aviation systems and is optional for non aviation systems. This data module shall describe the testing and troubleshooting process used to perform troubleshooting and shall include information on the methods used to perform troubleshooting. The general flow of the troubleshooting process shall be described and the general methods used to perform testing and troubleshooting shall be included. Any information peculiar to troubleshooting electrical subsystems and electronic equipment shall also be described. If a troubleshooting index is used, an explanation of the index shall be provided.

5.88.3.2 Project decisions.

None.

5.88.4 Troubleshooting index.

5.88.4.1 Army business rules.

5.88.4.1.1 General.

A troubleshooting index data module shall be prepared as directed by the acquiring activity and consist of either a malfunction index, a symptom index, or a system/subsystem index.

5.88.4.1.2 Malfunction index.

Data Module Type: Descriptive Information Code: 410F

When all probable faults have been determined and described, prepare a malfunction index data module using the exact description of the fault as was used in the troubleshooting procedures. A single descriptive data module shall be used. Group symptoms to common system areas in the malfunction index and in the troubleshooting procedures.

a. List all known malfunctions in alphabetical order by malfunction or by fault message word and reference this information to the applicable testing and troubleshooting data module or the required corrective action.
b. For complex systems, list malfunctions by subsystem categories, if necessary, and use codes that help identify specific items. Subsystem categories shall be listed in alphabetical order or by code.
c. Catalog malfunctions by method of detection, if this aids usability.

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d. Fault symptom descriptions (titles) shall be standardized between a malfunction index data modules and troubleshooting procedures data modules.

5.88.4.1.3 Symptom index.

Data Module Type: Descriptive Information Code: 410B

When all probable faults have been determined and described, prepare a symptom index data module using the exact symptom as was used in the troubleshooting procedures. A single descriptive data module shall be used. Group symptoms to common system areas in the symptom index and in the troubleshooting procedures.

a. List all fault symptoms in alphabetical order by symptom or by built-in test code and reference this information to the applicable testing and troubleshooting data module or the required corrective action.
b. For complex systems, list symptoms by subsystem categories, if necessary, and use codes that help identify specific items. Subsystem categories shall be listed in alphabetical order or by code.
c. Catalog symptoms by method of detection, if this aids usability.
d. Fault symptom descriptions (titles) shall be standardized between a symptom index data modules and troubleshooting procedures data modules.

5.88.4.1.4 Master index.

Data Module Type: Descriptive Information Code: 410D

When applicable, one master troubleshooting malfunction/symptom index data module shall be prepared for all troubleshooting for the system/equipment.

5.88.4.1.5 System/subsystem index.

Data Module Type: Descriptive Information Code: 410C

This shall consist of a list of specific systems, subsystems, assemblies and components requiring troubleshooting, referenced to the applicable testing and troubleshooting data module for required corrective action. A single descriptive data module shall be used.

5.88.4.2 Project decisions.

5.88.4.2.1 Troubleshooting index.

The project shall decide whether to prepare a malfunction index, a symptom index, or a system/subsystem index.

5.88.5 Preshop analysis **(DMWR/NMWR only)**.

Data Module Type: Procedural Information Code: 341C

5.88.5.1 Army business rules.

5.88.5.1.1 General.

Preshop analysis information set (**DMWR/NMWR only**) shall apply when data indicates that an inspection or test is more effective in determining useful life of a system, subsystem, or component than a mandatory disassembly.

5.88.5.1.2 Scope.

The purpose and coverage of the preshop analysis shall be stated.

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5.88.5.1.3 Preparation procedures.

a. Unpacking and special handling. Procedures shall be prepared for removing the item, assemblies, subassemblies, or components from the shipping containers and packaging material. Instructions shall be prepared on any needed handling requirements for hazardous material, electrostatic sensitive devices, precious metal content, classified material, or critical material. Instructions shall also be prepared for any special condemnation procedures for the item and its assemblies and subassemblies.
b. Checking attached documents. Instructions shall be prepared for checking all tags, forms, and documents attached to the item to determine the reason for its return and to identify any other obvious faults or damage.
c. External inspection. Procedures shall be prepared for external inspection of the item to determine if it is complete and if there is any obvious external damage.
d. Cleaning and preservation. Instructions shall be prepared for cleaning the item to prepare it for preshop analysis testing. They shall include the procedures for any temporary preservation or corrosion protection measures needed to protect the item until the work required is started.

5.88.5.1.4 Preshop analysis procedures.

Detailed procedures shall be prepared for performing a preshop analysis. The acquiring activity shall determine if the preshop analysis procedures shall be a narrative or be structured as a checklist. A checklist permits the inclusion of the name and signature of the person performing the analysis and any remarks that are required based on the results of the analysis. If a narrative preshop analysis is not provided, a printable checklist shall be provided. When specified by the acquiring activity, an electronic checklist shall be provided in lieu of the narrative or printable checklist.

5.88.5.1.5 Purpose and coverage of preshop analysis.

The purpose and coverage of the preshop analysis shall be stated.

a. Narrative procedures. Preshop analysis text shall be presented in procedural format. Test and analysis procedures shall be presented in a logical sequence not to cause any unnecessary disassembly and in the order in which they should be done. Each procedure shall be identified by a step number. Procedures shall be arranged in groups by major components, assemblies, and subassemblies. Each group shall be headed with an applicable title.
b. Checklist. The checklist shall include the following data.

    (1) Cover sheet/screen. The cover sheet/screen shall contain an area to record the following item information: part number; serial number; NSN, modifications required; reason for overhaul or repair; unpacking of secondary items required; review of tags or forms with the item, name and signature of person doing the analysis; and date.
    (2) Introduction. When necessary, the table of tests and inspections shall be preceded by a brief explanation of its use.

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(3) Table of tests and inspections. This table shall have an entry for each test and inspection procedure. Each entry shall have, as a minimum, the following information: inspection point (the item or area to be inspected), condition, action, remarks, and identification of the personnel performing the inspection. If the procedure is too complex or lengthy to be included in the checklist, a reference to the data module where the procedures or actions are provided shall be included in the checklist.

5.88.5.2 Project decisions.

5.88.5.2.1 Preshop analysis format.

The project shall determine if the preshop analysis procedures shall be a narrative or be structured as a checklist.

5.88.6 Component checklist **(DMWR/NMWR only)**.

Data Module Type: Descriptive Information Code: 341B

5.88.6.1 Army business rules.

5.88.6.1.1 General.

A component checklist information set shall be prepared when required to support the preshop analysis procedures.

5.88.6.1.2 Introduction.

When necessary, the checklist shall be preceded by a brief explanation of its use (introduction).

5.88.6.1.3 Component checklist.

The component checklist shall contain the following data, as applicable.

a. Name/nomenclature of the equipment/item
b. Serial number
c. Date received
d. Received from (identify unit)
e. Component name
f. NSN
g. Part number
h. Quantity required
i. Quantity received
j. Visual damage found

5.88.6.2 Project decisions.

5.88.6.2.1 Introduction.

The project shall determine when a component checklist introduction is required.

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5.88.7 Operational checkout.

5.88.7.1 Army business rules.

5.88.7.1.1 General.

Operational checkout procedures that subject an aircraft or other type of major weapon system or their systems, subsystems, components, accessories, and items of equipment to prescribed conditions to determine that they will function in accordance with predetermined test parameters shall be developed. Operational checkout for **DMWRs/NMWRs** shall be developed as specified by acquiring activity. An operational checkout information set may include test set hookup and disconnect procedures, index of test set message words, a reference index of test set or BIT/BITE fault codes and related actions, and further testing procedures related to the message words and fault codes. The words "END OF [*data module title*]" shall be placed below the last item (i.e., text, illustration, etc.) in any data module containing the operational checkout procedures.

5.88.7.1.2 Operational checkout introduction.

Data Module Type: Descriptive Information Code: 018V

When required, an introduction shall be included explaining how the operational checkout procedures are to be used to perform testing and how they relate to the associated troubleshooting information sets.

5.88.7.1.3 General procedures and precautions.

Any general procedures that shall be performed prior to checkout and precautions that shall be taken during the performance of the checkout procedure shall be included.

5.88.7.1.4 Pretest setup procedures.

Data Module Type: Procedural Information Code: 331B

Procedures for connecting any test and accessory equipment, including cable connections shall be included in the pretest setup procedures. Procedures for the initial setting of controls shall also be provided.

5.88.7.1.5 Operational checkout procedures.

The selection of an operational checkout type shall be based on the type of system, equipment, or assembly/subassembly being addressed, the target audience, and the maintenance level of the operator/technician. Based on the complexity of the operational checkout to be performed, operational checkout procedures can be structured differently and therefore contain different content elements. The following methods shall be used to prepare operational checkout procedures. Once selected, the operational checkout method shall be prepared in accordance with the requirements outlined below.

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5.88.7.1.5.1 Operational checkout test procedure.

Data Module Type: Procedural Information Code: 320C

The Operational checkout test procedure type of operational checkout procedures shall consist of a series of numbered steps and sub steps, which lead to an indication or condition. Based on the indications or conditions, a corrective action is provided. This corrective action can either be stated as a specific remedy or can be a reference to a detailed troubleshooting procedure data module. This process is continued until the complete operational checkout procedure is completed.

5.88.7.1.5.2 Message index.

Data Module Type: Descriptive Information Code: 410G

The test set message word index type of operational checkout procedures shall consist of a series of test set messages or bit-code words with message word description. Based on the message or bit-code word, a corrective action shall be stated. This corrective action can either be stated as a specific remedy or can be a reference to a detailed troubleshooting procedure data module.

5.88.7.1.5.3 Fault code reference index.

Data Module Type: Descriptive Information Code: 410H

Fault code reference index type of operational checkout procedures shall consist of fault code(s) that leads to a corrective action. This corrective action can either be stated as a specific remedy or can be a reference to a maintenance data module. If applicable, additional follow-on operational testing procedures shall be included based on the corrective action.

5.88.7.1.6 Post-operational checkout shutdown procedures.

Data Module Type: Procedural Information Code: 334C

Procedures to return the aircraft, aircraft system, or equipment to its normal configuration, prior to operational checkout setup, if required, shall be included. Any follow-on maintenance shall also be included. A single procedural data module shall be used for each test.

5.88.7.2 Project decisions.

5.88.7.2.1 Introduction.

The project shall determine if and when an introduction to operational checkout is required.

5.88.7.2.2 Method.

The project shall determine the method of operational checkout procedures.

5.88.8 Troubleshooting.

5.88.8.1 Army business rules.

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5.88.8.1.1 General.

Troubleshooting procedures for detecting, isolating, and correcting aircraft, aircraft systems or other types of weapon system, and their subsystems, and equipment failures and malfunctions shall be developed. Troubleshooting for **DMWRs/NMWRs** shall be developed as specified by acquiring activity. Data modules will relate either to a specific symptom or to a system, assembly, or component.

A single descriptive data module shall be used to contain the introduction and general procedures for each troubleshooting procedure.

5.88.8.1.2 Troubleshooting introduction.

Data Module Type: Descriptive Information Code: 018C

When required, an introduction shall be included explaining how the troubleshooting procedures are to be used to perform troubleshooting and how they relate to the associated operational checkout information sets.

5.88.8.1.3 General troubleshooting procedures and precautions.

Data Module Type: Procedural Information Code: unspecified

Any general procedures that shall be performed prior to troubleshooting and precautions that shall be taken during the performance of the troubleshooting procedure shall be included.

5.88.8.1.4 Pretest setup procedures.

Data Module Type: Procedural Information Code: 331B

Procedures for connecting any test and accessory equipment, including cable connections shall be included in the pretest setup procedures. Procedures for the initial setting of controls shall also be provided.

5.88.8.1.5 Graphic troubleshooting tree.

A graphic troubleshooting tree may be used in maintenance manuals. Graphic troubleshooting trees shall only be used as graphics to supplement the narrative troubleshooting procedures and shall not be the primary means of presenting troubleshooting information.

5.88.8.1.6 Troubleshooting type.

The selection of a troubleshooting type shall be based on the type of system, equipment, or assembly/subassembly being addressed, the target audience description, and the maintenance level of the operator/technician. Based on the complexity of the troubleshooting to be performed, troubleshooting procedures can be structured differently and therefore contain different content elements. The following methods shall be used to prepare troubleshooting procedures. Once selected, the troubleshooting method shall be prepared in accordance with the requirements specified by this document.

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5.88.8.1.6.1 Troubleshooting procedure.

Data Module Type: Fault Information Code: 421B through 428B

Troubleshooting procedures for specific fault symptoms shall combine text and logic and consist of a series of steps and sub steps which lead to an indication or condition (usually stated in the form of a question). Based on these indications or conditions, a "YES" or "NO" response is provided that will guide the technician to either the next step or a series of steps, or to a malfunction and corrective action. This process is continued until the entire troubleshooting procedure is completed. When required, the corrective action may include a reference to the data module that contains the corrective action.

5.88.8.1.6.2 Diagnostics (using the process data module).

Data Module Type: Process Information Code: 429A

Diagnostic procedures using computer generated code data shall be listed in troubleshooting sequence order. The pass or fail result shall be used to traverse through a series of troubleshooting steps until the problem is resolved.

5.88.8.1.6.2.1 General.

The diagnostic information set shall contain all information required by the maintenance technician to perform a single complete test or multiple tests that isolates a fault. The test may be an entire automatic system test to a series of manual steps required to obtain some level of fault identification. The process data module shall be used to develop troubleshooting procedures for all complex diagnostic models or simple diagnostic models that require state table manipulation. Process data module(s) in conjunction with other data modules as necessary shall be used. The following types of information shall be included:

a. As applicable, any warnings, cautions, or notes that would apply to the entire diagnostic procedure.
b. As applicable, any general information that may aide the technician in understanding, setting up, performing the test, or similar information.
c. As applicable, any additional configuration unique hookup or conditional hookup (depends on state table information) requirements not identified in the preliminary requirements.
d. As applicable, a reason for performing the test.
e. Shall conduct a single test using of the following methods:

    (1) Simple test
    (2) Complex test
    (3) Conditional complex test

f. As applicable, upon testing conclusion, any test equipment not required for next diagnostic test shall be removed through a disconnection procedure or conditional disconnection procedure.

5.88.8.1.6.2.2 State table explanation.

The state table is a function of S1000D and the Logic Engine. A state table provides the IETP and /or the user with information on the condition of the task being performed or changes in system or user defined variables.

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5.88.8.1.6.2.3 State table limits.

At no time shall changes to state table variables be allowed to change the IETP source data. TM/IETP source data shall only be changed as a result of an approved IETP/TM change.

5.88.8.1.6.2.4 Simple test.

Simple diagnostic testing shall contain an indication prompt. After conducting the testing the user is prompted for the test indication. The prompt shall indicate to the user the information needed from the test, usually through a question. The test indication shall be entered through selecting a binary indication (i.e., "yes/no," "true/false," "pass/fail") or a list of possible options (i.e., "<3.5" "3.5 to 4.5" ">4.5"). Using a simple test excludes the IETP from deriving direct results from test equipment or embedded sensors (since this depends on storing the information in an IETP state variable table for evaluation). Simple diagnostic testing shall contain test results. Each test evaluation shall provide a corrective action, reference to detailed corrective action data module, or reference to further diagnostic testing procedure or data module. When the test has determined the fault, the IETP shall display the fault code to the user for recording the equipment maintenance log. As applicable, upon testing conclusion, any test equipment not required for next diagnostic test shall be removed through a disconnection procedure. When the test has concluded and no further testing is required, the IETP shall indicate the test completion.

5.88.8.1.6.2.5 Complex tests.

Diagnostic testing shall conduct testing using known system conditions (maintained in the IETP state table), previous test results (maintained in the IETP state table), test equipment results, weapon system's embedded sensor(s) readings, and/or information from the user to conduct evaluations on the test information (from the IETP state table, user, and/or weapon system), and directs the user to the next test or corrective action.

5.88.8.1.6.2.5.1 IF statement.

The IF statement shall evaluate state table information (through user interaction or test results) to determine the appropriate action to perform. When an evaluated expression returns a true condition, the THEN condition shall perform the assigned test result(s) actions and/or conduct further evaluation on the test results. When multiple conditions occur that have different test result to perform, each additional condition shall use ELSEIF. When the evaluated ELSEIF expression returns a true condition the THEN condition shall perform the assigned test result(s) actions and/or conduct further evaluation on the test results. When all evaluated expressions returns as false, the ELSE condition shall perform the assigned test result(s) actions and/or conduct further evaluation on the test results.

5.88.8.1.6.2.5.2 LOOP COUNTER statement.

The LOOP COUNTER statement will repeat the testing actions for a predetermined number of iterations. After satisfying iteration count then the test result(s) actions shall be performed and/or further evaluation shall be conducted on the test results.

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5.88.8.1.6.2.5.3 LOOP UNTIL CONDITION statement.

The LOOP UNTIL CONDITION statement will repeat a testing action until an evaluated expression returns a terminating condition (Boolean true expression). After satisfying the terminating condition then the test result(s) actions shall be performed and/or further evaluation shall be conducted on the test results. The author shall ensure the LOOP UNTIL CONDITION statement has a terminating condition through setting an IETP state variable(s) and this terminating condition shall be part of the loop evaluating expression.

5.88.8.1.6.2.5.4 Loop test actions.

The looping test action includes any required instruction(s) automated test equipment results, weapon system's embedded sensor(s) readings, information from the user, conditional information from the user, and/or updating or setting IETP state variable(s).

5.88.8.1.6.2.6 Test results action.

Each test evaluation shall provide a corrective action, reference to detailed corrective action data module, reference to further diagnostic testing procedure or procedure, assigning IETP state variables, information for the user, and/or additional information from the user that may require additional evaluation. When the test has determined the fault, the IETP shall display the fault code to the user for recording, either automatically or manually, the equipment maintenance log. As applicable, upon testing conclusion, any test equipment not required for next diagnostic test shall be removed through a disconnection procedure or conditional disconnection procedure. When the test has concluded and no further testing is required, the IETP shall indicate the test completion.

5.88.8.1.7 Post-troubleshooting shutdown procedures.

Data Module Type: Procedural Information Code: 334B

Procedures to return the aircraft, aircraft system, or equipment to its normal configuration, prior to troubleshooting setup, if required, shall be included. Any follow-on maintenance shall also be included. A single procedural data module shall be used for each troubleshooting procedure.

5.88.8.1.8 Integrated system troubleshooting procedures.

When specified by the acquiring activity, integrated system operational checkout and troubleshooting shall be developed. Troubleshooting procedures which involve more than one system or more than one major subsystem and which cannot be logically placed in one of the individual system/ subsystem troubleshooting information sets shall be covered in this type of information set.

5.88.8.2 Project decisions.

5.88.8.2.1 Introduction.

The project shall determine if and when troubleshooting procedures require an introduction.

5.88.8.2.2 Troubleshooting type.

The project shall determine which trouble shooting type to use for each troubleshooting procedure required.

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5.88.8.2.3 Use of integrated system troubleshooting procedures.

The project shall determine if and when integrated system operational checkout and troubleshooting procedures shall be developed.

5.89 S1000D Chapter 5.2.1.3.3 – Common information sets – Non-destructive testing.

The information referenced in S1000D Chapter 5.2.1.3.3 is not required for U.S. Army TMs/IETPs. Refer to the Content Selection matrices for content requirements. This S1000D-provided information set does not support existing Army requirements. Any project desiring to acquire technical data matching this information set shall coordinate with LOGSA to ensure consistent implementation across the Army.

5.90 S1000D Chapter 5.2.1.3.4 – Common information sets – Corrosion control.

The information referenced in S1000D Chapter 5.2.1.3.4 is not required for U.S. Army TMs/IETPs. Refer to the Content Selection matrices for content requirements. This S1000D-provided information set does not support existing Army requirements. Any project desiring to acquire technical data matching this information set shall coordinate with LOGSA to ensure consistent implementation across the Army.

5.91 S1000D Chapter 5.2.1.3.5 – Common information sets – Storage.

The information referenced in S1000D Chapter 5.2.1.3.5 is not required for U.S. Army TMs/IETPs. Refer to the Content Selection matrices for content requirements. This S1000D-provided information set does not support existing Army requirements. Any project desiring to acquire technical data matching this information set shall coordinate with LOGSA to ensure consistent implementation across the Army.

5.92 S1000D Chapter 5.2.1.4 – Common information sets – Wiring data.

Data Module Type: Descriptive Information Code: 051A

5.92.1 Army business rules.

5.92.1.1 General.

Wiring diagrams information sets shall be prepared as directed by acquiring activity and include wiring and cable provisions contained in the equipment/end item, including all systems or equipment which can be installed or removed later (e.g., mission-related systems/equipment). Applicability of diagrams shall be explained in relation to equipment configuration.

5.92.1.2 Introduction.

Information shall be prepared to include the scope of the wiring diagrams information set. A statement shall be included explaining that wiring diagrams and essential wiring information are provided for all electrical and electronic systems and circuits.

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5.92.1.2.1 Wiring diagrams index.

A table which lists the wiring diagrams by foldout number and title may be included in the introduction. Wiring diagram index list shall include the sheet numbers as applicable and the page number for the foldout.

5.92.1.3 Abbreviations.

A statement shall be prepared that abbreviations are in accordance with ASME Y14.38, except when the abbreviation stands for a marking actually found in the equipment. A table listing the abbreviations used on the wiring diagram may be included in this data module. Table shall include the abbreviation and its definition.

5.92.1.4 Component descriptions with related schematic locations table.

A table may be prepared to assist user in finding components which contains component descriptions in alphabetical order, foldout sheet number, grid number, and official name which appears on the wiring diagram

5.92.1.5 Wire identification.

Identification of wires by number shall be explained. A list of circuit designators and a wire identification diagram shall be prepared. Additional tables may be included as follows for SAE or color designations:

5.92.1.5.1 SAE wire designations.

A table explaining the SAE wire designations used in the wiring diagrams may be included in the wiring diagrams data module.

5.92.1.5.2 Wire color designations. As applicable, a table may be prepared which explains the color codes used on the wiring diagrams.

5.92.1.6 Wiring diagrams.

Wiring diagrams shall be prepared for all electrical and electronic systems and circuits.

5.92.1.7 Signal flow.

To assist the IETP user in following the diagram, where possible, major signal or pressure flow shall be from left to right, and feedback or return flow shall be from right to left. Animation or color may be used to indicate signal flow.

5.92.2 Project decisions.

5.92.2.1 Data module size.

The amount of wiring information that is prepared in a single data module is a project decision dependent on the complexity and quantity of the wiring information needed.

5.92.2.2 Single or multiple data modules.

The required wiring information for introduction, wire ID, abbreviation, and wiring diagrams may be contained in a single or multiple data modules.

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5.92.2.3 Use of the wiring data module.

The project may elect to use the Wiring Data Module. If so, projects are required to coordinate efforts, including related business rules, with LOGSA.

5.92.2.4 Use of tables in wiring data module.

The project may include tables in the wiring data module for component descriptions, SAE wire designations, wire color designations, and/or wiring diagrams index.

5.93 S1000D Chapter 5.2.1.5 – Common information sets – Illustrated parts data.

5.93.1 Scope.

This section contains content requirements for the following information sets:

a. IPD introduction (refer to 5.93.4)
b. Repair parts information (refer to 5.93.5)
c. Repair parts for special tools list (refer to 5.93.7)
d. Kit parts list (refer to 5.93.8)
e. Bulk items list (refer to 5.93.9)
f. Special tools list (refer to 5.93.10)
g. Cross reference index (refer to 5.93.11)
h. National stock number index (refer to 5.93.11.1.5)
i. Part number index (refer to 5.93.11.1.6)
j. Reference designator index (refer to 5.93.11.1.7)
k. Components of end item list (refer to 5.93.11.2)
l. Basic issue items list (refer to 5.93.13)
m. Additional authorization list (refer to 5.93.14)
n. Collateral Material (refer to 5.93.14)
o. Expendable and durable items list (refer to 5.93.15)
p. Mandatory replacement parts (refer to 5.93.16)
q. Critical safety items (refer to 5.93.17)
r. Hand receipt technical manuals (refer to 5.93.18)

5.93.2 Army business rules.

5.93.2.1 General.

Parts lists shall be prepared for weapon systems, major components and applicable support and interface equipment.

5.93.2.2 Separate publication.

If a separate parts manual is required, it shall consist of front and rear matter and a Parts Information Chapter. Unless otherwise specified, the parts information chapter shall contain the data modules listed below in the order specified.

a. A single introduction
b. One or more repair parts list data modules.
c. When there is a special tools data module and the special tools have repair parts, a repair parts for special tools data module shall be prepared.
d. When kit parts are listed, a kit parts list shall be prepared.
e. When bulk items are listed in the parts list, a bulk items data module shall be prepared.

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f. When special tools are listed, one or more special tools list data modules.
g. A National Stock Number (NSN) index data module shall be prepared.
h. A part number index data module shall be prepared.
i. When specified by the acquiring activity, a reference designator index data module shall be prepared.

5.93.2.3 Parts data included in a maintenance publication.

When a separate parts manual is not required or authorized, parts data shall be included in a separate chapter that precedes the supporting information chapter in a maintenance TM/IETP. Introduction, repair parts list, kit parts, bulk items, special tools list, and cross reference indexes shall be included as specified herein.

5.93.2.4 Parts data included in a DMWR/NMWR.

If an item of equipment is programmed for depot overhaul and no repair parts (including modules, printed circuits, and components) are authorized for replacement at a level below depot maintenance, authorized repair parts data shall appear in the applicable DMWR/NMWR. Introduction, repair parts list, kit parts, bulk items, special tools list, and cross reference indexes shall be included as specified herein.

5.93.2.5 Depot repair parts.

Unless otherwise specified by the acquiring activity, depot level repair parts shall be included in a single parts list. When the acquiring activity specifies a depot (**DMWR/NMWR only**) level IPD, only depot level parts shall appear in the depot parts list. Figure(s) in the lower maintenance level parts list that contain both depot coded and non depot coded parts shall identify all parts. The appropriate SMR code shall identify the repair level. If the parts manual includes depot repair parts, the statement "Including Depot Maintenance Repair Parts" shall be added to the title of the publication.

5.93.2.6 Repair parts list, special tools, and kits layout.

Parts lists, special tools list and kit lists start on a right hand page. The first page shall contain the data module code and when practicable, the figure and parts list is placed on the first page. When the figure and parts list cannot be included on a single page, the part list shall begin on the next right-hand page following the figure(s).

5.93.2.7 Use of automated systems to generate parts data.

Projects are not precluded from using automated systems to generate parts data. Programs that use automated systems to generate parts data shall be able to produce IPD data compliant with S1000D and this standard.

5.93.3 Project decisions.

5.93.3.1 Separate parts manual.

The project shall decide if they will produce a separate parts manual or include parts data within other publications.

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5.93.4 Parts introduction.

Data Module Type: Descriptive Information Code: 018E

Parts information shall contain an introduction. For nonaviation systems refer to 5.93.4.1.1, for aviation systems refer to 5.93.4.1.2, and for Marine Corps only manuals refer to 5.93.4.1.3.

5.93.4.1 Army business rules.

5.93.4.1.1 Non-aviation parts information introduction.

For non-aviation systems, the verbatim text (below within the quotation marks) shall be included. The italicized text shall be replaced with the required system specific information or select the corresponding phrase for the specific system. The publication list shall identify the publication module code and title in numerical sequence. If the publication is non-government, the source shall be given and shall be listed alphabetically by title. If there are any SMR codes in the parts data that use the 6th position, information for the 6th position found in AR 700-82 shall be included in the parts data introduction after the explanation of the 5th position.

"INTRODUCTION

SCOPE

This parts information (PI) lists and authorizes spares and repair parts; special tools; special test, measurement, and diagnostic equipment (TMDE); and other special support equipment required for performance of (*insert maintenance level*) maintenance of the (*insert item name*). It authorizes the requisitioning, issue, and disposition of spares, repair parts, and special tools as indicated by the source, maintenance, and recoverability (SMR) codes.

GENERAL

In addition to the Introduction, this PI is divided into the following.

1. Repair Parts List containing lists of spares and repair parts authorized by this PI for use in the performance of maintenance at the levels determined by the MAC/SMR code. These also include parts which shall be removed for replacement of the authorized parts. Parts lists are composed of functional groups in ascending alphanumeric sequence, with the parts in each group listed in ascending figure and item number sequence. Sending units, brackets, filters, and bolts are listed with the component they mount on. Bulk materials are listed by item name in FIG. BULK at the end of one of the following data modules (*select the data module the bulk items will be listed in: the last Parts List data module, the Special Tools Repair Parts data module, or Kits data module*). (*choose one of the following*: *Repair parts kits are listed separately in their own functional group and data modules.* OR *Repair parts kits are listed at the end of the individual data modules.*) Repair parts for reparable special tools are also listed separately. Items listed are shown on the associated illustrations.

2.(*Include the text in items 2 through 4and 6 only if the described data module is included in the publication.*) Special Tools Repair Parts. This lists any spare parts required for the special tools, TMDE, or other support equipment listed in the Special Tools List that are not listed in any other publication.

3. Kits. This lists all repair kits and their component parts.

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4. Bulk Items. This lists all items identified as ‘bulk’ in the parts lists. Due to the nature of bulk items, this does not include a figure.

5. Special Tools List. This lists those special tools, special TMDE, and special support equipment authorized by this parts information (as indicated by Basis of Issue (BOI) information in the DESCRIPTION AND USABLE ON CODE (UOC) column). Tools that are components of common tool sets and/or Class VII are not listed.

6. Cross-Reference Indexes. There are (*enter applicable number*) cross-reference indexes in this Parts Information. The National Stock Number (NSN) Index refers you to the figure and item number for each NSN listed in the Parts Information. The Part Number Index refers you to the figure and item number for each part number listed in the Parts Information. (*If reference designator is used enter: “The Reference Designator Index refers you to the figure and item number of each reference designator listed in the Parts Information.*”)

EXPLANATION OF ENTRIES IN THE ILLUSTRATED PARTS LIST AND SPECIAL TOOLS LIST

ITEM NO. (Entry 1). Indicates the number used to identify items called out in the illustration.

SMR CODE (Entry 2). The SMR code containing supply/requisitioning information, maintenance level authorization criteria, and disposition instruction in accordance with AR 700-82, as shown in the following breakout. This entry may be subdivided into 4 subentries, one for each service.

Table I. SMR Code Explanation.

Source Code XX	**Maintenance Code XX**		**Recoverability Code X**
1st two positions: How to get an item.	3rd position: who can install, replace, or use the item.	4th position: Who can do complete repair* on the item.	5th position: Who determines disposition action on unserviceable items.

*Complete Repair: Maintenance capacity, capability, and authority to perform all corrective maintenance tasks of the "Repair" function in a use/user environment in order to restore serviceability to a failed item.

Source Code. The source code tells you how you get an item needed for maintenance, repair, or overhaul of an end item/equipment. Explanations of source codes follow:

Source Code	**Application/Explanation**
PA PB PC PD PE	Stock items; use the applicable NSN to requisition/request items with these source codes. They are authorized to the level indicated by the code entered in the 3rd position of the SMR code.

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Source Code	Application/Explanation
PF	**NOTE** Items coded PC are subject to deterioration. Items coded PR or PZ are obsolete and may not be able to be ordered like other P coded items.
PA	Stock items; use the applicable NSN to requisition/request items with these source codes. They are authorized to the level indicated by the code entered in the 3rd position of the SMR code. **NOTE** Items coded PC are subject to deterioration. Items coded PR or PZ are obsolete and may not be able to be ordered like other P coded items.
PB PC PD PE PF KF KB	
MF-Made at field MH- Made at below depot/sustainment level ML-Made at SRA MD-Made at depot MG-Navy only	Items with these codes are not to be requisitioned/requested individually. They shall be made from bulk material which is identified by the P/N in the DESCRIPTION AND USABLE ON CODE (UOC) entry and listed in the bulk material group of the PI. If the item is authorized to you by the third position code of the SMR code, but the source code indicates it is made at higher level, order the item from the higher level of maintenance.
AF-Assembled by field AH- Assembled by below depot sustainment level AL-Assembled by SRA AD-Assembled by depot AG-Navy only	Items with these codes are not to be requested/requisitioned individually. The parts that make up the assembled item shall be requisitioned or fabricated and assembled at the level of maintenance indicated by the source code. If the third position of the SMR code authorizes you to replace the item, but the source code indicates the item is assembled at a higher level, order the item from the higher level of maintenance.

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Source Code	Application/Explanation
XA	Do not requisition an "XA" coded item. Order the next higher assembly. (Refer to NOTE below.)
XB	If an item is not available from salvage, order it using the CAGEC and part number.
XC	Installation drawings, diagrams, instruction sheets, field service drawings; identified by manufacturer's part number.
XD	Item is not stocked. Order an XD-coded item through normal supply channels using the CAGEC and part number given, if no NSN is available.

NOTE

Cannibalization or controlled exchange, when authorized, may be used as a source of supply for items with the above source codes except for those items source coded "XA" or those aircraft support items restricted by requirements of AR 750-1.

Maintenance Code. Maintenance codes tell you the level(s) of maintenance authorized to use and repair support items. The maintenance codes are entered in the third and fourth positions of the SMR code as follows:

Third Position. The maintenance code entered in the third position tells you the lowest maintenance level authorized to remove, replace, and use an item. The maintenance code entered in the third position will indicate authorization to the following levels of maintenance:

Maintenance Code	Application/Explanation
C	Crew (operator)
F	Maintainer maintenance can remove, replace, and use the item.
H	Below Depot Sustainment maintenance can remove, replace, and use the item.
L	SRA can remove, replace, and use the item.
G	Afloat and ashore intermediate maintenance can remove, replace, and use the item (Navy only)
K	Contractor facility can remove, replace, and use the item
Z	Item is not authorized to be removed, replace, or used at any maintenance level
D	Depot can remove, replace, and use the item.

NOTE

Army may use C in the third position. However, for joint service publications, Army will use O.

Fourth Position. The maintenance code entered in the fourth position tells you whether or not the item is to be repaired and identifies the lowest maintenance level with the capability to do complete repair (perform all authorized repair functions).

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Maintenance Code	Application/Explanation
C	Crew (operator) is the lowest class that can do complete repair.
F	Maintainer is the lowest class that can do complete repair of the item.
H	Below Depot Sustainment is the lowest level that can do complete repair of the item.
L	SRA is the lowest class that can do complete repair of the item.
D	Depot is the lowest class that can do complete repair of the item.
G	Both afloat and ashore intermediate levels are capable of complete repair of item. (Navy only)
K	Complete repair is done at contractor facility
Z	Non-reparable. No repair is authorized.
B	No repair is authorized. No parts or special tools are authorized for maintenance of "B" coded item. However, the item may be reconditioned by adjusting, lubricating, etc., at the user level.

Recoverability Code. Recoverability codes are assigned to items to indicate the disposition action on unserviceable items. The recoverability code is shown in the fifth position of the SMR code as follows:

Recoverability Code	Application/Explanation
C	Reparable item. When uneconomically reparable, condemn and dispose of the item at the crew/operator level.
Z	Non-repairable item. When unserviceable, condemn and dispose of the item at the level of maintenance shown in the third position of the SMR code.
F	Reparable item. When uneconomically reparable, condemn and dispose of the item at the maintainer level.
H	Reparable item. When uneconomically reparable, condemn and dispose of the item at the below depot sustainment level.
D	Reparable item. When beyond lower level repair capability, return to depot. Condemnation and disposal of item are not authorized below depot level.
L	Reparable item. Condemnation and disposal not authorized below SRA.
A	Item requires special handling or condemnation procedures because of specific reasons (such as precious metal content, high dollar value, critical material, or hazardous material). Refer to appropriate manuals/directives for specific instructions.

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K	Reparable item. Condemnation and disposal to be performed at contractor facility

NSN (Column (3)). The NSN for the item is listed in this column.

CAGEC (Column (4)). The Commercial and Government Entity Code (CAGEC) is a five-digit code which is used to identify the manufacturer, distributor, or Government agency/activity that supplies the item.

PART NUMBER (Column (5)). Indicates the primary number used by the manufacturer (individual, company, firm, corporation, or Government activity), which controls the design and characteristics of the item by means of its engineering drawings, specifications, standards, and inspection requirements to identify an item or range of items.

NOTE

When you use an NSN to requisition an item, the item you receive may have a different part number from the number listed.

DESCRIPTION AND USABLE ON CODE (UOC) (Column (6)). This column includes the following information:

1. The federal item name, and when required, a minimum description to identify the item.
2. Part numbers of bulk materials are referenced in this column in the line entry to be manufactured or fabricated.
3. Hardness Critical Item (HCI). A support item that provides the equipment with special protection from electromagnetic pulse (EMP) damage during a nuclear attack.
4. Refer to Usable on Code details presented later in this data module under SPECIAL INFORMATION.
5. Dot indentions indicate the relationship of the part (or parts) to its next higher assembly (NHA) in the tabular listing. The NHA for this part (or parts) is listed right before the part (or parts) that it is the NHA for. If the item is connected directly to (can be disassembled from) the item identified in the functional group code title for that specific tabular listing, it shall have one dot indentation. Otherwise, that item in the tabular list will not have a dot indention.
6. The statement END OF FIGURE appears just below the last item description in column (6) for a given figure in both the illustrated parts list and special tools lists.

QTY (Column (7)). The QTY (quantity per figure) column indicates the quantity of the item used in the breakout shown on the illustration/figure, which is prepared for a functional group, sub functional group, or an assembly. A "V" appearing in this column instead of a quantity indicates that the quantity is variable and quantity may change from application to application."

(MC) Include for Marine Corps manuals only.

"USMC QTY per Equip (Column (8)). This column accommodates the Marine Corps quantity per equipment requirement.

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For IETPs only, cross-reference indexes are optional. The information below shall be included in all page-based manuals. For IETPs, if you have cross reference indexes in your parts information include the information below in the parts information introduction as applicable:

EXPLANATION OF CROSS-REFERENCE INDEXES FORMAT AND COLUMNS

1. National Stock Number (NSN) Index. NSNs in this index are listed in National Item Identification Number (NIIN) sequence.

STOCK NUMBER Column. This column lists the NSN in NIIN sequence. The NIIN consists of the last nine digits of the NSN. When using this column to locate an item, ignore the first four digits of the NSN. However, the complete NSN should be used when ordering items by stock number.

For example, if the NSN is 5385-01-574-1476, the NIIN is 01-574-1476.

FIG. Column. This column lists the number of the figure where the item is identified/located. The figures are in numerical order in the illustrated parts list and special tools lists.

ITEM Column. The item number identifies the item associated with the figure listed in the adjacent FIG. column. This item is also identified by the NSN listed on the same line.

2. Part Number (P/N) Index. Part numbers in this index are listed in ascending numeric/alphanumeric sequence (vertical arrangement of letter and number combinations which places the first letter or digit of each group in order A through Z, followed by the numbers 0 through 9 and each following letter or digit in like order).

PART NUMBER Column. Indicates the part number assigned to the item.

FIG. Column. This column lists the number of the figure where the item is identified/located in the illustrated parts list and special tools lists.

ITEM Column. The item number is the number assigned to the item as it appears in the figure referenced in the adjacent figure number column."

Include 3 if applicable.

"3. Reference Designator Index. Reference designators in this index are listed in ascending alphanumeric sequence (vertical arrangement of letter and number combination which places the first letter or digit of each group in order "A" through "Z," followed by the numbers "0" through "9" and each following letter or digit in like order).

REFERENCE DESIGNATOR Column. Indicates the reference designator assigned to the item.

FIG. Column. This column lists the number of the figure where the item is identified/located in the repair parts list or special tools list.

ITEM Column. The item number is the number assigned to the item as it appears in the figure referenced in the adjacent figure number column.

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SPECIAL INFORMATION

UOC. The UOC appears in the lower left corner of the Description Column heading. Usable on codes are shown as "UOC..." in the Description Column (justified left) on the first line under the applicable item/nomenclature. Uncoded items are applicable to all models. Identification of the UOCs used in the parts list are:

Code	Used On
PAA	Model M114
PAB	Model M114A
PAC	Model M114B"

Include appropriate UOC content, as applicable.

"Fabrication Instructions. Bulk materials required to manufacture items are listed in the bulk material functional group of this parts list. Part numbers for bulk material are also referenced in the Description Column of the line item entry for the item to be manufactured/fabricated. Detailed fabrication instructions for items source coded to be manufactured or fabricated are found in (*insert applicable TM number*).

Index Numbers. Items which have the word BULK in the figure column will have an index number shown in the item number column. This index number is a cross-reference between the NSN / Part Number (P/N) Index and the bulk material list in the repair parts list."

For a combined narrative-parts list manual associated publications shall not be included.

"Associated Publications. The publication(s) listed below pertains to the (*insert item name*):

Publication	Short Title"

The following paragraph shall appear only in the unit maintenance parts list special instructions.

"Illustrations List. The illustrations in this parts list contain unit authorized items. Illustrations published in (*insert applicable publication module code for the higher maintenance level parts list, e.g., for direct support, general support, etc.*) that contain unit authorized items also appear in this Parts list. The tabular list in the repair parts list contains only those parts coded "O" in the third position of the SMR code, therefore, there may be a break in the item number sequence.

HOW TO LOCATE REPAIR PARTS

1. When NSNs or Part Numbers Are Not Known.

First. Using the table of contents, determine the assembly group to which the item belongs. This is necessary since figures are prepared for assembly groups and subassembly groups, and lists are divided into the same groups.

Second. Find the figure covering the functional group or the sub functional group to which the item belongs.

Third. Identify the item on the figure and note the number(s).

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Fourth. Look in the repair parts list for the figure and item numbers. The NSNs and part numbers are on the same line as the associated item numbers.

For page-based manuals and IETPs that have cross-reference indexes in the parts information enter the following in the introduction:

2. When NSN Is Known.

First. If you have the NSN, look in the STOCK NUMBER column of the NSN index. The NSN is arranged in NIIN sequence. Note the figure and item number next to the NSN.

Second. Turn to the figure and locate the item number. Verify that the item is the one you are looking for.

3. When Part Number Is Known.

First. If you have the part number and not the NSN, look in the PART NUMBER column of the part number index. Identify the figure and item number.

Second. Look up the item on the figure in the applicable repair parts list.

For IETPs that don't have NSN and part number indexes in the parts information enter the following in the introduction:

2. When NSN or part number is known.

First. Using the search function in the tool bar (binoculars), search for the NSN or part number.

Second. Locate the parts data entries for the NSN or part number in the search results to find further details for the NSN or part number in the parts data.

Include the below only if the parts list has a reference designator index. Number appropriately to follow the above information as applicable.

4. When Reference Designator Is Known.

First. If you know the reference designator, look in the REFERENCE DESIGNATOR column of the reference designator index. Note the figure and item number.

Second. Turn to the figure and locate the item number. Verify that the item is the one you are looking for.

ABBREVIATIONS

Abbreviation	Explanation

Include uncommon abbreviations used in the parts list. List/define those not found in ASME Y14.38."

5.93.4.1.2 Aviation parts information introduction. For aviation systems include the following verbatim in the parts information introduction. Items in italics should be filled in with appropriate information and/or removed as appropriate.

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"**INTRODUCTION**

SCOPE

This parts information lists and authorizes spares and repair parts; special tools; special test, measurement, and diagnostic equipment (TMDE); and other special support equipment required for performance of (*enter maintenance level*) maintenance of the (*enter item name*). It authorizes the requisitioning, issue, and disposition of spares, repair parts, and special tools as indicated by the source, maintenance, and recoverability (SMR) codes.

GENERAL

In addition to the Introduction data module, this parts information is divided into the following data modules.

1. Repair Parts List data modules. Data modules containing lists of spare and repair parts authorized for use in the performance of maintenance at the levels determined by the MAC/SMR code. These data modules also include parts which must be removed for replacement of the authorized parts. Parts lists are composed of functional groups in ascending alphanumeric sequence, with the parts in each group listed in ascending figure and item number sequence. Sending units, brackets, filters, and bolts are listed with the component they mount on. Bulk materials are listed by item name in the Bulk Items data module which follows (*select the data module the bulk items follow: the last Parts List data module, the Special Tools Repair Parts data module, or Kits*) data module. *(choose one of the following) Repair parts kits are listed separately in their own functional group and data module* **OR** *Repair parts kits are listed at the end of the individual data modules.* Repair parts for reparable special tools are also listed in a separate data module. Items listed are shown on the associated illustrations.
2. *(Include the text in items 2 through 4 and 6 only if the described data module(s) is included in the TM.)* Special Tools Repair Parts data module. This data module lists any spare parts required for the special tools, TMDE, or other support equipment listed in the Special Tools data module that are not listed in any other publication.
3. Kits data module. This data module lists all repair kits and their component parts.
4. Bulk Items data module. This data module lists all items identified as ‘bulk’ in the parts lists. Due to the nature of bulk items, this data module does not include a figure.
5. Special Tools List data module. This data module lists those special tools, special TMDE, and special support equipment authorized by this parts data (as indicated by Basis of Issue (BOI) information in the DESCRIPTION AND USABLE ON CODE (UOC) entry). Tools that are components of common tool sets and/or Class VII are not listed.
6. Cross-Reference Indexes data modules. There are (*enter applicable number*) cross-reference indexes data modules in this parts information. The National Stock Number (NSN) Index data module refers you to the figure and item number for each NSN listed in the parts information. The Part Number Index data module refers you to the figure and item number for each part number listed in the parts information. (*If reference designator is used enter:*
“The Reference Designator Index data module refers you to the figure and item number of each reference designator listed in the parts data.”)

EXPLANATION OF ENTRIES IN THE PARTS INFORMATION DATA MODULES

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ITEM NO. (Entry 1). Indicates the number used to identify items called out in the illustration.
SMR CODE (Entry 2). The SMR code containing supply/requisitioning information, maintenance level authorization criteria, and disposition instruction in accordance with AR 700-82, as shown in the following breakout. This entry may be subdivided into 4 subentries, one for each service.

TABLE 1. SMR Code Explanation.

Source Code XX	**Maintenance Code XX**		**Recoverability Code X**
1st two positions: How to get an item	3rd position: Who can install, replace, or use the item	4th position: Who can do complete repair on the item	5th position: Who determines disposition action on unserviceable items.

NOTE

Complete Repair: Maintenance capacity, capability, and authority to perform all corrective maintenance tasks of the "Repair" function in a use/user environment in order to restore serviceability to a failed item.

Source Code. The source code tells you how you get an item needed for maintenance, repair, or overhaul of an end item/equipment. Explanations of source codes follow:

TABLE 2. Source Code Explanation.

Source Code	**Application/Explanation**
PA PB PC PD PE PF PG PH PR PZ	Stock items; use the applicable NSN to requisition/request items with these source codes. They are authorized to the level indicated by the code entered in the third position of the SMR code. **NOTE** Items coded PC are subject to deterioration. Items coded PR or PZ are obsolete and may not be able to be ordered like other P coded items.
KD KF	Items with these codes are not to be requested/requisitioned individually. They are part of a kit that is authorized to the maintenance

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KB	level indicated in the third position of the SMR code. The complete kit must be requisitioned and applied.
MO-Made at AMC level MF-Made at ASB level ML-Made at TASMG MD-Made at depot MG (Navy only)	Items with these codes are not to be requisitioned/requested individually. They must be made from bulk material which is identified by the P/N in the DESCRIPTION AND USABLE ON CODE (UOC) entry and listed in the bulk material group data module of the parts information. If the item is authorized to you by the third position code of the SMR code, but the source code indicates it is made at higher level, order the item from the higher level of maintenance.
AO-Assembled at AMC level AF-Assembled at ASB level AL-Assembled at TASMG AD-Assembled at depot AG- Navy only	Items with these codes are not to be requested/requisitioned individually. The parts that make up the assembled item must be requisitioned or fabricated and assembled at the level of maintenance indicated by the source code. If the third position of the SMR code authorizes you to replace the item, but the source code indicates the item is assembled at a higher level, order the item from the higher level of maintenance.
XA	Do not requisition an "XA" coded item. Order the next higher assembly. (Refer to NOTE below.)
XB	If an item is not available from salvage, order it using the CAGEC and P/N.
XC	Installation drawings, diagrams, instruction sheets, field service drawings; identified by manufacturer's P/N.
XD	Item is not stocked. Order an XD-coded item through local purchase or normal supply channels using the CAGEC and P/N given, if no NSN is available.

NOTE

Cannibalization or controlled exchange, when authorized, may be used as a source of supply for items with the above source codes except for those items source coded "XA" or those aircraft support items restricted by requirements of AR 750-1.

Maintenance Code. Maintenance codes tell you the level(s) of maintenance authorized to use and repair support items. The maintenance codes are entered in the third and fourth positions of the SMR code as follows:

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Third Position. The maintenance code entered in the third position tells you the lowest maintenance class authorized to remove, replace, and use an item. The maintenance code entered in the third position will indicate authorization to the following classes of maintenance:

Maintenance Code	**Application/Explanation**
O -	AMC maintenance can remove, replace, and use the item
F -	ASB maintenance can remove, replace, and use the item
L -	TASMG can remove, replace, and use the item
G -	Afloat and ashore intermediate maintenance can remove, replace, and use the item (Navy only)
K -	Contractor facility can remove, replace, and use the item
Z -	Item is not authorized to be removed, replace, or used at any maintenance level
D -	Depot can remove, replace, and use the item

Fourth Position. The maintenance code entered in the fourth position tells you whether or not the item is to be repaired and identifies the lowest maintenance class with the capability to do complete repair (perform all authorized repair functions).

Maintenance Code	**Application/Explanation**
O -	AMC is the lowest class that can do complete repair of item
F -	ASB is the lowest class that can do complete repair of the item
L -	TASMG is the lowest class that can do complete repair of the item
D -	Depot is the lowest class that can do complete repair of the item
G -	Both afloat and ashore intermediate levels are capable of complete repair of item. (Navy only)
K -	Complete repair is done at contractor facility
Z -	Nonreparable. No repair is authorized
B -	No repair is authorized. No parts or special tools are authorized for maintenance of "B" coded item. However, the item may be reconditioned by adjusting, lubricating, etc., at the user level.

Recoverability Code. Recoverability codes are assigned to items to indicate the disposition action on unserviceable items. The recoverability code is shown in the fifth position of the SMR code as follows:

Recoverability Code	**Application/Explanation**
Z -	Nonreparable item. When unserviceable, condemn and dispose of the item at the level of maintenance shown in the third position of the SMR code.
O -	Reparable item. When uneconomically reparable, condemn and dispose of the item at the AMC level

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F -	Reparable item. When uneconomically reparable, condemn and dispose of the item at the ASB level.
D -	Reparable item. When beyond lower level repair capability, return to depot. Condemnation and disposal of item are not authorized below depot level.
L -	Reparable item. Condemnation and disposal not authorized below TASMG.
A -	Item requires special handling or condemnation procedures because of specific reasons (such as precious metal content, high dollar value, critical material, or hazardous material). Refer to appropriate manuals/directives for specific instructions.
G -	Field level reparable item. Condemn and dispose at either afloat or ashore intermediate levels. (Navy only)
K -	Reparable item. Condemnation and disposal to be performed at contractor facility.

NSN (Entry 3). The NSN for the item is listed in this entry.

CAGEC (Entry 4). The Commercial and Government Entity Code (CAGEC) is a five-digit code that is used to identify the manufacturer, distributor, or Government agency/activity that supplies the item.

PART NUMBER (Entry 5). Indicates the primary number used by the manufacturer (individual, company, firm, corporation, or Government activity), which controls the design and characteristics of the item by means of its engineering drawings, specifications, standards, and inspection requirements to identify an item or range of items.

NOTE

When you use an NSN to requisition an item, the item you receive may have a different P/N from the number listed.

DESCRIPTION AND USABLE ON CODE (UOC) (Entry (6)). This entry includes the following information:
1. The federal item name, and when required, a minimum description to identify the item.
2. P/Ns of bulk materials are referenced in this entry in the line entry to be manufactured or fabricated.
3. Hardness Critical Item (HCI). A support item that provides the equipment with special protection from electromagnetic pulse (EMP) damage during a nuclear attack.
4. Refer to Usable on Code details presented later in this data module under SPECIAL INFORMATION.

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5. Dot indentions indicate the relationship of the part (or parts) to its next higher assembly (NHA) in the tabular listing. The NHA for this part (or parts) is listed right before the part (or parts) that it is the NHA for. If the item is connected directly to (can be disassembled from) the item identified in the functional group code title for that specific tabular listing, it shall have one dot indentation. Otherwise, that item in the tabular list will not have a dot indention.
6. The statement END OF FIGURE appears just below the last item description in entry (6) for a given figure in both the repair parts list and special tools list work packages.

QTY (Entry (7)). The QTY (quantity per figure) entry indicates the quantity of the item used in the breakout shown on the illustration/figure, which is prepared for a functional group, sub functional group, or an assembly. A "V" appearing in this entry instead of a quantity indicates that the quantity is variable and quantity may change from application to application.

(MC) Include for Marine Corps manuals only.
USMC QTY per Equip (Entry 8). This entry accommodates the Marine Corps quantity per equipment requirement.
If you have cross-reference indexes include the information below in the parts data introduction as applicable:
EXPLANATION OF CROSS-REFERENCE INDEXES DATA MODULES FORMAT AND ENTRY
1. National Stock Number (NSN) Index Data Module. NSNs in this index are listed in National Item Identification Number (NIIN) sequence.
STOCK NUMBER Entry. This entry lists the NSN in NIIN sequence. The NIIN consists of the last nine digits of the NSN. When using this entry to locate an item, ignore the first four digits of the NSN. However, the complete NSN should be used when ordering items by stock number.
For example, if the NSN is 5385-01-574-1476, the NIIN is 01-574-1476.
FIG. Entry. This entry lists the number of the figure where the item is identified/located. The figures are in numerical order in the repair parts list and special tools list work packages.
ITEM Entry. The item number identifies the item associated with the figure listed in the adjacent FIG. entry. This item is also identified by the NSN listed on the same line.
2. Part Number (P/N) Index Data Module. P/Ns in this index are listed in ascending numeric/alphanumeric sequence (vertical arrangement of letter and number combinations which places the first letter or digit of each group in order A through Z, followed by the numbers 0 through 9 and each following letter or digit in like order).
PART NUMBER Entry. Indicates the P/N assigned to the item.
FIG. Entry. This entry lists the number of the figure where the item is identified/located in the repair parts list and special tools list data modules.
ITEM Entry. The item number is the number assigned to the item as it appears in the figure referenced in the adjacent figure number entry.

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Include 3, as applicable.
3. Reference Designator Index Data Module. Reference designators in this index are listed in ascending alphanumeric sequence (vertical arrangement of letter and number combination which places the first letter or digit of each group in order "A" through "Z," followed by the numbers "0" through "9" and each following letter or digit in like order).
REFERENCE DESIGNATOR Entry. Indicates the reference designator assigned to the item.
FIG. Entry. This entry lists the number of the figure where the item is identified/located in the repair parts list or special tools list data module.
ITEM Entry. The item number is the number assigned to the item as it appears in the figure referenced in the adjacent figure number entry.
SPECIAL INFORMATION
UOC. The UOC appears in the lower left corner of the Description Entry heading. Usable on codes are shown as "UOC: ..." in the Description Entry (justified left) on the first line under the applicable item/nomenclature. Uncoded items are applicable to all models. Identification of the UOCs used in the PI are:

Code	Used On
PAA	Model M114
PAB	Model M114A
PAC	Model M114B

Include appropriate UOC content, as applicable.
Fabrication Instructions. Bulk materials required to manufacture items are listed in the bulk material functional group of this parts data. Part numbers for bulk material are also referenced in the Description Entry of the line item entry for the item to be manufactured/fabricated. Detailed fabrication instructions for items source coded to be manufactured or fabricated are found in (*enter applicable TM number or data module number/title*).
Index Numbers. Items which have the word BULK in the figure entry will have an index number shown in the item number entry. This index number is a cross-reference between the NSN / P/N index data modules and the bulk material list in the repair parts list data module."
For a combined narrative-parts data manual associated publications shall not be included.
Associated Publications. The publication(s) listed below pertains to the (*enter item name*):
Publication Short Title"
The following paragraph shall appear only in the unit maintenance parts data special instructions.
Illustrations List. The illustrations in this parts data contain field authorized items. Illustrations published in (*enter applicable TM number for the higher maintenance level parts data, e.g., for AMC, ASB, TASMG, etc.*) that contain field authorized items also appear in this parts data. The tabular list in the repair parts list data module contains only those parts coded "O" in the third position of the SMR code, therefore, there may be a break in the item number sequence.

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HOW TO LOCATE REPAIR PARTS

1. When NSNs or P/Ns Are Not Known.

First. Using the table of contents, determine the assembly group to which the item belongs. This is necessary since figures are prepared for assembly groups and subassembly groups, and lists are divided into the same groups.

Second. Find the figure covering the functional group or the sub functional group to which the item belongs.

Third. Identify the item on the figure and note the number(s).

Fourth. Look in the repair parts list data modules for the figure and item numbers. The NSNs and part numbers are on the same line as the associated item numbers.

If there are NSN and part number indexes in your parts data enter the following in the introduction:

2. When NSN Is Known.

First. If you have the NSN, look in the STOCK NUMBER entry of the NSN index work package. The NSN is arranged in NIIN sequence. Note the figure and item number next to the NSN.

Second. Turn to the figure and locate the item number. Verify that the item is the one you are looking for.

3. When P/N Is Known.

First. If you have the P/N and not the NSN, look in the PART NUMBER entry of the P/N index data module. Identify the figure and item number.

Second. Look up the item on the figure in the applicable repair parts list data module.

If you don't have NSN and part number indexes in your parts data enter the following in the introduction:

2. When NSN or part number is known.

First. Using the search function in the tool bar (binoculars), search for the NSN or part number.

Second. Locate the parts data entries for the NSN or part number in the search results to find further details for the NSN or part number in the parts data.

Include 4 only if the parts has a reference designator index data module.

4. When Reference Designator Is Known.

First. If you know the reference designator, look in the REFERENCE DESIGNATOR entry of the reference designator index data module. Note the figure and item number.

Second. Turn to the figure and locate the item number. Verify that the item is the one you are looking for.

ABBREVIATIONS

Abbreviation Explanation

Include uncommon abbreviations used in the parts data. List/define those not found in ASME Y14.38."

5.93.4.1.3 (MC) Marine Corps only parts information introduction. For Marine Corps only manuals include the following verbatim in the parts information introduction. Items in italics should be filled in with appropriate information and/or removed as appropriate.

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"**INTRODUCTION**

SCOPE
This PI lists and authorizes spares and repair parts; special tools; special test, measurement, and diagnostic equipment (TMDE); and other special support equipment required for performance of (*enter maintenance level*) maintenance of the (*enter item name*). It authorizes the requisitioning, issue, and disposition of spares, repair parts, and special tools as indicated by the source, maintenance, and recoverability (SMR) codes.

GENERAL
In addition to the Introduction data module, this PI data is divided into the following data modules.

1. PI List data modules. Data modules containing lists of spare and repair parts authorized for use in the performance of maintenance at the levels determined by the MAC/SMR code. These data modules also include parts which must be removed for replacement of the authorized parts. Parts lists are composed of functional groups in ascending alphanumeric sequence, with the parts in each group listed in ascending figure and item number sequence. Sending units, brackets, filters, and bolts are listed with the component they mount on. Bulk materials are listed by item name in the Bulk Items data module which follows (*select the data module the bulk items follow: the last Parts List data module, the Special Tools Repair Parts data module, or Kits*) module. *(choose one of the following) Repair parts kits are listed separately in their own functional group and data module* **OR** *Repair parts kits are listed at the end of the individual data modules.* Repair parts for reparable special tools are also listed in a separate data module. Items listed are shown on the associated illustrations.
2. *(Include the text in items 2 through 4 and 6 only if the described data module(s) is included in the TM.)* Special Tools Repair Parts Data module. This data module lists any spare parts required for the special tools, TMDE, or other support equipment listed in the Special Tools Data Module that are not listed in any other publication.
3. Kits data module. This data module lists all repair kits and their component parts.
4. Bulk Items Data Module. This data module lists all items identified as ‘bulk’ in the parts lists. Due to the nature of bulk items, this data module does not include a figure.
5. Special Tools List Data Modules. This data module lists those special tools, special TMDE, and special support equipment authorized by this PI (as indicated by Basis of Issue (BOI) information in the DESCRIPTION AND USABLE ON CODE (UOC) entry). Tools that are components of common tool sets and/or Class VII are not listed.
6. Cross-Reference Indexes Data Modules. There are (*enter applicable number*) cross-reference indexes data modules in this PI. The National Stock Number (NSN) Index data module refers you to the figure and item number for each NSN listed in the PI. The Part Number Index data module refers you to the figure and item number for each part number listed in the PI. (*If reference designator is used enter: “The Reference Designator Index data module refers you to the figure and item number of each reference designator listed in the PI.”)*

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EXPLANATION OF ENTRIES IN THE PI DATA MODULES

ITEM NO. (Entry 1). Indicates the number used to identify items called out in the illustration.

SMR CODE (Entry 2). The SMR code containing supply/requisitioning information, maintenance level authorization criteria, and disposition instruction in accordance with AR 700-82, as shown in the following breakout. This entry may be subdivided into 4 subentries, one for each service.

TABLE 1. SMR Code Explanation.

Source Code XX	Maintenance Code XX		Recoverability Code X
1st two positions: How to get an item.	3rd position: Who can install, replace, or use the item.	4th position: Who can do complete repair on the item.	5th position: Who determines disposition action on unserviceable items.

NOTE

Complete Repair: Maintenance capacity, capability, and authority to perform all corrective maintenance tasks of the "Repair" function in a use/user environment in order to restore serviceability to a failed item.

Source Code. The source code tells you how you get an item needed for maintenance, repair, or overhaul of an end item/equipment. Explanations of source codes follow:

TABLE 2. Source Code Explanation.

Source Code	Application/Explanation
PA PB PC PD PE PF PG PH	Stock items; use the applicable NSN to requisition/request items with these source codes. They are authorized to the level indicated by the code entered in the third position of the SMR code. **NOTE** Items coded PC are subject to deterioration. Items coded PR or PZ are obsolete and may not be able to be ordered like other P coded items.
PR PZ KD KF KB	Items with these codes are not to be requested/requisitioned individually. They are part of a kit that is authorized to the maintenance level indicated in the third position of the SMR code. The complete kit must be requisitioned and applied.

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MO-Made at Field/Organizational MF-Made at Field/Intermediate MH Made at Field/Intermediate ML-Made at Specialized Maintenance Facility MD-Made at depot MG (Navy only)	Items with these codes are not to be requisitioned/requested individually. They must be made from bulk material which is identified by the P/N in the DESCRIPTION AND USABLE ON CODE (UOC) entry and listed in the bulk material group data module of the PI. If the item is authorized to you by the third position code of the SMR code, but the source code indicates it is made at higher level, order the item from the higher level of maintenance.
AO-Assembled at Field/Organizational AF-Assembled at Field/Intermediate AH - Assembled at Field Intermediate AL-Assembled at Specialized Maintenance Facility AD-Assembled at depot AG- Navy only	Items with these codes are not to be requested/requisitioned individually. The parts that make up the assembled item must be requisitioned or fabricated and assembled at the level of maintenance indicated by the source code. If the third position of the SMR code authorizes you to replace the item, but the source code indicates the item is assembled at a higher level, order the item from the higher level of maintenance.
XA	Do not requisition an "XA" coded item. Order the next higher assembly. (Refer to NOTE below.)
XB	If an item is not available from salvage, order it using the CAGEC and P/N.
XC	Installation drawings, diagrams, instruction sheets, field service drawings; identified by manufacturer's P/N.
XD	Item is not stocked. Order an XD-coded item through local purchase or normal supply channels using the CAGEC and P/N given, if no NSN is available.

NOTE

Cannibalization or controlled exchange, when authorized, may be used as a source of supply for items with the above source codes except for those items source coded "XA" or those aircraft support items restricted by requirements of AR 750-1.

Maintenance Code. Maintenance codes tell you the level(s) of maintenance authorized to use and repair support items. The maintenance codes are entered in the third and fourth positions of the SMR code as follows:

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Third Position. The maintenance code entered in the third position tells you the lowest maintenance class authorized to remove, replace, and use an item. The maintenance code entered in the third position will indicate authorization to the following classes of maintenance:

Maintenance Code	**Application/Explanation**
O-	Field/Organizational maintenance can remove, replace, and use the item.
F-	Field Intermediate maintenance can remove, replace, and use the item.
H-	Field Intermediate maintenance can remove, replace, and use the item.
L-	Specialized Maintenance Facility can remove, replace, and use the item.
G-	Afloat and ashore intermediate maintenance can remove, replace, and use the item (Navy only).
K-	Contractor facility can remove, replace, and use the item.
Z-	Contractor facility can remove, replace, and use the item.
D-	Depot can remove, replace, and use the item.

Fourth Position. The maintenance code entered in the fourth position tells you whether or not the item is to be repaired and identifies the lowest maintenance class with the capability to do complete repair (perform all authorized repair functions).

Maintenance Code	**Application/Explanation**
O-	Field/Organizational is the lowest class that can do complete repair of item.
F-	Field Intermediate is the lowest class that can do complete repair of the item.
H-	Field Intermediate maintenance is the lowest class that can do complete repair of the item.
L-	Specialized maintenance Facility is the lowest class that can do complete repair of the item.
D-	Depot is the lowest class that can do complete repair of the item.
G-	Both afloat and ashore intermediate levels are capable of complete repair of item. (Navy only).
K-	Complete repair is done at contractor facility.
Z-	Nonreparable. No repair is authorized.
B-	No repair is authorized. No parts or special tools are authorized for maintenance of "B" coded item. However, the item may be reconditioned by adjusting, lubricating, etc., at the user level.

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Recoverability Code. Recoverability codes are assigned to items to indicate the disposition action on unserviceable items. The recoverability code is shown in the fifth position of the SMR code as follows:

Recoverability Code	**Application/Explanation**
Z-	Nonreparable item. When unserviceable, condemn and dispose of the item at the level of maintenance shown in the third position of the SMR code.
O-	Reparable item. When uneconomically reparable, condemn and dispose of the item at the Field/Organizational level.
F-	Reparable item. When uneconomically reparable, condemn and dispose of the item at the Field/Intermediate level.
H-	Reparable item. When uneconomically reparable, condemn and dispose of the item at the Field/Intermediate level.
D-	Reparable item. When beyond lower level repair capability, return to depot. Condemnation and disposal of item are not authorized below depot level.
L-	Reparable item. Condemnation and disposal not authorized below Specialized Maintenance Facility.
A-	Item requires special handling or condemnation procedures because of specific reasons (such as precious metal content, high dollar value, critical material, or hazardous material). Refer to appropriate manuals/directives for specific instructions.
G-	Field level reparable item. Condemn and dispose at either afloat or ashore intermediate levels. (Navy only)
K-	Reparable item. Condemnation and disposal to be performed at contractor facility.

NSN (Entry 3). The NSN for the item is listed in this entry.

CAGEC (Entry 4). The Commercial and Government Entity Code (CAGEC) is a five-digit code that is used to identify the manufacturer, distributor, or Government agency/activity that supplies the item.

PART NUMBER (Entry 5). Indicates the primary number used by the manufacturer (individual, company, firm, corporation, or Government activity), which controls the design and characteristics of the item by means of its engineering drawings, specifications, standards, and inspection requirements to identify an item or range of items.

NOTE

When you use an NSN to requisition an item, the item you receive may have a different P/N from the number listed.

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DESCRIPTION AND USABLE ON CODE (UOC) (Entry (6)). This entry includes the following information:
1. The federal item name, and when required, a minimum description to identify the item.

2. P/Ns of bulk materials are referenced in this entry in the line entry to be manufactured or fabricated.

3. Hardness Critical Item (HCI). A support item that provides the equipment with special protection from electromagnetic pulse (EMP) damage during a nuclear attack.

4. Refer to Usable on Code details presented later in this data module under

SPECIAL INFORMATION.

5. Dot indentions indicate the relationship of the part (or parts) to its next higher assembly (NHA) in the tabular listing. The NHA for this part (or parts) is listed right before the part (or parts) that it is the NHA for. If the item is connected directly to (can be disassembled from) the item identified in the functional group code title for that specific tabular listing, it shall have one dot indentation. Otherwise, that item in the tabular list will not have a dot indention.

6. The statement END OF FIGURE appears just below the last item description in entry (6) for a given figure in both the repair parts list and special tools list work packages.

QTY (Entry (7)). The QTY (quantity per figure) entry indicates the quantity of the item used in the breakout shown on the illustration/figure, which is prepared for a functional group, sub functional group, or an assembly. A "V" appearing in this entry instead of a quantity indicates that the quantity is variable and quantity may change from application to application.

If you have cross-reference indexes include the information below in the PI introduction as applicable:

EXPLANATION OF CROSS-REFERENCE INDEXES DATA MODULES FORMAT AND ENTRY

1. National Stock Number (NSN) Index Data Module. NSNs in this index are listed in National Item Identification Number (NIIN) sequence.

STOCK NUMBER Entry. This entry lists the NSN in NIIN sequence. The NIIN consists of the last nine digits of the NSN. When using this entry to locate an item, ignore the first four digits of the NSN. However, the complete NSN should be used when ordering items by stock number.

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For example, if the NSN is 5385-01-574-1476, the NIIN is 01-574-1476.
FIG. Entry. This entry lists the number of the figure where the item is identified/located. The figures are in numerical order in the repair parts list and special tools list work packages.

ITEM Entry. The item number identifies the item associated with the figure listed in the adjacent FIG. entry. This item is also identified by the NSN listed on the same line.

2. Part Number (P/N) Index Data Module. Part numbers which are all numbers are listed first in ascending numeric sequence. Part numbers containing letters and numbers are listed in ascending alphanumeric sequence by part number after all the part numbers containing numbers only.

PART NUMBER Entry. Indicates the P/N assigned to the item.
FIG. Entry. This entry lists the number of the figure where the item is identified/located in the repair parts list and special tools list data modules.

ITEM Entry. The item number is the number assigned to the item as it appears in the figure referenced in the adjacent figure number entry.

Include 3, as applicable.
3. Reference Designator Index Data Module. Reference designators in this index are listed in ascending alphanumeric sequence (vertical arrangement of letter and number combination which places the first letter or digit of each group in order "A" through "Z," followed by the numbers "0" through "9" and each following letter or digit in like order).

REFERENCE DESIGNATOR Entry. Indicates the reference designator assigned to the item.

FIG. Entry. This entry lists the number of the figure where the item is identified/located in the repair parts list or special tools list data module.

ITEM Entry. The item number is the number assigned to the item as it appears in the figure referenced in the adjacent figure number entry.

SPECIAL INFORMATION
UOC. The UOC appears in the lower left corner of the Description Entry heading. Usable on codes are shown as "UOC: ..." in the Description Entry (justified left) on the first line under the applicable item/nomenclature. Uncoded items are applicable to all models. Identification of the UOCs used in the PI are:

Code	Used On
PAA	Model M114
PAB	Model M114A
PAC	Model M114B

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Include appropriate UOC content, as applicable.

Fabrication Instructions. Bulk materials required to manufacture items are listed in the bulk material functional group of this PI. Part numbers for bulk material are also referenced in the Description Entry of the line item entry for the item to be manufactured/fabricated. Detailed fabrication instructions for items source coded to be manufactured or fabricated are found in (*enter applicable TM number or data module number/title*).

Index Numbers. Items which have the word BULK in the figure entry will have an index number shown in the item number entry. This index number is a cross-reference between the NSN / P/N index data modules and the bulk material list in the repair parts list data module."

For a combined narrative-PI manual, associated publications shall not be included.
Associated Publications. The publication(s) listed below pertains to the (*enter item name*):
Publication Short Title"

The following paragraph shall appear only in the unit maintenance PI special instructions.
Illustrations List. The illustrations in this PI contain field authorized items. Illustrations published in (*enter applicable TM number for the higher maintenance level PI, e.g., for AMC, ASB, TASMG, etc.*) that contain field authorized items also appear in this PI. The tabular list in the repair parts list data module contains only those parts coded "O" in the third position of the SMR code; therefore there may be a break in the item number sequence.

HOW TO LOCATE REPAIR PARTS
1. When NSNs or P/Ns Are Not Known.
First. Using the table of contents, determine the assembly group to which the item belongs. This is necessary since figures are prepared for assembly groups and subassembly groups, and lists are divided into the same groups.
Second. Find the figure covering the functional group or the sub functional group to which the item belongs.
Third. Identify the item on the figure and note the number(s).
Fourth. Look in the repair parts list data modules for the figure and item numbers. The NSNs and part numbers are on the same line as the associated item numbers.
If there are NSN and part number indexes in your PI data enter the following in the introduction:
2. When NSN Is Known.
First. If you have the NSN, look in the STOCK NUMBER entry of the NSN index work package. The NSN is arranged in NIIN sequence. Note the figure and item number next to the NSN.

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Second. Turn to the figure and locate the item number. Verify that the item is the one you are looking for.

3. When P/N Is Known.
First. If you have the P/N and not the NSN, look in the PART NUMBER entry of the P/N index data module. Identify the figure and item number.
Second. Look up the item on the figure in the applicable repair parts list data module.

If you don't have NSN and part number indexes in your PI data enter the following in the introduction:
2. When NSN or part number is known.
First. Using the search function in the tool bar (binoculars), search for the NSN or part number.
Second. Locate the PI data entries for the NSN or part number in the search results to find further details for the NSN or part number in the PI data.

Include 4 only if the PI has a reference designator index data module.
4. When Reference Designator Is Known.
First. If you know the reference designator, look in the REFERENCE DESIGNATOR entry of the reference designator index data module. Note the figure and item number.
Second. Turn to the figure and locate the item number. Verify that the item is the one you are looking for.

ABBREVIATIONS
Abbreviation Explanation
Include all abbreviations used in the PI."

5.93.4.2 Project decisions.

5.93.4.2.1 Parts list illustration.

When specified by the acquiring activity, an indexed parts list illustration and legend shall be added to the end of the introduction. Complex weapon systems have numerous repair parts lists associated to the equipment and the illustration and legend assists in locating the repair parts information. The indexed parts list illustration shall provide an exploded view of the equipment with index numbers pointing to the major functional groups. The illustration shall have a legend that defines the item number, major functional group figure title and figure number.

5.93.5 Repair parts information.

Data Module Type: IPD Information Code: 941A

5.93.5.1 Army business rules.

5.93.5.1.1 General.

A parts list data module shall consist of one functional group code.

5.93.5.1.2 Scope.

The repair parts lists shall have a figure and a list of repair part items.

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5.93.5.1.3 Repair parts figure title.

When available, figure titles shall be taken from provisioning documentation. The parts list figure title, the functional group title and the applicable MAC title shall be the same. When there is no provisioning documentation, the acquiring activity or contractor shall develop a title. This title shall be used consistently throughout the publication.

5.93.5.1.4 List requirements.

Repair part item. Each repair part list shall include the following column requirements:

a. Item number column. Items shall be listed on the repair parts list (in the ITEM NO. column) by the same callout number shown on the associated figure. The items shall be listed in ascending alphanumeric sequence.
b. SMR code column. The SMR code column shall include SMR codes assigned to the applicable items. When developed as a multiple service publication, each service shall have identified the appropriate SMR code. When services share the same SMR code for an item, the SMR code shall be listed for each service.
c. NSN column. The NSN column shall include the NSN assigned to the applicable item.
d. CAGEC column. The applicable five-digit CAGEC number, as listed in Catalog Handbook H4/H8, shall appear in the CAGEC column.
e. Part number column. The part number is listed in the PART NUMBER column.
f. Description and UOC column. The DESCRIPTION AND USABLE ON CODE (UOC) column shall include the following information.

    (1) Functional group header. The functional group header shall precede the first repair part item in the description column. The header shall consist of the functional group number and title appearing on the top line(s). The next line(s) below shall include the figure number and the figure title.
    (2) Item name. The item name shall consist of the federal item name (taken from Federal Supply Cataloging Handbook H6) and, if necessary, a minimum description to further identify the item. When provisioning data is used, the description shall consist of the data from the provisioning document. If the item is a Hardness Critical Item, the symbol HCI shall precede the item name.
    (3) Indentions. The item name listed in the DESCRIPTION AND USABLE ON CODE (UOC) column shall be indented to show components of assemblies and next higher assemblies.
    (4) UOC. When an item has multi-configurations or multi-models use, the three-position alphanumeric UOC representing the applicable configuration in which the item is used shall be placed on the last line under the item description. The letters "UOC:" followed by the applicable UOC shall be indented. When an item is used on all configurations or when only one configuration is covered by the parts list, UOCs shall not be shown.

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(5) Serial number application. When part numbers of spare/repair items are not the same for all serial numbered equipment of the same model, a statement identifying the Usable Effective (USBL EFF) serial numbers shall be placed on the last line under the item description. The letters "USBL EFF" followed by the applicable serial numbers shall be indented. (e.g., USBL EFF SER NOS 1719-1941). When an item is used on all models or when only one configuration is covered by the parts list, serial number shall not be shown.

(6) Assembled items. Spare and repair parts that are part of a nonstocked assembled item (source coded "AO," "AF," "AH," or "AD") shall be assigned item numbers on illustrations and shall be listed in item number sequence on the repair parts list. These items/parts shall be listed immediately below the item to be assembled on the repair parts list. When a particular illustration does not show the parts breakdown of the nonstocked assembly, reference shall be made to the breakdown illustration in the parts list. Instructions, drawings, charts, and tables showing how to assemble assemblies source coded "A( )" shall not appear in the parts list, but shall appear in the narrative maintenance TM.

g. Manufactured items. All items source coded "MO," "MF," "MH," or "MD" shall have the statement in the DESCRIPTION AND USABLE ON CODE (UOC) column as follows: "MAKE FROM (*insert applicable bulk material or other replaceable item name, CAGEC, and part number*)." Material that is used to make items shall also be shown in a separate bulk items data module. Instructions, drawings, charts, and tables required to show how items are made shall not be contained in the parts list but shall appear in the narrative maintenance TM. This is normally specified in the illustrated list of manufactured items when it is specified by the acquiring activity.

h. Kits and kit repair parts. Kits and repair parts (source coded "KD," "KF," or "KB") shall conform to the format of either option 1 or option 2, as specified by the acquiring Activity. Only one option is to be used in a weapons systems parts list.

(1) Option 1.

(a) Option 1 (kits). Option 1 kits shall appear at the end of the associated parts list. As specified by the acquiring activity, the ITEM NO. column for kits shall be either left blank or list an alphabetical character(s). The QTY column for kits shall be a V (variable) when the exact quantity may vary.

(b) Option 1 (parts). Option 1 kit repair parts shall be listed with their applicable figure and appear in item number sequence. The statement "part of Kit P/N (*insert kit P/N*)" shall follow item name. Kit repair parts shall also be listed under the kit list at the end of the parts list. Parts of the kit list shall be indented and listed alphabetically by item name or in item number sequence immediately below the kit item name. The quantity (in parentheses), figure number, and item number shall follow the repair part item name.

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(2) Option 2.

(a) Option 2 (kits). Option 2 kits shall be listed in the kit parts list (IC 607C).
(b) Option 2 (parts). Option 2 kit repair parts shall appear in the parts list by item number as shown on the associated figure. They shall be listed in item number sequence. The statement "PART OF KIT P/N (*insert kit part number*)" shall follow the item name.

i. End of data module statement. The statement "End of [*insert data module title*]" shall appear below the last item described in the column for each figure of the tabular lists in the repair parts list and the special tools lists.

j. Quantity column. The number in the QTY column shall represent the number of times the item appears in the illustration/figure with the associated item number. When a definite quantity cannot be determined because the number of uses per equipment or the size/length of an item may vary, with each equipment, the letters "AR" (as required) shall be placed in the left position of the QTY column.

k. (MC) USMC Quantity per equipment column. The number in the USMC QTY Per Equip column shall represent the total number of times the part appears in all the repair parts lists.

5.93.5.1.5 Basic Issue Items (BII) (repair parts).

Repair parts for reparable BII that do not have separate operator TMs, but are authorized for the parts list, shall be listed in a functional group titled BASIC ISSUE ITEMS (REPAIR PARTS). Items listed in functional and sub functional groups shall be listed and identified with the same basic columnar data required for the end item repair parts. BII shall be supported by illustrations.

5.93.5.1.6 Expendable and durable items.

Expendable and durable items shall not be listed in the parts list. These items shall appear in the expendable and durable items list in the Support Information Chapter.

5.93.5.2 Project decisions.

5.93.5.2.1 Optional columns.

The project shall decide on the use of the following repair part list optional columns:

a. Unit of Measure. The unit of measure for the item may be included.
b. Unit of Issue. The unit of issue for the item may be included.
c. Reference Designator. The reference designator for the item may be included.
d. Next Higher Assembly. Information on the next higher assembly may be included.
e. Parts Breakdown Reference. A reference to parts breakdown for the item may be included.

5.93.6 Illustrations.

5.93.6.1 Army business rules.

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5.93.6.1.1 Parts list specific illustration requirements.

Additional parts list specific illustration requirements are described below:

a. Arrangement of illustrations. All illustrations prepared for spares, repair parts, special tools, special TMDE, and other special support equipment shall be arranged in figure number sequence. They shall precede their companion parts list (on the left-hand page preceding the parts list or at the top of the same page of the parts list). Illustrations shall not be duplicated to provide facing page illustrations for the second and subsequent pages of the parts list. Illustrations shall not be duplicated to show different models or configurations of an assembly when UOCs can be assigned to indicate differences in configurations.
b. Use of illustrations. Foldout and foldout-fold up illustrations shall not be used in parts lists. References to illustrations in other publications or to illustrations in the narrative portion of a combined maintenance publications with a parts list shall not be made. Landscape pages shall not be prepared except for parts lists supporting nuclear weapons (regulated by the Department of Energy/Defense Nuclear Agency). For clarity, multisheet illustrations may be used.
c. Identical parts/item numbers. Identical parts (same part number) appearing in a figure (illustration) having only one FGC shall have the same item number. If a figure has two or more FGCs/assemblies, only the identical parts with identical SMR codes within each FGC/assembly shall have the same item number.
d. Identical assemblies. When two or more identical assemblies (same part number) exist in different places, i.e., in the equipment, a breakdown of the parts shall be illustrated only once, i.e., the first time the assembly appears in the parts list. For subsequent times that the identical assembly appears, the assembly item name shall appear in the description and UOC column and be followed by the statement "SEE FIG ## FOR BREAKDOWN."

5.93.6.2 Project decisions.

None.

5.93.7 Repair parts for special tools.

Data Module Type: IPD Information Code: 607B

5.93.7.1 Army business rules.

5.93.7.1.1 General.

Repair parts for special tools list. The special tools repair parts list shall be prepared when all of the following conditions in a through c are met. The list shall follow the last repair parts list and shall precede the kit parts list and bulk items list.

a. The parts list identifies special tools in the special tools list.
b. The special tool has repair parts that may be replaced at any maintenance level covered in the publication.
c. The special tool does not have repair instructions and parts listed in another technical manual for the special tool.

5.93.7.1.2 Special tools repair parts items list.

The repair parts items list requirements shall be used except as specified below:

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5.93.7.1.3 Functional group header.

The functional group header shall precede the first special tools repair part item in the DESCRIPTION AND USABLE ON CODE (UOC) column. The functional group number and title shall be "SPECIAL TOOLS (REPAIR PARTS)" appearing on the top line(s). The next line(s) below shall be the figure number and the figure title.

5.93.7.2 Project decisions.

None.

5.93.8 Kit parts list.

Data Module Type: IPD Information Code: 607C

5.93.8.1 Army business rules.

5.93.8.1.1 General.

A kits parts list shall be prepared when kit parts are listed separately. The kit part list shall follow the last repair parts list or repair parts for special tools list, when provided, and shall precede the bulk items list, if provided. The list consists of one or more kits part item lists organized by functional group.

5.93.8.1.2 Kits part items list.

The kits part items list shall be listed alphanumerically by part number in the PART NUMBER column. The requirements defined for repair parts lists shall be used except as specified below:

a. Functional group header. The functional group header shall precede the first bulk item in the DESCRIPTION AND USABLE ON CODE (UOC) column. The functional group number and title shall be "REPAIR KITS" appearing on the top line(s). The next line(s) below shall be the figure number and the figure title.
b. Kit part item group. Parts in the kit group, in the DESCRIPTION AND USABLE ON CODE (UOC) column, shall be indented two positions and listed alphabetically by item name or in item number sequence under their kit name. Kit parts shall be listed by item names, the quantity (in parentheses), the figure number, and the item numbers that appear in the basic parts list.
c. Kits part item quantity. The QTY column entry for kits part shall contain "AR" (as required) when the exact quantity may vary.

5.93.8.2 Project decisions.

None.

5.93.9 Bulk items.

Data Module Type: IPD Information Code: 603B

5.93.9.1 Army business rules.

5.93.9.1.1 General.

A bulk items list shall be prepared whenever bulk items are required in the repair of any parts listed in a parts list, special tool list or repair kit. The data module shall not have an illustration.

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5.93.9.1.2 Bulk items list.

Items in the bulk items list shall be listed alphabetically by item name in the DESCRIPTION AND USABLE ON CODE (UOC) column. The requirements defined for repair parts lists shall be used except as specified below:

a. ITEM column. Numbers in the ITEM column of bulk material list apply to the FIG. BULK only and shall not be associated with item numbers (callouts appearing on the illustrations/figures).
b. Functional group header. The functional group header shall precede the first bulk item in the DESCRIPTION AND USABLE ON CODE (UOC) column. The functional group number and title shall be "BULK MATERIAL" appearing on the top line(s). The next line(s) below shall be the figure number and the figure title and titled "FIG. BULK."

5.93.9.2 Project decisions.

None.

5.93.10 Special tools list.

Data Module Type: IPD Information Code: 604B

5.93.10.1 Army business rules.

5.93.10.1.1 General.

A special tools list shall be prepared for special tools, special TMDE, and other special support equipment authorized for maintenance of the end item/assembly. All repair parts for special tools listed that have their own publication shall not be listed in the repair parts for special tools list.

5.93.10.1.2 Special tools list.

The special tools list requirements described for repair parts lists shall be used except as specified below:

a. Item number column. The ITEM NO. column shall be left blank.
b. Functional group header. The functional group header shall precede the first bulk item in the DESCRIPTION AND USABLE ON CODE (UOC) column. The functional group number and title shall be "SPECIAL TOOLS" appearing on the top line(s). The next line(s) below shall be the figure number and the figure title.
c. D-coded items. When a depot level parts list does not exist and items are maintained at depot level, they shall be identified with a "D" in the third position of the SMR code in the highest level parts list prepared.
d. Basis of Issue (BOI). The BOI shall be placed on the last line under the item description, in the DESCRIPTION AND USABLE ON CODE (UOC) column, for individual items, sets, or kits. The BOI shall indicate the quantity of the items, i.e., sets, or kits authorized to support a quantity of end items/assembly(s) or a specific military unit. For example, BOI: 1 auth for 1-12 equip or BOI: 1 per BN HQ when BN has SVC CO.
e. Quantity column. The QTY column shall be left blank.

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f. Components list. Components of special tool sets and kits, in the DESCRIPTION AND USABLE ON CODE (UOC) column, shall be listed in figure and item number sequence. The component shall be indented two positions and listed by item name, the figure number, and the item numbers. Quantities of components shall be included in BOI statement.

5.93.10.2 Project decisions.

None.

5.93.11 Cross-reference indices.

5.93.11.1 Army business rules.

5.93.11.1.1 General.

For Army publications a combined cross reference index shall not be used. For IETPs, cross reference indexes are optional and search engines may be used in lieu of the indexes. For page-based/paper manuals, NSN and part number cross-reference indexes shall be included.

5.93.11.1.2 Preparation.

If required, cross reference table shall be auto generated as a descriptive data module at time of authoring.

5.93.11.1.3 Bulk figure reference.

When entries in either the NSN or part number index reference bulk material, the word "BULK" shall appear in the FIG. column. The numbers in the ITEM No. column shall refer to the item number list in the bulk figure located in the bulk functional group list and shall not refer to item numbers on an illustration.

5.93.11.1.4 Sets and kits.

Part numbers for sets/kits shall be cross-referenced to NSN, figure, and item number for the set/kit. When Option 1 is selected, the ITEM column shall either be left blank or list an alphabetical character (e.g., "K" for KIT, "S" for SET, etc.). When Option 2 is selected, the FIG. column shall list the word KITS or SETS, as applicable.

5.93.11.1.5 National Stock Number (NSN) index.

Data Module Type: Descriptive Information Code: 942F

The index shall be in ascending numeric sequence by the NIIN (the last nine digits of the NSN). Each line entry shall list the complete NSN for each NSN assigned to applicable repair part or special tool items figure number and item number. The NSN line entry shall identify the first figure number and item number for which the stock number is applicable. The NSN shall not be repeated on the same page of the index for each additional figure number and item number identified by that NSN. When NSN references carry over to another page, the carried over NSN entry shall appear at the top of the list.

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5.93.11.1.6 Part number index.

Data Module Type: Descriptive Information Code: 942B

The index shall be in ascending alphanumeric sequence by part number. The part numbers that consist of all numbers shall be in numeric sequence preceding those with both letters and numbers. Each line entry shall list each part numbers assigned to applicable repair part or special tool items figure number and item number. The part number line entry shall identify the first figure number and item number for which the part number is applicable. The part number shall not be repeated on the same page of the index for each additional figure number and item number identified by that part number. When part number references carry over to another page, the carried over part number entry shall appear at the top of the list.

5.93.11.1.7 Reference designator index.

Data Module Type: Descriptive Information Code: 942C

As applicable, a reference designator index may be prepared. The index shall be in alphanumeric sequence by reference designators. Each line entry shall list each reference designators assigned to applicable repair part or special tool items figure number and item number. The reference designator line entry shall identify the first figure number and item number for which the reference designators is applicable. The reference designators shall not be repeated on the same page of the index for each additional figure number and item number identified by that reference designator. When reference designator references carry over to another page, the carried over reference designator entry shall appear at the top of the list.

5.93.11.2 Project decisions.

5.93.11.2.1 Cross reference index.

Data Module Type: Descriptive Information Code: 942D

The project may decide to prepare a single Illustrated Parts Data Publication (IPDP) cross reference table with the IPDP in lieu of separate NSN, part number, and reference designator indices.

5.93.12 Components of End Item (COEI) list.

Data Module Type: Descriptive Information Code: 105D

5.93.12.1 Army business rules.

5.93.12.1.1 General.

The COEI list shall be prepared as an inventory for the equipment to ensure safe and efficient operation. The format of the COEI shall be based on the number of items and usability. When there are only a few items, the illustrations shall be placed above the tabular listing (Method A). When there are numerous items, the illustrations may be included within the tabular listing for better usability (Method B). For Marine Corps only manuals, Supply System Responsibility (SSR) shall be used in lieu of COEI terminology throughout the COEI information.

5.93.12.1.2 Components of End Item (COEI) introduction.

The COEI list data module shall include the following verbatim text:

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"COMPONENTS OF END ITEM (COEI) LIST

INTRODUCTION

Scope

The COEI for the (*insert the short end item name*) helps inventory items for safe and efficient operation of the equipment.

General

Components of End Item (COEI). This list is for information purposes only and is not authority to requisition replacements. These items are part of the (*insert name of end item*). As part of the end item, these items shall be with the end item whenever it is issued or transferred between property accounts. Items of COEI are removed and separately packaged for transportation or shipment only when necessary. Illustrations are furnished to help you find and identify the items.

Explanation of Columns in the COEI List "

Select method A text.

"Column (1) Illus Number. Gives you the number of the item illustrated.

Column (2) National Stock Number (NSN). Identifies the stock number of the item to be used for requisitioning purposes.

Column (3) Description, Part Number/(CAGEC). Identifies the Federal item name (in all capital letters) followed by a minimum description when needed. The stowage location of COEI is also included in this column. The last line below the description is the part number and the Commercial and Government Entity Code (CAGEC) (in parentheses).

Column (4) Usable On Code. When applicable, gives you a code if the item you need is not the same for different models of equipment. (Add the following only as applicable. Replace Xs with appropriate codes and model numbers.) These codes are identified below:

Code	Used on
XXX	Model XXX
XXX	Model XXXX
XXX	Model XXXXX

Column (5) U/I. Unit of Issue (U/I) indicates the physical measurement or count of the item as issued per the National Stock Number shown in column (2).

Column (6) Qty Rqr. Indicates the quantity required."

OR

Select method B text.

"Column (1) Item Number. Gives you the reference number of the item listed.

Column (2) National Stock Number (NSN) and Illustration. Identifies the stock number of the item to be used for requisitioning purposes and provides an illustration of the item.

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Column (3) Description, Part Number/(CAGEC). Identifies the Federal item name (in all capital letters) followed by a minimum description when needed. The stowage location of COEI is also included in this column. The last line below the description is the part number and the Commercial and Government Entity Code (CAGEC) (in parentheses).

Column (4) Usable On Code. When applicable, gives you a code if the item you need is not the same for different models of equipment. (Add the following only as applicable. Replace Xs with appropriate codes and model numbers.) These codes are identified below:

Code	Used on
XXX	Model XXX
XXX	Model XXXX
XXX	Model XXXXX

Column (5) U/I. Unit of Issue (U/I) indicates the physical measurement or count of the item as issued per the National Stock Number shown in column (2).

Column (6) Qty Rqr. Indicates the quantity required."

5.93.12.1.3 Components of End Item (COEI) or SSR list.

This list shall be prepared as an illustrated list of components of the end item (spare/repair parts that are removed from the major end item and separately packaged or stowed for transportation or movement; includes on-board spares). The illustrations shall be placed above the list (Method A) or within the list (Method B). When using method A for larger listings, the listing may broken into multiple smaller tables to aid usability. The COEI list shall include the following information and basic content applicable to the specific equipment. The description of each item shall consist of the approved Federal item name, followed by a short description when needed. Items shall be listed alphabetically. The part number shall be located below the item. The CAGEC shall follow the part number and in parentheses. The stowage location of COEI shall also be included with the description. When more than one model or configuration is applicable and Usable On Codes (UOC) are assigned, the UOC shall appear in a separate entry adjacent to the description entry. When on-board spares apply, there shall be a break in the text of the list and a new heading ON-BOARD SPARES shall be used. A list of the on-board spares shall appear in the same format as required for the basic COEI list.

5.93.12.1.4 Method B illustration.

The element **<symbol>** shall be used to include illustrations when using Method B.

5.93.12.2 Project decisions.

5.93.12.2.1 Components of End Item (COEI) method.

The project shall determine use of Method A or Method B for presenting COEI data.

5.93.13 Basic Issue Items (BII) list.

Data Module Type: Descriptive Information Code: 105C

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5.93.13.1 Army business rules.

5.93.13.1.1 General.

BII lists shall be prepared as an inventory for the equipment to ensure safe and efficient operation. The format of the BII shall be based on the number of items and usability. When there are only a few items, the illustrations shall be placed above the tabular listing (Method A). When using method A for larger listings, the listing may broken into multiple smaller tables to aid usability. When there are numerous items, the illustrations may be included within the tabular listing for better usability (Method B). For Marine Corps only manuals, BII shall not be included. Basic Issue Items (BII) introduction.

5.93.13.1.2 Basic issue Items Introduction.

The BII lists data module shall include the following verbatim text:

"BASIC ISSUE ITEMS (BII) LIST

INTRODUCTION

Scope

The BII for the (*insert the short end item name*) helps inventory items for safe and efficient operation of the equipment.

General

Basic Issue Items (BII). These essential items are required to place the (*insert name of end item*) in operation, operate it, and to do emergency repairs. Although shipped separately packaged, BII shall be with the (*insert name of end item*) during operation and when it is transferred between property accounts. Listing these items is your authority to request/requisition them for replacement based on authorization of the end item by the TOE/MTOE. Illustrations are furnished to help you find and identify the items.

Explanation of Columns in the BII List"

Select method A text.

"Column (1) Illus Number. Gives you the number of the item illustrated.

Column (2) National Stock Number (NSN). Identifies the stock number of the item to be used for requisitioning purposes.

Column (3) Description, Part Number/(CAGEC). Identifies the Federal item name (in all capital letters) followed by a minimum description when needed. The stowage location of BII is also included in this column. The last line below the description is the part number and the Commercial and Government Entity Code (CAGEC) (in parentheses).

Column (4) Usable On Code. When applicable, gives you a code if the item you need is not the same for different models of equipment. (Add the following only as applicable. Replace Xs with appropriate codes and model numbers.) These codes are identified below:

Code	Used on
XXX	Model XXX
XXX	Model XXXX

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XXX Model XXXXX

Column (5) U/I. Unit of Issue (U/I) indicates the physical measurement or count of the item as issued per the National Stock Number shown in column (2).

Column (6) Qty Rqr. Indicates the quantity required."

OR

Select method B text.

"Column (1) Item Number. Gives you the reference number of the item listed.

Column (2) National Stock Number (NSN) and Illustration. Identifies the stock number of the item to be used for requisitioning purposes and provides an illustration of the item.

Column (3) Description, Part Number/(CAGEC). Identifies the Federal item name (in all capital letters) followed by a minimum description when needed. The stowage location of BII is also included in this column. The last line below the description is the part number and the Commercial and Government Entity Code (CAGEC) (in parentheses).

Column (4) Usable On Code. When applicable, gives you a code if the item you need is not the same for different models of equipment. (Add the following only as applicable. Replace Xs with appropriate codes and model numbers.) These codes are identified below:

Code	Used on
XXX	Model XXX
XXX	Model XXXX
XXX	Model XXXXX

Column (5) U/I. Unit of Issue (U/I) indicates the physical measurement or count of the item as issued per the National Stock Number shown in column (2).

Column (6) Qty Rqr. Indicates the quantity required."

5.93.13.1.3 Basic Issue Items (BII) list.

This tabular list shall be prepared in the same format and include similar content (tailored to the applicable BII) as required for the COEI list. The stowage location of BII shall also be included with the description entry

5.93.13.2 Project decisions.

5.93.13.2.1 Basic Issue Items (BII) method.

The project shall determine use of Method A or Method B for presenting BII data.

5.93.14 Additional Authorization List (AAL) **(operator only)**.

Data Module Type: Descriptive Information Code: 104C

5.93.14.1 Army business rules.

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5.93.14.1.1 General.

The AAL data module shall list all AAL items (i.e., items not issued with the end item; not listed on the end item engineering drawing as part of the end item, NSN configuration; not required to be turned in with the end item; separately authorized by MTOE, Tables of Distribution and Allowances (TDA), Common Table of Allowance (CTA), or Joint Table of Allowances (JTA); and provided for information only). For Marine Corps only manuals, Using Unit Responsibility Items (UURI) List shall be used in lieu of AAL terminology throughout the AAL list information.

5.93.14.1.2 Introduction.

The following introduction shall be prepared and included verbatim in the AAL data module:

"ADDITIONAL AUTHORIZATION LIST (AAL)

INTRODUCTION

Scope

This lists additional items you are authorized for the support of the (*insert item name*).

General

This list identifies items that do not have to accompany the (*insert item name*) and that do not have to be turned in with it. These items are all authorized to you by CTA, MTOE, TDA, or JTA.

Explanation of Columns in the AAL

Column (1) National Stock Number (NSN). Identifies the stock number of the item to be used for requisitioning purposes.

Column (2) Description, Part Number/(CAGEC). Identifies the Federal item name (in all capital letters) followed by a minimum description when needed. The last line below the description is the part number and the Commercial and Government Entity Code (CAGEC) (in parentheses).

Column (3) Usable On Code. When applicable, gives you a code if the item you need is not the same for different models of equipment. (Add the following only as applicable. Replace Xs with appropriate codes and model numbers.) These codes are identified below:

Code	Used on
XXX	Model XXX
XXX	Model XXXX
XXX	Model XXXXX

Column (4) U/I. Unit of Issue (U/I) indicates the physical measurement or count of the item as issued per the National Stock Number shown in column (1).

Column (5) Qty Recm. Indicates the quantity recommended."

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5.93.14.1.3 Additional Authorization List (AAL).

A tabular list of all additional authorized items shall be prepared. The entries and subsequent information for this list shall be the same as the COEI and BII lists except the ILLUS NUMBER entry required for the COEI and BII lists shall not apply since there are no illustrations used, and the QTY entry shall be QTY RECM (quantity recommended). The items shall be listed alphabetically.

5.93.14.2 Project decisions.

None.

5.93.14A (MC) Collateral Material (CM) Data Module.

Data Module Type: Descriptive Information Code: 105A

5.93.14A.1 (MC) Army Business Rules.

5.93.14A.1.1 (MC) General.

This data module shall be prepared for Marine Corps only manuals. This data module contains a list of items furnished with the end items upon initial issue and normally remain with the using unit during redistribution/rebuild or other change of custody of the end item unless otherwise directed by MARCORLOGCOM. These items are required to be maintained on hand, on order, or identified as an unfunded deficiency unless otherwise specifically directed. CM will be maintained and replaced by the using unit, except for materiel with 9999 series NSNs. Using units are not authorized to requisition items using the assigned 9999 series NSNs. The 9999 series NSN shown under the heading of "Collateral Materiel" is for control within the distribution system only, and is not authorized for requisitioning purposes. Items under this category will be requisitioned by individual NSN/NIIN, and/or part number and CAGE) Codes.

5.93.14A.1.2 (MC) Introduction. The following introduction (text within the quotation marks) shall be prepared and included verbatim:

"**COLLATERAL MATERIAL(CM) ITEMS LIST INTRODUCTION**
Scope
This data module lists collateral material items you are authorized for the support of the (*enter item name*)
General
This list identifies items that are to be requisitioned by the using unit except those with 9999 NSN.
Explanation of Entries in the CM
National Stock Number (NSN). Identifies the stock number of the item to be used for requisitioning purposes.
Description, Part Number/Commercial and Government Entity Code (CAGEC). Identifies the Federal item name (in all capital letters) followed by a minimum description when needed. The last line below the description is the part number and the CAGEC (in parentheses).

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Usable On Code. When applicable, gives you a code if the item you need is not the same for different models of equipment. (*Add the following only as applicable. Replace Xs with appropriate codes and model numbers.*) These codes are identified below:

Code	**Used on**
XXX	*Model XXX*
XXX	*Model XXXX*
XXX	*Model XXXXX*

Add if applicable: Model XXX uses CM items (insert item numbers), Model XXXX uses CM items(insert item numbers), and Model XXXXX use CM items (insert item numbers.

U/I. Unit of Issue (U/I) indicates the physical measurement or count of the item as issued per the National Stock Number.
Qty Recm. Indicates the quantity recommended."

5.93.14A.1.3 (MC) CM list.

A tabular list of all CM items shall be prepared. The entries and subsequent information for this list shall be the same as the COEI/BII/SSR lists except the ILLUS NUMBER entry required for the COEI/BII/SSR lists shall not apply since no illustrations are used, and the QTY entry shall be QTY RECM (quantity recommended). The items shall be listed alphabetically.

5.93.14A.2 (MC) Project Decisions.

None.

5.93.15 Expendable and durable items list.

Data Module Type: Descriptive Information Code: 070D

5.93.15.1 Army business rules.

5.93.15.1.1 General.

The expendable and durable items list data module shall be prepared to provide the user a list of all expendable and durable items called out in the TM/IETP text which are necessary to operate and/or maintain the equipment.

5.93.15.1.2 Introduction.

The following introduction shall be prepared and included verbatim in the expendable and durable items data module:

"EXPENDABLE AND DURABLE ITEMS LIST

INTRODUCTION

Scope

This lists expendable and durable items that you will need to operate and maintain the (*insert equipment/end item name*). This list is for information only and is not authority to requisition the listed items. These items are authorized to you by CTA 50-970, Expendable/Durable Items (Except Medical, Class V Repair Parts, and Heraldic Items),

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CTA 50-909, Field and Garrison Furnishings and Equipment or CTA 8-100, Army Medical Department Expendable/Durable Items.

Explanation of Columns in the Expendable/Durable Items List

Item No. This number is assigned to the entry in the list and is referenced in the narrative instructions to identify the item.

Level. This entry identifies the lowest level of maintenance that requires the listed item (include as applicable: C = Operator/Crew, O = AMC, F = Maintainer or ASB, H = Below Depot or TASMG, D = Depot).

National Stock Number (NSN). This is the NSN assigned to the item which you can use to requisition it.

Item Name, Description, Part Number/(CAGE). This column provides the other information you need to identify the item. The last line below the description is the part number and the Commercial and Government Entity Code (CAGE) (in parentheses).

U/I. Unit of Issue (U/I) code shows the physical measurement or count of an item, such as gallon, dozen, gross, etc."

5.93.15.1.3 Scope.

The Expendable and durable items list shall be prepared and include the following information:

a. Item number
b. Lowest maintenance level
c. NSN
d. Item name or nomenclature
e. If applicable a description
f. Part number
g. CAGEC
h. U/I

5.93.15.1.4 No illustrations.

No illustrations shall be prepared for these items. Items appearing in the tabular list shall appear in alphabetical sequence by item name. Items to be listed shall be those approved by the acquiring activity.

5.93.15.2 Project decisions.

None.

5.93.16 Mandatory replacement parts **(Field/Aviation Maintenance Company (AMC) level or above only).**

Data Module Type: Descriptive Information Code: 075D

5.93.16.1 Army business rules.

5.93.16.1.1 General.

The mandatory replacement parts (MRP) data module shall be included. If there are no MRPs, the following statement shall be included in the MRP data module:

"No mandatory replacement parts are required for the maintenance of (*insert equipment name*)."

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5.93.16.1.2 Scope.

The MRPs data module shall be prepared and shall list all mandatory replacement parts referenced in the task preliminary requirements and procedures including those for PMCS. **For DMWRs/NMWRs**, a mandatory replacement parts list (consisting of all items that shall be replaced during the repair and overhaul of the equipment, whether or not they have been disturbed) shall be developed. When an item or component is not disassembled based on PreShop Analysis (PSA), the item will not be disassembled for the sole purpose to add a mandatory part. All items that shall be replaced during overhaul or repair procedures (based on usage intervals such as miles, time, or rounds fired, or replaced on a Time Between Overhaul (TBO) interval) shall be included in the parts list table. A reference shall be made to the TM/IETP that covers the equipment.

5.93.16.1.3 Introduction.

Mandatory replacement parts data module shall include an introduction.

5.93.16.1.4 Mandatory replacement parts.

This data module shall include a tabular list of mandatory replacement parts. Mandatory replacement parts shall be listed (standard column headings in quotes) by:

a. item number "Item No."
b. part number and CAGEC "Part Number/(CAGEC)"
c. NSN "National Stock Number (NSN)"
d. nomenclature "Nomenclature"
e. quantity "Qty."

Items shall be listed in alphanumeric order by part number

5.93.16.2 Project decisions.

5.93.16.2.1 Mandatory replacement parts format.

The project shall determine if mandatory replacement parts shall be prepared as tables or if procedural step writing style will indicate the needed information.

5.93.17 Critical Safety Items (CSIs).

Data Module Type: Descriptive Information Code: 075E

5.93.17.1 Army business rules.

5.93.17.1.1 General.

When specified by the acquiring activity, the CSI data module shall be developed.

5.93.17.1.2 Critical Safety Items (CSIs).

As applicable, the CSI data module shall include a tabular listing provided by the acquiring activity. Each CSI and associated characteristic(s) shall be clearly identified within overhaul/repair procedures. The location of the critical safety procedures or processes within the depot maintenance information set shall be referenced.

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5.93.17.1.3 Critical Safety Items (CSIs).

A CSI data module shall be prepared on any aviation system that contains a CSI. All CSIs shall be listed by their nomenclature, part number, CAGEC, and critical characteristic.

5.93.17.2 Project decisions.

None.

5.93.18 Hand Receipt (HR) technical manuals.

5.93.18.1 Army business rules.

5.93.18.1.1 General.

Hand receipt technical data shall be prepared using the data module types and info codes specified in the corresponding content selection matrix in A.5.

Hand receipt data shall consist of the following content.

5.93.18.1.2 Section I. Introduction.

Data Module Type: Descriptive Information Code: 018A

TM hand receipt Section I, Introduction, shall consist, as a minimum, of the following paragraphs:

a. SCOPE - describes the scope and purpose of the HR.
b. GENERAL - explains the overprinted DA Form 2062 and its purpose; local reproduction authorization; and provides an address for requisitioning additional copies of HRs.
c. EXPLANATION OF BLOCKS AND COLUMNS (DA FORM 2062) includes explanations of all applicable codes used on the DA Form 2062 (e.g., controlled inventory item code (formerly SEC) and Accounting Requirements Code (ARC)).
d. AUTHORIZATION DOCUMENTS - provides the authorization documents for COEI, BII, and AAL.

Additional paragraphs addressing other introductory information may be added as appropriate.

5.93.18.1.3 Section II, Hand receipt.

Data Module Type: Descriptive Information Code: 023D

The hand receipt DA Forms 2062 shall consist of COEI, BII, and AAL contents extracted from the applicable validated and verified operator's manual.

5.93.18.1.3.1 Overprinted DA Form 2062.

TM hand receipt publications shall include overprinted DA Forms 2062 for line item entry for system/end item and the contents of the applicable COEI, BII, and AAL. The TM hand receipt COEI, BII, and AAL title headers and listings should be in the same sequence as used in the related operator technical manual (i.e., (1) system/end item line item entry; (2) COEI; (3) BII; and (4) AAL). Content guidance for TM hand receipts is detailed in the following paragraphs:

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a. The related TM number and date of publication, end item stock number, and the end item description and quantity should be shown in the applicable blocks in the heading of DA Form 2062. The line item entry for the end item and contents of COEI, BII and AAL lists, with applicable headers, should comprise one DA Form 2062 (front side with continuation sheet(s)).
b. The continuation sheet(s) shall contain the TM number and short end item title placed at the top left (outside the margin of the DA Form 2062). When COEI, BII, and/or AAL listings require a continuation sheet, the first line of the description column should include the applicable title (i.e., COEI, BII, or AAL) followed by a dash and the word "Continued").
c. Sufficient space (8 lines minimum) should be left at the end of a listing for signature of recipient of COEI, BII, and AAL items. If a list of components extends too far on the page to allow for signature in the balance columns, add a blank continuation sheet.
d. When a title header (e.g., COEI, BII, or AAL) has an applicable listing in the operator technical manual, the TM hand receipt should consist of the title header followed by the line item entry for NSN; brief item description (which shall include CAGEC and part number (P/N), in that order); the accounting requirements code; the physical security/pilferage code; unit of issue information; and quantity authorized.
e. When a title header (e.g., COEI, BII, or AAL) has no applicable listing in the operator technical manual, the title header should appear on the TM hand receipt with the line entry "NOT APPLICABLE."

5.93.18.1.3.2 Current as of date.

The statement "Current as of" should be shown at the bottom of each DA Form 2062. The cited date should be the publication date of the current operator's manual/change from which the TM hand receipt data was extracted.

5.93.18.2 Project decisions.

5.93.18.2.1 Hand receipt data as part of a larger manual.

The project may decide to produce hand receipt data as a stand-alone manual or as part of a larger manual or IETP.

5.94 S1000D Chapter 5.2.1.6 – Common information sets – Maintenance planning information.

5.94.1 Maintenance Allocation Chart (MAC) introduction (**For non-aviation**).

Data Module Type: Descriptive Information Code: 018D

5.94.1.1 Army business rules.

5.94.1.1.1 General.

An introduction for non-aviation Army MAC shall be prepared using a single descriptive data module. It shall include the following text verbatim:

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"**INTRODUCTION**

The Army Maintenance System MAC

This introduction provides a general explanation of the maintenance classes/levels, functions, and other information contained in the MAC.

The MAC (immediately following this introduction) designates overall authority and responsibility for the performance of all maintenance tasks on the identified end item or component. The application of the maintenance tasks to the end item or component shall be consistent with the capacities and capabilities of the designated maintenance levels, which are shown in the MAC in column (4). Column (4) is divided into two secondary columns. These columns indicate the maintenance levels/classes of ‘Field’ and ‘Sustainment’. Each maintenance level column is further divided into two sub-columns. These sub-columns identify the maintenance classes and are as follows:

1. Field level maintenance classes:
    a. Crew (operator) maintenance. This is the responsibility of a using organization to perform maintenance on its assigned equipment. It normally consists of inspecting, servicing, lubricating, adjusting, and replacing parts, minor assemblies, and subassemblies. Items with a "C" ("O" for joint service reporting) in the third position of the Source, Maintenance, and Recoverability (SMR) code may be replaced at the crew(operator) class. A code of "C" ("O" for joint service) in the fourth position of the SMR code indicates complete repair is authorized at the crew (operator) class.
    b. Maintainer maintenance. This is maintenance accomplished on a component, accessory, assembly, subassembly, plug-in unit, or other portion by field level units. This maintenance is performed either on the system or after it is removed. An "F" in the third position of the SMR code indicates replacement of assemblies, subassemblies, or other components is authorized at this level. An "F" in the fourth position of the SMR code indicates complete repair of the identified item is allowed at the Maintainer class. Items repaired at this level are normally returned to the user after maintenance is performed.
2. Sustainment level maintenance classes:
    a. Below depot sustainment. This is maintenance accomplished on a component, accessory, assembly, subassembly, plug-in unit, or other portion either on the system or after it is removed. The item subject to maintenance has normally been forwarded to a maintenance facility away from the field level supporting units. An "H" in the third position of the SMR code indicates replacement of assemblies, subassemblies, or other components is authorized at this class. An "H" appearing in the fourth position of the SMR code indicates complete repair is possible at this class. Items are normally returned to the supply system after maintenance is performed at this class.

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b. Depot. This is maintenance accomplished on a component, accessory, assembly, subassembly, plug-in unit, or other portion either on the system or after it is removed. Assets to be repaired at this class are normally returned to an Army Depot or authorized contractor facility. The replace function for this class of maintenance is indicated by the letter "D" or "K" appearing in the third position of the SMR code. A "D" or "K" appearing in the fourth position of the SMR code indicates complete repair is possible at the depot sustainment maintenance level. Items are returned to the supply system after maintenance is performed at this class.

The tools and test equipment requirements table (immediately following the MAC) lists the tools and test equipment (both special tools and common tool sets) required for each maintenance task as referenced from the MAC.

The remarks table (immediately following the tools and test equipment requirements) contains supplemental instructions and explanatory notes for a particular maintenance task.

Maintenance functions (tasks)

Maintenance functions are limited to and defined as follows:

1. Inspect. Step-by-step instructions determine the serviceability of an item by comparing its physical, mechanical, and/or electrical characteristics with established standards through examination (e.g., by sight, sound, or feel).
2. Test. Step-by-step instructions to verify serviceability by measuring the mechanical, pneumatic, hydraulic, or electrical characteristics of an item and comparing those characteristics with prescribed standards, e.g., load testing of lift devices or hydrostatic testing of pressure hoses. For software, it is step-by-step instructions to verify usability/operability/functionality of the software.
3. Service. Step-by-step instructions to be performed periodically to keep an item in proper operating condition such as replenishing fuel, lubricants, chemical fluids, or gases.
4. Adjust. Step-by-step instructions to maintain or regulate, within prescribed limits, by bringing into proper position, or by setting the operating characteristics to specified parameters.
5. Align. Step-by-step instructions to adjust specified variable elements of an item to bring about optimum or desired performance.
6. Calibrate. Step-by-step instructions to determine and cause corrections to be made or to be adjusted on instruments of test, measuring, and diagnostic equipment used in precision measurement. It consists of comparisons of two instruments, one of which is a certified standard of known accuracy, to detect and adjust any discrepancy in the accuracy of the instrument being compared.
7. Remove. Step-by-step instructions for taking a sub-component off an asset to facilitate other maintenance on a different component or on the same component (except replace or repair). For software, it is step-by-step instructions for uninstalling/removing the software from a workstation or other viewing hardware.

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8. Install. Step-by-step instructions for placing, positioning, or otherwise locating a component to make it part of a higher level end item. The install task is authorized by the LPD/MAC and the assigned maintenance level is shown as the third position in the SMR code. For software, it is step-by-step instructions putting the software on a workstation or other viewing hardware.
9. Replace. Step-by-step instructions for taking off a serviceable component and putting a serviceable one in its place. The replace task is authorized by the LPD/MAC and the assigned maintenance level is shown as the third position code of the SMR code.
10. Repair. Step-by-step instructions for restoring an item or software to a completely serviceable or fully mission capable status. The repair task is authorized by the LPD/MAC and the assigned maintenance level is shown as the fourth position code of the SMR code. The following definitions are applicable to the "repair" maintenance task: welding, grinding, riveting, straightening, facing, machining, and/or resurfacing.
11. Paint. Step-by-step instructions to prepare and apply coats of paint. When used with munitions, the paint is applied so the ammunition can be identified and protected.
12. Overhaul. Step-by-step instructions to restore an item to a completely serviceable/operational condition as required by maintenance standards in the appropriate technical publications. Overhaul is normally the highest degree of maintenance performed by the Army. Overhaul does not normally return an item to a like new condition.
13. Rebuild. Step-by-step instructions required for the restoration of unserviceable equipment to a like new condition in accordance with original manufacturing standards. Rebuild is the highest degree of material maintenance applied to Army equipment. The rebuild operation includes the act of returning to zero those age measurements (e.g., hours/miles) considered in classifying Army equipment/components.
14. Lubricate. Step-by-step instructions for applying a material (e.g., oil or grease) to reduce friction and allow a component to operate in a more efficient manner.
15. Mark. Step-by-step instructions for restoring obliterated identification on an asset.
16. Pack. Step-by-step instructions to place an item into a container for either storage or shipment after service and other maintenance operations have been completed.
17. Unpack. Step-by-step instructions for removing an asset from a storage or shipping container in preparation to perform further maintenance (e.g., repair or install).
18. Preserve. Step-by-step instructions for treating systems and equipment whether installed or stored, to ensure a serviceable condition.

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19. Prepare for use. Step-by-step instructions required to make an asset ready for other maintenance (e.g., remove preservatives, lubricate, etc.).
20. Assemble. Step-by-step instructions to join the component pieces of an asset together to make a complete serviceable asset.
21. Disassemble. Step-by-step instructions to break down (take apart) a spare/functional group coded item to the level of its least component, that is assigned an SMR code for the level of maintenance under consideration (i.e., identified as maintenance significant).
22. Clean. Step-by-step instructions on how to remove dirt, corrosion or other contaminants from equipment. Refer to appropriate painting, lubrication, and preservation methods to restore original corrosion prevention and control methods when removed as a result of cleaning and/or when using cleaning to remove corrosion from the item.
23. Non-destructive inspection. Step-by-step instructions on preparation and accomplishment of inspections which do not destroy or damage the equipment.
24. Radio interference suppression. Step-by-step instructions to ensure installed equipment, either communication or other electronics, does not interfere with installed communication equipment.
25. Place in service. Step-by-step instructions required to place an item into service that are not covered in the service upon receipt data module.
26. Towing. Step-by-step instructions to connect one vehicle to another for the purpose of having one vehicle moved through the motive power of the other vehicle.
27. Jacking. Step-by-step instructions to mechanically raise or lift a vehicle to facilitate maintenance on the vehicle.
28. Parking. Step-by-step instructions to safely place a vehicle in a lot, ramp area or other designated location.
29. Mooring. Step-by-step instructions to secure a vehicle by chains, ropes or other means to protect the vehicle from environmental conditions or secure for transportation.
30. Covering. Step-by-step instructions to place a protective wrapping over a vehicle to protect it from environmental conditions or to hide (e.g., camouflage) it.
31. Hoisting. Step-by-step instructions to allow a vehicle to be raised by cables or ropes through attaching points.
32. Sling loading. Step-by-step instructions to place a sling around a vehicle to allow it to be raised.

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33. External power. Step-by-step instructions on how to apply electrical power from any authorized power source (e.g., external generator or facility power).

34. Preparation for storage. Step-by-step instructions for preparing the equipment for placement into administrative storage, short-term storage, and/or long-term storage.

35. Preparation for shipment. Step-by-step instructions for preparing the equipment to be shipped or transported.

36. Transport. Step-by-step instructions and guidance for transporting/shipping the equipment.

37. Arm. Step-by-step instructions on activating munitions prior to use.

38. Load. Step-by-step instructions for one of three tasks:

    a. For transportation, the act of placing assets onto a transportation medium (e.g., pallet, truck, container).

    b. For weapons/weapons systems, the act of placing munitions into the weapon/weapons system.

39. Unload. Step-by-step instructions for one of three tasks:

    a. For transportation, the act of removing assets from a transportation medium (e.g., pallet, truck, container).

    b. For weapons/weapons systems, the act of removing munitions from the weapon/weapons system.

40. Install peripheral device. Step-by-step instructions for installing peripheral devices such as printers, scanners, modems, etc.

41. Uninstall peripheral device. Step-by-step instructions for uninstalling peripheral devices such as printers, scanners, modems, etc.

42. Upgrade/patch. Step-by-step instructions for performing an upgrade to software or installing a patch to software.

43. Configure. Step-by-step instructions for configuring software for different uses/purposes and/or different users.

44. Debug. Step-by-step instructions for debugging software/correcting errors in the software.

Explanation of Columns in the MAC

Column (1) Group Number. Column (1) lists Functional Group Code (FGC) numbers, the purpose of which is to identify maintenance significant components, assemblies, subassemblies, and modules with the Next Higher Assembly (NHA).

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Column (2) Component/Assembly. Column (2) contains the item names of components, assemblies, subassemblies, and modules for which maintenance is authorized.

Column (3) Maintenance task. Column (3) lists the functions to be performed on the item listed in column (2). (For a detailed explanation of these functions, refer to "Maintenance tasks" outlined previously).

Column (4) Maintenance Level. Column (4) specifies each level/class of maintenance authorized to perform each function listed in column (3), by indicating work time required in the appropriate sub-column. This work time figure represents the active time required to perform that maintenance task at the indicated level/class of maintenance. If the number or complexity of the tasks within the listed maintenance task varies at different maintenance classes, appropriate work time figures are to be shown for each class.

The work time figure represents the average time required to perform the prescribed task (assembly, subassembly, component, module, end item, or system) on the item under typical operating conditions for that maintenance level/class. This time includes preparation time (including any necessary disassembly/assembly time), troubleshooting/fault location time, and quality assurance time in addition to the time required to perform the specific tasks identified for the maintenance tasks authorized in the MAC. The symbol designations for the various maintenance levels and classes are as follows:

Field:

C Crew maintenance

F Maintainer maintenance

Sustainment:

L Specialized Repair Activity (SRA)

H Below depot maintenance

D Depot maintenance

NOTE

The "L" maintenance class is not included in column (4) of the MAC. Functions to this class of maintenance are identified by work time figure in the "H" column of column (4), and an associated reference code is used in the REMARKS column (6). This code is keyed to the remarks and the SRA complete repair application is explained there.

Column (5) Tools and Equipment Reference Code. Column (5) specifies, by a number code, those common tool sets, kits, or outfits (not individual tools), common Test, Measurement and Diagnostic Equipment (TMDE), common tools that are not part of a set, kit, or outfit, special tools, special TMDE, and special support equipment required to perform the designated function. Codes are keyed to the entries in the tools and test equipment table.

Column (6) Remarks Code. When applicable, this Column (6) contains a letter code, in alphabetical order, which is keyed to the remarks table entries.

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Explanation of Columns in the Tools and Test Equipment Requirements

Column (1) Tool or Test Equipment Reference Code. The tool or test equipment reference code correlates with a code used in column (5) of the MAC.

Column (2) Maintenance Level. The lowest class of maintenance authorized to use the tool or test equipment.

Column (3) Nomenclature. Name or identification of the tool or test equipment.

Column (4) National Stock Number (NSN). The NSN of the tool or test equipment.

Column (5) Tool Number. The manufacturer's part number.

Explanation of Columns in the Remarks

Column (1) Remarks Code. The code recorded in column (6) of the MAC.

Column (2) Remarks. This column lists information pertinent to the maintenance task being performed as indicated in the MAC."

5.94.1.2 Project decisions.

None.

5.94.2 Maintenance Allocation Chart (MAC) Introduction (**for Army aviation**).

Data Module Type: Descriptive Information Code: 018D

5.94.2.1 Army business rules.

5.94.2.1.1 General.

An introduction for Army aviation MAC shall be prepared using a single descriptive data module. It shall include the following text verbatim:

"INTRODUCTION

Aviation Maintenance Allocation Chart

The MAC (immediately following the introduction) designates overall authority and responsibility for the performance of maintenance tasks on the identified end item or component. The application of the maintenance tasks to the end item or component shall be consistent with the capacities and capabilities of the designated maintenance level which are shown on the MAC as:

Field - includes two columns:

"O" which corresponds to Aviation Maintenance Company (AMC) and

"F" which corresponds to Aviation Support Battalion (ASB)

Sustainment - includes two columns:

"L" which corresponds to Theater Aviation Sustainment Maintenance Group (TASMG) and other organizations that have National Maintenance Program certification and

"D" which corresponds to Depot

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The maintenance to be performed is described as follows:

1. Field maintenance activities:
   a. Aviation Maintenance Company (AMC). The aviation maintenance company is the lowest class of aviation field maintenance. The AMC provides direct support to aircraft operations, performing functions of aircraft servicing (daily, preflight, postflight inspections, refuel, arming), Battle Damage Assessment and Repair (BDAR), and repair or replacement actions as specified in the MAC.
   b. Aviation Support Company (ASC) in the Aviation Support Battalion (ASB). The ASB performs the following types of maintenance:
      (1) Off equipment repair of LRUs or other components within the limits prescribed in the MAC.
      (2) Inspections beyond the capability of the AMC.
      (3) BDAR as required.
      (4) Provide support to AMC personnel during peak workload periods as determined by local policy.
2. Sustainment maintenance:
   a. Theater Aviation Sustainment Maintenance Group (TASMG) (deployed). The TASMG performs the following:
      (1) Provides support to CONUS deploying forces
      (2) Provides support to OCONUS deployed forces (as the Theater Aviation Support Maintenance Group (TASMG).
      (3) Expands aviation maintenance capabilities of CONUS depots
      (4) Classifies and inspects aviation stocks and components.
      (5) Performs maintenance actions beyond the scope of the AMC or ASB within the limits prescribed in the MAC.
      (6) Augments ASB and AMC maintenance tasks.
   b. Depot. This is maintenance accomplished on a component, accessory, assembly, subassembly, plug-in unit, or other portion either on the system or after it is removed. Assets to be repaired at this class are normally returned to an Army Depot or authorized contractor facility. The replace function for this class of maintenance is indicated by the letter "D" or "K" appearing in the third position of the Source, Maintenance, and Recoverability (SMR) code. A "D" or "K" appearing in the fourth position of the SMR code indicates complete repair is possible at the depot sustainment maintenance level. Items are returned to the supply system after maintenance is performed at this level/class.

Use of the MAC

NOTE

Approved item names are used throughout this MAC. Generic terms/ nomenclature (if any) are expressed in parentheses and are not to be considered as official terminology.

The MAC assigns maintenance tasks to the lowest level/class of maintenance.

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Maintenance functions (tasks)

Maintenance functions are limited to and defined as follows:

1. Inspect. Step-by-step instructions to determine the serviceability of an item by comparing its physical, mechanical, and/or electrical characteristics with established standards through examination (e.g., by sight, sound, or feel).
2. Test. Step-by-step instructions to verify serviceability by measuring the mechanical, pneumatic, hydraulic, or electrical characteristics of an item and comparing those characteristics with prescribed standards, e.g., load testing of lift devices or hydrostatic testing of pressure hoses. For software, to verify usability/operability/functionality of the software.
3. Service. Step-by-step instructions to be performed periodically to keep an item in proper operating condition such as replenishing fuel, lubricants, chemical fluids, or gases.
4. Adjust. Step-by-step instructions to maintain or regulate, within prescribed limits, by bringing into proper position, or by setting the operating characteristics to specified parameters.
5. Align. Step-by-step instructions to adjust specified variable elements of an item to bring about optimum or desired performance.
6. Calibrate. Step-by-step instructions to determine and cause corrections to be made or to be adjusted on instruments of test, measuring, and diagnostic equipment used in precision measurement. It consists of comparisons of two instruments, one of which is a certified standard of known accuracy, to detect and adjust any discrepancy in the accuracy of the instrument being compared.
7. Remove. Step-by-step instructions for taking a off an asset to facilitate other maintenance on a different component or on the same component (except for replace repair). For software, it is step-by-step instructions for uninstalling/removing the software from a workstation or other viewing hardware.
8. Install. Step-by-step instructions for placing, positioning, or otherwise locating a component to make it part of a higher level end item. The install task is authorized by the LPD/MAC and the assigned maintenance level is shown as the third position code of the SMR code. For software, it is step-by-step instructions putting the software on a workstation or other viewing hardware.
9. Replace. Step-by-step instructions for taking off an unserviceable component and putting s serviceable component in its place. The replace task is authorized by the LPD/MAC and the assigned maintenance level is shown as the third position code of the SMR code.
10. Repair. Step-by-step instructions for restoring an item or software to a completely serviceable or fully mission capable status. The repair task is authorized by the LPD/MAC and the assigned maintenance level is shown as the forth position code of the SMR code. The following definitions are applicable to the “repair” maintenance task: welding, grinding, riveting, straightening, facing, machining, and/or resurfacing.

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11. Paint. Step by step instructions to prepare and apply coats of paint. When used with munitions, the paint is applied so the ammunition can be identified and protected.

12. Overhaul. Step-by-step instructions to restore an item to a completely serviceable/operational condition as required by maintenance standards in the appropriate technical publications. Overhaul is normally the highest degree of maintenance performed by the Army. Overhaul does not normally return an item to a like new condition.

13. Rebuild. Step-by-step instructions required for the restoration of unserviceable equipment to a like new condition in accordance with original manufacturing standards. Rebuild is the highest degree of material maintenance applied to Army equipment. The rebuild operation includes the act of returning to zero those age measurements (e.g., hours/miles) considered in classifying Army equipment/components.

14. Lubricate. Step-by-step instructions for of applying a material (e.g., oil or grease) to reduce friction and allow a component to operate in a more efficient manner.

15. Mark. Step-by-step instructions for restoring obliterated identification on an asset.

16. Pack. Step-by-step instructions to place an item into a container for either storage or shipment after service and other maintenance operations have been completed.

17. Unpack. Step-by-step instructions for removing an asset from a storage or shipping container in preparation to perform further maintenance (e.g., repair or install).

18. Preserve. Step-by-step instructions for treating systems and equipment whether installed or stored, to ensure a serviceable condition.

19. Prepare for use. Step-by-step instructions required to make an asset ready for maintenance (e.g., remove preservatives, lubricate, etc).

20. Assemble. Step-by-step instructions to join the component pieces of an asset together to make a complete serviceable asset.

21. Disassemble. Step-by-step instructions to break down (take apart) a spare/functional group coded item to the level of its least component, that is assigned an SMR code for the level of maintenance under consideration (i.e., identified as maintenance significant)

22. Clean. Step-by-step instructions on how to remove dirt, corrosion or other contaminants from equipment. Refer to appropriate painting, lubrication, and preservation methods to restore original corrosion prevention and control methods when removed as a result of cleaning and/or when using cleaning to remove corrosion from the item.

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23. Non destructive inspection. Step-by-step instructions on preparation and accomplishment of inspections which do not destroy or damage the equipment.

24. Radio interference suppression. Step-by-step instructions to ensure installed equipment, either communication or other electronics, does not interfere with installed communication equipment.

25. Place in service. Step-by-step instructions required to place an item into service that are not covered in the service upon receipt data module.

26. Towing. Step-by-step instructions to connect one vehicle to another for the purpose of having one vehicle moved through the motive power of the other vehicle.

27. Jacking. Step-by-step instructions to mechanically raise or lift a vehicle to facilitate maintenance on the vehicle.

28. Parking. Step-by-step instructions to safely place a vehicle in a lot, ramp area or other designated location.

29. Mooring. Step-by-step instructions to secure a vehicle by chains, ropes or other means to protect the vehicle from environmental conditions or secure for transportation.

30. Covering. Step-by-step instructions to place a protective wrapping over a vehicle to protect it from environmental conditions or to hide (e.g., camouflage) it.

31. Hoisting. Step-by-step instructions to allow a vehicle to be raised by cables or ropes through attaching points.

32. Sling loading. Step-by-step instructions to place a sling around a vehicle to allow it to be raised.

33. External power. Step-by-step instructions on how to apply electrical power from any authorized power source (e.g., external generator or facility power).

34. Preparation for storage. Step-by-step instructions for preparing an item for placement into administrative, short-term, and/or long-term storage.

35. Preparation for shipment. Step-by-step instructions for preparing the equipment to be shipped or transported.

36. Transport. Step-by-step instructions and guidance for transporting/shipping the equipment.

37. Arm. Step-by-step instructions on activating munitions prior to use.

38. Load. Step-by-step instructions for one of three tasks:

    a. For transportation, the act of placing assets onto a transportation medium (e.g., pallet, truck, container).

    b. For weapons/weapon systems, the act of placing munitions into the weapon/weapon system.

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39. Unload. Step-by-step instructions for one of three tasks:

    a. For transportation, the act of removing assets from a transportation medium (e.g., pallet, truck, container).

    b. For weapons/weapon systems, the act of removing munitions from the weapon/weapon system.

40. Install peripheral device. Step-by-step instructions for installing peripheral devices such as printers, scanners, modems, etc.

41. Uninstall peripheral device. Step-by-step instructions for uninstalling peripheral devices such as printers, scanners, modems, etc.

42. Upgrade/patch. Step-by-step instructions for performing an upgrade to software or installing a patch to software.

43. Configure. Step-by-step instructions for configuring software for different uses/purposes and/or different users.

44. Debug. Step-by-step instructions for debugging software/correcting errors in the software.

Explanation of Columns in the MAC

Column (1) Group Number. Column (1) lists Functional Group Code (FGC) numbers, the purpose of which is to identify maintenance significant components, assemblies, subassemblies, and modules with the Next Higher Assembly (NHA).

Column (2) Component/Assembly. Column (2) contains the item names of components, assemblies, subassemblies, and modules for which maintenance is authorized.

Column (3) Maintenance task. Column (3) lists the functions to be performed on the item listed in column (2). (For a detailed explanation of these functions, refer to "Maintenance tasks" outlined above).

Column (4) Maintenance Level. Column (4) specifies each level/class of maintenance authorized to perform each function listed in column (3), by indicating work time required in the appropriate sub-column. This work time figure represents the active time required to perform that maintenance task at the indicated level of maintenance. If the number or complexity of the tasks within the listed maintenance task varies at different maintenance levels/classes, appropriate work time figures are to be shown for each level/class.

The man-hours represents the average time required to perform the prescribed task (assembly, subassembly, component, module, end item, or system) on the item under typical operating conditions for that maintenance level. This time includes preparation time (including any necessary disassembly/assembly time), troubleshooting/fault location time, and quality assurance time in addition to the time required to perform the specific tasks identified for the maintenance tasks authorized in the MAC. The symbol designations for the maintenance levels/classes are as follows:

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Field:

O Aviation Maintenance Company

F Aviation Support Battalion

Sustainment:

L Theater Aviation Support Maintenance Group (TASMG)

D Depot

Column (5) Tools and Equipment Reference Code. Column (5) specifies, by a number code, those common tool sets, kits, or outfits (not individual tools), common TMDE, common tools that are not part of a set, kit, or outfit, and special tools, special TMDE, and special support equipment required to perform the designated function.

Column (6) Remarks Code. When applicable, Column (6) contains a letter code, in alphabetical order, which is keyed to the remarks.

Explanation of Entries in the Tools and Test Equipment Requirements

Column (1) Tool or Test Equipment Reference Code. The tool or test equipment reference code correlates with a code used in column (5) of the MAC.

Column (2) Maintenance Level. The lowest level/class of maintenance authorized to use the tool or test equipment.

Column (3) Nomenclature. Name or identification of the tool or test equipment.

Column (4) National Stock Number (NSN). The NSN of the tool or test equipment.

Column (5) Tool Number. The manufacturer's part number.

Explanation of Entries in the Remarks

Column (1) Remarks Code. The code recorded in remarks code entry of the MAC.

Column (2) Remarks. This entry lists information pertinent to the maintenance task being performed as indicated in the MAC."

5.94.2.2 Project decisions.

None.

5.94.3 Maintenance Allocation Chart (MAC).

Data Module Type: Schedule Information Code: 916A (MAC)
916B (Aviation MAC)

5.94.3.1 Army business rules.

5.94.3.1.1 General.

The MAC shall be prepared in FGC sequence to consolidate and identify those groups on the list which involve identified maintenance functions. The MAC shall be prepared according to the approved source data provided by the acquiring activity. The MAC shall be prepared using the maintenance planning schema and the **`<mainAllocation>`** branch.

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5.94.3.1.2 Single Maintenance Allocation Chart (MAC) data module.

The MAC shall be prepared as a single data module. A project may optionally present the MAC in an IETP in screen views segmented at the subsystem or sub-subsystem level, but the MAC shall also be available to users as a single uninterrupted (scrollable) presentation.

5.94.3.1.3 Maintenance Allocation Chart (MAC) entries.

a. The basic entries in the MAC shall be a list of functional groups applicable to the end item which require maintenance. The term functional group applies to reparable assemblies and subassemblies, i.e., spares (any repairable component required for the maintenance or repair of an end item), but not to repair parts (any consumable, non-repairable component required for the maintenance or repair of an end item). The end item group shall be numbered "00," or its equivalent "AA."
b. Entries shall be item names (a basic name and a noun word or phrase modifier, e.g., transformer, pulse, low power) and, where applicable, type designators, without stock or part numbers (P/Ns) if possible, in order to minimize need for subsequent change; however, entries shall contain positive identification. Parts that are not subject to maintenance shall not be listed in the MAC.
c. All item names of MAC functional groups shall be official nomenclature in accordance with the parts list nomenclature or other source as specified by the acquiring activity. Reverse word order shall be used in the MAC.
d. The maintenance code entered in the third position of the SMR code in the parts list shall be used to identify the lowest category of maintenance that is authorized to remove, replace, and use the spare or repair parts.
e. If the maintenance function is a replace function only for a repair part, the repair part shall not be listed in the MAC, unless not listing the repair part would result in omission of the NHA group number; in this case, the part shall be listed in order to list the NHA functional group number.
f. All items in the MAC shall specify the maintenance level(s) to which a function is authorized.
g. Exception is authorized to ammunition MACs to permit use of maintenance function headings that better describe or identify ammunition peculiar maintenance functions. The headings used and their definitions shall be included in the appropriate ammunition publication(s).

5.94.3.1.4 Maintenance Allocation Chart (MAC) format.

For an explanation of data to be listed in columns of the MAC, refer to the introduction information presented in 5.94.1 as applicable.

The non-aviation MAC and aviation MAC shall be prepared as follows:

a. For an explanation of data to be listed in entries of the MAC, refer to the introduction information presented in 5.94.1or 5.94.2 as applicable.
b. The group number entry shall be entered, the nomenclature of the spare (component/assembly) shall be entered, and the maintenance function shall be listed in the MAC.
c. The maintenance level entry shall be as follows:

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(1) The non-aviation MAC maintenance level column shall be divided into two main headings, one for field and one for sustainment. Beneath the main headings there shall be four subheadings. Crew and maintainer shall be under field and below depot sustainment and depot shall be under sustainment.

(2) The aviation MAC maintenance level column shall be divided into two main headings, one for field and one for sustainment. Beneath the main headings there shall be four subheadings. Aviation Maintenance Company and Aviation Support Battalion shall be under field and theater aviation sustainment maintenance group and depot shall be under sustainment.

d. A work time figure shall appear in the entry for the maintenance level authorized to perform the maintenance listed in the maintenance function. Reference numbers for all required tools and test equipment shall be listed in the Tools and Equipment Reference Code entry of the MAC. These reference numbers shall correspond to the appropriate tools/test equipment listed in the tools and test equipment table.
e. Reference letters for applicable remarks be listed in the Remarks Code entry of the MAC. These reference letters shall correspond to the appropriate remarks listed in the remarks table.

5.94.3.1.5 Tools and test equipment requirements.

A tabular list of all tools and test equipment, both special and common, required to maintain the equipment shall be prepared, as applicable. The column headings shall be:

a. Column 1 – "Tools of test equipment reference code"
b. Column 2 – "Maintenance level"
c. Column 3 – "Nomenclature"
d. Column 4 – "National stock number"
e. Column 5 – "Tool number"

5.94.3.1.6 Common tools.

Common tools shall not be included on this list when they are part of an existing set, kit, or outfit authorized to the intended user; however, the authorized set, kit, or outfit which contains the prescribed common tools shall be listed.

5.94.3.1.7 Remarks.

Remarks pertinent to maintenance functions shall be prepared, as applicable. The column headings shall be:

a. Column 1 – "Remarks code"
b. Column 2 – "Remarks"

5.94.3.2 Project decisions.

5.94.3.2.1 Maintenance Allocation Chart (MAC) nomenclature.

The project shall decide and document the official nomenclature for MAC functional groups.

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5.94.3.2.2 Single Maintenance Allocation Chart (MAC) data module.

For IETP implementations, the project shall decide if, and how, the MAC is presented in segmented screen views. If the project decided to present segmented views, the MAC shall also be available to users as a single uninterrupted (scrollable) presentation.

5.95 S1000D Chapter 5.2.1.7 – Common information sets – Mass and balance information.

5.95.1 Weighing and loading.

Data Module Type: Procedural Information Code: 160B

5.95.1.1 Army business rules.

5.95.1.1.1 General.

Weighing and loading data module (**Aviation Support Battalion only**) shall provide description, information, and procedures for aircraft weighing, balancing, and loading.

5.95.1.1.2 Scope.

The following text shall be included verbatim in the weighing and loading information set:

"WEIGHING AND LOADING ASB

GENERAL INFORMATION

Scope

Description, information, and procedures for aircraft weighing and loading contained here replaces the Chart E (Loading Data and Special Weighing Instructions) placed in the individual aircraft weight and balance files by the aircraft manufacturer. Chart E in the aircraft file will no longer be required."

5.95.1.1.3 Weighing.

Instructions for preparing the aircraft, weighing the aircraft in the basic weight condition, performing calculations, and using and recording data on DD Form 365-1 (Basic Weight Checklist) and DD Form 365-2 (Aircraft Weighing Record) shall be included. Instructions shall include preliminary requirements, procedures for positioning the aircraft in the weighing area, and assembly of the aircraft weighing equipment. Illustrations shall be prepared to support the text, including a two view chart diagram. A reference may be made to TM 55-1500-342-23 for additional information governing weight and balance of aircraft, forms, and records.

5.95.1.1.4 Loading.

Descriptions and instructions shall be prepared for aircraft loading, and computing weight and balance information. Sufficient information and data shall be provided so that an aviator, knowing the basic weight and moment of the aircraft, can compute any combination of weight and balance using the prescribed charts and forms. Reference shall be made to AR 95-1, DA PAM 738-751, and TM 55-1500-342-23 for additional information governing weight and balance of aircraft, forms, and records. Data shall include fundamental principles of loading. An illustration of aircraft compartments and stations shall be included. Reference shall be made to DD Form 365-1 for a more complete listing of compartments and equipment that comprise the basic weight of the aircraft. Loading information shall include weight and balance characteristics, center of gravity limits, weight/balance and loading, and weight and moment tables for load items such as crew, fuel, cargo, and armament.

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5.95.1.2 Project decisions.

None.

5.96 S1000D Chapter 5.2.1.8 – Common information sets – Recovery information.

The information referenced in S1000D Chapter 5.2.1.8 is not required for U.S. Army TMs/IETPs. Refer to the Content Selection matrices for content requirements. This S1000D-provided information set does not support existing Army requirements. Any project desiring to acquire technical data matching this information set shall coordinate with LOGSA to ensure consistent implementation across the Army.

5.97 S1000D Chapter 5.2.1.9 – Common information sets – Equipment information.

5.97.1 Equipment/user fitting instructions **(Field or above only)**.

Data Module Type: Procedural Information Code: 913B

5.97.1.1 Army business rules.

5.97.1.1.1 General.

As applicable, equipment/user fitting instructions for personal use equipment shall be prepared.

5.97.1.2 Project decisions.

5.97.1.2.1 Information codes.

The project shall decide the appropriate information code(s) to be used with Equipment/user fitting instructions content.

5.97.2 Auxiliary equipment maintenance.

5.97.2.1 Army business rules.

5.97.2.1.1 General.

When auxiliary equipment (e.g., MTOE items, etc.) maintenance TMs/IETPs or maintenance requirements cards are not procured for peculiar equipment furnished by the contractor, maintenance instructions shall be prepared. Procedural data module(s) shall be used with information codes assigned by the project specific to the maintenance performed.

5.97.2.1.2 Auxiliary equipment procedures.

Concise step-by-step auxiliary equipment procedures shall be prepared for proper care of auxiliary equipment while in and out of service. These procedures shall include instructions for storage, preventive maintenance, lubrication, operating checks, and adjustments, as applicable. Maintenance instructions shall also be included, as applicable, for special tools that have been fabricated.

5.97.2.2 Project decisions.

5.97.2.2.1 Data module types and information codes.

The project shall decide the data module types (typically procedural) and information codes to use when preparing auxiliary equipment maintenance.

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5.97.3 Supplemental data for Commercial Off-The-Shelf (COTS) manuals.

5.97.3.1 Army business rules.

5.97.3.1.1 General.

If after evaluation of COTS Manuals (refer to MIL-PRF-32216), it is determined the manual requires supplemental data, the supplemental data should be prepared using the following guidance. COTS supplemental manuals shall be prepared using the data module types and info codes specified in the corresponding content selection matrix in A.5.

5.97.3.1.2 Identifying Technical Publication Sheet.

The contracting activity may require the contractor to prepare an Identifying Technical Publication Sheet. The Identifying Technical Publication Sheet should be tailored to reflect only information applicable to the acquisition. S1000D and the Army business rules provide guidelines for the appropriate distribution statement, disclosure notice, destruction notice, and authority notice. Other pertinent data should be inserted by the contractor as provided by the Government.

5.97.3.1.3 Equipment/model coverage.

Only equipment/models, accessories, and components specified in the contract shall be covered in the supplemental data.

5.97.3.1.4 Content/format selection summary.

The supplemental data should be presented in the following order:

5.97.3.1.4.1 Front matter.

Refer to 5.128.

5.97.3.1.4.2 Destruction of military materiel to prevent enemy use.

Refer to 5.101.3.

5.97.3.1.4.3 Lubrication instructions.

Data Module Type: Procedural Information Code: 240B

If required, lubrication charts or instructions shall be included in the supplemental data or prepared separately, as specified by the contracting activity. All lubricants, fluids, and associated products identified in the manual, supplemental data, or separate lubrication chart shall have a Government identifier (military specification number, NSN, etc.) that identifies the product beyond the product name and provides the user with requisitioning information. Refer to 5.97.4.

5.97.3.1.4.4 Preventive Maintenance Checks and Services (PMCS).

Refer to 5.87.4.

5.97.3.1.4.5 Maintenance Allocation Chart (MAC).

Refer to 5.94.

5.97.3.1.4.6 Components of End Item (COEI).

Refer to 5.93.12.

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5.97.3.1.4.7 Basic Issue Items (BII) list.

Refer to 5.93.13.

5.97.3.1.4.8 Additional Authorization List (AAL).

Refer to 5.93.14.

5.97.3.1.4.9 Expendable supplies and materials list.

Refer to 5.93.15.

5.97.3.1.4.10 Repair parts information.

Data Module Type: IPD Information Code: 941A

Manuals shall be supplemented with applicable spare/repair parts breakdown information.

Recommended changes, activity comment sheet, or manual deficiency report applicable to the particular service, as provided by the contracting activity. Refer to 5.93.5.

5.97.3.1.4.11 Other requirements as specified.

Data Module Type: Descriptive Information Code: unspecified

When using manuals evaluation checklist as a guide, other required data may be indicated thereon.

5.97.3.1.4.12 Warranty information.

Data Module Type: Descriptive Information Code: 023E

If applicable, the COTS manuals supplemental data shall contain warranty information pertinent to the equipment covered. It shall include data such as duration of warranty and serial numbers of equipment covered. If warranty is covered separately, or in another document, reference shall be made to that document.

5.97.3.1.4.13 Copyright.

Data Module Type: Descriptive Information Code: 021A

The supplemental data shall include the appropriate copyright release or rights in data statements) in accordance with the FAR (and its applicable supplements) and as established by the contract.

5.97.3.2 Project decisions.

5.97.3.2.1 Determination of supplemental data.

The project shall determine if and what COTS supplemental data is required for COTS manuals.

5.97.3.2.2 Identifying Technical Publication Sheet.

The project shall determine if the contractor shall prepare an Identifying Technical Publication Sheet.

5.97.3.2.3 Cover contents.

The project shall determine if the federal item name, NSN, P/N, model number, and applicable contractor number shall be overprinted on the cover or the title page of the manual.

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5.97.3.2.4 List of Effective Data Modules (LOEDM).

The project shall determine if a LOEDM that will include the basic manual and the supplemental data shall be prepared.

5.97.4 Lubrication instructions.

Data Module Type: Procedural Information Code: 240B

Lubrication instructions contain lubrication procedures. Lubrication Orders (LOs) are separate manuals containing only lubrication instruction procedures in card format (refer to 5.97.4.1.2) except in the following cases:

a. When specified by the acquiring activity, the lubrication instructions may be included in the PMCS data module or as a lubrication data module.
b. When the lubrication procedures are classified, the lubrication instructions shall be included in the PMCS or a lubrication data module that is classified to at least the classification level of the instructions or higher. Classified instructions shall be marked and handled as specified in the current security regulations.

5.97.4.1 Army business rules for separate lubrication order (LO).

5.97.4.1.1 DELETED.

5.97.4.1.2 Lubrication Order (LO) sizes.

LOs shall be prepared in either log book or standard page size (refer to TABLE XLIII).

TABLE XXXIX. DELETED

5.97.4.1.3 Lubrication Order (LO) number.

The LO number shall appear on the cover in accordance with 5.97.4.1.6. The LO number shall appear at the top of all other page.

5.97.4.1.4 Lubrication Order (LO) page numbering.

Unless otherwise specified by the contracting activity, the page number shall be centered at the bottom of all the pages.

5.97.4.1.4A Lubrication interval symbols.

Unless otherwise specified by the contracting activity, the following lubrication interval symbols shall be used:

TABLE XXXIXA. Lubrication Intervals.

Symbol	Definition
D	Daily
W	Weekly
M	Monthly
Q	Quarterly
S	Semiannually
A	Annually
B	Biannually
H	Hours (operated)

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TABLE XXXIXA. Lubrication Intervals - Continued.

Symbol	Definition
MI	Miles (operated)
KM	Kilometers (operated)
RDS	Rounds (fired)
OC	On Condition
MRA	Maintenance Repair Action

5.97.4.1.4B Measurements.

Unless otherwise specified by the contracting activity, all measurements expressed in the text, in tables, or in illustrations shall be expressed in both U.S. standard units and metric units. Refer to 5.11.2.2. The order shall be in accordance with equipment markings.

5.97.4.1.5 Title page (cover) contents.

The title page (cover) shall contain the heading, title, NSN, P/N, CAGEC, the end item code, a reference line, reporting errors information, supersedure notice (revisions only), distribution statement/export control warning/destruction notice, LO statement, service nomenclature, and date.

5.97.4.1.6 Heading.

The heading shall consist of the LO number centered at the top of the cover and the words "LUBRICATION ORDER," centered below the LO number.

5.97.4.1.7 Title.

The title shall appear below the heading and read the same as the title on the related publication. When more than one piece of equipment is covered by the LO, the title for each shall appear separately.

5.97.4.1.8 National Stock Number (NSN), Part Number (P/N), Commercial and Government Entity Code (CAGEC), and End Item Code (EIC).

The applicable NSNs, P/Ns, CAGECs, and EICs for each piece of equipment covered by the LO shall be entered beneath the title(s).

5.97.4.1.9 Reference line.

A reference line consisting of the publication module code(s) of the related publication shall be placed below the title within the applicable area.

5.97.4.1.10 Reporting errors.

LO cover shall contain a Reporting Errors and Recommending Improvements Statement.

5.97.4.1.10A Supersedure notice.

For revised LOs, a supersedure notice shall be included on the cover.

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5.97.4.1.10B Distribution statement, export control warning, and destruction notice.

A distribution statement, export control warning, and destruction notice shall be placed on the LO cover in accordance with this standard.

5.97.4.1.11 Lubrication Order (LO) statement.

The following statement shall be included on the title page of the LO:

"Copy of this lubrication order will remain with the equipment at all times; instructions contained herein are mandatory."

5.97.4.1.12 Service nomenclature.

The LO cover shall include the service or acquiring activity's nomenclature.

5.97.4.1.12A LO date.

The LO cover shall include the date of the LO at the bottom.

5.97.4.1.13 LO introduction.

The LO introduction shall contain the following statements/information, as applicable:

5.97.4.1.13.1 General statement(s)/Notes.

General statement(s)/notes shall be placed in the LO introduction and are applicable to the overall understanding of requirements of the LO procedures. The statement(s) shall include such information as adherence to lubrication intervals, explanation of interval symbols, maintenance levels, exceptional operational requirements, abbreviations, fittings, and parts cleaning. A statement concerning corrosion control shall be used as applicable. The statement shall provide instructions or reference corrosion control requirements provided in the applicable narrative publication.

5.97.4.1.13.2 Oil filter statement.

As applicable, a statement similar to the following shall be included:

"Oil filters shall be serviced/cleaned/changed as applicable, when:

a. They are known to be contaminated, or clogged;

b. Service is recommended by Army Oil Analysis Program (AOAP) laboratory analysis, or

c. At prescribed hardtime intervals."

5.97.4.1.13.3 Army Oil Analysis Program (AOAP) sampling interval statement.

Statement similar to the following shall be included:

"Engine oil/transmission oil/hydraulic fluids shall be sampled at (*insert applicable hour/mileage time frame*) as prescribed by *(insert DA PAM 750-8, The Army Maintenance Management System (TAMMS) Users Manual or DA PAM 738-751, Functional Users Manual for the Army Maintenance Management System - Aviation (TAMMS-A)*)."

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5.97.4.1.13.4 Army Oil Analysis Program (AOAP) not available/non-enrolled statement.

When a component/equipment is not enrolled in the AOAP, or oil analysis support is not available, a statement similar to the following shall be used:

> "This (*insert name of component/equipment*) is not enrolled in the Army Oil Analysis Program. HARDTIME INTERVALS APPLY."

5.97.4.1.13.5 Warranty hardtime statement.

When applicable, the following statement shall be used:

> "For equipment under manufacturer's warranty, hardtime oil service intervals shall be followed. Intervals shall be shortened if lubricants are known to be contaminated or if operation is under adverse conditions such as longer than usual operating hours, extended idling periods, extreme dust, etc."

5.97.4.1.14 Lubrication procedures.

Lubrication procedures shall be prepared and shall include all applications, procedures, authorized lubricants, intervals, man-hour requirements, lubrication points, and AOAP requirements. Unless otherwise specified by the contracting activity, the lubrication procedures shall be presented in grouped sequence by interval so as to enable the user to receive, lubricate, and return to an acceptable performance standard all components of the equipment in a minimum of time with the skills, tools, test equipment, and spare parts authorized by the LPD or the MAC. Unless otherwise specified by the contracting activity, lubrication procedures shall be based upon the principles of RCM logic.

5.97.4.1.15 Warnings, cautions, and notes.

Warnings, cautions, and notes shall be applied in accordance with this standard.

5.97.4.1.16 Illustrations.

Illustrations shall be used to show the location of grease fittings, and when applicable, shall indicate the number of grease points. A minimum number shall be used.

5.97.4.1.17 Multiple illustrations.

When it is necessary to provide a multiple number of illustrations to show separate component parts, each illustration shall have an individual title.

5.97.4.1.18 DELETED.

TABLE XL. DELETED.

5.97.4.1.19 Grouped lubrication points.

When grouped lubrication points require the same lubricant at the same interval, the type and number of points shall be identified and described by one of the following methods:

a. Multi-headed arrows. Multi-headed, solid-shafted arrows shall point to each of the lubrication points.
b. Lubrication point notes. Lubrication point notes shall provide instructions for applying lubricants, taking into account the following factors:

   (1) Type, grade, availability, and properties of prescribed lubricant.
   (2) Expected temperature.

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(3) Lubrication gun and tools available to authorized maintenance level.
(4) Types of lubrication fittings.
(5) Possible ill effects of excessive or insufficient lubrication.

Caution shall be stressed where over or under lubrication of a part will damage that part or closely associated parts. Such cautionary notes shall be included either as a portion of the point note, or as a special note (refer to 5.97.4.1.29).

5.97.4.1.20 Disassembling and hand packing.

If applicable, disassembling and hand packing instructions shall be provided for medium and high speed antifriction bearings which are sensitive to the amount of lubrication applied and do not have bleed holes or relief valves.

5.97.4.1.21 Cleaning, disassembling, and reassembling.

Cleaning, disassembling, and reassembling instructions required before or after lubrication shall be provided. If instructions are extensive and contained in a technical manual, the technical manual/IETP shall be referenced.

5.97.4.1.22 Washing and natural drying.

If applicable, instructions shall be given for washing and natural drying of finely machined and dirt-sensitive parts before relubricating. Use of compressed air jets or temperatures above 212 degrees Fahrenheit shall not be prescribed.

5.97.4.1.23 Preservative material.

Instructions shall not specify a coating of preservative material, either before or after packing parts that are lubricated with grease; nor shall they specify an application of oil, solvent, or additional grease to a "sealed-for-life" or prepacked antifriction bearing.

5.97.4.1.24 Lubricants and military symbols.

Unless otherwise specified by the contracting activity, lubricants shall be identified by standard military symbols, in accordance with MIL-HDBK-113 and MIL-HDBK-275. The lubricant symbols and interval symbols shall be contained in a table. The columns shall be headed by the words "LUBRICANT" AND "INTERVAL." Those lubrication points which are serviced or lubricated by checking level, replenishing lubricant, or draining and refilling shall be indicated by the lubricant's symbol at the point on the illustration which is designated for replenishing or refilling. The amount of lubricant required shall be given either in the point note or in the "Capacity" column of the table, if applicable.

5.97.4.1.25 DELETED.

TABLE XLI. DELETED

5.97.4.1.26 DELETED.

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5.97.4.1.27 Lubricant table.

As applicable, a table(s) shall be prepared to provide information needed to select the proper lubricant for various temperature ranges and uses. The size and location of the table(s) shall be tailored to meet layout requirements and shall include as applicable, information on temperature range, lubricant, military symbol, NATO code, specification, national stock number, capacity, interval between service, and man-hours required to complete all service by type stated to the nearest tenth for all lubricants prescribed by the lubrication order.

5.97.4.1.28 Notes to tables.

As necessary, when specific restrictions, preferred grades, and other conditions exist, notes shall be annotated on table(s). For example: 1/"When MIL-PRF-2104 lubricant is authorized, use 15W-40 (OE/HDO-15/40) when available and applicable temperature range exists," or 2/"15W-40 oil is not authorized in this particular (*insert component name*)." Where applicable, the statement "For Arctic Operation, refer to TM 4-33.31" shall be included as a note.

5.97.4.1.29 Special notes.

5.97.4.1.29.1 Pertinent lubrication point information.

As applicable, additional pertinent lubrication point information shall be incorporated into the lubrication order. When applicable, the lubrication order shall contain a special note referencing, but not repeating, instructions in technical manuals.

5.97.4.1.29.2 Effect of extreme conditions.

If applicable, pertinent instructions relevant to the effect of extreme conditions such as temperature, humidity, or altitude on lubrication requirements for the equipment shall be included as a special note.

5.97.4.1.29.3 Authentication block.

An authentication block provided by the contracting activity, shall be included in the LO. Distribution information, as applicable, shall be placed below the authentication block.

5.97.4.2 Project decisions.

5.97.4.2.1 LO page size.

The project shall decide between logbook and standard page size for the LO.

5.97.5 Army Test, Measurement and Diagnostic Equipment (TMDE).

5.97.5.1 Army business rules.

5.97.5.1.1 General.

Army TMDE information sets shall be prepared using the data module types and info codes specified in the corresponding content selection matrix in A.5.

5.97.5.1.2 Paragraph numbering.

Army test, measurement, and diagnostic equipment manuals and IETP paragraphs shall not be numbered by decimals.

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5.97.5.1.3 Content and order of presentation.

Unless otherwise specified by the contracting activity, material shall be presented in the following order:

a. Front matter
b. Chapter 1 – Introduction
c. Chapter 2 – Functional Analysis
d. Chapter 3 – Maintenance Requirements
e. Chapter 4 – Calibration
f. Appendixes
g. Rear Matter

5.97.5.1.4 Front matter.

Refer to 5.128 for front matter content requirements.

5.97.5.1.5 Test, Measurement and Diagnostic Equipment (TMDE) Chapter 1 – Introduction.

5.97.5.1.5.1 Section I – Test, Measurement and Diagnostic Equipment (TMDE) introduction (Scope).

Data Module Type: Descriptive Information Code: 018H

This section shall contain, as a minimum, the following statement:

"These instructions are for use by depot/contractor personnel. They apply to the (*insert name of equipment*) and in case of conflict, take precedence over all other documents pertinent to its maintenance and repair."

5.97.5.1.5.2 Section II – Description (Description and data).

Data Module Type: Descriptive Information Code: 040A

This section shall contain the following paragraphs.

5.97.5.1.5.2.1 Description.

This paragraph shall provide a general description indicating the purpose, use, capabilities, and features of the test equipment.

5.97.5.1.5.2.2 Performance data.

This paragraph shall provide performance data for the equipment. It shall include, as applicable, lists of:

a. Functional characteristics, such as power requirements, sensitivity, and selectivity.
b. Rated output, such as wattage, voltage, horsepower, and gallons per minute.
c. Environmental characteristics, such as ambient temperature, humidity limits, ventilation and air conditioning requirements.

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5.97.5.1.5.2.3 Configuration data.

All models and modifications authorized for the TMDE shall be listed. Differences between configurations, models, serial or part number groups, and individual items of equipment, including affected model, part, or serial numbers, shall be described. For equipment with modifications or minor model differences, the major parts affected shall be briefly described and the number groups, or registration numbers, and model numbers shall be included.

5.97.5.1.5.2.4 Equipment, accessories, and publications required.

Data Module Type: Descriptive	Information Code: 061B (Support equipment and tools (List of equipment))
Data Module Type: Descriptive	Information Code: 017L (List of publications required, but not supplied)
Data Module Type: Descriptive	Information Code: 070D (Expendable and durable items list)

As applicable, all associated equipment and publications shall be listed to include:

a. Equipment and accessories (special tools, miscellaneous parts) which form a part of, or are supplied with, the test equipment.
b. All equipment and publications required, but not supplied.
c. Consumable/expendable items and the procedures in which these items are used.

5.97.5.1.6 Test, Measurement and Diagnostic Equipment (TMDE) Chapter 2 – Functional analysis.

Data Module Type: Descriptive Information Code: 042B

The structure and organization of this chapter shall parallel the section on troubleshooting (refer to 5.97.5.1.8.4). The functional analysis shall present an overall operational sequence of the equipment and show the functional relationship between major components or units. Functional diagrams shall be used as the primary means of communication for this chapter; the text shall be used only to support the diagrams as necessary for clarity. Functional diagrams shall depict the development of each equipment function from input to output, and shall show interconnection of the units. Signal levels, direction of flow, wave forms, etc, shall be included as applicable.

5.97.5.1.7 Test, Measurement and Diagnostic Equipment (TMDE) Chapter 3 – Operating procedures.

5.97.5.1.7.1 Section I – Setup instructions.

Data Module Type: Procedural Information Code: 125B

Site selection, unpacking, assembly, installation instructions, and special tools and requirements for installation inspection and pre-energizing procedures shall be provided in this section. Instructions shall also be given for establishing normal, neutral, zero, center, on-off, or any required positions of each switch, control, or similar item before connecting to power when the equipment is in shutdown status.

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5.97.5.1.7.2 Section II – Controls and indicators.

Data Module Type: Descriptive Information Code: 111A

This section shall contain information which is needed by the operator to properly identify, determine the function and use of, connect, operate, and protect the equipment being used. Controls and indicators shall be supported by illustrations which identify and locate all operator controls and indicators.

5.97.5.1.7.3 Section III – Turn-on and turn-off procedures.

Data Module Type: Procedural Information Code: 131H

This section shall contain instructions to place the equipment in operation, to operate the equipment in each mode of operation, to remove the equipment from operation and put it in standby condition, and to remove it from operation and put it in shutdown status. Instructions shall be provided for turning the equipment off during an emergency (fire, hazard to personnel, loss of coolant, normal power, etc.), as applicable.

5.97.5.1.8 Test, Measurement and Diagnostic Equipment (TMDE) Chapter 4 – Maintenance requirements.

5.97.5.1.8.1 Section I – Facilities, equipment, and material standards.

Data Module Type: Descriptive Information Code: 202B

5.97.5.1.8.1.1 Facilities.

The facilities required for maintenance of the test equipment, including special factors such as environment, shall be listed.

5.97.5.1.8.1.2 Material standards.

Unless otherwise specified by the contracting activity, this portion shall state that parts and material used for replacement, repair, or modification shall meet all applicable equipment drawings and specifications.

5.97.5.1.8.1.3 Special support equipment and tools.

Data Module Type: IPD Information Code: 304B

This portion shall contain the detailed description, instructions, and illustrations for special tools and equipment which are necessary to perform maintenance on the test equipment, including any items which shall be locally fabricated. Specific dimensions and tolerances shall be supplied for tools and fixtures.

5.97.5.1.8.2 Section II – Preventive maintenance.

Data Module Type: Descriptive Information Code: 200E

This section shall contain a tabular listing of all periodic checks, services, and safety precautions, including intervals, necessary to maintain the test equipment in an operable state. References shall be made to applicable equipment LOs (refer to 5.97.4). If no applicable LOs are published, lubrication instructions shall be included in this section, in tabular format, with illustrated locations of lubrication points.

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5.97.5.1.8.3 Section III – Pre-operational specifications and self-test procedure.

Data Module Type: Procedural Information Code: 330C

This section shall include information as to required pre-operational specifications applicable to checks and procedures done on the test equipment before actual testing is performed on the UUT. If applicable, instructions on any adapter required for UUT procedures shall be included. Instructions shall be provided in this section for testing the performance of the test equipment in the event of failure of the UUT. Any necessary diagrams shall be included in this section.

5.97.5.1.8.4 Section IV – Troubleshooting procedure.

Data Module Type: Fault Information Code: 421B through 428B

This section shall provide troubleshooting procedures should the test equipment fail to satisfy the requirements of the self-test procedure. An explanation as to how end item and major components function, and how these components interface with the rest of the equipment, shall be provided for the depot technician. Only essential information which the technician shall know to troubleshoot the test equipment properly shall be provided. When specified by the contracting activity, functional block diagrams, test layouts, or schematics referred to and placed in Appendix C shall be used to illustrate the interface between the test equipment and the unit or assembly equipment UUT testing loop.

NOTE

Multiple information codes are available to the project (422B through 428B) to allow for multiple different troubleshooting procedures to be prepared for the same end item if necessary.

5.97.5.1.8.5 Section V – Maintenance.

5.97.5.1.8.5.1 Disassembly procedure.

Data Module Type: Procedural Information Code: 530A

Disassembly procedures shall be provided to support troubleshooting, repair, or inspection (riveted, soldered, and welded parts are not normally mentioned in disassembly). Illustrations shall be used to support the procedures. When specified by the contracting activity, engineering drawings shall be referenced for disassembly procedures.

5.97.5.1.8.5.1.1 Replace.

Data Module Type: Procedural Information Code: 685B

Instructions shall be prepared to install a serviceable component in its place in exchange of one that is unserviceable or a required time change asset at all maintenance levels authorized by the MAC.

5.97.5.1.8.5.1.2 Repair.

Data module type: Procedural Information code: 685C

Instructions shall be prepared for repair actions required to restore an item to a completely serviceable or fully mission capable status. Repair instructions shall be developed for all maintenance levels allowed full repair by the MAC.

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5.97.5.1.8.5.2 Assemble procedure.

Data Module Type: Procedural Information Code: 710A

Step-by-step instructions for assembly shall be provided, including in-process and final inspection requirements, if applicable. When specified by the contracting activity, the instructions shall be supported by illustrations and a checklist. When specified by the contracting activity, engineering drawings shall be referenced for assembly procedures.

5.97.5.1.9 Test, Measurement and Diagnostic Equipment (TMDE) Chapter 5 – Calibrate.

Data Module Type: Procedural Information Code: 273A

When previously developed calibration procedures are available, the publications containing the procedures shall be referenced. If no calibration procedures have been developed, they shall be prepared according to the general technical requirements for calibration information and the standard format provided by the contracting activity. The calibration procedures developed shall appear in this chapter. When specified by the contracting activity, engineering source data shall be used verbatim.

5.97.5.1.10 Appendix A – References.

Data Module Type: Descriptive Information Code: 017B

This appendix shall consist of a consolidated listing of all reference material (such as documents, forms, drawings, etc.) in the text and/or necessary for operation and maintenance of the test equipment. The documents shall be listed alphabetically or numerically under each type heading.

5.97.5.1.11 Appendix B – List of parts.

Data Module Type: IPD Information Code: 307A

This appendix shall include all peculiar maintenance items and parts not identified in another equipment publication used at the depot level for the TMDE addressed in the data module. Nomenclature, description, manufacturer's part number, CAGEC, and quantity shall be listed. When specified by the contracting activity, parts lists on engineering drawings shall be referenced. The parts listing shall be prepared in accordance with S1000D and these business rules.

5.97.5.1.12 Appendix C – Unit Under Test (UUT) procedures.

Data Module Type: Procedural Information Code: 320B

This appendix shall contain contracting activity approved test procedures for UUT using the test equipment. Unless otherwise specified by the contracting activity, these UUT procedures shall not duplicate procedures in other publications, nor those provided elsewhere in the data module. The appendix shall contain a list of all UUTs, or reference a publication containing such a list.

5.97.5.1.13 Other appendixes.

Data Module Type: Descriptive Information Code: (unspecified)

Additional appendixes shall be provided, as appropriate.

5.97.5.1.14 Rear matter.

Refer to 5.128.3.1 for rear matter content requirements

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5.97.5.2 Project decisions.

5.97.5.2.1 Stand alone.

Army TMDE information sets may be produced as either a stand-alone TM/IETP or as part of a more comprehensive publication. If this content is produced as a stand-alone publication, the chapter/section/paragraph numbering requirements apply. If the content is included in a publication with a larger scope, the content requirements apply but the chapter/section/paragraph numbering requirements do not.

5.98 S1000D Chapter 5.2.1.10 – Common information sets – Weapon loading information.

The information referenced in S1000D Chapter 5.2.1.10 is not required for U.S. Army TMs/IETPs. Refer to the Content Selection matrices for content requirements. This S1000D-provided information set does not support existing Army requirements. Any project desiring to acquire technical data matching this information set shall coordinate with LOGSA to ensure consistent implementation across the Army.

5.99 S1000D Chapter 5.2.1.11 – Common information sets – Cargo loading information.

5.99.1 Army business rules.

5.99.1.1 On-vehicle equipment loading plan.

Data Module Type: Descriptive Information Code: 160C

On-vehicle equipment loading plan information set shall be prepared when applicable to the equipment. The loading plan shall include information provided by the acquiring activity.

5.99.1.2 Scope.

A brief scope statement shall be prepared explaining the purpose of the loading plan and identifying the equipment covered by the on-vehicle equipment loading plan information set.

5.99.1.3 Locator graphic.

An illustration identifying and locating the on-vehicle equipment shall be included. External and internal views shall be used, if necessary. As applicable, both tactical and non-tactical situation loading configurations shall be shown.

5.99.2 Project decisions.

None.

5.100 S1000D Chapter 5.2.1.12 – Common information sets – Stores loading information.

The information referenced in S1000D Chapter 5.2.1.12 is not required for U.S. Army TMs/IETPs. Refer to the Content Selection matrices for content requirements and the business rules documented relative to S1000D Chapter 5.2.1.7 – Common information sets – Mass and balance information.

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5.101 S1000D Chapter 5.2.1.13 – Common information sets – Role change information.

5.101.1 Modification Work Orders (MWOs).

5.101.1.1 Army business rules.

5.101.1.1.1 General.

The MWO information sets shall be prepared using the data module types and info codes specified in the corresponding content selection matrix in A.5.

5.101.1.1.2 Text.

The technical data required for the MWO shall be contained in the following standard titled paragraphs. These paragraphs shall be numbered consecutively and presented in the sequence prescribed herein. The words "Not applicable" shall follow each standard paragraph title when the technical data is not required.

a. Purpose.
b. Priority.
c. End item(s) or system(s) to be modified.
d. Module(s), (components, assemblies, subassemblies, boards, and cards) to be modified.
e. Part(s) to be modified.
f. Application.
g. Technical publications affected/changed.
h. MWO kit(s)/part(s) and their disposition.
i. Special tools, tool kits, jigs, TMDE, and fixtures required.
j. Modification procedures.
k. Calibration requirements.
l. Weight and balance data.
m. Quality assurance requirements.
n. Recording and reporting of the modification.
o. Materiel change number.
p. Modification identification

5.101.1.1.3 Paragraph 1 – Purpose, and Paragraph 2 – Introduction (Priority).

Data Module Type: Descriptive Information Code: 018A

5.101.1.1.3.1 Paragraph 1.

Paragraph 1 shall contain a brief explanation as to the purpose of the modification, e.g., what the modification will accomplish and how it will benefit the user.

5.101.1.1.3.2 Paragraph 2.

Paragraph 2 shall contain one of the following statements as selected and specified by the contracting activity:

a. "This modification is classified ROUTINE."
b. "This modification is classified URGENT as a result of a Safety of Use/Flight Message (*cite message reference*). Operating restrictions provided therein remain in effect until this modification is applied."

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c. "This modification is classified EMERGENCY as a result of an Emergency Safety of Use/Flight Message (*cite message reference*) which deadlined/grounded the equipment. The restriction remains in effect until this modification is applied."

5.101.1.1.4 Paragraph 3 – End item(s) or system(s) to be modified, Paragraph 4 – Module(s) (components, assemblies. subassemblies. boards. and cards) to be modified, and Paragraph 5 – Part(s) to be modified.

Data Module Type: Descriptive Information Code: 616A

5.101.1.1.4.1 Paragraph 3.

Paragraph 3 shall contain information to identify the end item(s) or system(s) to be modified. This information may be presented in a tabular format, whenever practicable and shall include, but not be limited to, the nomenclature, NSN, P/N, CAGECs, type or model number, and serial number(s) or serial number ranges of the end item(s) or system(s) to be modified. When a large number of units is to be modified and the exempt number of units is small, the serial numbers of the exceptions shall be listed rather than the serial numbers of the units to be modified.

5.101.1.1.4.2 Paragraph 4.

Paragraph 4 shall begin with the following statement: "The following items, whether installed or in PLL/ASL or depot stock, shall be modified." This paragraph shall contain a listing of items to be modified, identified by nomenclature, NSN, CAGEC, P/N, and where applicable, by serial number(s) or ranges of serial numbers.

5.101.1.1.4.3 Paragraph 5.

Paragraph 5 shall begin with this statement: "The following item(s), whether installed or in PLL/ASL or depot stock, shall be modified. Stocked parts shall be modified prior to issue and shall be marked so that it can be easily determined that modification has been accomplished." This paragraph shall include a listing of items to be modified, including item identification by nomenclature, NSN, CAGEC, P/N, and, where applicable, by serial number(s) or range(s) of serial numbers.

5.101.1.1.5 Paragraph 6 – Modification application.

Data Module Type: Descriptive Information Code: 670D

This paragraph shall include:

a. The following time compliance statement: "Time compliance schedule: MWO effective date is (*insert date*) and completion date is (*insert date*)." The same MWO effective date/completion date statement shall be printed on the cover/title page of the MWO.
b. A level of maintenance statement indicating the lowest level of maintenance authorized to apply the MWO.
c. Work force and man-hour requirements for application of the MWO to a single unit, end item, or system.
d. A listing of all MWOs that shall be applied prior to or concurrently with the application of this MWO. This listing shall include MWOs required for other end items, systems, and TMDE that impact on this MWO.
e. Any additional information deemed necessary to assist in the application of the MWO.

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5.101.1.1.6 Paragraph 7 – Technical publications affected/changed.

Data Module Type: Descriptive Information Code: 017N

This paragraph shall list, by publication module code and date, all the technical publications (i.e., TMs, DMWRs, etc.) that have been or are being changed as a result of this MWO.

5.101.1.1.7 Paragraph 8 – Kit parts list.

Data Module Type: Descriptive Information Code: 607C

This paragraph shall contain general information as to MWO kits, parts, and bulk material needed to apply the MWO and shall specifically address the following:

a. Kit(s)/part(s) needed to apply the MWO. All kits needed to apply the MWO shall be listed and identified by NSN, nomenclature, CAGEC, and P/N. Additionally, security classification of the MWO kit along with shipping data, e.g., weight, dimensions, and cubic displacement, shall be provided.
b. Contents of MWO kits. Complete content of each MWO kit shall be listed, providing the nomenclature, NSN, CAGEC, P/N, and the quantity of each item needed for the modification. This data may be provided in a tabular format and shall include the appropriate figure numbers for each item listed when illustrations are used to clarify the MWO kit contents information.
c. Bulk and expendable material. When applicable, a listing of all bulk and expendable material needed to apply the MWO shall be provided. The listing may be presented in a tabular format and shall include information as to the nomenclature, NSN, CAGEC, P/N, and the quantity of the material needed to accomplish a single MWO application.
d. Parts disposition. Instructions covering the disposition of replaced/removed parts/components and those items in excess of the requirements for the completion of the MWO shall be provided.
e. Mandatory Replacement Parts. When applicable, this paragraph shall contain a list of parts that shall be replaced during the modification.

5.101.1.1.8 Paragraph 9 – Special support equipment and tools (Special tools; tool kits; jigs; Test, Measurement, and Diagnostic Equipment (TMDE); and fixtures required).

Data Module Type: Descriptive Information Code: 304B

This paragraph shall contain a list of tool kits, special tools, jigs, fixtures, and TMDE, including associated test program sets, and software, that are required for the application of the MWO. This listing shall identify the item(s) by nomenclature, NSN, CAGEC, P/N, and quantity. When applicable, this paragraph shall contain instructions for the disposition of the special tools, tool kits, jigs, TMDE, and fixtures after application of the MWO.

5.101.1.1.9 Paragraph 10 – Modification procedures.

Data Module Type: Procedural Information Code: 670B

This paragraph shall provide instructions for the application of the MWO. Instructions for disassembly/assembly of the end item/assembly/system to be modified shall be provided by referencing appropriate TMs or DMWRs. Instructions may be included when a stand-alone document is necessary for the expeditious accomplishment of the modification. Illustrations shall be in detail adequate to support the written procedures. Additionally, the modification procedures paragraph shall provide the following information:

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a. Include instructions for operational checks before application and upon completion of the entire MWO or portion of the MWO. Instructions for operational checks shall be provided in the text or by reference to appropriate technical manual(s) and shall include values of all pertinent performance characteristics and tolerances.
b. In cases of complex and lengthy modification procedures and when specifically authorized by the contracting activity, provide the modification procedures instructions as an appendix to the MWO and reference the appropriate appendix within this paragraph.
c. When parts are to be removed and not used in reassembly, the procedures shall state: "Remove and set aside for disposition per para 8." The term "discard" shall not be used in the modification procedures.
d. When there are Item Unique Identification (IUID) markings used on the equipment being modified, any procedures for adding, changing, or preserving these markings shall be included in the modification procedures.
e. Include any instructions for verifying correct application of the modification and operability of the modified equipment.

For abbreviated MWOs, this paragraph shall contain just a reference to the applicable DMWR/NMWR, engineering drawings, and other technical data.

5.101.1.1.10 Paragraph 11 – Calibration requirements.

Data Module Type: Descriptive Information Code: 017E

This paragraph shall identify all calibration requirements upon completion of the MWO and shall reference the appropriate publications prescribing the calibration procedures and schedules. The level of calibration support required shall be specified for each separate calibration action and affected item(s) shall be identified by nomenclature and NSN. For abbreviated MWOs, this paragraph shall contain just a reference to the applicable DMWR/NMWR, engineering drawings, and other technical data.

5.101.1.1.11 Paragraph 12 – Weight and balance data.

Data Module Type: Descriptive Information Code: 169F

Whenever weight and balance affect the performance of the equipment to be modified, this paragraph shall include instructions for weight and balance procedures and the completion of appropriate DD Form 365, Record of Weight and Balance Personnel. These instructions shall be provided by referencing applicable publications. This paragraph shall not duplicate weight and balance information contained in the referenced documents. When weight and balance do not affect the performance of the equipment or the change made is negligible, this paragraph shall contain the following statement: "Weight and balance are not significantly affected."

5.101.1.1.12 Paragraph 13 – Quality assurance requirements.

Data Module Type: Descriptive Information Code: 315A

This paragraph shall contain information as to the quality assurance techniques and methods necessary to assure proper application of the MWO. General quality assurance inspection criteria cited shall be in accordance with TM 750-245-4. For abbreviated MWOs, this paragraph shall contain just a reference to the applicable DMWR/NMWR, engineering drawings, and other technical data.

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5.101.1.1.13 Paragraph 14 – Recording and reporting of the modification, Paragraph 15 – Materiel change number, and Paragraph 16 – Modification identification.

Data Module Type: Descriptive Information Code: 670C

5.101.1.1.13.1 Paragraph 14.

Paragraph 14 shall contain the following information:

a. Records and reports. Detailed recording and reporting procedures shall be provided by referencing AR 750-10 and if necessary, DA Pamphlet 750-8 or DA Pamphlet 738-751. AR 750-10 contains the mandatory reporting/recording requirements for MWO applications. DA PAM 750-8 and DA PAM 738-751 contain the general reporting/recording requirements and provide detailed instructions for the completion of the various maintenance historical records.
b. Marking equipment. Specific instructions shall be provided for marking the modified item(s) to facilitate MWO application identification.
c. Identification data. When the modification results in a change in NSN and model designation, information about the nomenclature, model number, CAGEC, P/N, and NSN changes on each affected item (end item, system, assembly, component, or part) shall be provided. This data may be presented in the following format:

TABLE XLII. Identification data presentation.

	Before Modification	After Modification
Nomenclature		
Model No.		
CAGEC/Part No.		
NSN		

5.101.1.1.13.2 Paragraph 15.

Paragraph 15 shall contain the following statement:

"This MWO is authorized by materiel change number (*insert complete materiel change number*)." The materiel change number shall be provided by the preparing activity.

5.101.1.1.13.3 Paragraph 16.

Paragraph 16 shall contain a narrative description and supporting illustration(s) of the completed modification to aid in physical inspection of the materiel to verify the modification has been completed.

5.101.1.1.14 Abbreviated Modification Work Orders (MWOs) (short form).

When specified by the contracting activity, the MWO shall be prepared in an abbreviated format. An abbreviated MWO shall satisfy the content requirements of specified standard prime paragraphs by referencing. In an abbreviated MWO, the requirements of "Paragraph 9 – Special tools; tool kits: jigs: test, measurement, and diagnostic equipment (TMDE): and fixtures

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required", "Paragraph 10 – Modification procedures", "Paragraph 11 – Calibration requirements", and "Paragraph 13 – Quality assurance requirements" shall be satisfied by referencing the appropriate portion(s) of the applicable DMWR, engineering drawings, other technical data, or contract. Additionally, "Paragraph 6 – Application" shall be abbreviated to include only the time compliance schedule and the level of maintenance information.

5.101.1.2 Project decisions.

5.101.1.2.1 Abbreviated Modification Work Order (MWO) format.

The project shall determine if the MWO shall be prepared in an abbreviated format.

5.101.2 Demilitarization of surplus military items.

5.101.2.1 Army business rules.

5.101.2.1.1 General.

Demilitarization of Surplus Military Items information sets shall be prepared using the data module types and info codes specified in the corresponding content selection matrix in A.5.

5.101.2.1.2 Printing.

Unless otherwise specified by the contracting activity, Demilitarization of surplus military items publications prepared in horizontal format shall be printed head to foot with holes punched at the bottom of even numbered pages and at the top of odd numbered pages. Except for pocket TMs, the PMC shall appear on the upper right corner of all pages. The upper pages shall have even numbers, and the lower pages shall have odd numbers.

5.101.2.1.3 Foldouts.

Foldout/fold up pages shall not be used in Demilitarization of surplus military items TMs.

5.101.2.1.4 Content.

The technical manual for demilitarization of surplus military items shall consist of the following:

a. Front matter.
b. Chapter 1, Introduction.
c. Chapter 2, Methods of Demilitarization.
d. Chapter 3, Detailed Instructions for Demilitarization.
e. Appendix A, References.
f. Rear Matter

5.101.2.1.5 Front matter.

Refer to 5.128.1 for front matter content requirements.

5.101.2.1.6 Demilitarization of surplus military items Chapter 1 – Introduction.

Data Module Type: Descriptive Information Code: 018A

This chapter shall contain the following paragraphs:

5.101.2.1.6.1 Scope.

The scope paragraph shall contain the following statement:

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"This manual provides additional technical instructions covering the methods and degree of demilitarization of surplus military items as required by DOD 4160.21-M, Defense Materiel Disposition Manual. DOD 4160.21-M, which contains the basic information on demilitarization, shall be used in conjunction with this manual. Where this manual conflicts with DOD 4160.21-M, the latter takes precedence. Additional data may be obtained from DODI 4160.21-M, Defense Materiel Disposition Manual."

5.101.2.1.6.2 Authorization.

This paragraph shall contain the following statement:

"Demilitarization of surplus military materiel shall be limited to that which the National Inventory Control Points (NICP) have identified as requiring demilitarization. Demilitarization of those items which are not normally physically accepted by a Defense Reutilization and Marketing Officer (DRMO) will be accomplished by the activity having physical custody of the property upon completion of all required utilization and donation screening. Such action will be coordinated with a DRMO. Where appropriate, demilitarization of this property may be accomplished as a condition of sale, provided that there are effective controls and surveillance to assure proper demilitarization. Where the DRMO is the custodian of the property and is unable to perform required demilitarization, DRMO may require demilitarization as a condition of sale, with proper inspection and surveillance, or may obtain assistance from activity turning in the property."

5.101.2.1.6.3 Certification.

This paragraph shall contain the following statement:

"A certificate reading substantially as quoted below and signed by two qualified Government representatives will be executed and placed in the applicable contract or property disposal file for all items demilitarized.

'I certify that (indicate items) were demilitarized in accordance with (cite specific instructions which were complied with; for example, DOD 4160.21- M, Defense Materiel Disposition Manual."

5.101.2.1.6.4 Reporting demilitarization.

This paragraph shall contain any necessary reporting requirements concerning the accomplishment of demilitarization. If none, this paragraph shall be omitted.

5.101.2.1.6.5 Special information.

This paragraph shall be used to present any general information not covered elsewhere within the specification. If no such information is required, this paragraph shall be omitted.

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5.101.2.1.7 Demilitarization of surplus military items Chapter 2 – Methods of demilitarization.

Data Module Type: Descriptive Information Code: 997F

This chapter shall contain a brief description of the methods used to demilitarize surplus equipment, parts, and supplies. For each method, it shall include a list of equipment required, warning and safety instructions, and the procedures to be followed. Only those methods which are actually used to demilitarize the equipment covered in the manual shall be included. Examples of these methods are crushing, cutting, burning, welding, smelting, shearing, torching, chemical neutralization, or a combination thereof.

5.101.2.1.8 Demilitarization of surplus military items Chapter 3 – Detailed instructions for demilitarization.

Data Module Type: Procedural Information Code: 997G

This chapter shall include detailed information on the demilitarization of individual or types of items. This information shall include a description of the operation, identification of the methods to be used and their points of application, inspection, warnings, and safety precautions. The methods selected shall be the most practical and economical way of destroying the military offensive or defensive advantages inherent in the materiel being demilitarized. Illustrations may be used if necessary for clarity.

5.101.2.1.9 Appendix A – References.

Data Module Type: Descriptive Information Code: 017B

This appendix shall list all publications referenced in the manual and required by the user to demilitarize the materiel covered in the manual. The appendix shall have an introduction or scope paragraph to provide a brief statement concerning its use and content. The publications shall be listed in groups by publication types. If the publication is non-Government, the source shall be provided. The complete name of each publication and the publication module code shall be used. When a List Of Applicable Publications (LOAP) is published, this appendix shall reference the LOAP.

5.101.2.1.10 Rear matter.

Refer to 5.128.3.1 for rear matter content requirements.

5.101.2.2 Project decisions.

5.101.2.2.1 Stand alone.

The project shall decide if Demilitarization of Surplus Military Items information sets are to be produced as either a stand-alone TM/IETP or as part of a more comprehensive publication. If this content is produced as a stand-alone publication, the chapter/section/paragraph numbering requirements apply. If the content is included in a publication with a larger scope, the content requirements apply but the chapter/section/paragraph numbering requirements do not.

5.101.2.2.2 Page layout.

The project shall determine the page layout (portrait/landscape) and format for printed manuals.

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5.101.3 Destruction of equipment to prevent enemy use.

5.101.3.1 Army business rules.

5.101.3.1.1 General requirements.

Destruction of Equipment to Prevent Enemy Use information sets shall be prepared using the data module types and info codes specified in the corresponding content selection matrix in A.5.

5.101.3.1.2 Approach.

There are several approaches in preparing manuals for destruction of Army materiel. These include, but are not limited to:

a. Instructions or procedures based for a particular stock class as identified by its FSC.
b. Procedures that provide detailed destruction instructions for specific weapons systems or equipment and any installed subsystems.
c. Simple standardized destruction methods based on the assumption that time and demolition materials may not always be available for carrying out complicated demolition or other destruction procedures.

5.101.3.1.3 Types of manuals.

Each weapon system or major item of equipment shall have destruction procedures prepared that cover the approaches in b and c above. Equipment managers may direct that a generic destruction manual be developed for assets they control that are not covered in a weapons system specific manual. Equipment managers and weapons system program managers should work together to ensure that destruction procedures do not provide conflicting destruction requirements or overly duplicate destruction procedures. Duplication of destruction procedures is allowed for components in a weapons system, but only those specific procedures for the component shall be duplicated. Duplication of this information is preferred to having users in a combat situation looking for destruction information in multiple publications.

5.101.3.1.4 Destruction manuals for a stock class.

When directed by an AMC stock class custodian or manager, a separate destruction publication shall be prepared. The manual shall contain generic destruction procedures and when possible should include specific procedures for each item in the stock class.

5.101.3.1.5 Destruction manuals/data modules for weapon systems.

Each weapons system shall have destruction procedures developed. If a separate manual is used, these procedures will be contained in a minimum of two data modules. The first shall be general information containing the information specified in 5.101.3.1.6.1. The second and any succeeding data modules shall contain specific destruction procedures specified in 5.101.3.1.7.

5.101.3.1.6 General destruction rules.

When preparing any destruction manual, the following priority guidelines shall be followed. These are provided to ensure a common approach to destruction of material.

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a. Any cryptographic equipment or material shall be destroyed first.
b. Classified equipment or material is to be destroyed after any cryptographic assets. A statement to this effect shall be included in the introductory material. The statement destruction of classified material statement is required regardless of the classification of the material covered in the current publication.
c. Essential material shall be destroyed when time precludes the destruction of the entire system. In this case, essential material consists of that material identified for the system or stock class in the manual being prepared. The system manual shall include a list of essential material. A statement shall be included stating that essential material be destroyed in the order provided and that the same material be destroyed on each system (refer to 5.101.3.1.6.5).
d. Any repair parts that may be on the verge of capture shall be destroyed in the same order as the essential material.

5.101.3.1.6.1 Destruction general information.

Data Module Type: Descriptive Information Code: 997D

5.101.3.1.6.2 Scope of manual.

Each destruction general information shall have a scope statement. As a minimum, the scope statement shall contain the following text, entered verbatim.

> "This manual is for the guidance of those whose duty it is to render inoperable or destroy equipment which is in imminent danger of capture by an enemy."

For destruction procedures that will implement any international standards, the following statement shall be included. For a stand-alone destruction manual, the statement shall be in the scope paragraph. For destruction procedures included in a weapon system manual, this statement shall be included in the "How to Use the Manual."

> "Certain provisions of this technical manual (identify by chapter, DMC, paragraph, or similar manner, if appropriate) are the subject of international standardization agreement (*insert the ABCA or ASCC standard number; the NATO, STANAG, NETR, or NEPR number; or appropriate documentary reference*). When revision or cancellation of this technical manual is proposed which will modify the international agreement concerned, the technical manual management activity will take appropriate action through international standardization channels, including departmental standardization offices, to change the agreement or make other appropriate accommodations."

5.101.3.1.6.3 Authority to destroy materiel.

The following paragraph shall be included verbatim.

> "Authorization. Only division or higher commanders have the authority to order destruction of equipment. They may however, delegate this authority to subordinate commanders when the situation demands it."

5.101.3.1.6.4 Reporting destruction.

A paragraph shall be included that requires any destruction activity be reported through command channels.

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5.101.3.1.6.5 General destruction information.

Text shall be included that provides the user with information that is generic to most destruction processes. This data shall include, but is not limited to, the following types of information:

a. Information on types of destructive process such as burning, use of explosives, burying, or self destruction devices/techniques. This explanation shall include the advantages and disadvantages of each process.
b. For complex weapons systems, the reason to perform any subordinate destruction procedures in conjunction those for the weapons system.
c. Any considerations relative to physical location or weather related (wind, rain, temperature) that users should consider when destroying materiel.
d. Explanations on the priority for materiel destruction (refer to 5.101.3.1.6.7).

5.101.3.1.6.6 Degree of destruction.

The following information shall be included verbatim:

> "Methods of Destruction. Choose methods of destruction which will cause such damage that it will be impossible to restore the equipment to a usable condition within the combat zone. Classified Equipment. Classified equipment shall be destroyed to such a degree as to prevent duplication by, or revealing means of operation or function to the enemy.
>
> Associated Classified Documents. Any classified documents, notes, instructions, or other written materiel pertaining to function, operation, maintenance, or employment, including drawings or parts lists, shall be destroyed in a manner to render them useless to the enemy."

5.101.3.1.6.7 Essential components and spare parts.

When specified by the acquiring activity, the destruction procedures may identify essential components whose destruction will incapacitate the weapons system. In certain conditions, the destruction of essential components may be used. If destruction of essential components is allowed, statements shall be included that for each weapons system, the same components will be destroyed. A similar statement shall be included that for any spare parts requiring destruction, the same essential spare parts shall be destroyed. If a weapons system determines component parts to be essential, they should notify the components item manager so they may identify those items for higher priority destruction in any item level destruction procedures manual.

5.101.3.1.7 Parts list.

Data Module Type: Descriptive Information Code: 907B

When a weapons system publication contains a requirement to allow destruction of essential or spare parts, a list of essential components and spares shall be developed and included.

5.101.3.1.8 Destruction procedures.

Data Module Type: Descriptive Information Code: 997B

The destruction procedures data modules shall contain only destruction procedures. All general or explanatory information shall be contained in the destruction general information. The destruction procedures shall include specific destruction procedures for the weapons system or items (for item level publications). When required, specific procedures to destroy subordinate

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components shall be included. Specific destruction procedures for subordinate components shall not be referenced. As applicable, the order the procedures should be applied and the results of applying in the wrong order shall be included. When destruction procedures are developed, authors shall ensure the procedures use resources a soldier in the field would have readily accessible. The following methods shall be included as applicable:

a. Self destruction options.
b. Explosive devices.
c. Improper operation.
d. Fire.
e. Mechanical devices (e.g., sledgehammers, crowbars, cranes, etc.).
f. Natural surroundings (e.g., rivers, lakes, caves, burying, hiding in vegetation, etc).

As applicable, the procedures shall identify the points on the equipment that would be most advantageous to apply the above methods (e.g., where to place explosives or where to apply force with a mechanical device).

5.101.3.1.9 Destruction procedures - Classified equipment.

Data Module Type: Procedural Information Code: 997C

Special instructions for destruction of classified equipment and documents shall be provided.

5.101.3.2 Project decisions.

5.101.3.2.1 Stand alone.

Destruction of equipment to prevent enemy use information sets may be produced as either a stand-alone TM/IETP or as part of a more comprehensive publication.

5.101.3.2.2 Generic destruction manual.

Equipment managers may direct that a generic destruction manual be developed for assets they control that are not covered in a weapons system specific manual.

5.102 S1000D Chapter 5.2.1.14 – Common information sets – Battle damage assessment and repair information.

5.102.1 Army business rules.

5.102.1.1 General.

The BDAR information sets shall be prepared using the data module types and info codes specified in the corresponding content selection matrix in A.5.

5.102.1.2 Content.

Content shall be directed to fix-forward battlefield conditions, that is, repairs shall be made as quickly as possible and to the extent necessary to restore or maintain the applicable equipment/system. Unless otherwise specified by the acquiring activity, content and order of presentation shall be as specified. The following statement shall appear at the beginning of each data module in the BDAR information:

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"BDAR FIXES SHALL BE USED ONLY IN COMBAT OR FOR TRAINING AT THE DISCRETION OF THE COMMANDER. (AUTHORIZED TRAINING FIXES ARE LISTED IN BDAR TRAINING PROCEDURES.) IN ANY CASE, DAMAGE SHALL BE REPAIRED BY STANDARD MAINTENANCE PROCEDURES AS SOON AS PRACTICABLE."

5.102.1.3 Operating procedures.

Operating procedures in BDAR data modules shall be restricted to testing a system, subsystem, or component for the purpose of damage assessment, or testing after a field expedient repair has been performed. If any change to normal operating procedures is made, the new procedures to be followed shall be given.

5.102.1.4 Battle Damage Assessment and Repair (BDAR) introduction (General information).

Data Module Type: Descriptive Information Code: 018G

5.102.1.4.1 Operating procedures.

This data module shall contain information that is general in nature. It shall inform the user/reader of the purpose and scope of the BDAR information and its relationship to user personnel, other publications, and the end item/system it supports. In addition, this data module shall include definitions, standards, practices, identification of responsibilities, and tasks to be performed.

5.102.1.4.2 Introduction.

This paragraph shall state the purpose and scope of the BDAR information and how it is applied to the task of BDAR. As a minimum, this paragraph shall contain subparagraphs as follows:

a. Purpose. This subparagraph shall contain an explanation of the purpose of the BDAR.
b. Scope. This subparagraph shall contain information on the scope of the BDAR information.
c. Application. This subparagraph shall contain information on how to apply the BDAR information.
d. Definitions. Any terms used in the BDAR information that are new or peculiar to BDAR shall be defined. These terms shall only apply to BDAR. For manuals with BDAR included in them, these terms not be included in any other listing of terms in the manual.
e. Forms. This paragraph shall contain the information as prescribed in 5.86.4.1.2.

5.102.1.4.3 Standards and practices.

This paragraph shall contain information pertaining to standards and practices peculiar to combat conditions. It shall include, as a minimum, the paragraph headings, and data (expanded as applicable) as follows:

a. BDAR Characteristics - explanation of the expediency of repair, reason for deviation from standard maintenance practices, need to take greater risks, and other characteristics peculiar to repair under combat conditions.
b. Waiver of precautions - reference to deviations from normal peacetime precautions, and if such deviations are summarized in another portion of the TM, reference shall be made to that portion.

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c. Operating characteristics - minimum functional combat capability criteria for the applicable end item/system.
d. Training - explanation/rationale concerning use of BDAR fixes for training and list of all BDAR procedures which are authorized for training. The fix (training) procedures shall be grouped by major system(s) or components(s) as they appear in the BDAR information. Each procedure shall be cross-referenced to the data module where it appears. The following statement shall be included:

"After completion of training, the end item/system shall be returned to full serviceable condition using regular repair procedures as applicable."

5.102.1.4.4 Tasks and responsibilities.

This paragraph shall consist of tasks that may be required as a result of battlefield damage. The person/group responsible for each task shall be identified. The tasks shall appear in the order in which they should be performed. This information shall be presented in narrative form. This section shall include the following paragraphs:

a. Tagging/identifying BDAR repairs - instructions for identifying components affected by BDAR fixes.
b. Reports - instructions for completing reports resulting from BDAR fixes.

5.102.1.4.5 Combat threats **(Aviation Only)**.

This paragraph shall consist of the description of damage from threats confronting aircraft while on combat missions from armor-piercing, armor piercing incendiary projectiles, and high-explosive incendiary projectiles and from exposure to bombs, mortars, and artillery fragments and blasts when on the ground. The resulting effects on the metal airframe structure and follow-on effects should the mission be continued, of secondary damage such as cracks, crippling, or buckling and loss or damage to mechanical fasteners shall be given. Structure damage modes shall be defined for the type of materials and structure affected.

5.102.1.5 General fault assessment tables (Battle damage assessment tables).

Data Module Type: Descriptive Information Code: 410E

There shall be multiple battle damage assessment data modules. Each of these data modules shall contain an introduction and fault assessment tables. The data modules shall be organized as follows:

a. End item. These shall be a battle damage assessment data modules pertaining to the overall end item or major subsystems and its capability to perform its mission essential functions.
b. Major functional group. Unless otherwise specified by the acquiring activity, these data modules shall be titled, arranged, and correspond to the functional groups as they appear in the MAC and the parts information. The total number of data modules in the BDAR information shall be determined by the number of major functional groups applicable to the equipment/system covered by the manual.
c. Auxiliary Equipment. As required, there shall be battle damage assessment data modules for any auxiliary equipment. Each battle damage assessment data module shall be formatted and shall contain the information in 5.102.1.5.1 through 5.102.1.5.2.

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5.102.1.5.1 Introduction.

The primary purpose of this paragraph shall be to introduce the assessment table(s). It shall contain paragraphs that will cover the scope and application of assessment tables.

5.102.1.5.2 Fault assessment tables.

This paragraph shall contain assessment tables that lead the user to a repair procedure or another chart/table that will further aid in analyzing/assessing damage. As specified by the acquiring activity, the format of assessment tables shall be either a troubleshooting procedure or a table. The assessment procedures shall be developed and arranged so that logical and expedient methods are used to locate trouble.

5.102.1.6 Repair.

Unless otherwise specified by the contracting activity, these data modules shall provide information for battlefield repair of end items, components, etc. Each repair data module shall comply with the requirements contained in 5.102.1.6.5 through 5.102.1.6.6. The following types of repair data modules shall be included in the BDAR information:

5.102.1.6.1 General repair.

Data Module Type: Procedural Information Code: (unspecified)

As required, there shall be procedures provided for items that are not necessarily associated with a specific component or subsystem of the end item.

5.102.1.6.2 End item repair.

Data Module Type: Procedural Information Code: (unspecified)

Procedures for repair of the overall end item shall be provided.

5.102.1.6.3 Major functional group repair.

Data Module Type: Procedural Information Code: (unspecified)

Unless otherwise specified by the acquiring activity, these data modules shall be titled, arranged, and correspond to the functional groups as they appear in the MAC and the parts information. The total number of data modules in the BDAR repair information shall be determined by the number of major functional groups applicable to the equipment/system covered by the manual.

5.102.1.6.4 Auxiliary equipment.

Data Module Type: Procedural Information Code: (unspecified)

As required, procedures for repair of battle damage to auxiliary equipment shall be provided.

5.102.1.6.5 Introduction.

This paragraph shall contain subparagraphs as follows:

a. Scope - brief statement that describes the purpose and application of the overall coverage of the data module.
b. Repair procedure index - list of all procedures contained in the chapter, listed in the order in which they appear. Procedures authorized for training and listed in Appendix E of the TM/IETP shall be boxed in.

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5.102.1.6.6 Repair procedure.

This paragraph shall contain the repair procedure for the item(s) covered in the data module. The format and content of these paragraphs shall be as follows:

a. General - remarks concerning general nature and causes related to the damage and repair of the item. These remarks shall be brief.
b. Item name, trouble - item name and the trouble shall be used as the subparagraph side head. The side head shall be followed with a general statement(s) concerning the particular type of trouble and repair to be made. Statement(s) shall be brief and as concise as possible. Subparagraphs shall be as follows:

    (1) Limitations - this statement(s) shall identify the limits that would be imposed on the equipment/end item, in relation to operational capability, if the fix that follows is performed.
    (2) Personnel/time required - the number of personnel and time required to accomplish the fix shall be listed as follows:

    "1 soldier - 1.0 hrs (express time in decimal point hours to the nearest one-tenth hour)."

    (3) Materials/tools - list of materials and tools (peculiar) needed to make the BDAR fix. Following each item listed shall be a reference (in parenthesis) to that item number and data module. Reference to tools shall reference instructions for tool fabrication when applicable. Any other necessary information (such as quantities and sizes) shall be provided.
    (4) Procedural steps - each step shall be listed numerically and placed in the sequential order in which it will be performed. The last procedural step for every BDAR fix shall be: "Record BDAR action taken. When mission is complete, as soon as practical, repair the equipment/system using standard maintenance procedures."

c. Options - more than one method of making the same repair/fix. Options shall be listed in order of effectiveness and listed consecutively as option 1, option 2, etc. Each option provided under the item name/trouble paragraph side head (b. above) shall contain subparagraphs: Limitations, Personnel/time required, Materials/tools, and Procedural steps. Alternatives that do not include fixes shall also be listed as options.
d. Item name, category - when the basic item, identified in the section title, is divided into categories or types, each specific item shall be titled and covered within a separate paragraph. Each of these paragraphs shall contain only the information that applies to that specific item. For example: Information or procedures under a heading "high pressure" shall pertain to high pressure; low pressure information/procedures (if applicable) shall appear under the heading, "low pressure."

5.102.1.7 References.

Data Module Type: Descriptive Information Code: 017B

References for BDAR information shall be included in the references for the IETP. BDAR shall not have its own references data module.

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5.102.1.8 Support equipment and tools (Special or fabricated tools).

Data Module Type: Descriptive Information Code: 605B

The special or fabricated tools data module shall contain a list of all tools and test equipment that are required for BDAR procedures and that are not common. This list shall be prepared in accordance with the requirements for a tool identification list in paragraph 5.103.1. When fabrication of tools is required for BDAR, this shall also contain fabrication instructions for those tools. The fabrication instructions shall be prepared in accordance with the requirements for an illustrated list of manufactured items contained in paragraph 5.87.17.

5.102.1.9 Expendable and durable items list.

Data Module Type: Descriptive Information Code: 070D

Expendable and durable items required for BDAR information shall be included in the expendable and durable items list for the IETP. BDAR shall not have its own expendable and durable items list.

5.102.1.10 Substitute materials/parts.

Data Module Type: Descriptive Information Code: 607D

The substitute materials/parts data module shall list materials and parts that may be used for BDAR fixes. Lists or tables shall include the primary material/part, the substitute/alternate material/part, and remarks (when applicable) that identify the limitations or degradation effected by use of the substitutes. It shall be divided into paragraphs by material type. When paragraphs are required, the first paragraph shall be titled introduction and shall provide a general explanation of the purpose and content of the other paragraphs. When applicable, a paragraph shall be dedicated to petroleum, oil, and lubricant (POL) substitutes.

5.102.2 Project decisions.

5.102.2.1 Format of assessment data.

The project shall decide if the format of assessment tables will be prepared as either a troubleshooting procedure (with the fault isolation data module type) or a table (with the descriptive data module type).

5.103 S1000D Chapter 5.2.1.15 – Common information sets – Illustrated tool and support equipment information.

5.103.1 Tool identification list **(Field/Aviation Maintenance Company (AMC) level or above only)**.

Data Module Type: Descriptive Information Code: 062B

5.103.1.1 Army business rules.

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5.103.1.1.1 General.

Tool identification list data module shall be prepared and shall include a list of the tools authorized to the levels of maintenance covered in the narrative portion of the TM/IETP and as referenced by the preliminary requirements. For **DMWRs/NMWRs**, a list of all special tools and test, measurement, and diagnostic equipment not contained in lower level technical manuals or in the parts information or IPD, and required to perform the procedures in the DMWR/NMWR, shall be included. This list shall include any special inspection equipment used only for the item that the DMWR/NMWR covers.

5.103.1.1.2 Introduction.

The following introduction shall be prepared and included verbatim in the tool identification list data module:

"TOOL IDENTIFICATION LIST

INTRODUCTION

Scope

This lists all common tools and supplements and special tools/fixtures needed to maintain the (*insert equipment name*)."

OR

"This lists special tools and equipment needed to maintain the (*insert equipment name*)." (**DMWRs/NMWRs only**)

"Explanation of Columns in the Tool Identification List

Column (1) Item No. This number is assigned to the entry in the list and is referenced in the preliminary requirements to identify the item.

Column (2) Item Name. This column lists the item by noun nomenclature and other descriptive features (e.g., Gauge, belt tension).

Column (3) National Stock Number (NSN). This is the National Stock Number (NSN) assigned to the item; use it to requisition the item.

Column (4) Part Number/(CAGEC). Indicates the primary number used by the manufacturer (individual, company, firm, corporation, or Government activity) which controls the design and characteristics of the item by means of its engineering drawings, specifications, standards, and inspection requirements to identify an item or range of items. The manufacturer's Commercial and Government Entity Code (CAGEC) is also included.

Column (5) Reference. This column identifies the authorizing supply catalog or illustrated parts list for items listed in this information set." (**Not required for DMWRs/NMWRs**)

5.103.1.1.3 Tool identification list.

Applicable information for the Tool identification list shall be prepared and include the following information:

a. Item number
b. Item name or nomenclature
c. NSN

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d. P/N
e. CAGEC
f. Reference

Item names shall be in alphabetical order. A lead-in paragraph to the tool identification list may be included.

5.103.1.2 Project decisions.

None.

5.104 S1000D Chapter 5.2.1.16 – Common information sets – Service bulletins.

The information referenced in S1000D Chapter 5.2.1.16 is not required for U.S. Army TMs/IETPs. Refer to the Content Selection matrices for content requirements. This S1000D-provided information set does not support existing Army requirements. Any project desiring to acquire technical data matching this information set shall coordinate with LOGSA to ensure consistent implementation across the Army.

5.105 S1000D Chapter 5.2.1.17 – Common information sets – Material data.

5.105.1 Army business rules.

5.105.1.1 General.

Munition Equipment and Ammunition Data Sheets information sets shall be prepared using the data module types and info codes specified in the corresponding content selection matrix in A.5.

5.105.1.2 Front matter.

Refer to 5.128 for front matter content requirements.

5.105.1.3 Introduction.

The introduction paragraph shall be placed on the first page after the table of contents. If the table of contents ends on a left-facing page, the reverse right-facing page shall be blank and the introduction paragraph shall begin on the next left-facing page. The introduction paragraph shall include the following statement:

> "This manual is a reference document published as an aid in training, familiarization, and identification of (*insert commodity item*). This manual is not authorization for requisitioning, stockage, maintenance, or issue of the material described herein."

5.105.1.4 Munitions equipment and ammunition data sheets.

Data Module Type: Descriptive Information Code: 030D

Information on data sheets shall contain, as applicable, the following information. NOTE: "(a)" is applicable to ammunition data sheets only; "(e)" is applicable to munitions equipment data sheets only; no code is applicable to both.

a. Photograph or line drawing of the munitions equipment or ammunition item
b. Type classification (a)
c. Use
d. Description
e. Functioning
f. Differences between models

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g. Tabulated data
h. Performance (a)
i. Temperature limits (a)
j. Drawings (a)
k. Unit of issue (a)
l. Packing data (a)
m. Shipping and storage data
n. Limitations (a)
o. References (a)
p. Remarks (a)
q. Associated equipment (e)
r. Kits (e)

5.105.1.4.1 Photograph or line drawing of the munitions equipment or ammunition item.

As required by the acquiring activity, a photograph or line drawing of the item shall be included on the data sheet.

5.105.1.4.2 Type classification.

The type classification paragraph shall be the first paragraph of the ammunition data sheet and shall list the type classification of the item.

5.105.1.4.3 Use.

This paragraph shall describe the purpose for which the item is used.

5.105.1.4.4 Description.

The description paragraph shall include the general characteristics, capabilities, and features of the item. Color coding information for ammunition items shall be included, as applicable.

5.105.1.4.5 Functioning.

This paragraph shall include a simple description of how the item functions. The description shall explain what functional affect it has on other components and shall be presented by simple text and illustrations, as appropriate.

5.105.1.4.6 Differences between models.

This paragraph shall identify differences in configuration or models when more than one model is described. Differences shall be clearly identified.

5.105.1.4.7 Tabulated data.

This paragraph shall provide descriptive data of the item and its components. Ammunition items shall have: model, dimensions, weight, color, type of explosive used, packaging, NSN, and DODAC. Munitions equipment shall have: APE number, unit of issue, installation data, utilities required, and production capacity.

5.105.1.4.8 Performance.

This paragraph shall present information describing the normal use or operation of the item (e.g., chamber pressure, velocity, maximum range, trace, etc.).

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5.105.1.4.9 Temperature limits.

This paragraph shall list the firing and storage temperature limits of the item.

5.105.1.4.10 Drawings.

This paragraph shall list all applicable ammunition drawings, by number only of the ammunition end-item, components, and packaging configurations.

5.105.1.4.11 Unit of issue.

This paragraph shall list the smallest quantity of the item authorized for issue.

5.105.1.4.12 Packing data.

This paragraph shall provide the dimensions (length, width, height, and cube) and weight of a full depot pack configuration of the item.

5.105.1.4.13 Shipping and storage data.

For ammunition items, this paragraph shall list all applicable shipping and storage data such as hazard classification and storage compatibility group, United Nations (UN) identification number and shipping name, and Department of Transportation (DOT) class. For munitions equipment it shall list the physical dimensions, weight, and cube of the equipment.

5.105.1.4.14 Limitations.

This paragraph shall list any restriction, warning, or weakness associated with the item.

5.105.1.4.15 References.

This paragraph shall be a list, citing only publication module codes, of all related TMs/IETPs, FMs, and Supply Catalogs (SCs).

5.105.1.4.16 Remarks.

This paragraph shall provide any other information deemed pertinent.

5.105.1.4.17 Associated equipment.

This paragraph shall list any additional APE that is used in conjunction with the described munitions equipment.

5.105.1.4.18 Kits.

This paragraph shall list any APE accessory equipment not normally supplied with the end item.

5.105.1.5 Appendices.

Ammunition data sheet TMs shall contain appendices as specified by the acquiring activity. Munitions equipment data sheet TMs shall contain the following appendices.

5.105.1.5.1 Appendix A – Deleted items.

Data Module Type: Descriptive Information Code: 003D

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This appendix shall appear in all editions subsequent to the first edition. It shall consist of an alphabetical list of all items deleted from this TM/IETP as a result of a technical committee action or Materiel Status Record (MSR). On first editions which contain no deleted items, Appendix A shall contain the following statement:

"Since this is the first edition, there are no deleted items."

5.105.1.5.2 Appendix B – Operational index.

Data Module Type: Descriptive Information Code: 942E

When specified by the acquiring activity, the TM/IETP shall contain an operational appendix. It shall provide a cross-reference between ammunition items and the APE items needed for function testing, inspecting, maintenance, renovation, and demilitarization of the ammunition item. This appendix may consist of one or more sections.

5.105.1.5.3 Appendix C – Preparation and handling of ammunition peculiar equipment for shipment and storage.

Data Module Type: Descriptive Information Code: 810D

When specified by the acquiring activity, the TM/IETP shall contain a preparation and handling of APE for shipment and storage appendix. It shall contain an introduction (scope and definitions), general requirements (project requirements, levels of protection, and basic requirements), and detailed requirements section, as applicable, and requirements for checking for and removal of explosive contamination.

5.105.1.6 Rear matter.

Refer to 5.128.3 for rear matter requirements.

5.105.2 Project decisions.

5.105.2.1 Stand alone.

Munition Equipment and Ammunition Data Sheets information sets may be produced as either a stand-alone TM/IETP or as part of a more comprehensive publication. If this content is produced as a stand-alone publication, the chapter/section/paragraph numbering requirements apply. If the content is included in a publication with a larger scope, the content requirements apply but the chapter/section/paragraph numbering requirements do not.

5.105.2.2 Photographs and line drawings.

The project shall decide about the inclusion of a photograph or line drawing of the item on the data sheet.

5.106 S1000D Chapter 5.2.1.18 – Common information sets – Common information and data.

5.106.1 Supporting information – General.

5.106.1.1 Army business rules.

5.106.1.1.1 General.

Supporting information shall be prepared for weapon systems, major equipment, components and applicable support and interface equipment. Supporting information requirements are included for the preparation of technical data that supplements the specific operation and maintenance information contained in the TM/IETP. This supplemental information includes:

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a. References (refer to 5.106.1.1.2)
b. MAC (refer to 5.94)
c. COEI (refer to 5.93.12)
d. BII (refer to 5.93.13)
e. AAL (refer to 5.93.14)
f. Expendable and durable items list (refer to 5.93.15)
g. Tool identification list (refer to 5.103.1)
h. Mandatory replacement parts list (refer to 5.93.16)
i. CSI (refer to 5.93.17)
j. Support items (refer to 5.106.1.1.3)

Not all of the above listed supporting information is required in all cases. Refer to the business rules for the individual lists for details.

5.106.1.1.2 References.

Data Module Type: Descriptive Information Code: 017B

A LOAP shall be referenced (if it exists).

5.106.1.1.3 Support equipment and tools (Support items).

Data Module Type: Descriptive Information Code: 061B

This data module shall be prepared as directed by acquiring activity and shall combine any the supporting lists described in c through i, as applicable. This data module shall be developed when the data contained in these supporting lists are minimal and creating a separate data module for each list is unnecessary. The data module may include an introduction and the applicable lists described in c through i.

5.106.1.1.4 Additional supporting information.

Data Module Type: Descriptive Information Code: unspecified

When specified by the acquiring activity, additional data modules shall be prepared when the data modules previously described herein do not support the data/information to be presented.

5.106.1.2 Project decisions.

None.

5.106.2 Warranty Technical Bulletins (WTBs).

5.106.2.1 Army business rules.

5.106.2.1.1 General.

The WTB information sets shall be prepared using the data module types and info codes specified in the corresponding content selection matrix in A.5.

5.106.2.1.2 National Stock Numbers (NSNs).

NSNs shall not be used in the procedures or the narrative portion of the WTB. Unless essential for identification, manufacturer's part numbers shall not be used in procedures or the narrative portion of the WTB.

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5.106.2.1.3 References.

Reference to other documents and information within the WTB shall be held to a minimum. Reference shall not be made to other documents unless they are normally available to the user.

5.106.2.1.4 Order of presentation.

The content of WTBs shall be formatted as follows:

a. Cover/title page.
b. General.
c. Explanation of terms.
d. Coverage - specific.
e. Contractor responsibilities.
f. Government responsibilities.
g. Design/performance specifications (if specified by the contracting activity.
h. Nullification.
i. Claim procedures.
j. Storage/shipment/handling.
k. Appendixes.
l. DA Form 2028 (Recommended Changes to Publications and Blank Forms).

5.106.2.1.5 Front matter.

Refer to 5.128 for front matter content requirements.

5.106.2.1.6 General.

Data Module Type: Descriptive Information Code: 028A

The project shall determine the page layout (portrait/landscape) and format for printed manuals.

5.106.2.1.6.1 Paragraph 1, General.

This paragraph shall state the general intent and coverage of the WTB and shall identify the type of warranty (performance, time and material, workmanship, reliability, design). Subparagraphs such as applicability, limitations, and purpose shall be included when appropriate. When the warranty covers major components of an end item, the end item shall be identified. These subparagraphs, however, shall not include any detailed specifics that are normally part of paragraph 3 (refer to 5.106.2.1.6.3).

5.106.2.1.6.2 Paragraph 2, Explanation of terms.

All terms used within the WTBs that are peculiar to warranty and contract terminology shall be explained. Terms shall be listed in alphabetical order. Terms not used in the WTB shall not be listed. As a minimum, all applicable terms used in the following list shall be included:

5.106.2.1.6.2.1 Abuse.

The improper use, repair, or handling of warranted items such that the warranty may become void.

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5.106.2.1.6.2.2 Acceptance date.

The date an item of equipment is accepted into the Army's inventory by the execution of the acceptance block and signing of a DD Form 250 or approved acceptance document, by an authorized representative of the government.

5.106.2.1.6.2.3 Acquiring command or activity.

An activity which procures the items or materiel for a user.

5.106.2.1.6.2.4 Alterations/Modifications.

Any alteration after production such as retrofit, conversion, remanufacture, design change, engineering change and the like.

5.106.2.1.6.2.5 Consolidated warranty technical bulletin.

A WTB that covers a multiple number of equipment systems that are not covered by separately numbered TMs.

5.106.2.1.6.2.6 Contractor support.

Those services that are to be performed and those responsibilities that are placed upon the contractor by the government as specified in the warranty contract/provisions. This support, which may include such things as labor, parts, tools, training, technical packages, etc., will be used in support of the warranted equipment during the specified warranty period.

5.106.2.1.6.2.7 Defect.

Any condition or characteristic in any supplies or services furnished by the contractor under the contract that is not in compliance with the requirements of the contract.

5.106.2.1.6.2.8 Failed item.

A part, component, or end item that fails to perform its intended use.

5.106.2.1.6.2.9 False return rate.

The return of suspected defective warranty items to the manufacturer that are eventually determined to be serviceable.

5.106.2.1.6.2.10 Manufacturer's recall.

a. Safety recall. A manufacturer recalls an item to repair or replace a defective part or assembly which may affect public safety.
b. Service recall. A manufacturer recalls an item to repair or replace a defective part or assembly which does not affect the safe use of the item.

5.106.2.1.6.2.11 Primary damage.

The damage suffered by a part, component, or end item itself upon its failure.

5.106.2.1.6.2.12 Prime contractor.

A party that enters into an agreement directly with the United States to furnish part or all of a weapon system.

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5.106.2.1.6.2.13 Reimbursement.

A written provision in a warranty contract whereby the user may make the necessary repairs with or without prior approval of the contractor and the Government will be reimbursed for the repair parts and/or labor costs.

5.106.2.1.6.2.14 Repair.

To restore an item to serviceable condition without affecting the warranty.

5.106.2.1.6.2.15 Reparable.

An item that may be reconditioned or economically repaired for reuse when it becomes unserviceable.

5.106.2.1.6.2.16 Secondary damage.

The damage suffered by an item because of a failure of another item within the same configuration.

5.106.2.1.6.2.17 Serviceable.

The condition of an item which may be new or used that meets all the requirements and performs the functions for which it was originally intended.

5.106.2.1.6.2.18 Subcontractor.

Any supplier, distributor, vendor, or firm that furnishes supplies or service to or for a prime contractor or another subcontractor.

5.106.2.1.6.2.19 Tailoring.

The process of evaluating individual potential requirements to determine their pertinence and cost effectiveness for a specific system or equipment acquisition, and modifying these requirements to ensure that each contributes to the optimal balance and cost. The tailoring of data requirements should consist of determining the essentialness of potential Contract Data Requirements List items and should be limited to the exclusion of information requirement provisions.

5.106.2.1.6.2.20 Turnaround time.

The amount of time that is permitted for an item to be replaced/repaired by the contractor/ maintenance repair facility and returned to the user. The time is measured from the time the contractor/repair facility receives the request.

5.106.2.1.6.2.21 Validation.

The process by which the contractor tests/measures the WTB to assure its accuracy as it pertains to the warranty item(s).

5.106.2.1.6.2.22 Verification.

The process of determining the accuracy and adequacy of the WTB provided by the contractor. This process is performed by the Government/user.

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5.106.2.1.6.2.23 Warranty.

A promise or statement of fact from a seller to a purchaser on the nature, usefulness, or condition of the supplies or performance of services to be furnished. The main purposes of a warranty in a government contract are to outline the rights and obligations of the contractor and the government for defective items and services. It also serves to foster quality performance by the contractor, but is not a substitute for an adequate quality assurance program.

5.106.2.1.6.2.24 Warranty claim.

Action started by the equipment user for authorized warranty repair, replacement, or reimbursement made from the local dealer or manufacturer.

5.106.2.1.6.2.25 Warranty Control Office (WARCO).

WARCOs are established at the intermediate General Support/Director of Industrial Operations level or equivalent and serve as the intermediary between the troops owning the equipment and the local dealer, contractor, or manufacturer. All warranty claim actions will be processed through the WARCO.

5.106.2.1.6.2.26 Warranty period.

Time during which the warranty is in effect. Normally measured as the maximum number of years, months, days, miles, or hours used.

5.106.2.1.6.2.27 Warranty start date.

The date the warranty is put into effect.

5.106.2.1.6.3 Paragraph 3, Coverage – Specific.

This paragraph shall cover all information necessary to identify the item(s) covered and the terms of coverage. Each component/part of the item(s) having different coverage, such as time coverage or limited coverage, shall be clearly identified. When possible, tables shall be developed to identify all pertinent information. More than one table shall be developed when it will make it easier to distinguish different coverage applicable to the warranty. Each separate table shall key on a particular subject such as: extent/duration of coverage (components covered for 1 year or 50,000 miles, or components covered for 15,000 hours of operation). Tables shall include all data listed below, if applicable:

a. Nomenclature
b. Line item number
c. Model numbers
d. NSNs
e. Manufacturer and part number (use CAGEC)
f. Serial numbers (identification numbers)
g. Contract number(s) - prime contractor
h. Applicable dates, hours, mileage, length of time coverage
i. Type of coverage

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5.106.2.1.6.4 Contractor responsibilities.

This paragraph shall contain the obligations imposed on the contractor. It shall address how the warranty claims will be handled by the contractor. It shall state the extent of coverage involved such as: "The item(s) determined to be defective, due to defective material or workmanship, shall be replaced with a new item(s) at no cost to the Government" or "at the option of the contractor the defective equipment shall be replaced or repaired, with the contractor assuming all expenses." Handling and shipping costs (both ways), and time allowed for the contractor to settle legitimate claims shall be addressed. When detailed responsibilities for handling, shipping, and others are explained in other paragraphs, reference shall be made to those paragraphs. When responsibilities apply to subcontractor(s) rather than the prime contractor, the responsible subcontractor shall be identified. When contractor support is not available or planned, reference shall be made to instructions provided under government responsibilities. A complete and current worldwide listing of applicable contractors, subcontractors, and their associated claim/service addresses shall be provided. When this data is excessive (more than one page of printed material), an appendix shall be prepared and referenced in this paragraph.

5.106.2.1.6.5 Government responsibilities/identification.

The Life Cycle Management Commands (LCMCs), contracting activity, or other Government activity responsible for administrative functions relative to assuring that the pertinent warranty program is effective shall be identified. As a minimum, this identification shall include the command(s) name, telephone number (Defense Switched Network (DSN) and commercial), business hours (e.g., 0800-1630 EST), point of contact (Continental U.S. (CONUS) and outside CONUS (OCONUS)), and emergency contact information. The responsibilities of the activity(s) shall be listed.

a. Government maintenance. When the provisions of the warranty allow the Government to perform corrective maintenance on warranty items, the maintenance functions and the maintenance level that may perform these functions on these warranty items shall be listed or referenced. These maintenance functions shall be the same level as authorized in the maintenance allocation chart of the applicable TM/IETP. Normal care, servicing, and preventive maintenance procedures required to keep the warranty effective shall be included in this paragraph. Any authorized deviation from normal maintenance and repair procedures shall be listed. An explanation covering evacuation, shipping, or handling details shall be made when contractor support is not available. When these details are covered in another paragraph of the WTB or another document (e.g., TM or TB), reference shall be made to the applicable paragraph or document.
b. Owning unit responsibilities. This paragraph shall include responsibilities of the owning unit. When these responsibilities are identified elsewhere within the WTB, reference shall be made to the paragraph where these responsibilities are identified.
c. Warranty Control Office (WARCO) responsibilities. This paragraph shall describe the responsibilities of WARCO pertaining to the specific warranty contract. When responsibilities of the LCMC or installation warranty control office are different from the activity WARCO, separate subparagraphs shall be included to distinguish these differences.

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d. Army Oil Analysis Program (AOAP). This paragraph shall identify warranty items enrolled in the AOAP. It shall specify the oil and oil filter change interval required by the warranty contractor and reference applicable AOAP documents that direct AOAP sampling. Instructions shall be provided to indicate what action shall be taken when AOAP sample reveals incipient failure or the AOAP laboratory recommends maintenance action(s) that may negate the warranty.

e. Alterations/modifications. This paragraph shall contain the following statement:

"Alterations and modifications shall not be made unless expressly authorized or directed by: (*insert name, address, and telephone number (DSN and commercial) of the authorizing command*)."

5.106.2.1.6.6 Design/performance specifications.

When design performance specifications are clearly defined in the contract, this paragraph shall describe or identify the physical and performance specifications of the warranty item(s) that the accepting command should verify to determine whether or not the specifications are met. A description or illustration showing content and location of warranty labels identifying warranty items shall be made. This description shall include content and location of any bar coded warranty information concerning the item of equipment. When they are shown in other available publications, reference shall be made to these publications. The methods for testing or measuring the actual design performance of item(s) shall be described or identified either by placing details in this paragraph or by reference to document(s) containing these details. Testing and measuring methods shall be identified with the maintenance level capable of performing these functions. These testing or measuring methods shall apply to the initial acceptance criteria as well as item/equipment performance for the duration of the warranty. When acceptance criteria and continued performance criteria differ, they shall be clearly identified.

5.106.2.1.6.7 Nullification.

This paragraph shall identify any action taken by the Government that may nullify the warranty such as: certain maintenance/repair, improper use or operation, abuse, improper environmental exposure, and method of installation. The nullification actions identified shall be specific enough to avoid misunderstanding. Also, actions that shall be taken to keep the warranty in effect or prevent the warranty from becoming void shall be provided or referenced in this paragraph.

5.106.2.1.6.8 Abuse determination.

This paragraph shall state what action shall be taken, and by whom, when abuse is not obvious, but suspected. This action shall indicate the responsibility of both the warranty contractor and the Government in making a determination as to whether or not abuse has taken place. When abuse is determined, the action required to keep the item functional shall be stated.

5.106.2.1.6.9 Claim procedures.

This paragraph shall include all procedures necessary to process claims and shall identify who shall perform these procedures. As a minimum, these procedures shall include identification of failed items, disposition, reimbursement for Army repair, claim denial/disputes/reporting, and identification of the command hot line (DSN or commercial). Reference shall be made to DA PAM 750-8.

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a. Identification of failed items. This paragraph shall state that failed warranty items shall be tagged/identified to prevent improper repair or use. Documents that describe the use of DA Form 2402, Exchange Tag, and DA Form 2407, Maintenance Request, shall be referenced. Items requiring special handling, storage, or shipment during the processing of claims shall be identified.

b. Disposition. This paragraph shall include procedures for handling, repair, and evacuation of failed warranty items. These procedures shall identify who will do what, when, and where. Procedures shall include documentation required and how to document or refer to instructions for completion of documentation.

(1) False returns. An explanation shall be provided to warn that when items returned to the contractor for repair are found to be serviceable, the submitting Government unit will be penalized (cost, loss of time, non-availability of item, etc.) Also, a statement shall be made that false returns will be monitored by the responsible activity (usually the commodity command).

(2) Receipts/verification of contractor repairs. Instructions shall include actions to be taken, and by whom, when contractors repair and return a warranty item. Instructions shall include, but not be limited to, procedures for recording and reporting the action and verification of repair.

(3) Special area requirements. When limitations exist and adjustments or changes are required at different commands, theaters, or locations; these conditions shall be identified. When the list of these exceptional conditions is extensive, it shall appear in the WTB appendix and be referenced in the text.

c. Reimbursement for Army repair. This paragraph shall describe the conditions and provide procedures for obtaining/requesting reimbursement when the Army performs authorized maintenance. These procedures shall state that reimbursement actions to support the claim shall be documented and submitted through the warranty control office.

d. Claim denials/disputes. This paragraph shall describe the procedures that shall be performed when a warranty claim denial or dispute occurs. Specific elements or organizations within each geographical area to which disputes shall be referred for resolution shall be identified.

e. Reporting. This paragraph shall state:

"Reporting or recording action on a failed item shall be as specified in DA PAM 750-8 or DA Pam 738-751. Contractor unique forms shall not be used."

5.106.2.1.6.10 Storage/shipment/handling.

When applicable, warranty requirements pertaining to storage, shipment, and handling shall be provided. When these requirements are provided in more detail in other available documents, reference shall be made to these documents.

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a. Storage. This paragraph shall include storage requirements that will pertain to the warranty contract. These storage requirements shall include the time prior to use of the materiel, regular storage, administrative storage, storage during maintenance and repair, and storage in the depot, installation, or field environment. Instructions shall include any special packing, preservation, and depreservation techniques required.
b. Shipment. Shipment requirements, regular or special, associated with the warranty shall be identified. The responsibilities on the part of both the Government and the warranty contractor shall be specified. These responsibilities shall include cost and funding allocations as well as action required. A statement shall be made to indicate that no shipment shall be made without direct authority from the supporting warranty control office. Any additional authorization required shall be stated. If cost of transportation and shipment shall be recovered from the warranty contractor, recovery procedures shall be provided.
c. Handling. When special handling of warranty items is necessary because potential hazards exist or damage may be caused to the items or other items/equipment when improperly handled, instructions shall be provided.

5.106.2.1.7 Appendices – Warranty tables.

Data Module Type: Descriptive Information Code: 023F

Appendices shall be used when it is not appropriate to use tables integrated within the text of the WTB. Extensive information such as an applicable worldwide list of warranty service and claim offices shall be placed within an appendix. These listings shall be arranged by geographical areas or a method that is self explanatory. When the TB is a consolidated TB, specific details such as a listing of all equipment names and models, NSNs, serial numbers, contract numbers, and effective dates shall be covered in an appendix titled Equipment Under Warranty. The format shall be that specified by the contracting activity. The number of appendixes used will be determined by the extent of the warranty.

5.106.2.1.8 Rear matter.

Refer to 5.128.3 for rear matter requirements.

5.106.2.2 Project decisions.

None.

5.107 S1000D Chapter 5.2.1.19 – Common information sets – Training.

5.107.1 Army business rules.

None.

5.107.2 Project decisions.

5.107.2.1 Planning scope and depth.

The project shall determine the planning scope and depth.

5.107.2.2 Training information scope and depth.

The project shall determine the training information scope and depth.

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5.108 S1000D Chapter 5.2.1.20 – Common information sets – List of applicable publications.

Data Module Type: Descriptive Information Code: 017B

5.108.1 Army business rules.

None.

5.108.2 Project decisions.

5.108.2.1 One or several publication list data modules.

The project shall decide whether to deliver the publications and documents listed in one data module or as separate data modules.

5.108.2.2 Include unpublished publications and documents.

The project shall decide whether or not to include publications and documents that are not published.

5.108.2.3 Include the manufacturer's part no. or reference no.

The project shall decide whether or not to include and present the manufacturer's part no. or reference no.

5.108.2.4 Markup of publication entry as a link.

The project shall decide whether or not to markup publication entries as a links.

5.108.2.5 Use of language.

The project shall decide whether or not to include and present the value of the attribute **`language`** on the element **`<pmEntry>`** in the LOAP.

5.109 S1000D Chapter 5.2.1.21 – Common information sets – Maintenance checklists and inspections.

Refer to 5.87.3.1.2, 5.87.7, 5.87.23, 5.97.3.1.4.4, 5.117, 5.118, and 5.119.

5.110 S1000D Chapter 5.2.2.1 – Air specific information sets – Use of generic information.

The information referenced in S1000D Chapter 5.2.2.1 is not required for U.S. Army TMs/IETPs. Refer to the Content Selection matrices for content requirements. This S1000D-provided information set does not support existing Army requirements. Any project desiring to acquire technical data matching this information set shall coordinate with LOGSA to ensure consistent implementation across the Army.

5.111 S1000D Chapter 5.2.2.3 – Air specific information sets – Cross servicing information.

The information referenced in S1000D Chapter 5.2.2.3 is not required for U.S. Army TMs/IETPs. Refer to the Content Selection matrices for content requirements. This S1000D-provided information set does not support existing Army requirements. Any project desiring to acquire technical data matching this information set shall coordinate with LOGSA to ensure consistent implementation across the Army.

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5.112 S1000D Chapter 5.2.2.4 – Air specific information sets – Engine maintenance information.

The information referenced in S1000D Chapter 5.2.2.4 is not required for U.S. Army TMs/IETPs. Refer to the Content Selection matrices for content requirements. This S1000D-provided information set does not support existing Army requirements. Any project desiring to acquire technical data matching this information set shall coordinate with LOGSA to ensure consistent implementation across the Army.

5.113 S1000D Chapter 5.2.2.5 – Air specific information sets – Power plant build-up information.

The information referenced in S1000D Chapter 5.2.2.5 is not required for U.S. Army TMs/IETPs. Refer to the Content Selection matrices for content requirements. This S1000D-provided information set does not support existing Army requirements. Any project desiring to acquire technical data matching this information set shall coordinate with LOGSA to ensure consistent implementation across the Army.

5.114 S1000D Chapter 5.2.2.6 – Air specific information sets – Engine standard practices information.

The information referenced in S1000D Chapter 5.2.2.6 is not required for U.S. Army TMs/IETPs. Refer to the Content Selection matrices for content requirements. This S1000D-provided information set does not support existing Army requirements. Any project desiring to acquire technical data matching this information set shall coordinate with LOGSA to ensure consistent implementation across the Army.

5.115 S1000D Chapter 5.2.2.7 – Air specific information sets – Aircrew information.

5.115.1 Army business rules.

5.115.1.1 General.

Aircraft operator information sets shall be prepared using the data module types and info codes specified in the corresponding content selection matrix in A.5.

5.115.1.2 Preparing data modules.

All aircrew descriptive information (except front and rear matter) shall be prepared with the Crew/Operator data module using the descriptive branch (element **`<descrCrew>`**).

5.115.1.3 Scope.

The operator's manual shall describe briefly and concisely the operation of the complete aircraft. Unmanned Aircraft Systems (UASs) shall include ground stations and other elements in addition to the actual air vehicles. The description of aircraft, aircraft systems, sub-systems, and components shall contain only that detail required to explain the operation, operational procedures, and checks necessary for the pilot to safely and efficiently operate the aircraft, aircraft systems, and mission equipment during flight and ground operation. Each operator's manual prepared in accordance with this specification shall be divided into the following sections:

a. Front Matter
b. Chapter 1 – Introduction
c. Chapter 2 – Aircraft and Systems Description and Operation

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d. Chapter 3 – Avionics
e. Chapter 4 – Mission Equipment
f. Chapter 5 – Operating Limits and Restrictions
g. Chapter 6 – Weight/Balance and Loading
h. Chapter 7 – Performance Data
i. Chapter 8 – Normal Procedures
j. Chapter 9 – Emergency Procedures
k. References
l. Abbreviations and Terms
m. Index
n. Authentication Page
o. DA Form 2028
p. Foldouts (if included)

5.115.1.4 Hierarchical breakdown.

An Operator's Manual begins with: volumes (if required), chapters, and sections. Each division used should have at least two occurrences (for example where there is a Volume 1, there should be a Volume 2; where there is a Chapter 1, there should be a Chapter 2; etc.). Multiple volumes should be partitioned only between chapters.

5.115.1.5 Volume size.

Division into volumes shall occur when the number of printed pages (excluding pocket TMs) exceeds 1,000 pages or 500 sheets. Each volume shall not exceed 1,000 pages or 500 sheets. An Maintenance Test Flight manuals or checklist (4 ½ x 8 inches) volume shall not exceed 500 pages or 250 sheets. Foldouts are counted in page units (sheets).

5.115.1.6 Volume content.

Each volume of a series shall display the publication module code on its cover and all pages that make up the volume. Each volume of a series shall contain a title block page and table of contents. The first volume shall contain a complete (including all volumes information) table of contents.

5.115.1.7 Front matter.

Refer to 5.128 for front matter content requirements.

5.115.1.8 Aircraft operator's manual Chapter 1 – Introduction.

Data Module Type: Crew/Operator Information Code: 018A

This chapter shall consist, at a minimum, of introductory material that applies to the manual as a whole. A brief summary of the contents of the manual shall be provided.

5.115.1.8.1 Explanation of warnings, cautions, and notes.

Data Module Type: Crew/Operator Information Code: 012H

An explanation of the use of warnings, cautions, and notes that the operators will find in the TM/IETP and the importance of observing these safety alerts shall be provided. The following shall be included:

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"Warnings, cautions, and notes are used to emphasize important and critical instructions and are used for the following conditions.

WARNING - Identifies and highlights an essential operating or maintenance procedure, practice, condition, statement, etc., which if not strictly observed, could result in injury to, or death of, personnel or long term health hazards to the person performing that procedure.

CAUTION - Identifies and highlights an essential operating or maintenance procedure, practice, condition, statement, etc., which, if not strictly observed, could result in damage to, or destruction of, equipment or loss of mission effectiveness.

NOTE - Highlights an essential operating or maintenance procedure, condition, or statement."

5.115.1.8.2 Theory of operation (Description).

Data Module Type: Crew/Operator Information Code: 042F

A succinct summary of the aircraft's description and primary mission, omitting any extraneous mission capabilities statements, shall be provided. The statement similar to the following shall be included:

"This manual contains the best operating instructions and procedures for the (*insert aircraft designation*), under most circumstances. The observance of limitations, performance, and weight/balance data provided is mandatory. The adherence to procedures is mandatory except when modifications are required because of multiple emergencies, adverse weather, terrain, etc. Basic flight principles are not included. THIS MANUAL SHALL BE ACCESSIBLE IN THE AIRCRAFT OR FOR UAS, KEPT IN THE GROUND CONTROL STATION DURING ALL FLIGHTS."

5.115.1.8.3 References.

Data Module Type: Crew/Operator Information Code: 017B

a. Army aviation safety program. The following statement shall be provided.

"Reports necessary to comply with the Army Aviation Safety Program are prescribed in AR 385-10."

b. Destruction of Army materiel. Information on procedures for destroying Army materiel to prevent enemy use shall be included. Reference shall be made to TM 750-244-1-5.

c. Forms and records. Flight records and aircraft maintenance records which are used by the operators and crewmembers shall be described. References shall be made to DA Pam 738-751 and TM 55-1500-342-23.

5.115.1.8.4 How to use this manual.

Data Module Type: Crew/Operator Information Code: 018B

Explanation of change symbols. An explanation of the use of change symbols shall be included. An example of this explanation shall be as follows:

"Changes to the text and tables, including new material on added pages shall be indicated by a vertical bar in the outer margin extending close to the entire area of the material affected. Pages with emergency markings, which consist of black diagonal lines around three edges, shall have the vertical bar or change symbol placed along the

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outer margins between the text and the diagonal lines. Change symbols show current changes only. A miniature pointing hand symbol is used to denote a change to an illustration. However, a vertical bar in the outer margin, rather than miniature pointing hands, shall be utilized when there have been extensive changes made to an illustration. Change symbols shall not be used to indicate changes in the following:

a. Introductory material.
b. Indexes and tabular data where the change cannot be identified.
c. Correction of minor inaccuracies, such as spelling, punctuation, relocation of material, etc., unless such correction changes the meaning of instructive information and procedures.
d. Blank spaces resulting from the deletion of text, an illustration, or a table."

5.115.1.8.4.1 Designator symbols.

An explanation of designator symbols, along with a table of symbols used in the TM/IETP shall be provided. Designator symbols shall be defined by the use of the element **`<inlineSignificantData>`** and the attribute **`significantParaDataType`** with the "**`psd55`**" (refer to 5.48.1.30).

5.115.1.8.4.2 Explanation of the use of shall, should, and may.

A statement similar to the following shall be included in the introduction:

> Within this TM/IETP, use "shall" whenever a TM/IETP expresses a mandatory requirement. "Will" may be used to express a declaration of purpose or procedural result. Use "should" to indicate a non-mandatory, but preferred, method of accomplishment. The word "may" shall be used to indicate an acceptable method of accomplishment.

5.115.1.8.4.3 Additional introductory information.

Any additional introductory information that may be required such as explanatory information for appendices or indices shall be provided, as applicable.

5.115.1.9 Aircraft operator’s manual Chapter 2 – Aircraft and systems description and operation.

5.115.1.9.1 General.

A description of the airframe and all aircraft systems and controls shall be provided in this chapter. Major assemblies such as fuselage, wings, and tail boom shall be described. Each compartment of the aircraft such as cockpits and cabins shall be described and illustrated as required. Individual sections (as noted in 5.115.1.9.2 through 5.115.1.9.16) shall be developed for the description and operation of the aircraft and each aircraft system.

5.115.1.9.1.1 Unmanned Aircraft Systems (UASs).

UAS manuals shall provide a complete description and shall include the entire system by major such as Air Vehicle, Ground Control Shelter, Ground Control Station/Portable Control Station, Data Link and Launcher. The description of each system and associated controls and equipment shall be brief and concise. Illustrations shall be used to identify and locate the systems controls and equipments. Major UAS assemblies such as shelter, portable cases, and workstations shall be described. Each workstation of the ground control station shall be described and illustrated as required. Illustrations shall be used to identify and locate the systems, controls, and equipment.

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5.115.1.9.1.2 Interactive displays.

For aircraft equipped with interactive displays, such as a multifunction display (MFD), the data management system, including the interactive display, shall be described in this chapter. For each section within this chapter that describes a subsystem, the appropriate top page of the interactive display, including each button, shall be fully described, and explained. When needed for clarity, illustrations of representative items displayed on the interactive display shall be included throughout the TM/IETP.

5.115.1.9.1.3 Controls.

Each control contributing to the operation of a system shall be described and its location given. The function of the control and the end result produced when the control is moved to each of its possible positions shall be included in the description. Any effect which this control may have on other systems, or which they may have on the control shall be stated. If movement of the control requires any special action because of locks, gates, etc., it shall be so stated. When feasible, a separate paragraph and illustration shall be devoted to each control. It shall be preferable to divide the control description into two portions, normal controls, and emergency controls, if emergency capabilities exist.

5.115.1.9.1.4 Indicators.

All indicators, instruments, and warning devices that are a part of the aircraft system shall be described and illustrated. This shall include location, function, power source, and interpretation of the indications.

5.115.1.9.2 Section I – Description (Aircraft).

Data Module Type: Crew/Operator Information Code: 043J

This section shall provide a complete but concise description of the aircraft. At a minimum, the following subjects and illustrations shall be included.

5.115.1.9.2.1 General.

A description of the airframe shall be included. Major assemblies such as fuselage, wings, and tail boom shall be described. Each compartment of the aircraft such as cockpits and cabins shall be described and illustrated as required.

5.115.1.9.2.2 Illustrations and tables.

The following illustrations and tables shall be included in Section I.

a. The aircraft's general arrangement shall depict all access openings that will be checked during preflight of the aircraft. The general arrangement shall be placed as near to the beginning of Section I as practicable. These diagrams shall not include individual controls or aircraft systems. Diagrams that are needed for clarity shall be used. Two or more of these illustrations, such as crew movement diagrams and compartment diagrams, may be combined into one.

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b. Illustrations showing minimum turning radius, ground clearance, dimensions and danger areas shall be included. The minimum turn shall be based on a turn permitted on one wheel (tire hub), with and without power steering assist. Minimum ground clearance shall also be shown. The turning radius for skid equipped aircraft shall be based on turning the aircraft on an identifiable reference point on the aircraft or an identifiable reference point on the ground. An illustration shall be included showing danger areas around the aircraft for all modes of operations on or near the ground. Areas to be avoided to prevent damage to equipment or injury to personnel shall be depicted or described. These figures shall be provided for idle and maximum power. For rotary wing aircraft, illustrations shall be based on hover power required at maximum gross weight. Danger areas of main rotors, tail rotors, or propellers shall also be depicted.
c. Significant differences in design and operation between each aircraft series included in the manual shall be provided. Special emphasis shall be placed on features that will affect recognition and operation of the various series. This information shall be contained in a table.
d. Each major compartment, such as cockpit or cabin, that can carry payload or that can be entered by personnel shall be illustrated and identified.

5.115.1.9.2.3 Unmanned Aircraft System (UAS) - specific illustrations and tables.

As specified by the acquiring activity, the following illustrations and tables shall be provided for UAS manuals:

a. The ground control station or portable ground control stations general arrangement shall depict all access openings. These diagrams shall not include individual controls or systems. Diagrams that are needed for clarity shall be used. Two or more of these illustrations, such as crew movement diagrams and compartment diagrams, may be combined into one.
b. Danger areas around the ground control station for all modes of operations shall be illustrated. Areas to be avoided to prevent damage to equipment or injury to personnel shall be depicted or described.
c. Significant differences in design and operation between each ground control station series included in the manual shall be provided. Special emphasis shall be placed on features that will affect recognition and operation of the various series. This information shall be contained in a table.
d. The Ground Data Terminal/Antenna System general arrangement shall depict all areas that will be checked during preflight of the system. The general arrangement shall be placed as near to the beginning of Section I as practicable. These diagrams shall include all components of the Ground Data Terminal/Antenna System. Diagrams that are needed for clarity shall be used.
e. Illustrations showing setup distance, dimensions and danger areas shall be included. Minimum setup distance from the UAS system or other structures shall also be shown. An illustration shall be included showing danger areas around the Ground Data Terminal/Antenna System. Areas to be avoided to prevent damage to equipment or injury to personnel shall be depicted or described.

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f. Significant differences in design and operation between each Ground Data Terminal/Antenna System series included in the manual shall be provided. Special emphasis shall be placed on features that will affect recognition and operation of the various series. This information shall be contained in a table.

5.115.1.9.2.4 Landing gear system.

Information describing the landing gear system shall be presented in detail for the operator's use. The following shall also be included.

a. The steering system, including any special or unusual features, shall be described.
b. The brake system, including all emergency provisions, shall be described. Brake provisions for aircraft equipped with floats shall be described as well.

5.115.1.9.2.5 Instruments, panels, and consoles.

All instruments, panels, and consoles shall be described and illustrated. UAS instruments, panels, and consoles include those on or within the ground control station and on or within the Data Link System. Several configurations may be covered by one illustration labeled typical. Minor variations in number or type of controls and instruments shall be indicated by detailed views to the illustration and by notations in the key. The panels or console shall be shown more than once when major changes in configuration are involved.

5.115.1.9.2.6 Canopies.

The canopies shall be described and illustrated. Several configurations may be covered by one illustration labeled typical. All normal and emergency canopy controls, both external and internal, shall be described and illustrated.

5.115.1.9.2.7 Doors.

All doors to include ramps, hatches, etc., controls for normal and emergency operations, and their sources of power shall be described.

5.115.1.9.2.8 Seats.

Pilot and other flight compartment seat controls shall be described and illustrated. Emergency and ejection seat controls, inertia reels, harnesses, and seat belts shall be described and illustrated in detail, emphasizing how they are affected by other systems.

5.115.1.9.2.9 Ground data terminal/Antenna systems.

As required, this section shall provide a complete but concise description of the UAS System specific Data Link systems used in transmitting flight control and payload information between the Ground Control Station and the Air Vehicle. These may include systems such as Ground Data Terminals, Portable Ground Data Terminals, Tactical Common Data Link System, or Tactical Automated Landing Systems. At a minimum, the following subjects and illustrations shall be included.

5.115.1.9.2.9.1 Data link system **(UAS only)**.

An overall description and general arrangement of the Data Link System shall be included. Major assemblies such as shelters, portable cases, and workstations shall be described. Each workstation of the ground control station shall be described and illustrated as required. Diagrams needed for clarity shall be used.

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5.115.1.9.2.10 Emergency recovery system **(UAS only)**.

All emergency equipment used in the recovery of unmanned aircraft shall be described. (i.e., parachute systems, dead stick landing systems.)

5.115.1.9.3 Section II – Emergency equipment.

5.115.1.9.3.1 Description (General).

Data Module Type: Crew/Operator Information Code: 043J

All emergency equipment, except that which forms part of a complete system, shall be described. For example, emergency landing gear controls shall be treated under the landing gear system and emergency fuel pumps under the fuel system. Emergency equipment in this section shall include, but shall not be limited to, hand fire extinguishers, engine fire extinguishers, emergency alarms, pyrotechnic equipment, axes, emergency hatches, signal lamps, ditching jackets, first aid kits, and survival kits. Emergency procedures shall be described only in Chapter 9 (refer to 5.115.1.16).

5.115.1.9.3.2 Illustrations.

Illustrations showing locations of emergency equipment or systems shall be shown as needed but only in Chapter 9 (refer to 5.115.1.16).

5.115.1.9.4 Section III – Description (Engines and related systems).

Data Module Type: Crew/Operator Information Code: 043J

The engine and its related controls, as outlined in the following paragraphs shall be described.

5.115.1.9.4.1 Engines.

The most important characteristics and special features of the engine shall be described. Model designation shall be included for all engines used in the subject aircraft. The following engine systems shall be described:

a. Cooling system and controls such as cowl flaps and engine cooling fans.
b. Engine/engine inlet anti-icing/deicing system.
c. The engine fuel control system, which applies to jet and turbine powered aircraft and extends from the engine fuel control unit through the burner ring or combustor section. Where applicable, special emphasis shall be placed on the emergency fuel control systems. Any special or unusual characteristics of the system shall also be described. Theory of operation shall not be included. Discussion of the throttle/power lever shall be included, as well as all systems affected by throttle/power lever operation.
d. Information on all controls affecting the oil system.
e. Ignition system controls.
f. Starter controls.
g. Infrared suppression system.
h. Engine instruments and indicators. For the purpose of the operator's manual, the fuel and oil supply systems shall be treated as ending at the point where they deliver the fluid to the carburetor, fuel control unit, or the engine-driven oil pump.

5.115.1.9.5 Section IV – Description (Fuel system).

Data Module Type: Crew/Operator Information Code: 043J

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5.115.1.9.5.1 General.

A full description of the fuel system shall be given. Coverage of drop tank release controls shall be included. Reference shall be made to fuel grades and specifications in Section XV, Servicing (refer to 5.115.1.9.16). Diagrams of the typical courses of fuel flow, including fuel system control positions for takeoff, cruising, landing, and emergency operation shall be included.

5.115.1.9.5.2 Controls and indicators.

Fuel system controls and indicators shall be described.

5.115.1.9.5.3 Fuel system management.

The fuel system management process shall be described, including auxiliary fuel, booster pump use, fuel transfer procedures, tank selection procedures, and courses of fuel flow. All possible courses of fuel flow, such as inoperative engines and failed boost pump, shall be included. The sequence in which fuel tanks shall be used shall be stated with corresponding reasons (strength or balance). When applicable, reference shall be made to the pertinent portion of Chapter 6 (refer to 5.115.1.13) when weight distribution becomes a problem. The required sequence of use of tanks to maintain a favorable center-of-gravity (CG) shall be described in detail. Remarks shall also be included regarding control of the aircraft if the transfer system fails and results in an unbalanced condition because of improper fuel distribution.

5.115.1.9.6 Section V – Description (Flight control system).

Data Module Type: Crew/Operator Information Code: 043J

5.115.1.9.6.1 General.

The flight control system and its location in the aircraft or UAS shall be described in its entirety. Flight controls, indicators, trim tabs, force trim, control locks, UAS data links, etc., shall be discussed as stated in 5.115.1.9.2 through 5.115.1.9.2.10. In addition, all other controls located on the control sticks, wheels, yokes, pedals, cyclic and collective, shall be discussed. Illustrations shall be provided for each control column or control stick. Details shall be shown for switches and control buttons, friction devices, locks, etc. Variations in controls between aircraft series or serial numbers, or both, shall also be shown.

5.115.1.9.6.2 Automatic flight control system.

Detailed coverage of automatic stabilization equipment, stability augmentation control system, autopilot, and UAS automatic flight modes shall be provided. All modes of operation shall be described. If any additional systems are required to operate in conjunction with the stabilization equipment, a statement shall be included to that effect. Applicable precautionary data shall be included for conditions of partial or temporary electrical power failure, manual override, etc. When applicable, reference shall be made to navigation equipment descriptions and operations contained in Chapter 3 (refer to 5.115.1.10).

5.115.1.9.7 Section VI – Description (Hydraulic and pneumatic systems).

Data Module Type: Crew/Operator Information Code: 043J

A description of all hydraulic and pneumatic systems shall be provided. At a minimum, test switches, indicators and gauges, caution/warning lights, and controls shall be discussed.

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5.115.1.9.8 Section VII – Description (Power train system).

Data Module Type: Crew/Operator Information Code: 043J

The power train system shall be described in detail to include the transmission and gearbox systems, drive shafting, system controls, and indicators.

5.115.1.9.9 Section VIII – Description (Rotors or propellers).

Data Module Type: Crew/Operator Information Code: 043J

The propellers or rotors, as applicable, and their functions shall be described, including a detailed description of operation.

5.115.1.9.10 Section IX – Description (Utility systems).

Data Module Type: Crew/Operator Information Code: 043J

A description of the defrosting, anti-icing/deicing, pressurization, oxygen, and rain removal systems, and miscellaneous equipment shall be provided. Coverage shall be brief and shall focus on the location of the equipment and its controls, source of power, illustration of the controls (if not covered previously), and a brief discussion of function and operation. Control/switch panels that control several different utility systems shall only be illustrated once, if feasible. Information shall be included on all non-emergency equipment which is not part of a system. All miscellaneous equipment and normal and emergency operation procedures shall be included. Miscellaneous equipment shall include, but shall not be limited to, seats (other than pilot and flight engineer), hatches, heated blanket provisions, data case, beaching gear, night flying curtains, ladders, relief equipment, food warmers, water containers, and tool kits. Items covered as aircraft loading equipment in Chapter 6 (refer to 5.115.1.13) shall not be included here. Items dealing with aircraft servicing and ground handling shall be contained in servicing, parking, and mooring, Section XV (refer to 5.115.1.9.16).

5.115.1.9.11 Section X – Description (Heating, ventilation, cooling, and environmental control systems).

Data Module Type: Crew/Operator Information Code: 043J

The heating, ventilation, cooling, and environmental control systems shall be described. The description, normal operation, and emergency operation for each of these systems shall be discussed under separate paragraphs, as applicable.

5.115.1.9.12 Section XI – Description (Electrical power supply and distribution systems).

Data Module Type: Crew/Operator Information Code: 043J

The electrical power supply and distribution systems and controls shall each be described and illustrated. Where pertinent, reference shall be made to auxiliary power systems that are described elsewhere. The external power source and the interaction between the auxiliary power plant and the electrical system shall be described. General arrangement and order of the primary system shall be covered first, followed by the secondary system.

5.115.1.9.12.1 Direct Current (DC) power supply system.

DC power supply systems shall include battery; starter-generators, generators, alternators and converters; indicators, gauges, and controls; circuit breaker and junction boxes; auxiliary power; and ground power.

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5.115.1.9.12.2 Alternating Current (AC) power supply system.

These systems shall include inverters and alternators; indicators, gauges, and controls; AC circuit breaker and junction box diagram; auxiliary power; and ground power.

5.115.1.9.12.3 Breakers.

The location of each circuit breaker panel shall be shown, and on standardized installation, each circuit breaker in the panels shall be identified. The illustration shall depict a typical installation of both systems (AC/DC) that may be combined on one illustration. In those instances where a standardized circuit breaker location does not exist, the location of circuit breakers or fuses shall be given.

5.115.1.9.13 Section XII – Description (Auxiliary power unit).

Data Module Type: Crew/Operator Information Code: 043J

A description of the auxiliary power unit, controls, and its interaction with other systems shall be provided. Starting, stopping, and in-flight operating procedures shall be contained in Chapter 8 (refer to 5.115.1.15) and emergency procedures in Chapter 9 (refer to 5.115.1.16).

5.115.1.9.14 Section XIII – Description (Lighting).

Data Module Type: Crew/Operator Information Code: 043J

Information shall be provided for, but shall not be limited to, formation, landing, fuselage, cabin, instruments, wheel well, taxi, navigation, and anti-collision lights. Coverage shall concern itself largely with locations, controls, power sources, and a discussion of functions. Illustrations may be used if equipment is not depicted in Chapter 2 or elsewhere.

5.115.1.9.15 Section XIV – Description (Flight instruments).

Data Module Type: Crew/Operator Information Code: 043J

All flight instruments, indicators, gauges, and miscellaneous instruments and systems shall be described. Miscellaneous instruments and systems shall include such items as master caution systems, rpm high/low warning systems, trainer instrument panel, and clocks. Special problems, such as erroneous readings of the airspeed indicating system resulting from installation error or hovering, shall be included with references to correction charts, when applicable. Complex display systems shall be included under a separate primary heading. Line drawings shall be provided for all instruments. Each indicator, gauge, and control shall be shown. Each item shall be indexed or posted and references or links shall be used within the text as appropriate.

5.115.1.9.16 Section XV – Description (Servicing, parking, and mooring).

Data Module Type: Crew/Operator Information Code: 043J

5.115.1.9.16.1 General.

Servicing shall include, but shall not be limited to, flight crew oriented instructions for normal and closed circuit refueling and for replenishment of fuel, oil, hydraulic fluid, other fluids, and air in tires. Servicing shall also include all other such items involved in servicing the aircraft that a crew could be expected to perform while away from military maintenance support. Safety precautions to observe in servicing a particular tank or reservoir, such as grounding and prevention of fire hazards, shall be stated clearly. Servicing instructions shall be supplemented with a diagram showing locations of regular and alternate servicing points. NO STEP areas on

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walkways leading to tanks shall be indicated, with necessary precautions. Reference shall be made to graphs or data in other parts of the manual pertinent to servicing, such as tire pressure versus gross takeoff weight.

5.115.1.9.16.2 Servicing diagram.

The servicing diagram shall depict each servicing point, including, but not limited to, tanks, reservoirs, filler caps, receptacles, oxygen bottles, and accumulators and shall be shown as viewed. Illustrations of site gauges and other indicators shall clearly depict proper servicing levels.

5.115.1.9.16.3 Servicing information.

Servicing data shall be in tabular form. Each item of equipment including, but not limited to, engine, transmission, gearboxes, reservoirs (hydraulic, anti-icing), auxiliary power unit, and oxygen systems shall be listed under "System." Under the heading of "Specification," the military specification for the fuel, oil, fluid, or lubricant shall be listed, including references to any notes on temperature ranges, mixing of oil, etc. Fuel capacities shall also be listed to include total, servicing capacity, and usable capacity in U.S. measurements to the nearest tenth of a gallon, and metric equivalents.

5.115.1.9.16.4 Approved fuels.

A tabular listing of primary, alternate, and emergency fuels shall be included, to include NATO and commercial brand names authorized for use in the aircraft for which this manual applies. Warnings and cautions regarding additives shall be presented in the table. Also, restrictions on the use of any fuels shall be stated. The fuels contained in this listing shall only be those authorized for use by TB 55-9150-200-24 and by the acquiring activity. This information shall not be repeated in the manual.

5.115.1.9.16.5 Additional servicing instructions.

Information shall include a listing of acceptable commercial engine oils as indicated in TB 55-9150-200-24 and as authorized for use in the aircraft.

5.115.1.9.16.6 Ground handling.

Instructions and necessary precautions for ground handling of the aircraft shall be provided, including any information needed in extreme cold, heat, humidity, and dust. A description and instructions for operating any ground handling equipment involved shall also be provided. Left and right turning limits while towing (with or without external stores) shall be listed. Aircraft ground handling procedures relating to electronics equipment shall be stated when applicable.

5.115.1.9.16.7 Parking and mooring.

Instructions for parking and mooring and the installation and stowage of aircraft covers, control locks, chocks, and tie down devices shall be described and illustrated. If feasible, ground handling, parking, and mooring may be shown on a single page illustration.

5.115.1.9.16.8 Additional sections.

Additional sections may be added as required by the procuring activity, i.e., Unique Equipment.

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5.115.1.10 Aircraft operator's manual Chapter 3 – Avionics.

5.115.1.10.1 Section I – Introduction (General).

Data Module Type: Crew/Operator Information Code: 018A

Except for mission avionics, a general overall description covering the avionics equipment configurations installed on a specific aircraft shall be provided. It shall include a brief description of the avionics equipment, its technical characteristics, capabilities, and locations. Mission avionics equipment shall be covered in Chapter 4 (refer to 5.115.1.11).

5.115.1.10.2 Sections II through IV.

For each item of avionics equipment contained within Sections II, III, and IV, the following information shall be included, as applicable. Additional sections shall be added by the acquiring activity when required.

a. Description.
b. Controls and functions.
c. Operation.
d. Emergency operation (if applicable).
e. Power source (if applicable).

5.115.1.10.2.1 Description.

Avionics equipment shall be described in detail, including controls, indicators, instruments (if applicable), jacks, switches, and control panels, etc. Antenna locations shall be shown on appropriate illustrations. Antenna arrangement illustrations shall be included in Section I and referenced or linked when required or may be included in the applicable section where discussed. The proper techniques and procedures to be employed when operating the equipment shall also be described.

5.115.1.10.2.2 Controls and functions.

a. For systems with MFD, the Control/Indicator table may be omitted or altered at the discretion of the procuring activity. The location and function of each control, including built-in test capability, contributing to the operation of the avionics equipment shall be listed. Each control panel shall be discussed separately. Reference or links shall be made to illustrations in Chapter 2 regarding controls and control panels.
b. A tabular listing may be included for each control panel. Each control or indicator shall be listed and its function defined in terms of what the operator of the control shall see, hear, or do as a result of the control setting. Terms of simple, immediate, and observable results shall be used. No attempt shall be made to give the operator the exact technical details about what happens when the control is used.
c. A tabular listing may be included for each control display unit. Each key that shall be pressed shall be listed and a description of the function shall be included in the table.

5.115.1.10.2.3 Operation.

A description of the operating details for each item of avionics equipment shall be provided. Whenever standard operational avionics data exist within the government, such data shall be furnished by the acquiring activity. Complete operating procedures shall be included as follows:

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a. When separate modes of operation are available, i.e., when the equipment may serve two or more systems, each mode shall be described. These shall be listed as modes of operation and each shall be briefly described.
b. The sequence of settings and the position to which the controls should be set to ensure proper results each time the equipment is energized shall be explained. Instructions shall be provided to prevent the possibility of damage through improper settings or sequence of operations. When appropriate, operating tolerances shall be called out. When operation of a unit is related to or dependent on the operation of a similar or independent control unit, this information shall be included in the operating procedure. Only those controls normally used by the operator shall be included; control adjustments that are the responsibility of maintenance personnel shall not be included.
c. If the configuration provides for a parallel operation from various positions in the aircraft, similar, separate, and complete coverage for each position shall be provided. When the procedure is identical to a position previously covered, it shall be covered by a reference to the previous procedure.

5.115.1.10.2.4 Emergency operations.

When applicable, settings and operations of avionics equipment during emergency operations shall be described.

5.115.1.10.2.5 Power source.

When applicable, a brief description of the power sources for avionics equipment shall be provided, including any special procedures or limitations using, but not limited to, external power and battery power.

5.115.1.10.3 Section II – Description (Communications).

Data Module Type: Crew/Operator Information Code: 043J

Information for communications equipment installed in the aircraft shall be developed.

5.115.1.10.4 Section III – Description (Navigation).

Data Module Type: Crew/Operator Information Code: 043J

A description of all navigation systems and indicators shall be provided. When there is doubt as to whether the system should be covered under communications or navigation, the primary use of the system shall be the deciding factor. A suitable reference shall be made in the manual to aid the operator in locating the material.

a. Automatic Direction Finder (ADF)
b. Gyro compass and magnetic indicators
c. Marker beacon
d. Flight director
e. (VHF) OMNI directional range
f. Tactical Air Navigation (TACAN)
g. Instrument landing system
h. Doppler
i. Inertial Navigation System (INS)
j. Autopilot
k. Other

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5.115.1.10.5 Section IV – Description (Transponder and radar).

Data Module Type: Crew/Operator Information Code: 043J

All information for transponders, collision warning systems, and radar systems and indicators, as applicable, shall be provided.

5.115.1.10.6 Additional sections.

Data Module Type: Crew/Operator Information Code: 043J

Additional sections may be added as required by the procuring activity, i.e., Unique Equipment.

5.115.1.11 Aircraft operator's manual Chapter 4 – Mission equipment.

5.115.1.11.1 General.

A description of all standard mission equipment that may be utilized with the aircraft shall be provided. Coverage shall include description, controls and function, operating procedures, power sources, and illustrations. Controls, functions, and operating procedures shall be prepared as detailed in 5.115.1.10, as applicable. The sections listed below will be included if applicable. Sections shall be sequentially numbered. Additional equipment may be added at the discretion of the procuring activity.

5.115.1.11.2 Section I – Description (Mission avionics).

Data Module Type: Crew/Operator Information Code: 043J

Unclassified information regarding mission avionics equipment that is not a part of the standard flight communication, navigation, transponder, or radar equipment shall be provided. It includes electronic equipment such as radio monitoring systems, side looking airborne radar (SLAR), infrared devices, and photographic equipment. Detailed information shall be given regarding the photographic equipment including, but not limited to, types of cameras, control stations, camera doors, and capabilities of the equipment. Gun camera equipment shall also be covered. Mission avionics equipment that requires extensive explanation of operating procedures shall be covered in this section or separately. An appendix for mission avionics equipment shall be included only if authorized by the acquiring activity. Classified information on mission avionics equipment shall be covered in a separate classified supplement to the manual.

5.115.1.11.3 Section II – Description (Armament control systems).

Data Module Type: Crew/Operator Information Code: 043J

5.115.1.11.3.1 General.

The description of gunnery, rocket, tow target, control, and computer equipment and their interrelations when installed shall be provided. Armor protection shall be discussed along with the individual item that is being protected. Precautions and safety considerations shall also be included.

5.115.1.11.3.2 Armament control system.

Description and operating instructions for the armament control system shall be provided, if applicable. Also, information such as presentation on the scope or sight, when applicable, shall be included. Warm-up time and preflight, in-flight before landing and after landing checks shall be listed. Checklist format and style shall be in accordance with S1000D and these business rules.

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5.115.1.11.3.3 Gunnery equipment.

Information shall be included on all guns and turrets, including quantity of ammunition that can be carried for each gun. When describing remote controlled turrets, the manual shall include, but shall not be limited to, the station from which the turret is operated, method of gaining control of the turret, and method of transferring control. All gunnery controls shall be covered, including gun sight and gun heater.

5.115.1.11.3.4 Rocket equipment.

Information shall be provided regarding the firing procedures, description and capability, controls, and types and number of rockets that can be carried. Typical combinations of rockets and firing order shall be covered. Special precautions, if any, shall be listed.

5.115.1.11.3.5 Missiles.

Information shall be provided regarding the firing procedures, description and capability, controls, and types and number of missiles that can be carried. Special precautions, if any, shall be listed.

5.115.1.11.3.6 Laser control system.

Description and operating instructions for the laser control system shall be provided, if applicable. Also, information such as presentation on the scope or sight, when applicable, shall be included. Warm-up time and preflight, in-flight before landing and after landing checks shall be listed. Checklist format and style shall be in accordance with S1000D and these business rules.

5.115.1.11.4 Section III – Cargo handling.

Data Module Type: Procedural Information Code: 160F

Descriptions and procedures for cargo handling systems and equipment to include hoists, winches, and cargo hooks shall be provided.

5.115.1.11.5 Section IV – Description (Passive defense).

Data Module Type: Crew/Operator Information Code: 043J

Passive defense equipment shall be described, procedures outlined, and controls and precautions listed. Employment methods shall also be discussed.

5.115.1.11.5.1 Description (Additional system coverage).

Data Module Type: Crew/Operator Information Code: 043J

Additional sections shall be used as required, to describe systems not covered in other sections.

5.115.1.12 Aircraft operator's manual Chapter 5 – Operating limits and restrictions.

5.115.1.12.1 General.

All important operating limits and restrictions that shall be observed during ground and flight operations shall be provided. Special emphasis shall be placed on any unusual restrictions which are particularly characteristic of the aircraft. All time limited operations shall include a time limit and the upper and lower boundaries.

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5.115.1.12.2 Section I – Operating limits – General.

Data Module Type: Crew/Operator Information Code: 043B

General information on aircraft limits and restrictions, including decals and placards shall be provided. The following statements shall be included:

a. Purpose. This chapter identifies or refers to all important operating limits and restrictions that shall be observed during ground and flight operations.
b. General. The operating limitations set forth in this chapter are the direct result of design analysis, tests, and operating experiences. Compliance with these limits shall allow the pilot to safely perform the assigned missions and to derive maximum utility from the aircraft.
c. Exceeding operational limits. Any time an operational limit is exceeded, an appropriate entry shall be made on DA Form 2408-13-1. The entry shall state what limit or limits were exceeded, range, time beyond limits, and any additional data that would aid maintenance personnel in the maintenance action that may be required.
d. Minimum crew requirements. The minimum crew required for flight is (fill in proper number). Additional crew members, as required, will be added at the discretion of the commander in accordance with pertinent DA regulations.

5.115.1.12.3 Section II – Operating limits – System.

Data Module Type: Crew/Operator Information Code: 043H

All aircraft system limits not covered elsewhere in this chapter that may restrict operation shall be provided.

5.115.1.12.3.1 Instrument, interactive display, or display operating ranges and markings.

Each instrument, interactive display, or display that indicates an operating limit(s) shall be illustrated and accurately reflect the actual markings/displays on the instrument, interactive display, or display. The information appearing on the illustration depicting markings or displays shall not be repeated in the text or table. The color coded markings/displays or interactive display graphic symbols shall be fully explained. If the instrument, interactive display, or display limits cannot be adequately explained in the space provided for the captions, explanations shall be included under the appropriate paragraph heading. The text shall state or describe all limit ranges, including gaps that may be shown in range markings.

5.115.1.12.3.2 Propeller limitations.

Propeller limitations shall be discussed including, but not limited to, reverse pitch and restricted revolutions per minute (rpm).

5.115.1.12.3.3 Rotor limitations.

For rotary wing aircraft, rotor limitations during both flight and ground operation shall be discussed, covering such points as restricted rpm, auto-rotational rpm, limitations for startup and shutdown during high winds, and wind gust spread.

5.115.1.12.3.4 Additional limitations.

All system limits and restrictions not described by the instrument markings shall be included. Limits and restrictions that should be observed when operating utility, heating, ventilation, cooling, or rain removal systems shall also be included.

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5.115.1.12.4 Section III – Operating limits – Power.

Data Module Type: Crew/Operator Information Code: 043C

Power limits shall include engine and drive train and idle limitations. Limitations that shall be observed when alternate fuel grades are used shall be included. Acceleration limits and restrictions that apply to the engine shall be covered. Limits shall be expressed in terms of observable indications that are available to the flight crew; e.g., 360°C, 46 lb., 10 psi. Terms such as military power or takeoff power shall not be used.

5.115.1.12.5 Section IV – Operating limits – Loading.

Data Module Type: Crew/Operator Information Code: 043D

5.115.1.12.5.1 General.

Loading limits pertaining to the aircraft shall be discussed in detail.

5.115.1.12.5.2 Center-of-gravity limitations.

Longitudinal limitations shall be described. Lateral limitations shall be described when specified by the acquiring activity. Also, a statement similar to the following shall be included: CG limits for the aircraft to which this manual applies and appropriate charts for computation of the CG are contained in Chapter 6 (refer to 5.115.1.13).

5.115.1.12.5.3 Weight limitations.

All minimum/maximum aircraft weight limitations including parking, towing, taxing, and takeoff and landing from prepared/unprepared fields shall be provided. For aircraft in which weight distribution is a problem (such as minimum fuel to be carried in the wings at various gross weights), coverage of the limitations involved shall be included. References or links shall be made to fuel management in Chapter 2 (refer to 5.115.1.9), as necessary.

5.115.1.12.5.4 Turbulence.

Restrictions regarding flying in all levels of turbulence shall be discussed and limitations shall be covered.

5.115.1.12.5.5 Other limitations.

Other types of limitations that affect operations shall be covered, including the following:

a. Additional restrictions to be observed when carrying stores. For aircraft equipped to carry a variety of external stores, information concerning the stores carried at each station and the maximum lateral unbalanced load that can be carried shall be included.
b. Limitations as to the weight for external sling loads on rotary wing aircraft and speed restrictions, if any.
c. Floor loading limits that are to be observed when carrying internal cargo.
d. Restrictions on jettisoning external stores and sling loads.

5.115.1.12.6 Section V – Operating limits - Airspeed.

Data Module Type: Crew/Operator Information Code: 043E

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5.115.1.12.6.1 General.

Airspeed limitations shall be discussed, including level flight airspeed, diving airspeed, airspeed for various degrees of flap extension, airspeed for various stabilator positions, airspeed for door opening, and airspeeds under various conditions of weight and configuration. For rotary wing aircraft, sideward and rearward airspeed limits and restrictions shall be discussed. Airspeeds shall be expressed as Knots Indicated Airspeed (KIAS), unless otherwise specified by the acquiring activity.

5.115.1.12.6.2 Airspeed operating limits chart.

This chart shall present operating limits for forward flight at various gross weights, pressure altitudes, Free Air Temperature (FAT), and KIAS.

5.115.1.12.7 Section VI – Operating limits - Maneuvering.

Data Module Type: Crew/Operator Information Code: 043F

5.115.1.12.7.1 General.

Maneuvering flight limitations to include acrobatic flight, if applicable, shall be described. Acceleration limitations shall also be covered, including maximum acceleration with tip tanks and maximum bank angle at high gross weight. Maximum permissible accelerations under various flight conditions at specific gross weights and fuel weights shall be detailed. For aircraft not equipped with G meters, G forces shall be expressed in terms that are recognizable by the pilot, such as airspeed and bank angle. Restrictions on control movements shall be listed. Material shall be presented on permissible bank angles and side slip. Prohibited maneuvers shall be listed as appropriate.

5.115.1.12.7.2 Flight envelope chart.

For aircraft with G meters, plots of load factor versus speed for the full range of gross weight shall be shown. The speeds at which maneuvers are restricted and unrestricted, as a function of load limit factors, shall be presented. When changes in configuration result in variations in airspeed position error, separate airspeed scales shall be shown. Where direct reading Mach meters are provided, charts for both Indicated Airspeed (IAS) and Indicated Mach Number (IMN) shall be provided.

5.115.1.12.8 Section VII – Operating limits – Environmental.

Data Module Type: Crew/Operator Information Code: 043G

5.115.1.12.8.1 General.

As applicable, altitude, temperature, rain, snow, ice, hail, and oxygen limits shall be provided. Material on maximum wind velocity and gust spread, maximum wind velocity for crosswind operations, wind from the critical azimuth, and normal operation shall be included. Operations under wind azimuth direction and wind velocity conditions that should be avoided shall be discussed. Where appropriate, charts shall be used to depict the preceding conditions.

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5.115.1.12.8.2 Flight under Instrument Meteorological Conditions (IMC).

The definition of IMC and the criteria for such flights shall be provided. In addition, when applicable, information on when a particular aircraft is qualified for operation in instrument meteorological conditions, and when a certain aircraft is restricted to visual flight conditions shall be included.

5.115.1.12.8.3 Description (Additional sections).

Data Module Type: Crew/Operator Information Code: 043J

When specified by the acquiring activity, additional sections may be used to allow for added limits or restrictions to fit specific aircraft.

5.115.1.13 Aircraft operator's manual Chapter 6 – Weight/balance and loading.

5.115.1.13.1 Section I – Weight and balance (General).

Data Module Type: Crew/Operator Information Code: 169A

5.115.1.13.1.1 General.

General statements about the importance of weight and balance calculations shall be provided. In addition, a note that Chapter 6 contains sufficient instructions and data so that an aviator, given the proper data, can compute any combination of weight and balance shall be included (refer to 5.115.1.13). When weight and balance computers/calculators are provided for the aircraft, instructions and examples of their use shall be based on gear down configurations, with supplementary data for gear up conditions (when required). A statement similar to the following statement shall be included:

> "Army (*insert assigned aircraft designation*) are in class (*insert class*). Additional directives governing weight and balance of class (*insert class*) aircraft forms and records are contained in AR 95-1 and AR 95-23."

5.115.1.13.1.2 Aircraft compartment and station diagram.

A general description of the aircraft compartments and a supporting diagram shall be provided. The diagram shall show the reference datum line, stations, butt lines, and water lines in inches.

5.115.1.13.2 Section II – Weight and balance data.

Data Module Type: Crew/Operator Information Code: 169F

Information necessary for the computation of weight and balance for loading of specific aircraft shall be provided. Instructions for completion of weight and balance forms (DD Form 365 series) shall not be provided in the manual; however, TM 55-1500-342-23 which provides these instructions shall be referenced. Sufficient information shall be provided to permit the flight crew to readily use the data presented in the other sections of this chapter to determine loading arrangements, fuel burn or transfer sequences, ordnance off-load sequences, and other weight and balance procedures to assure the aircraft remains within weight and balance limits for the entire flight.

5.115.1.13.3 Section III – Weight and balance – Fluids (Fuel/oil).

Data Module Type: Crew/Operator Information Code: 169B

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5.115.1.13.3.1 General.

Fuel quantity data shall be in chart form. The names of the tanks on the charts shall be identical to the name appearing on the tank selector (a more explanatory title may be carried in parentheses if desired). Any group of tanks or cells that are interconnected to fill and drain shall be treated as a single tank. The chart shall include data on each tank (including droppable and ferry) that is designed for use with the aircraft. Tank volume shall be given in terms of usable fuel rather than total tank volume. Fuel quantities shall be given in gallons regardless of the type of instrumentation. All gallon figures shall be followed by the conversion to pounds. The grid lines within the chart shall be based on fuel weight in pounds of fuel. It shall be stated that the weights are based on a given specific gravity at standard day temperature.

5.115.1.13.3.2 Oil data.

When specified by the acquiring activity, a statement of usable oil capacity, equivalent in pounds, total moments, and fuselage station number shall be provided. Aircraft that have a large usable oil capacity shall have a tabular listing if oil loading computation is critical. It shall be noted that the weight shall be based on specific gravity at standard day temperature.

5.115.1.13.4 Section IV – Weight and balance - Personnel.

Data Module Type: Crew/Operator Information Code: 169C

5.115.1.13.4.1 General.

All essential information and instructions for preparation, loading, and unloading of personnel, including airborne troops shall be provided.

5.115.1.13.4.2 Personnel compartment and entrances.

A general description of the personnel compartment and entrances, including profile and cross-section drawings showing all dimensions, in inches, shall be provided. In addition, a description shall be provided of any critical dimensions which limit full use of the personnel compartment.

5.115.1.13.4.3 Personnel loading and unloading.

Personnel loading and unloading shall include, but shall not be limited to, a checklist and description of steps necessary for loading and unloading troops as follows:

a. Troop seat installation.
b. A description and operation of safety belts and harness.
c. A check of comfort and emergency provisions.
d. Instructions for troop loading and unloading procedure.

5.115.1.13.4.4 Personnel weight.

When aircraft are operated at critical gross weights, the exact weight of each individual occupant, including the weight of the equipment shall be provided. In addition, if weighing facilities are not available, or if the tactical situation dictates otherwise, loads shall be included and computed as follows:

a. Combat equipped soldiers - 240 pounds per individual.
b. Combat equipped paratroopers - 260 pounds per individual.
c. Litter and patient’s weight - 265 pounds per patient.

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d. Crew and passengers with no equipment - compute weight according to each individual's estimate.

5.115.1.13.4.5 Personnel moments.

Personnel moments charts for personnel in any position shall be provided.

5.115.1.13.5 Section V – Weight and balance – Mission equipment.

Data Module Type: Crew/Operator Information Code: 169D

Loading data charts for mission equipment shall provide a tabular listing containing the quantity, weight, and moment of each load item up to the maximum quantity for which provisions are available. Only items of load shall be listed. Items that are part of the basic weight shall not be part of this listing. Data shall be provided for all applicable mission system loads including, but not limited to, armament, avionics, sling, hoist, and litters. Listings shall provide weights and moments of required pylons and launchers. Tabular listing of rockets shall be inclusive for maximum capacity of launchers. Since rockets vary in weight by type, separate listings shall be required.

5.115.1.13.6 Section VI – Cargo loading.

Data Module Type: Procedural Information Code: 160D

5.115.1.13.6.1 General.

Detailed information on cargo loading shall be provided.

5.115.1.13.6.2 Description and illustrations.

A general description of cargo compartments and entrances, including profile and cross-section drawings showing all dimensions (in inches) shall be provided. Also, descriptions of critical dimensions that limit full use of cargo compartments shall be included.

a. A plan view showing dimensions of cargo floor, designation, location, and strength of tie-down fittings, and diagram and limitations on use of fittings, including the desirable cone of action when using fittings, shall be provided. Also, a plan view of cargo floor showing variations in floor strength and weight concentration limitations in various areas shall be included, as applicable.
b. A suitable view of litter provisions showing location shall be presented.
c. A general description of, and operating instructions for, aerial delivery systems shall be included, when applicable.
d. A list and description of all cargo loading aids, unloading aids, cargo securing equipment (including, but not limited to, ramps, hoists, winching provisions, and tie-downs), and stowage provisions shall be provided.

5.115.1.13.6.3 Equipment loading and unloading.

Procedures and a checklist for loading and unloading vehicles and equipment shall be provided, as follows:

a. Assembly of equipment needed for loading.
b. Preparation of cargo compartment and floor and installation of fittings.
c. Preparation of the aerial delivery system, when applicable.

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d. Including, but not limited to, operation of cargo doors, ramps, load assist devices, and aircraft support jacks, including installation and operation, as applicable. Instructions for checking landing gear shall be included, when appropriate.
e. Assembly and checking of unloading aids and releasing of cargo tie-down devices.

5.115.1.13.6.4 Preparation of general cargo.

Pre-loading information shall be presented as follows:

a. Instructions that loading personnel should assemble prior to loading data, such as weights, dimensions, CG locations, and contact areas of equipment for use in positioning the load shall be included.
b. Reference or a link shall be made to the weight and balance computations in Section II, and the balance computer, if furnished, for the computation of final load positions in the aircraft.

5.115.1.13.6.5 Loading, securing, and unloading cargo.

General methods of loading, safe lashing, and unloading of cargo, vehicles, and equipment shall be provided. Rigging of cargo for aerial delivery shall be included, when applicable. The information shall be detailed enough to acquaint service personnel with the factors involved in properly loading, securing loads, and unloading the aircraft.

5.115.1.13.6.6 Cargo center-of-gravity.

A chart shall be provided showing approximate allowable cargo CGs versus known weights which may be used for planning purposes for various cargo loads. The chart shall be based on a range of aircraft basic weights and center of gravity locations to allow for anticipated variations in these values. The chart shall state that these data are for planning purposes only, that the results are approximate, and final loading shall be checked for the particular aircraft using weight and balance computations and the balance computer, if furnished.

5.115.1.13.6.7 Loading procedure.

A checklist of the actions required from the time the aircraft is prepared for loading until it is ready for flight shall be provided. It shall include instructions and notes on loading equipment into the aircraft, checking items with CG markings and items 10 feet or longer and placing them in position, determining the amount of shoring required for flight conditions, and general instructions for loading and lashing miscellaneous cargo. Reference shall be made to the appropriate regulations regarding handling of hazardous equipment.

5.115.1.13.6.8 Securing loads.

The following items shall be described.

a. Approved restraint criteria including fore, aft, sideward and vertical restraints.
b. Detailed tie-down instructions shall be provided only for equipment or cargo that is unique to a specific aircraft.

5.115.1.13.6.9 Unloading procedures.

Procedures for unloading the aircraft and stowing associated equipment shall be provided.

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5.115.1.13.7 Section VII – Center-of-Gravity (CG).

Data Module Type: Crew/Operator Information Code: 169E

Longitudinal CG limitations shall be included, and lateral CG limits shall be shown as specified by the acquiring activity.

a. Where possible, the gross weight and CG limitations of the aircraft shall appear on a single chart. However, additional charts may be used if necessary to adequately portray the various configurations of the aircraft.
b. Explanatory text shall explain the purpose and components of the charts; illustrate the use of the charts; emphasize that charts are designed to illustrate degree of risk involved at various weights and CGs; and establish limitations.
c. The chart shall be based on gross weight that is defined as the total weight of the aircraft and its contents. It shall include, but not be limited to, operating weight plus fuel, cargo, ammunition, missiles, and external auxiliary fuel tanks. The gross weight in pounds shall be shown on the left side of the chart, and shall range from the aircraft's minimum operating weight to maximum gross weight allowable.
d. At least one example to illustrate the application of the chart shall be included.

5.115.1.14 Aircraft operator's manual Chapter 7 – Performance data.

5.115.1.14.1 General.

All the performance data charts required for the completion of preflight and in-flight mission planning shall be provided. The data presented shall cover the maximum range of conditions and performances for which the aircraft is qualified. Explanatory text applicable to the use of data presented shall be included for each model of aircraft. Performance data charts shall appear in the initial issue of the manual.

Information contained on the charts shall be based on, and shall be consistent with, the recommended operating procedures and techniques set forth elsewhere in the manual. Each section shall include an explanation of all applicable charts and a synopsis of pertinent terms used with each chart.

In addition to the draft TM, the acquiring activity may require submission of an aerodynamic report illustrating the derivation of the data entered on the charts included in the TM. The report should include an analysis leading to the establishment of lift and drag values used in the calculations, aircraft efficiency and compressibility correction factors, methods of computing power or thrust required and available, a discussion of duct loss and propeller efficiencies, and adequate references to appropriate wind tunnel or flight test data. Calculation methods need to be fully explained and a sample calculation given. The calculations should be presented in sufficient detail to permit ready review and check of conclusions and to enable additional calculations to be made.

5.115.1.14.2 Data basis.

Unless otherwise specified by the acquiring activity, the preparation of performance data charts shall be derived from flight test reports, when available. Exceptions to this may be authorized by the acquiring activity for new aircraft, provided adequate flight tests have been completed for the prototype. However, for these exceptions, an evaluation of all changes that affect performance shall be obtained by additional flight tests. The basis for data presented shall be clearly defined at

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the bottom of each chart to include data type and source data document. Army test reports shall be used when available. When flight test reports are not available, referenced estimates shall be clearly identified as such. Conservative estimates shall be used until verified by flight test data. Data that are not based strictly on the particular aircraft shall be explained in detail.

5.115.1.14.3 Identification.

Each chart shall be marked in the following manner:

a. Titles shall be centered above the chart. The name of each chart shall define the type of information to be obtained from that particular chart.
b. Condition headings (5.13.1.22.8) shall be centered below the title and, when required, shall contain the following types of information, when applicable:

    (1) Pressure altitude.
    (2) Situation to which chart applies (takeoff, landing, sling load takeoff).
    (3) Conditions of auxiliary equipment (ECU, bleed air, etc.).
    (4) Configuration.
    (5) Wing flap position.
    (6) Rotor or prop rpm.
    (7) Engine rpm.
    (8) Fuel type.
    (9) Hovering condition (in ground effect (IGE) or out of ground effect (OGE)).
    (10) Power requirements.
    (11) Runway conditions.
    (12) Wind conditions.
    (13) Gear up/down.
    (14) Power required.

c. Titles of figures shall match the title shown at the top of each chart.

5.115.1.14.4 Factors affecting data.

Conditions that affect the data but are not presented as variables on any specific chart shall be listed as "Conditions" under the title of the chart. An explanation of these factors shall be included in the text that describes that chart.

5.115.1.14.5 Configuration.

Unless otherwise specified by the acquiring activity, the baseline configuration for all presented data shall be the most probable combat configuration. This baseline configuration shall be labeled and presented as a condition on applicable charts. The baseline configuration shall be completely defined in the "Drag" section. Where inherent configuration variations exist (including, but not limited to, antenna variations, IR suppressers, and engine inlet configurations), the data shall be based on the most conservative configuration combination (highest drag, lowest power/thrust available, highest fuel consumption, etc.). The effects of altering these items shall be discussed in each section, as applicable.

5.115.1.14.6 Fuel.

All charts shall be based on the primary fuel for the engine/engines installed unless additional charts are required by the acquiring activity for alternate fuels.

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5.115.1.14.7 Atmospheric conditions.

Where data are presented incrementally, they shall be presented to the next increment beyond the range of probable operating atmospheric conditions as found in MIL-HDBK-310, for guidance only, to permit interpolation. Unless otherwise specified by the acquiring activity, standard day, standard conditions, standard temperature, or density altitude shall not be mentioned or presented. The following formulas for converting pressure altitude (H_p) to static air pressure (P), and vice versa, shall be used:

$$P\ (in.Hg) = 29.92125(1 - H_p/145{,}442.1)^{5.255376}$$

$$H_p\ (ft.) = 145{,}442.1(1 - P/29.92125)^{.1902632}$$

5.115.1.14.8 Allowances.

Allowance shall be made for all installation losses and a complete analysis of such allowances shall be included in the performance data substantiation report. The following allowances shall be included. An increased allowance of five percent shall be made for fuel consumption data only when data are based on estimates; however, this shall not be stated in the TM/IETP.

5.115.1.14.9 Limitations and restrictions.

Applicable operating limits shall be shown. Restricted operating regions shall be depicted by shaded areas. Data shall be extended to the next normal increment beyond operating limits to aid interpolation. Such data shall be represented by dotted lines. NOTE: maximum gross weight is an operating limit.

5.115.1.14.10 Definitions.

Definition of terms used including, but not limited to, takeoff speed, takeoff distance, and rotation speed shall be included in abbreviations and terms.

5.115.1.14.11 Rotary wing performance data.

Unless otherwise specified by the acquiring activity, the following performance data charts shall be created for rotary wing aircraft:

a. Fuel flow (Figure 1).
b. Maximum torque available (*insert condition/time*) (Figure 2).
c. Hover (Figure 3).
d. Takeoff (Figure 4).
e. Drag (Figure 5).
f. Cruise (Figure 6).
g. Climb-descent (Figure 7).
h. Airspeed calibration (Figure 8 and Figure 9).

Additional charts peculiar to certain aircraft, such as multi-engine, shall be included as specified by the acquiring activity. These charts, if required, shall completely define the operation or restrictions of the aircraft.

5.115.1.14.12 Fixed wing performance data.

Unless otherwise specified by the acquiring activity, the following performance data shall be presented for fixed wing aircraft:

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a. Crosswinds - takeoff and landing (Figure 10).
b. Idle fuel flow (Figure 1).
c. Torque available for takeoff (Figure 11).
d. Takeoff - normal (Figure 12).
e. Normal rotation/takeoff airspeed (Figure 13).
f. Acceleration check distance (Figure 14).
g. Accelerate-stop distance (Figure 15).
h. Accelerate after lift off (Figure 16).
i. Minimum single engine control airspeed (flaps down and up, if applicable) (Figure 17).
j. Single engine climb (Figure 18).
k. Cruise climb (Figure 19).
l. Drag (Figure 5).
m. Cruise (Figure 20).
n. Climb/descent (Figure 21).
o. Approach speed (Figure 22).
p. Landing (Figure 23).
q. Airspeed calibration (Figure 8 and Figure 9).

Additional charts peculiar to certain aircraft, such as multi-engine, shall be included as specified by the acquiring activity. These charts, if required, shall completely define the operation or restrictions of the aircraft.

5.115.1.14.13 Section I – Introduction.

Data Module Type: Crew/Operator Information Code: 018A

An explanation of the performance data including the purpose, scope, limits, uses, and conditions shall be provided.

5.115.1.14.13.1 Purpose.

The following paragraph shall be included:

"The purpose of this chapter is to provide the best available performance data for the (*insert assigned aircraft designation*). Regular use of this information will allow you to receive maximum safe use of the aircraft. Although maximum performance is not always required, regular use of this chapter is recommended for the following reasons:

a. Knowledge of performance margins will allow you to make better decisions when unexpected conditions or alternate missions are encountered.
b. Situations requiring maximum performance will be more readily recognized.
c. Familiarity with the data will allow performance to be computed more easily and quickly.
d. Experience will be gained in accurately estimating the effects of conditions for which data are not presented.

The information is primarily intended for mission planning and is most useful when planning operations in unfamiliar areas or at extreme conditions. The data may also be used inflight, to establish unit or area Standard Operating Procedures (SOPs), including pilot aid cards, and to inform ground commanders of performance/risk tradeoffs."

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5.115.1.14.13.2 General.

This paragraph shall contain a statement similar to the following:

The data presented cover the maximum range of conditions and performance that can reasonably be expected. In each area of performance, the effects of altitude, temperature, gross weight, and other parameters relating to that phase of flight are presented. In addition to the presented data, judgment and experience will be necessary to accurately determine performance under a given set of circumstances. The conditions for the data are listed under the title of each chart. The effects of different conditions are discussed in the text accompanying each phase of performance. Where practical, data are presented at conservative conditions. However, no general conservatism has been applied.

WARNING

Exceeding operating limits can cause permanent damage to critical components. Over-limit operation can decrease performance, cause immediate failure, or failure on a subsequent flight.

Applicable limits are shown on the charts. Performance generally deteriorates rapidly beyond limits. If limits are exceeded, minimize the amount and time. Enter the maximum value and time beyond limits on DA Form 2408-13-1 so proper maintenance action can be taken. Exceeding operating limits can cause permanent damage to critical components. Overlimit operations can decrease performance, cause immediate failure, or failure on a subsequent flight.

5.115.1.14.13.3 Use of charts.

This paragraph shall contain a sample problem typical of a normal mission accomplished by the aircraft. The sample shall be included on or precede the first chart. Additional examples shall be prepared as required for other charts within a section. When possible, actual chart values shall be used throughout the problem. Data for the problem in which derivation may not be entirely clear shall be explained. Additional discussion, sample problems, or illustrations may be used throughout the chapter to clarify the usage of charts. The TM/IETP shall point out that the use of a straight edge (ruler or page edge) and a hard fine point pencil is recommended to avoid cumulative errors. In addition to the primary use, other uses of each chart are explained in the text accompanying each set of performance charts. An example of an auxiliary use of the charts shall be shown by noting that although the hover chart is primarily arranged to find torque required, maximum skid height or maximum gross weight can also be found. The TM/IETP shall note that in general, any single variable can be found if all other variables are known. Also, the tradeoffs between two variables can be found.

5.115.1.14.13.4 Data basis.

This paragraph shall contain a statement similar to the following statements and definitions:

a. The source of data used is indicated at the bottom of each performance chart under "Data Basis." The applicable report and date of the data are also given. The data provided generally are based on one of the following categories.
b. Flight test data are obtained by flight tests of the aircraft at precisely known conditions using sensitive calibrated instruments.
c. Calculated data are data based on tests, but not on flight tests of the complete aircraft.

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d. Estimated data are data based on estimates using aerodynamic theory or other means not verified by flight testing.

5.115.1.14.13.5 Specific conditions.

This paragraph shall contain a statement similar to the following: The data presented are accurate only for specific conditions listed under the title of each chart. Variables for which data are not presented, but which may affect that phase of performance, are discussed in the text. Where data are available or reasonable estimates can be made, the amount that each variable affects performance shall be given.

5.115.1.14.13.6 General conditions.

General conditions, in addition to specific conditions listed on each chart, shall be included. Examples of general conditions which might affect performance of the aircraft shall include, but shall not be limited to, rigging, pilot technique, sideslip, aircraft variation, engine variation, and instrument variation. Information shall be included which defines what effect the general conditions listed shall have on the performance data of the aircraft.

5.115.1.14.13.7 Performance discrepancies.

A statement similar to the following shall be included in the TM/IETP:

> Regular use of this chapter will also allow monitoring of instruments and other aircraft systems for malfunctions, by comparing actual performance with planned performance. Knowledge will also be gained concerning the effects of variables for which data are not provided, thereby increasing the accuracy of performance predictions.

5.115.1.14.14 Section II and subsequent sections – Performance data.

Data Module Type: Crew/Operator Information Code: 030E

5.115.1.14.14.1 General.

A separate section shall be created for each chart listed in 5.115.1.14.11 or 5.115.1.14.12, as applicable. The sections shall be titled using the applicable performance data chart title. In addition to the chart itself, each section shall contain, as a minimum, the following:

a. Description. A description of the performance data including those parameters obtainable from the chart and information relative to any peculiarity of data presented shall be provided.
b. Use of charts. Reference shall be made to examples used on each chart. Additional use of charts may be included when approved by the acquiring activity. Reference shall be made to related charts that may be used in conjunction with the chart and all information relative to peculiarities of data presented on the chart.
c. Conditions. Each condition that has a direct or indirect effect on the chart data presented shall be discussed, explaining the effect it may have on the aircraft.

5.115.1.14.14.2 Rotary wing chart content.

Performance data charts for rotary wing aircraft shall conform to the requirements detailed in the following paragraphs:

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5.115.1.14.14.2.1 Fuel flow chart.

The fuel flow chart (refer to Figure 1) shall show fuel flow at both the airframe idle throttle position and at normal rotor speed with flat pitch. The chart shall also present fuel flow conditions when the engine is operational at different configurations, e.g., bleed air On/Off. Pressure altitude and FAT shall be used as the criteria for fuel flow computations. Reference shall be made to other charts that present fuel flow data at cruise conditions. Fuel flow data shall be based on the primary fuel type. Information shall be included in the supporting text to define additional pertinent information which may affect fuel flow. All data shall be based on normal operating engine rpm.

5.115.1.14.14.2.2 Maximum torque available chart.

The charts for maximum torque available (refer to Figure 2) shall show the effects of altitude and temperature on the maximum torque available and shall take into consideration calibration factors used to correct for known errors in torque indicating systems. Separate charts shall be provided for each applicable set of time limited torque available data. For example, separate charts shall be provided for intermediate (30 minute) and one engine inoperative contingency (10 minute) torque available data. Data for continuous torque available shall not be provided unless they are also the maximum torque available. Information shall be provided to allow the operator to correct the data presented on the charts to account for variations in torque available due to operation of IR suppressers, systems requiring bleed air, or other similar operating conditions. Information shall also be provided to allow the operator to correct the data presented to account for known variations in the torque available of the individual engines installed in the aircraft compared to the standard or specification engines depicted by the charts.

5.115.1.14.14.2.3 Hover chart.

The hover chart (refer to Figure 3) shall present the torque required to hover at given conditions of skid height, gross weight, temperature, and altitude. Aircraft limitations shall be presented to include marginal areas of performance. When unsafe performance areas could be encountered, the full range of precautionary data shall be presented and safe limits presented to better clarify the use of the data. Basic IGE hover data shall be based on hovering over a level surface. If IGE hover data are presented for other than level surfaces, information shall be included in the supporting text or on the charts. Compressibility effects on hover power required may be presented as shown in Figure 3.

5.115.1.14.14.2.4 Critical data chart.

Critical wind azimuth and velocities at varying gross weights, pressure altitudes, and FAT during hover and low speed flight shall be presented as required. A separate chart may be used.

5.115.1.14.14.2.5 Takeoff chart.

The takeoff chart shall consist of all takeoff data required to clear various obstacle heights and shall be based on all necessary parameters shown in Figure 4. All approved techniques such as level acceleration, coordinated climb, and sling load techniques shall be covered on additional

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charts as required by the acquiring activity. The primary parameters used for takeoff performance shall be maximum hovering height capability, FAT, gross weight, and maximum torque available. Additional performance charts shall be referenced when required. Takeoff limits shall be stated and indicated on all charts. All takeoff conditions shall be based on calm winds, level hard surfaces, normal rotor/engine speeds, and optimum torque available.

5.115.1.14.14.2.6 Drag chart.

The baseline configuration for drag (refer to Figure 5) shall be completely defined. Inherent or basic equipment variations, existing or anticipated, and any external stores included in the baseline configuration shall be provided. Data shall be prepared to show each drag item and the drag area change in square feet based on additional engine torque or horsepower required. These data shall be prepared in tabular form or shall be conveyed in a manner more suitable for interactive viewing. Negative drag increments from baseline configurations shall be permissible. The drag data shall fall into one of these major categories: (1) inherent or basic aircraft modifications or basic equipment chances; (2) external stores and store combinations; (3) crew alterable configurations; and (4) for helicopters with sling capability, drag of various standard sling loads. A procedure shall be provided for estimating drag of sling loads for which data are not provided. Information to determine the change in maximum range or long range cruise to chart the airspeed with drag variations shall be provided. A supplementary graph on the cruise chart depicting torque/horsepower change for drag change shall be provided. It shall cover the airspeed range from minimum power to limit airspeed. It shall also cover a drag range to one-half the basic aircraft drag or the largest drag increment combination, which ever is larger. One or two alternate total configurations shall be depicted on these sub-graphs using special line coding with approval of the acquiring activity (6.2). If alternate configurations are depicted, they shall be completely defined using separate charts, as applicable.

5.115.1.14.14.2.7 Cruise chart.

Cruise charts (refer to Figure 6) shall present torque requirements for level flight at various airspeeds, gross weights, pressure altitudes, and FAT. The particular altitudes and temperatures at which cruise data are to be presented shall be specified by the acquiring activity. Indicated airspeeds for all airspeed systems used on the aircraft referenced shall be shown on the charts. Fuel flow shall be shown for different engine operations. Torque available shall be shown for maximum torque and continuous bleed air On/Off. When torque available is greater than the torque limit only, the torque limit shall be shown. Velocity never exceeded (V_{ne}) shall be shown on each chart, as appropriate. Airspeeds for maximum range, endurance, and rate of climb shall be included on each chart. This information shall be presented for each engine when performance data pertain to multi-engine aircraft. Maximum performance, precautionary, and limits data shall be shown on each chart and explained in the text. Other performance data charts related to the cruise charts shall be referenced. All cruise data shall be based on normal operational rotor and engine speed, on drag area changes, true airspeed, pressure altitude, and FAT. A drag area change table showing the change due to each possible configuration change shall be included.

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5.115.1.14.14.2.8 Climb-descent chart.

The climb-descent chart (refer to Figure 7) shall show the torque required in excess of that needed for level flight to obtain the desired rate of climb. The torque decrease for a desired rate of descent shall also be shown. Desired rate of climb or descent and gross weight shall be used to compute the torque change required.

5.115.1.14.14.2.9 Airspeed calibration chart.

An airspeed calibration chart(refer to Figure 8 and Figure 9), which defines the relationship between the pilot's indicated and calibrated airspeed for level flight, climb, and descent, shall be provided. Instructions and examples shall be provided to show the operator how to determine the level flight indicated airspeed value which corresponds to known indicated airspeeds in climb and descent. Instructions and examples for determining calibrated airspeeds corresponding to known indicated airspeed shall also be provided. Altimeter correction charts that provide position error correction versus indicated airspeed shall be provided for all normal and emergency altimeter systems. Data shall be provided for all applicable flap settings or other variations in configuration. A temperature conversion/correction chart that provides true FAT as a function of true airspeed and indicated temperature shall also be provided for aircraft capable of significant airspeeds. For those aircraft whose air data system position errors are insignificant, calibration data for airspeed, altitude, and temperature shall be omitted, with approval of the acquiring activity.

5.115.1.14.14.2.10 Optimum cruise.

When requested by the acquiring activity, data shall be provided to determine the altitude for maximum range and maximum endurance as a function of gross weight and ambient temperature. Information shall also be provided for optimum rotor/propeller rpm for maximum range and endurance. Where optimum rpm is different from that presented for the (normal) cruise data, information shall be provided to correct fuel flow for the different RPMs. Optimum cruise speed (maximum range or endurance) presented on the cruise chart shall be referenced and used. Airspeed and power schedules for climb and descent to maximize total range or endurance shall be described. A means shall be provided for estimating ambient temperature at optimum altitude. Also, a means shall be provided for comparing the effects of varying winds with altitude with the change in aircraft performance with altitude. Data shall cover the range of gross weights and ambient temperatures presented on the cruise charts, and the limits of altitude on the cruise charts (if required). If corrections to optimum altitude for configuration variations are significant and capable of being done, this information shall be provided.

5.115.1.14.14.3 Fixed wing chart content.

Performance data charts for fixed wing aircraft shall conform to the requirements in the following paragraphs.

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5.115.1.14.14.3.1 Crosswind chart.

The crosswind chart (refer to Figure 10) shall show the takeoff or landing conditions under which a takeoff or landing is or is not recommended. Various wind velocities, runway wind angle, and rotation or touchdown airspeeds shall be shown. Additional charts to obtain required information shall be referenced. When more than one configuration is possible for the applicable aircraft, the differences shall be indicated and the charts adjusted appropriately or separate charts may be provided for each configuration.

5.115.1.14.14.3.2 Idle fuel flow chart.

The idle fuel flow chart shall show idle fuel flow pounds per hour at the airframe idle throttle position at various altitudes and ambient air temperatures. Additional charts, when applicable, depicting idle fuel flow at various idle conditions shall be included. Differences between idle fuel flow with bleed air On or Off and similar conditions shall also be shown when applicable. The type of fuel used in computation shall be shown in the subheading of this chart.

5.115.1.14.14.3.3 Torque available for takeoff chart.

This chart (refer to Figure 11) shall show the torque available for takeoff, per engine for multi-engine aircraft, at various ambient air temperatures and altitudes. Maximum torque limits shall be shown when applicable. The standards for which the chart was compiled shall be shown in the heading and defined in the supporting text. Allowable tolerances for available torque shall be stated when applicable.

5.115.1.14.14.3.4 Takeoff chart.

The takeoff chart (refer to Figure 12) shall show the ground roll distance and total takeoff distance required to clear different obstacle heights at various temperatures, altitudes, and aircraft gross weights. Wind conditions, aircraft configuration, power requirements, runway surface conditions, and other applicable information shall be given in the subheading and explained in the text. Additional charts required to obtain information shall be referenced. Each approved takeoff technique shall be covered on separate charts.

5.115.1.14.14.3.5 Rotation/takeoff airspeed chart.

The chart (refer to Figure 13) shall show the recommended normal rotation and takeoff airspeeds for the aircraft at various gross weights. Flap settings and other applicable information, as required by the acquiring activity, shall be given in the subheading or explained in the text. Each approved takeoff technique shall be covered on separate charts.

5.115.1.14.14.3.6 Acceleration check distance chart.

This chart (refer to Figure 14) shall show the relationship between indicated airspeed and ground roll distance during takeoff. The actual indicated airspeed required at any distance traveled along the takeoff airspeeds for various aircraft gross weights and the required ground roll distances for the aircraft shall be provided.

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5.115.1.14.14.3.7 Accelerate-stop distance chart.

The accelerate-stop distance chart (refer to Figure 15) shall show the actual distance required to begin takeoff, accelerate to rotation speed, abort the takeoff, and bring the aircraft to a stop. Variables shall include ambient air temperature, pressure altitude, runway conditions, and gross weight.

5.115.1.14.14.3.8 Accelerate after takeoff chart.

The chart (refer to Figure 16) shall show the actual distance required to clear an obstacle after takeoff. Parameters shall include FAT, pressure altitude, takeoff weight, and velocity.

5.115.1.14.14.3.9 Minimum single engine control airspeed chart.

This chart (refer to Figure 17) is applicable to multi-engine aircraft and shall show the minimum controllable airspeed (V_{mc}), with parameters of FAT, pressure altitude, and gross weight, following engine failure during takeoff. The chart shall be based on the operating engine's capability to produce full takeoff power. The primary use of the chart shall be to provide V_{mc} at takeoff, not to provide single engine rate of climb information. All applicable limits shall be shown and explained in the text. Conditions such as flap setting, landing gear position, etc., shall be included in the subheading or explained in the text. The effect of engine failure on takeoff, climb, and cruising performance, the effect of wind-milling and feathered propellers on aircraft drag, and other adverse factors shall be described.

5.115.1.14.14.3.10 Single engine climb chart.

This chart (refer to Figure 18) shall present single engine airspeeds and rate of climb data for various temperatures, altitudes, and gross weights. Single engine rate of climb shall be based on takeoff airspeeds to include gear-up and gear-down configurations. When alternate aircraft configurations change the validity of information being presented, additional charts shall be prepared with an explanation of the alternate configuration provided in the subheading and within the text when necessary. Information indirectly obtained from the chart that would help in the determination of the best course of action to be taken shall also be included in the text. Reference shall be made to other charts related to single engine operations.

5.115.1.14.14.3.11 Cruise climb chart.

The cruise climb chart (refer to Figure 19) shall be used to find the time, fuel, and distance required to climb. Parameters shall include initial and final FAT, initial and final pressure altitude, and initial gross weight.

5.115.1.14.14.3.12 Drag chart.

The drag chart (refer to Figure 5) shall show additional shaft horsepower required at various airspeeds, altitudes, and temperatures due to drag increases caused by changes in external configuration. Additional shaft horsepower shall be given per engine for multi-engine aircraft. Charts used in connection with the drag chart shall be referenced in the text. Tabular data presenting each drag item and the drag area change in square feet shall be included in the text.

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5.115.1.14.14.3.13 Cruise chart.

The cruise chart (refer to Figure 20) shall show the obtainable airspeed, required engine shaft horsepower, engine torque pressure, shaft horsepower increase required due to increases in drag, fuel flow and optimum propeller rpm for maximum range during cruise flight at various aircraft gross weights, altitudes, and temperatures. The particular altitudes, configurations, and temperatures at which cruise data are to be presented shall be specified by the acquiring activity. This information shall be presented for each engine when performance data pertain to multi-engine aircraft. When fuel flow variations exist due to alternate engine operations, fuel flow for each alternate condition shall be shown. Single engine data shall be placed on the same charts as multi-engine data only when approved by the acquiring activity. Maximum performance, precautionary, and limits data shall be shown on each chart and explained in the text. Indicated and true airspeed for each altitude shall be shown. When an altitude limitation prevents safe single engine cruise for multi-engine aircraft, the single engine graph shall be omitted. Additional charts related to cruise performance shall be referenced in the text.

5.115.1.14.14.3.14 Climb-descent chart.

The climb-descent chart (refer to Figure 21) shall show changes in torque and horsepower required to obtain a desired rate of climb or descent at a known gross weight and propeller rpm. For maximum rate of climb information, reference shall be made to the cruise charts. If the aircraft is other than baseline configuration, an increase in horsepower due to drag shall be computed from the drag chart and added to the horsepower required per engine. Charts used in connection with the climb-descent charts shall be referenced in the text and in the single engine climb chart.

5.115.1.14.14.3.15 Approach speed chart.

The approach speed chart (refer to Figure 22) shall present the recommended airspeeds during approach to landing for the full range of gross weights and flap settings for the aircraft. The chart shall be valid for all aircraft configurations, unless otherwise specified by the acquiring activity. Charts used in connection with the approach speed chart shall be referenced in the text.

5.115.1.14.14.3.16 Landing chart.

The landing chart (refer to Figure 23) shall show the total ground roll distance for landing with no reverse thrust at known gross weight, pressure altitude, and ambient air temperature. Landing distance shall be based on touching down at the approach speed obtained from the approach speed chart, full braking with 0 degrees, and normal landing flap settings. The correct approach speed is obtained from the approach speed chart. Landing performance shall be based on a dry, level, hard surface runway and calm wind conditions. This chart shall be valid for all stores configurations unless otherwise specified by the acquiring activity. The chart used in computing landing distances shall be described in the text.

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5.115.1.14.14.3.17 Optimum cruise.

When requested by the acquiring activity, data shall be provided to determine the altitude for maximum range and maximum endurance as a function of gross weight and ambient temperature. Information shall also be provided for optimum rotor/propeller rpm for maximum range and endurance. Where optimum rpm is different from that presented for the (normal) cruise data, information shall be provided to correct fuel flow for the different rpm. Optimum cruise speed (maximum range or endurance) presented on the cruise chart shall be referenced and used. Airspeed and power schedules for climb and descent to maximize total range or endurance shall be described. A means shall be provided for estimating ambient temperature at optimum altitude. Also, a means shall be provided for comparing the effects of varying winds with altitude with the change in aircraft performance with altitude. Data shall cover the range of gross weights and ambient temperatures presented on the cruise charts, and the limits of altitude on the cruise charts (if required). If corrections to optimum altitude for configuration variations are significant and capable of being done, this information shall be provided.

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EXAMPLE

WANTED

FUEL FLOW AT ENGINE IDLE AND AT 324 ROTOR/6600 ENGINE RPM WITH FLAT PITCH

KNOWN

PRESSURE ALTITUDE = 11000 FEET, FAT = 0°

METHOD

ENTER PRESSURE ALTITUDE
MOVE RIGHT TO (ENGINE IDLE) FAT
MOVE DOWN, REDA ENGINE IDLE
FUEL FLOW = 223 LB/HR
REENTER PRESSURE ALTITUDE
MOVE RIGHT TO (FLAT PITCH) FAT
MOVE DOWN, READ FLAT PITCH
FUEL FLOW = 265 LB/HR

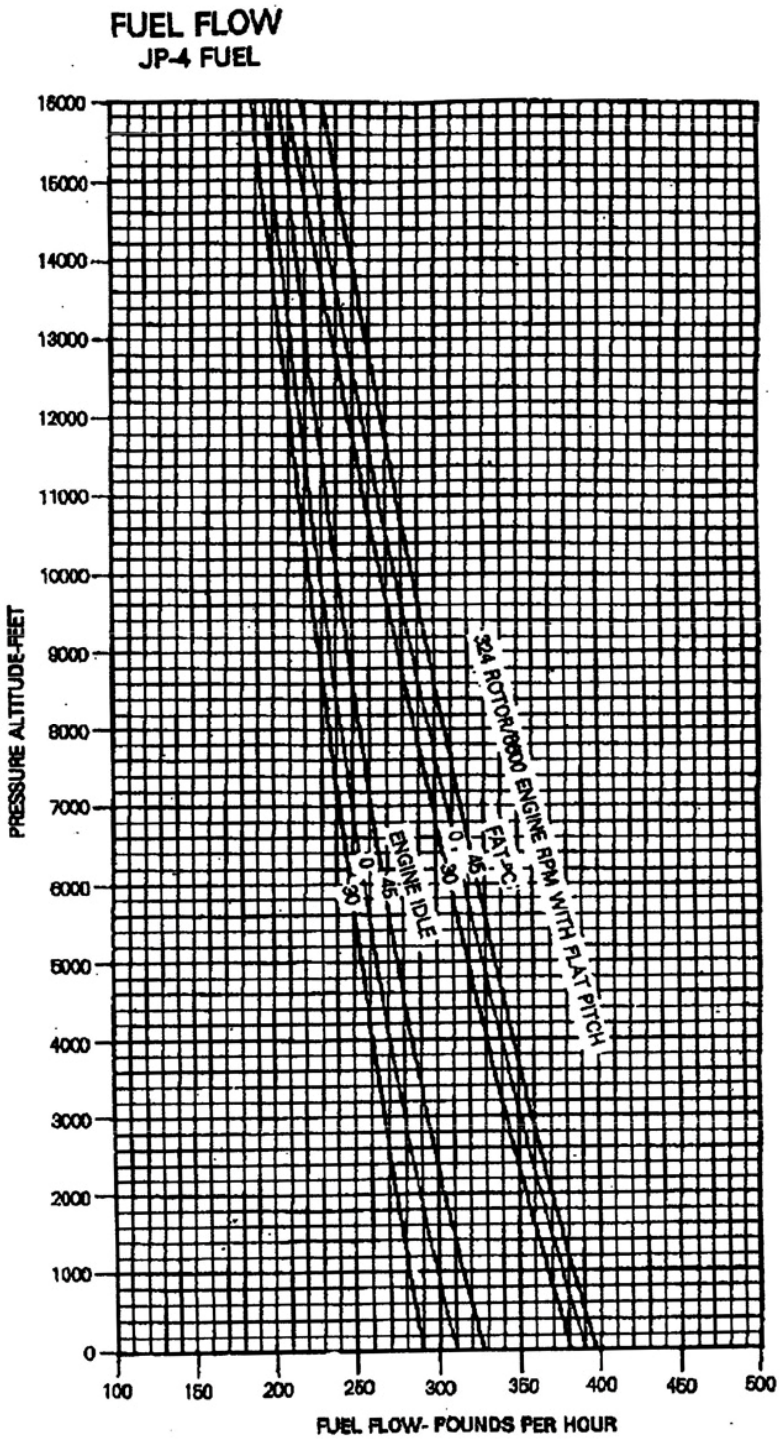

FIGURE 1. Fuel flow chart.

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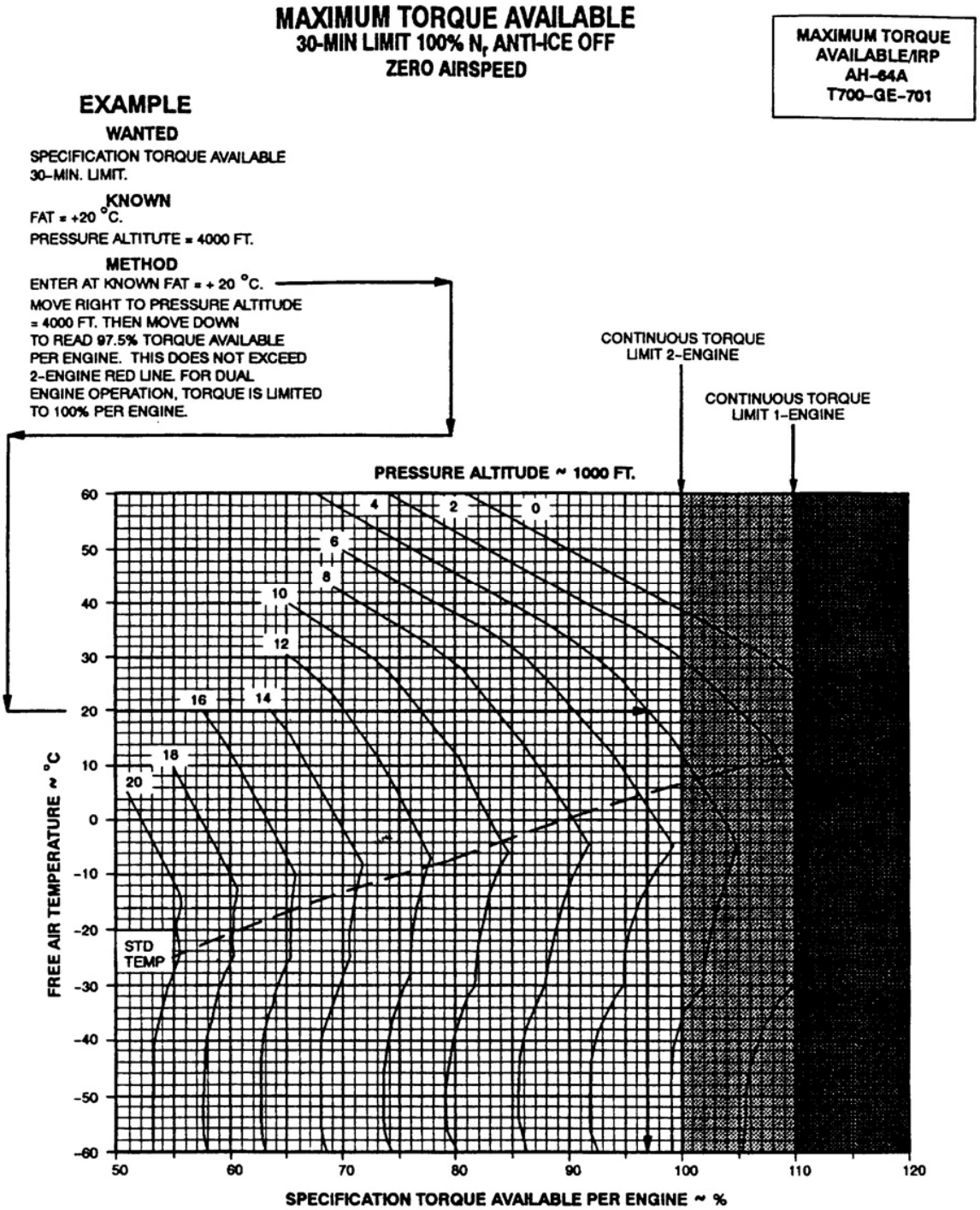

FIGURE 2. Maximum torque available chart.

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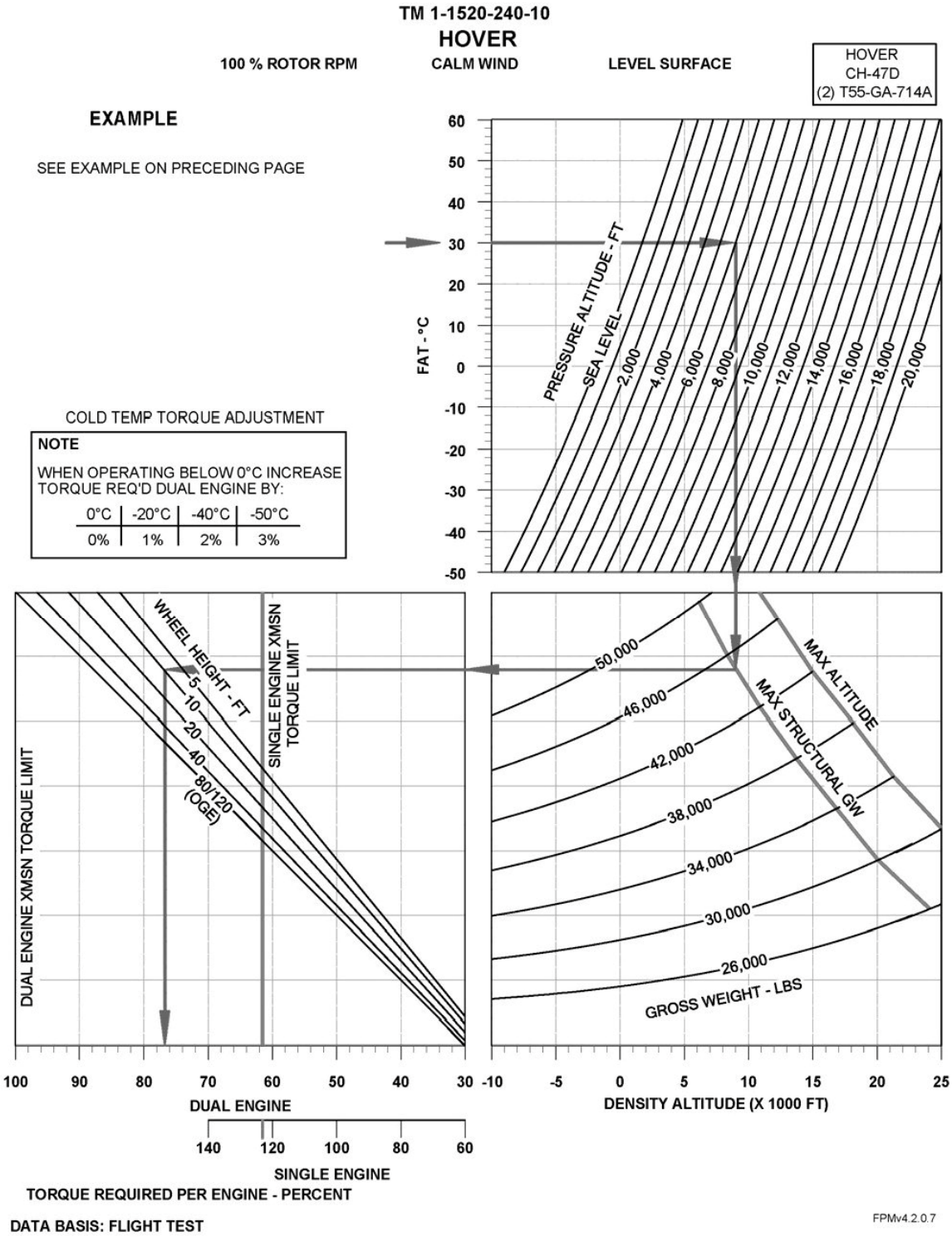

FIGURE 3. Hover chart.

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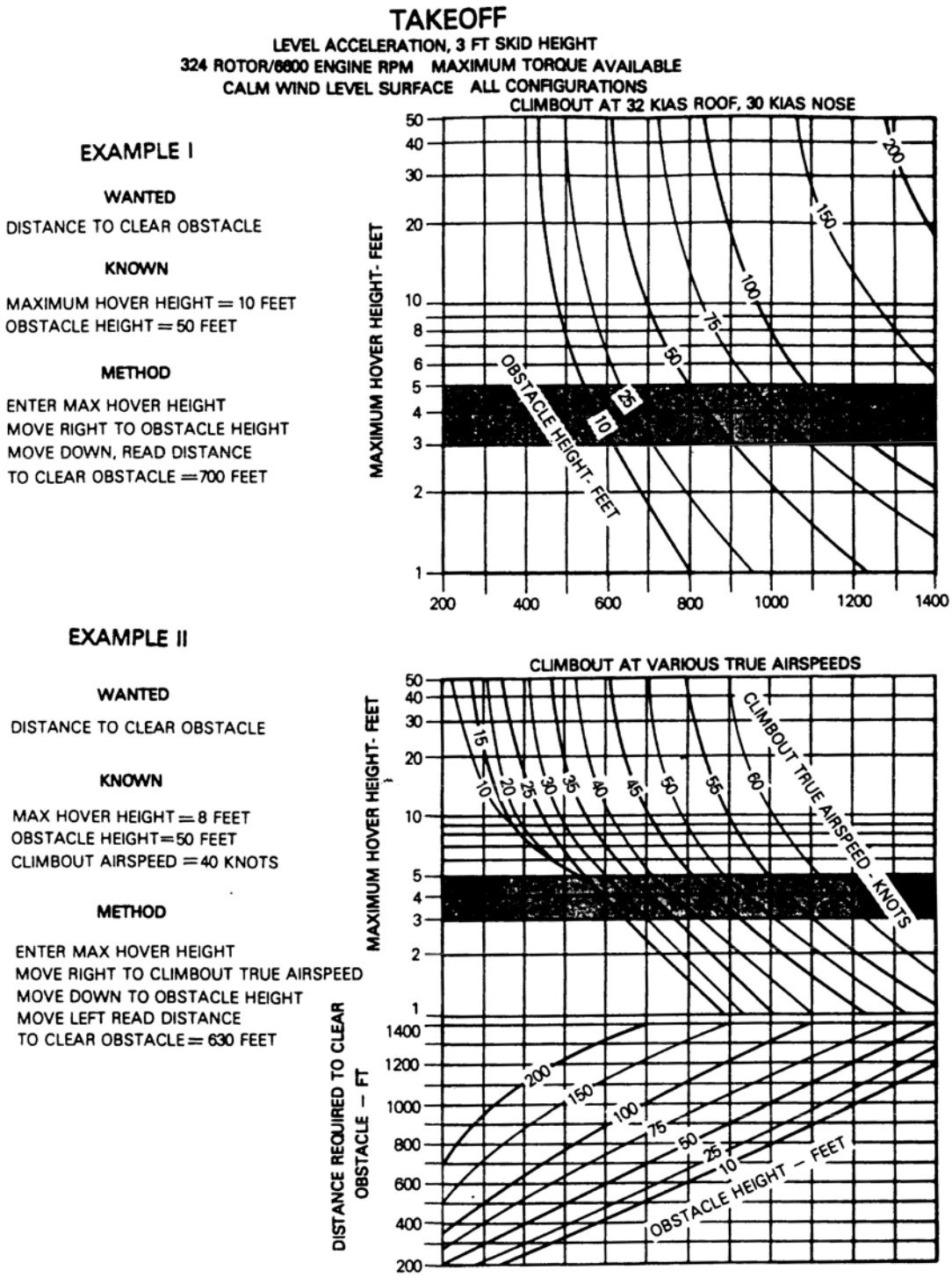

FIGURE 4. Takeoff chart.

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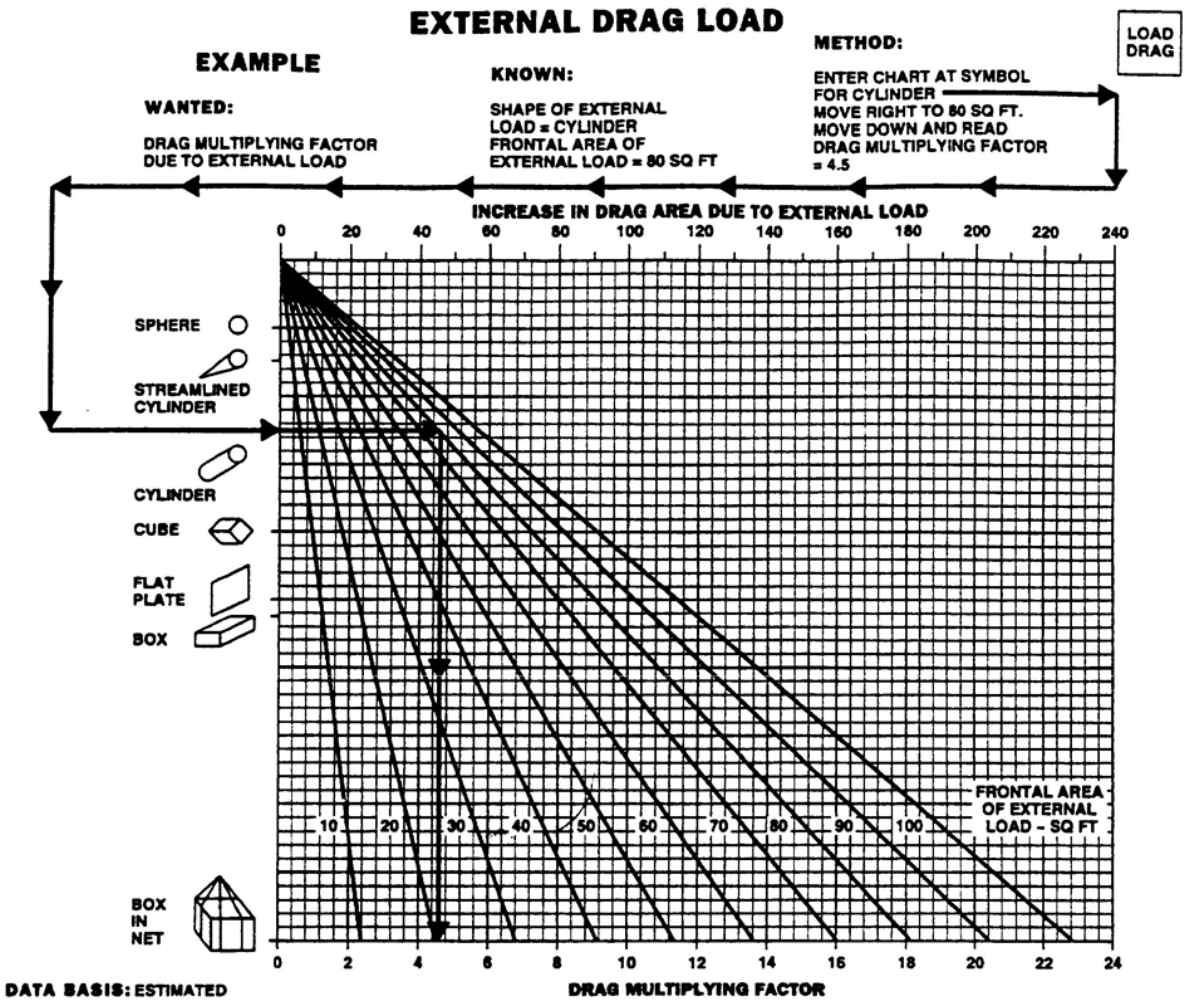

FIGURE 5. Drag chart.

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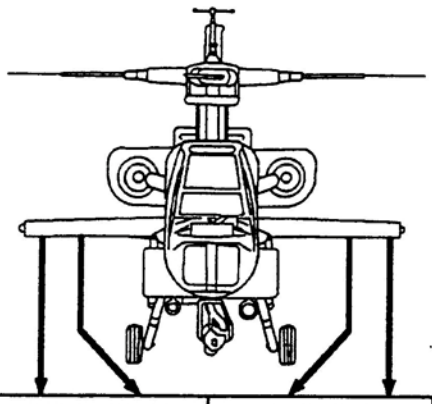

RIGHT WING STORES		LEFT WING STORES		Δ F (SQ. FT.)	MULTIPLYING FACTOR
OUTBOARD	INBOARD	INBOARD	OUTBOARD		
				-8.0	-0.8
				-6.9	-0.69
				-6.9	-0.69
				-5.7	-0.57
				-6.1	-0.61
				-6.1	-0.61
				-2.1	-0.21
				-2.1	-0.21
				-4.9	-0.49
				-4.9	-0.49
				-0.9	-0.09
				-0.9	-0.09
				-4.2	-0.42

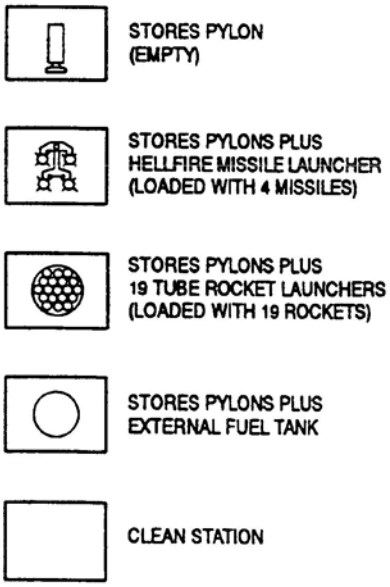

Figure 5. Drag chart - Continued.

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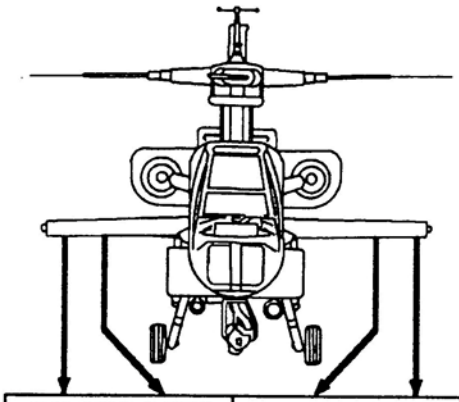

RIGHT WING STORES		LEFT WING STORES		Δ F (SQ. FT.)	MULTIPLYING FACTOR
OUTBOARD	INBOARD	INBOARD	OUTBOARD		
				+5.2	+0.52
				0 (BASELINE)	0 (BASELINE)
				0 (BASELINE)	0 (BASELINE)
				+1.2	+0.12
				+1.2	+0.12
				+1.9	+0.19
				+1.9	+0.19
				+9.6	+0.96

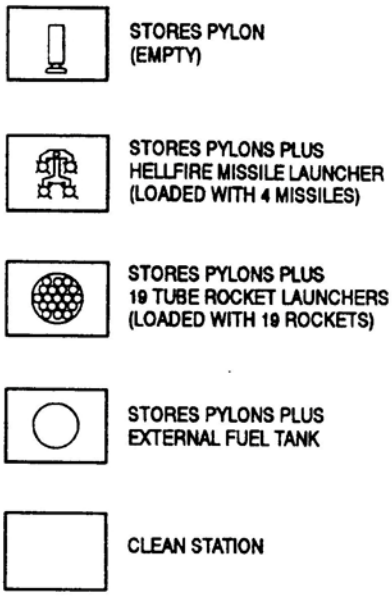

Figure 5. Drag chart - Continued.

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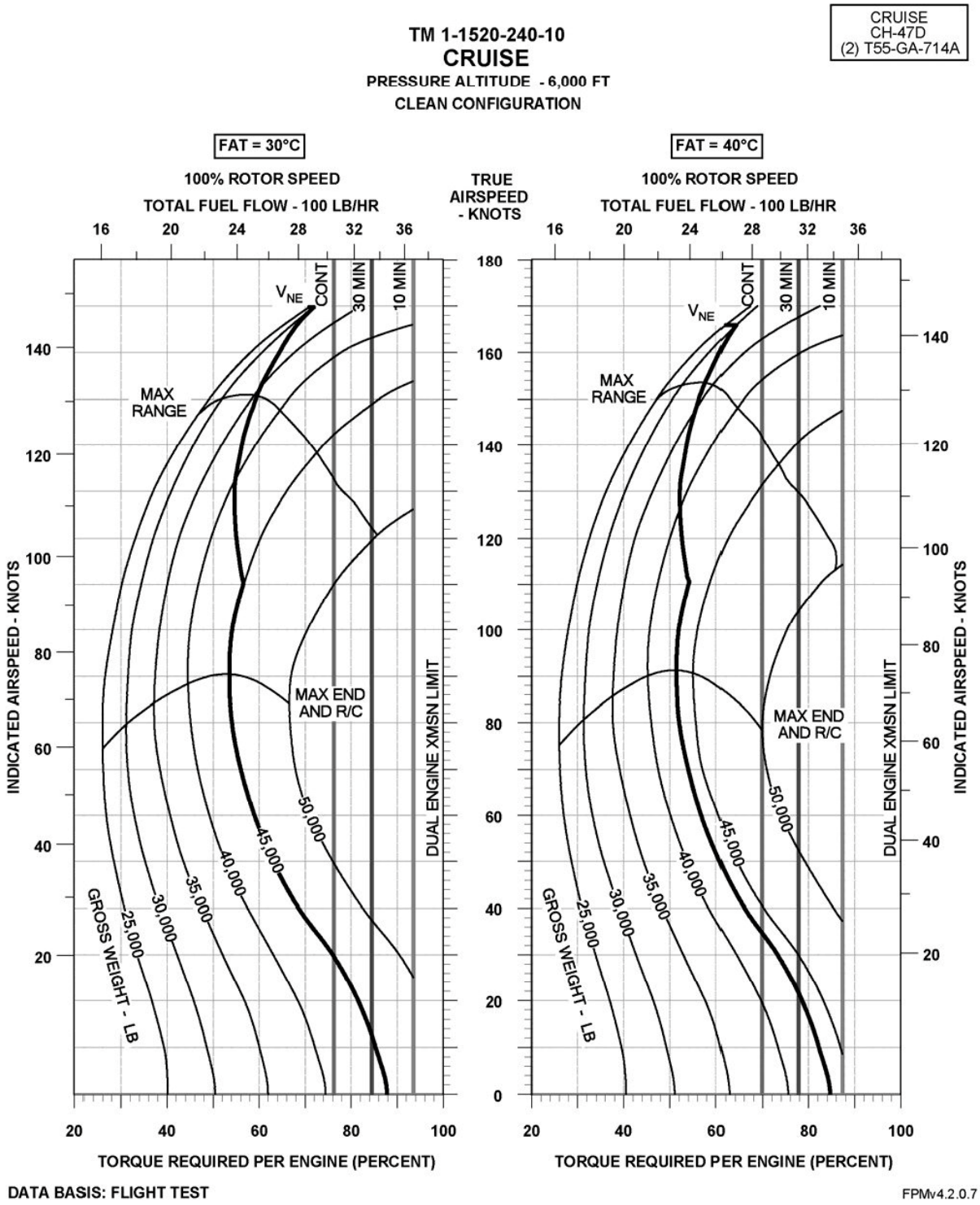

FIGURE 6. Cruise chart.

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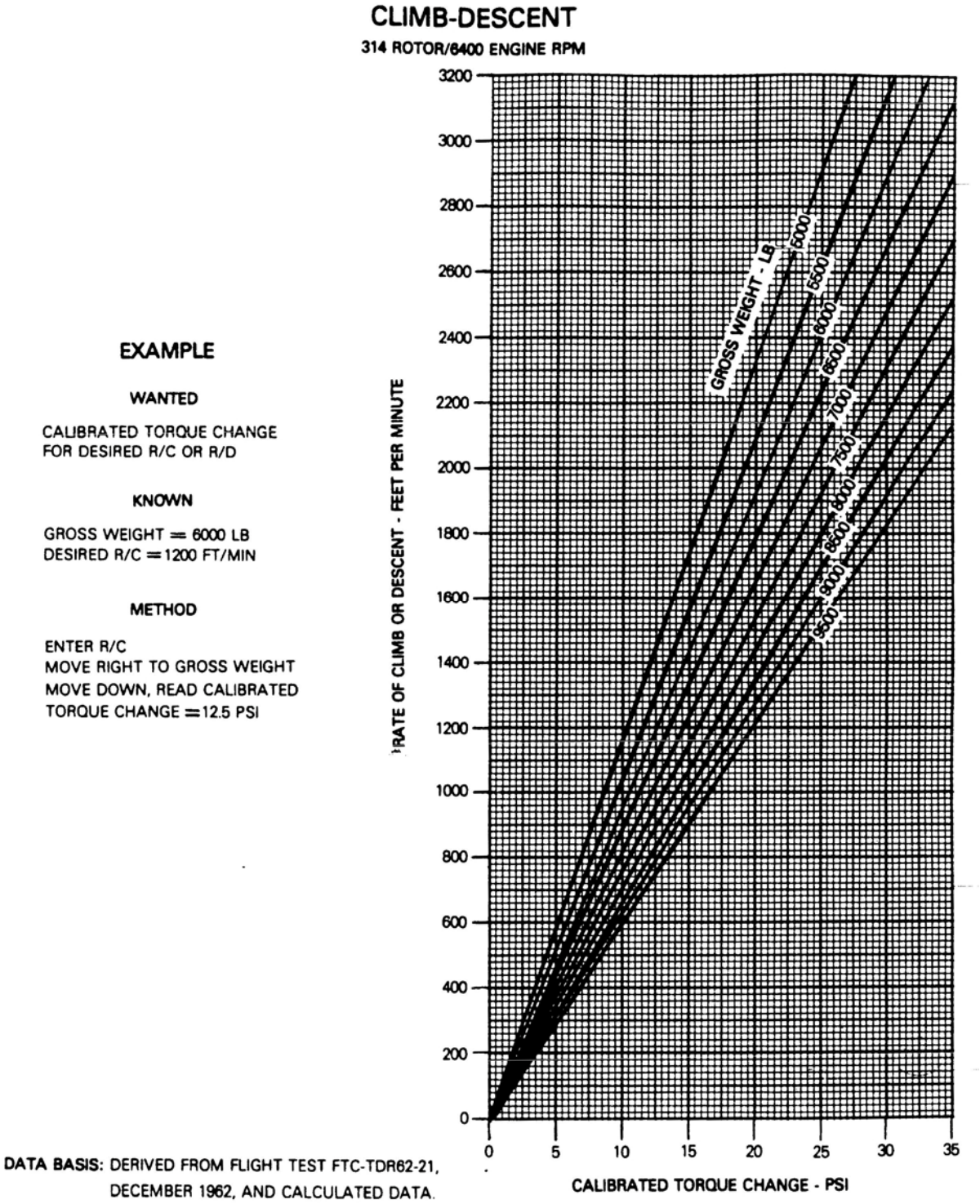

FIGURE 7. Climb-descent chart.

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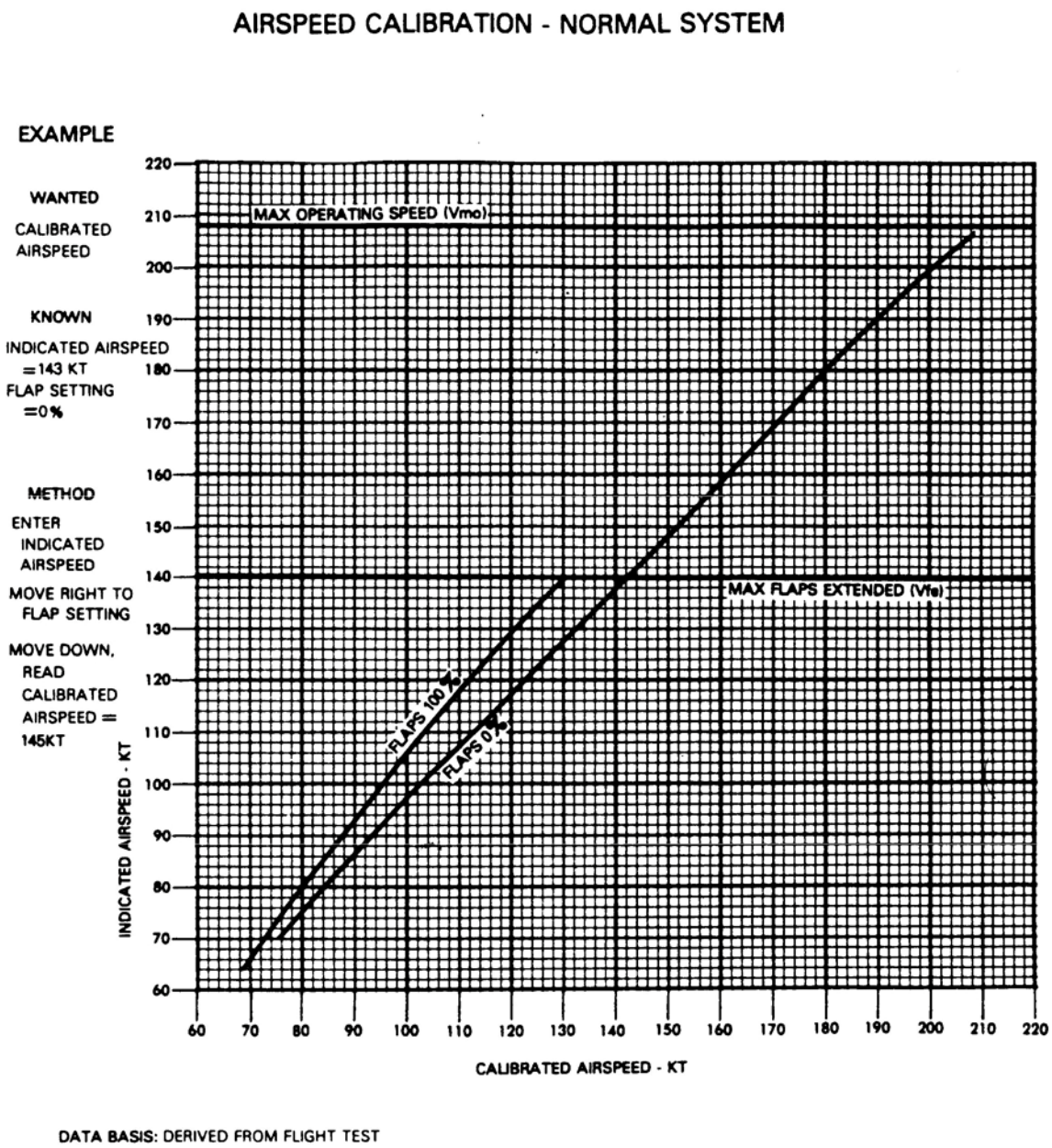

FIGURE 8. Airspeed calibration chart.

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TEMPERATURE CONVERSION/CORRECTION

TEMPERATURE CONVERSION
/CORRECTION
RU-21A, RU-21D
T74-CP-700

EXAMPLE

WANTED

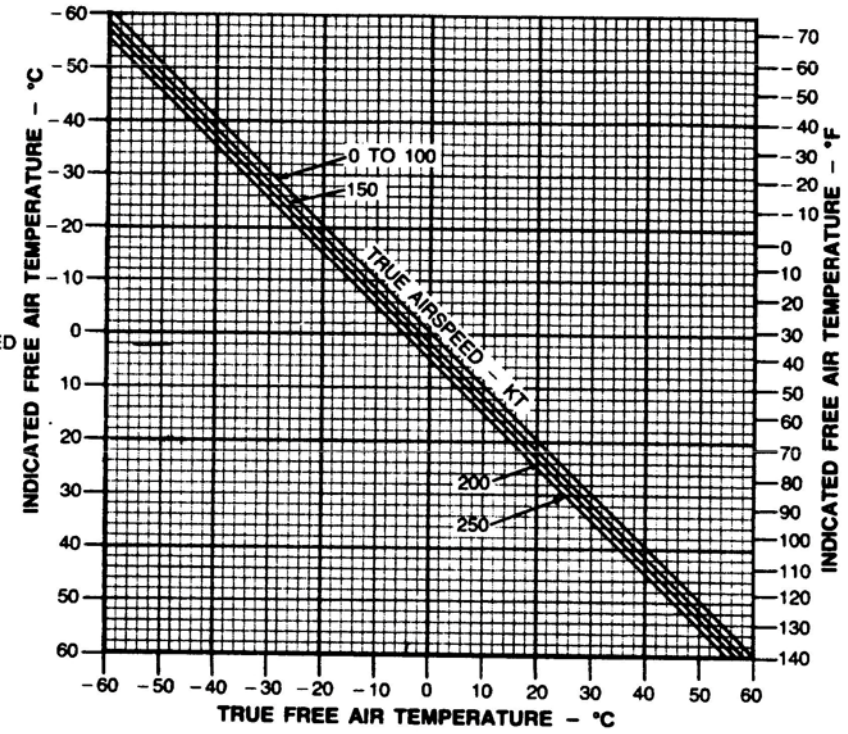
TRUE FAT

KNOWN

INDICATED FAT = −2°C
TRUE AIRSPEED = 154 KT

METHOD

ENTER INDICATED FAT HERE
MOVE RIGHT TO TRUE AIRSPEED
MOVE DOWN READ TRUE
FAT = −4°C



AP 001611

Figure 8. Airspeed calibration chart - Continued.

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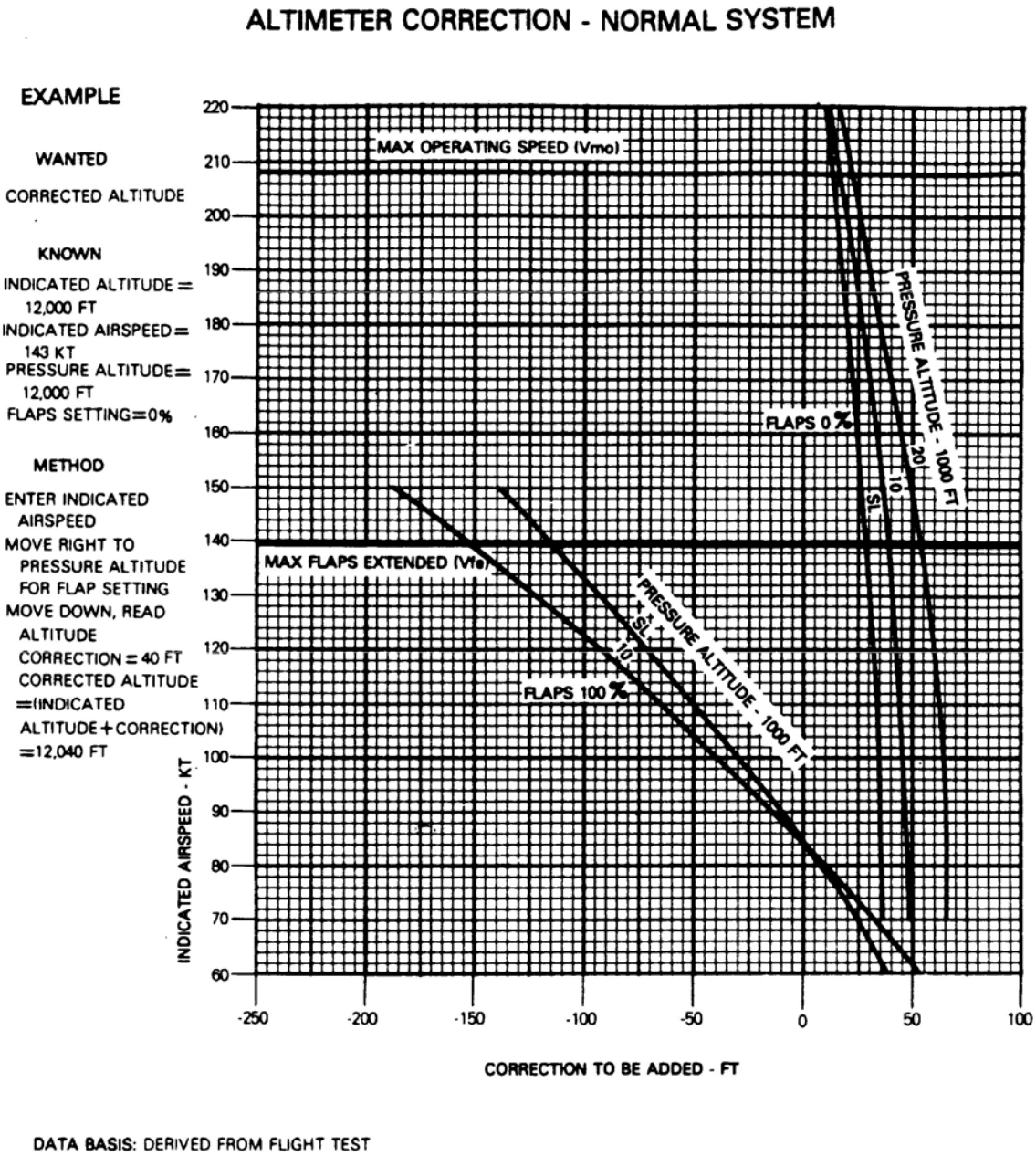

FIGURE 9. Airspeed-altimeter correction chart.

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CROSSWIND - TAKEOFF OR LANDING

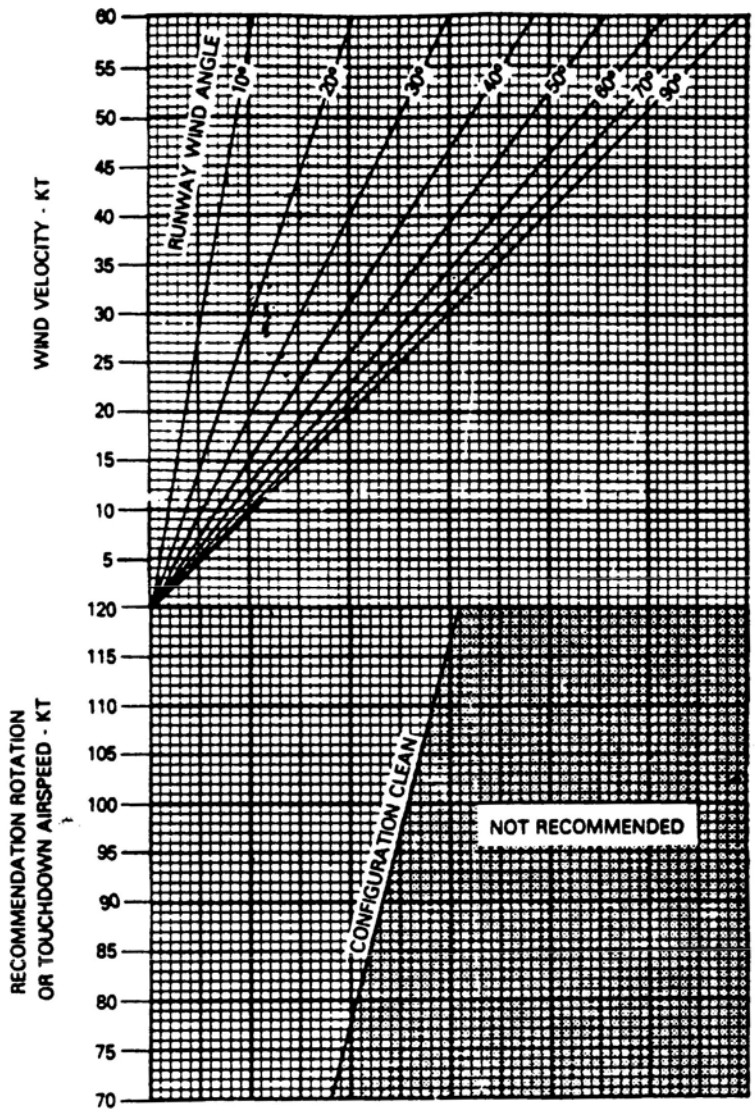
EXAMPLE

KNOWN

CLEAN CONFIGURATION
RUNWAY 21
WIND VELOCITY = 23KT
WIND DIRECTION = 190°
NORMAL ROTATION AIRSPEED = 93KT

METHOD

DETERMINE RUNWAY WIND ANGLE,
210° - 190° = 20°
ENTER WIND VELOCITY
MOVE RIGHT TO RUNWAY WIND ANGLE = 20°
MOVE DOWN TO NORMAL ROTATION AIRSPEED LINE = 93 KTS
THE INTERSECTION FALLS WITHIN THE RECOMMENDED AREA



DATA BASIS: FLIGHT TEST

FIGURE 10. Crosswinds – takeoff and landing chart.

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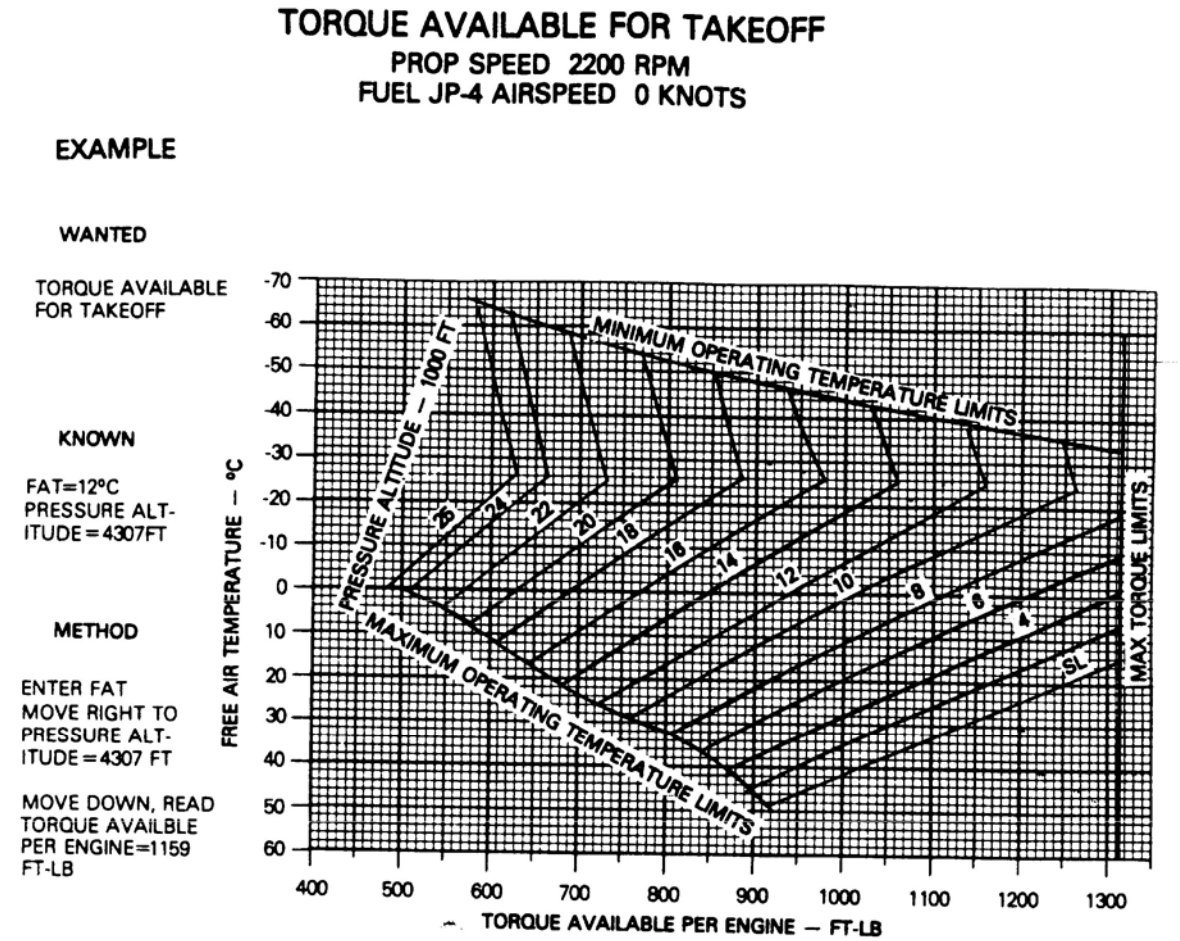

DATA BASIS: CALCULATED FROM ENGINE MODEL SPEC .

FIGURE 11. Torque available for takeoff chart.

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TAKEOFF - NORMAL

CALM WINDS FLAPS 0 PERCENT POWER - TAKEOFF

LEVEL HARD SURFACE

EXAMPLE

WANTED

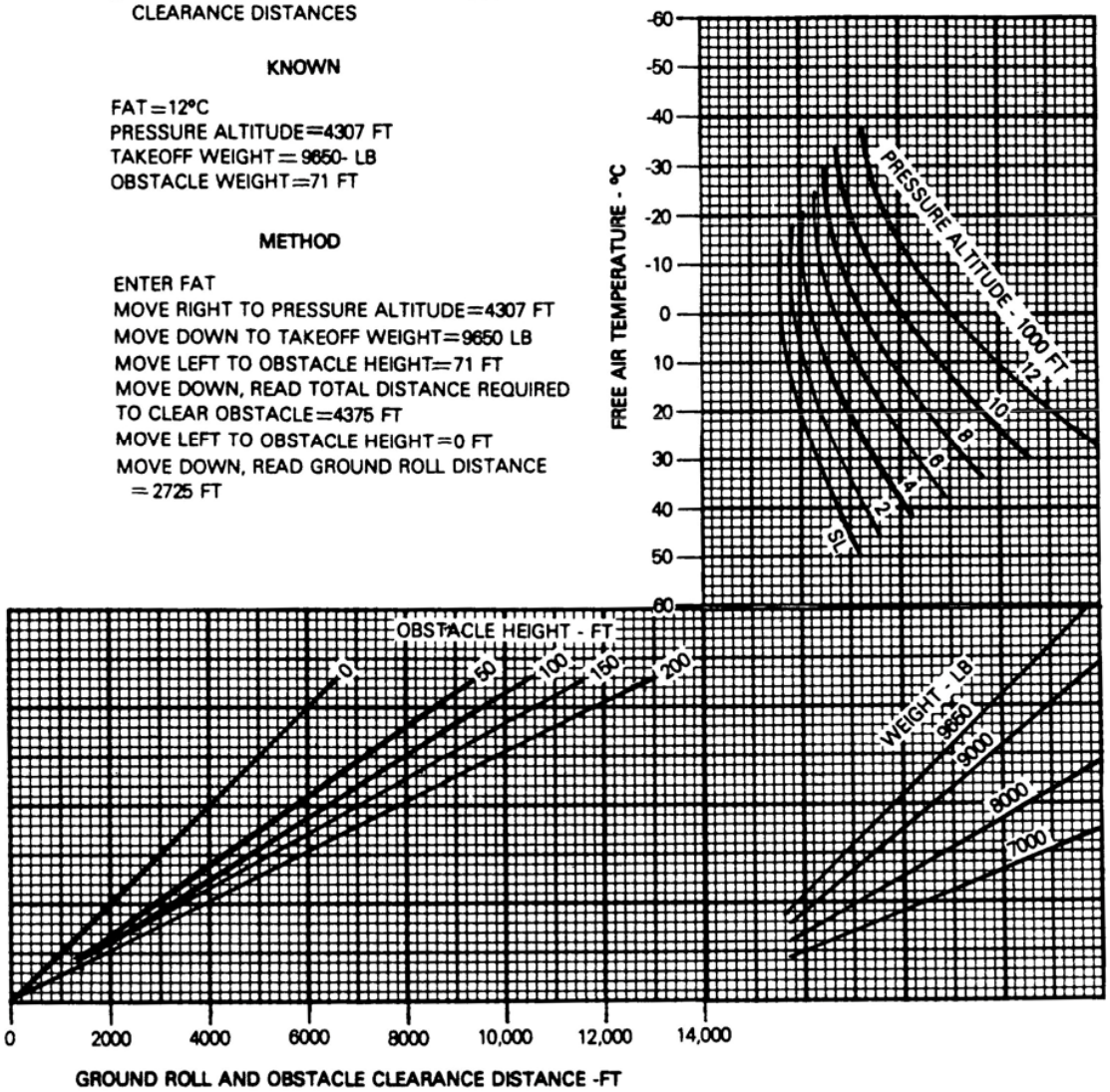
REQUIRED GROUND ROLL AND OBSTACLE CLEARANCE DISTANCES

KNOWN

FAT=12°C
PRESSURE ALTITUDE=4307 FT
TAKEOFF WEIGHT=9650- LB
OBSTACLE WEIGHT=71 FT

METHOD

ENTER FAT
MOVE RIGHT TO PRESSURE ALTITUDE=4307 FT
MOVE DOWN TO TAKEOFF WEIGHT=9650 LB
MOVE LEFT TO OBSTACLE HEIGHT=71 FT
MOVE DOWN, READ TOTAL DISTANCE REQUIRED TO CLEAR OBSTACLE=4375 FT
MOVE LEFT TO OBSTACLE HEIGHT=0 FT
MOVE DOWN, READ GROUND ROLL DISTANCE =2725 FT



DATA BASIS: CALCULATED

FIGURE 12. Takeoff – normal chart.

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NORMAL ROTATION/TAKEOFF AIRSPEED

FLAPS 0 PERCENT

EXAMPLE

WANTED

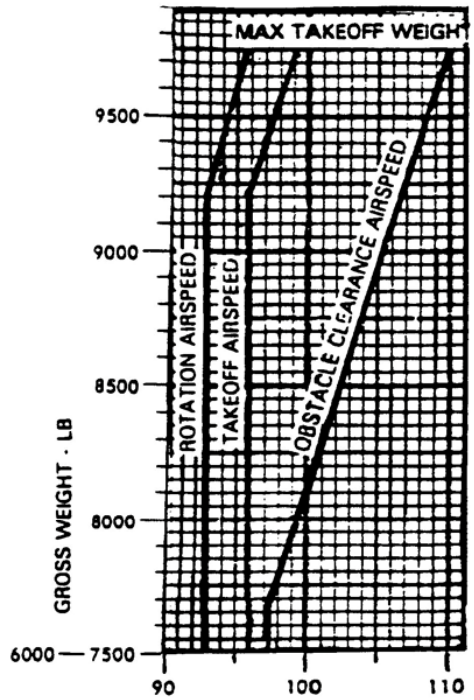
NORMAL ROTATION, TAKEOFF, AND OBSTACLE CLEARANCE AIRSPEEDS FOR KNOWN TAKEOFF WEIGHT

KNOWN

TAKEOFF WEIGHT = 9650 LBM

METHOD

ENTER TAKEOFF WEIGHT
MOVE RIGHT TO ROTATION AIRSPEED. TAKEOFF AIRSPEED AND OBSTACLE CLEARANCE AIRSPEED LINES
MOVE DOWN FROM ROTATION AIRSPEED LINE READ INDICATED AIRSPEED FOR ROTATION 96 KT
MOVE DOWN FROM TAKEOFF AIRSPEED LINE, READ INDICATED AIRSPEED FOR TAKEOFF 99 KT
MOVE DOWN FROM OBSTACLE CLEARANCE AIRSPEED LINE, READ INDICATED AIRSPEED FOR OBSTACLE CLEARANCE 110 KT



DATA BASIS: FLIGHT TEST

FIGURE 13. Normal rotation/takeoff airspeed chart.

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ACCELERATION CHECK

POWER – TAKEOFF CALM WINDS
FLAPS 0 PERCENT LEVEL HARD SURFACE

ACCELERATION CHECK
RU-21D
T74-CP-700

EXAMPLE

WANTED

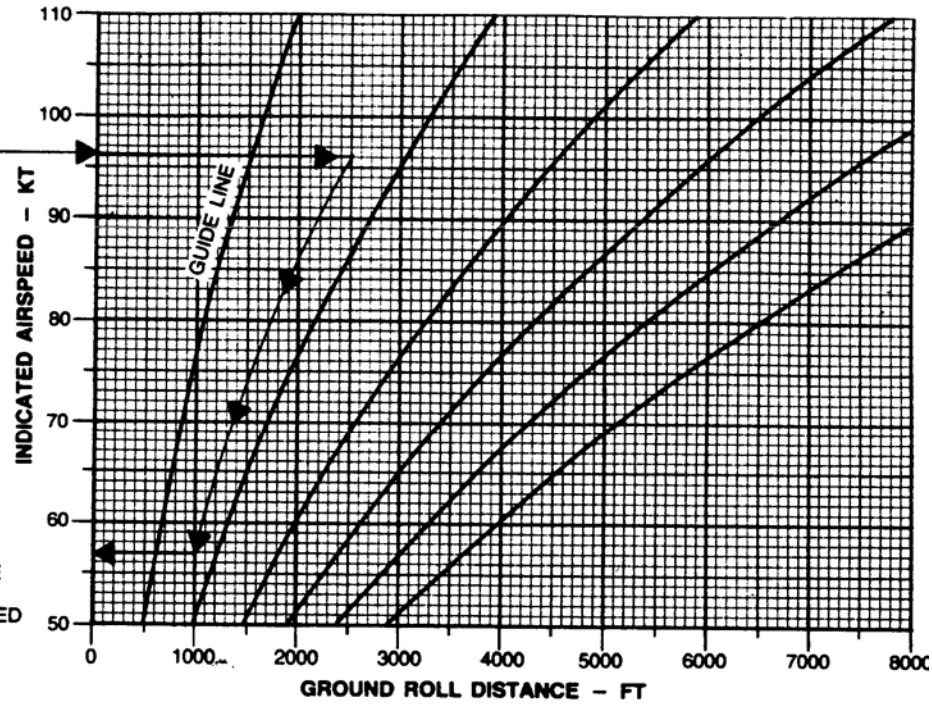
AIRSPEED REQUIRED AT VARIOUS ACCELERATION CHECK POINTS

KNOWN

TAKEOFF AIRSPEED FOR KNOWN GROSS WEIGHT OF 9,650 LB = 96 KT
GROUND ROLL DISTANCE = 2500 FT

METHOD

ENTER INDICATED AIR SPEED HERE
MOVE RIGHT TO GROUND ROLL DISTANCE LINE = 2500 FT
MOVE DOWN THE GUIDE LINE TO THE 1000 FT GROUND ROLL DISTANCE LINE
MOVE LEFT, READ INDICATED AIRSPEED REQUIRED AT 1000 FT MARKER = 57 KT



DATA BASIS: ESTIMATED

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AP 001539

FIGURE 14. Acceleration check distance chart.

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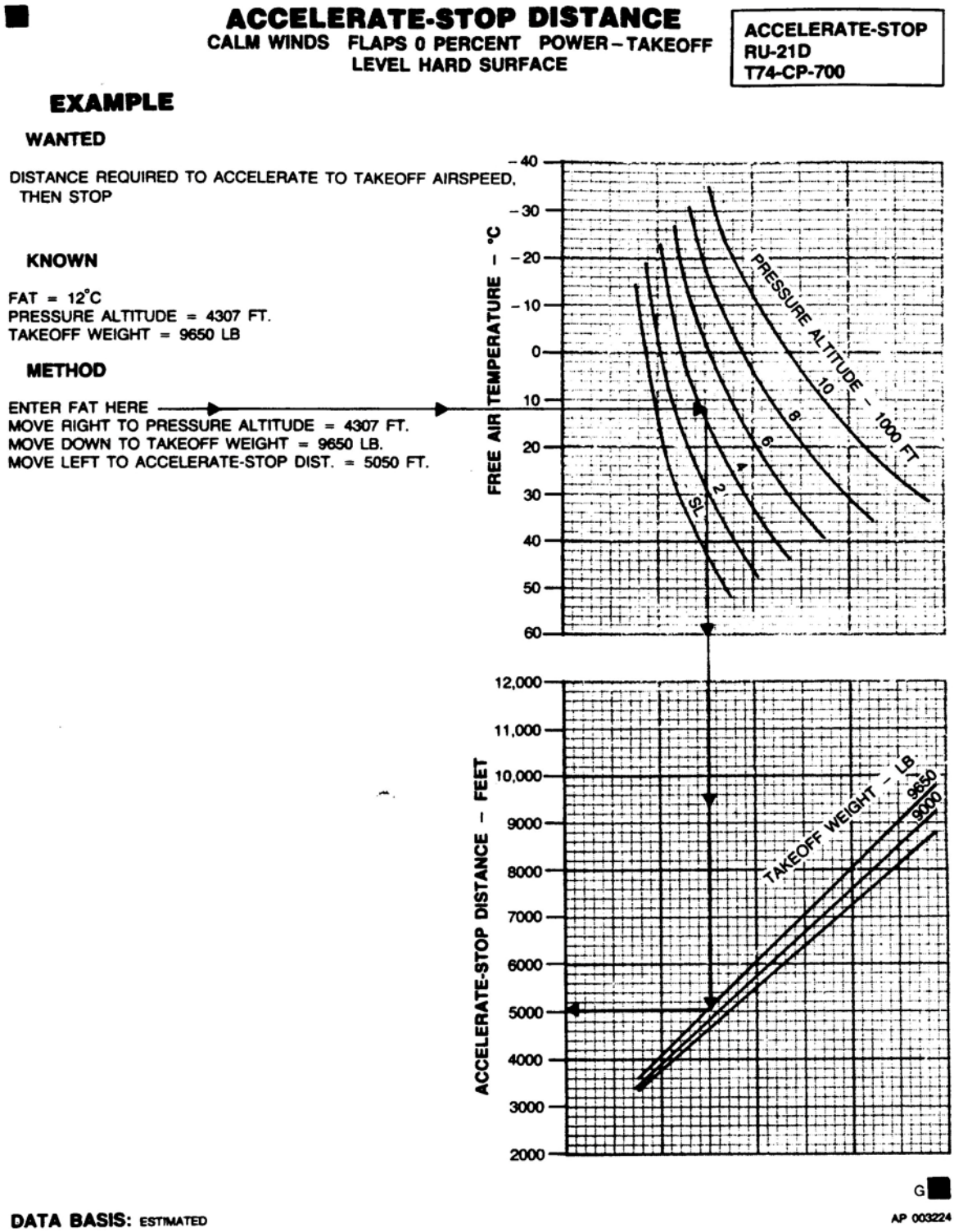

FIGURE 15. Accelerate-stop distance chart.

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EXAMPLE

WANTED

GROUND ROLL DISTANCE AND
TOTAL DISTANCE OVER 50 FT,
OBSTACLE.

KNOWN

FREE AIR TEMPERATURE — 25°C
PRESSURE ALTITUDE — 3966 FT.
HEADWIND COMPONENT — 9.5 KTS
GROSS WEIGHT — 12500 LBS.

METHOD

ENTER AT FAT
MOVE RIGHT TO PRESSURE ALTITUDE
MOVE DOWN TO 1ST REF. LINE
FOLLOW GUIDE LINE TO GROSS WEIGHT
MOVE DOWN TO 2ND REF. LINE
FOLLOW GUIDE LINE TO WIND SPEED
MOVE DOWN TO 3RD REF. LINE
CONTINUE STRAIGHT DOWN
READ GROUND ROLL EQUAL 3300 FT.
FOLLOW GUIDE LINE TO 50 FT
READ TOTAL DISTANCE EQUAL 8550 FT.

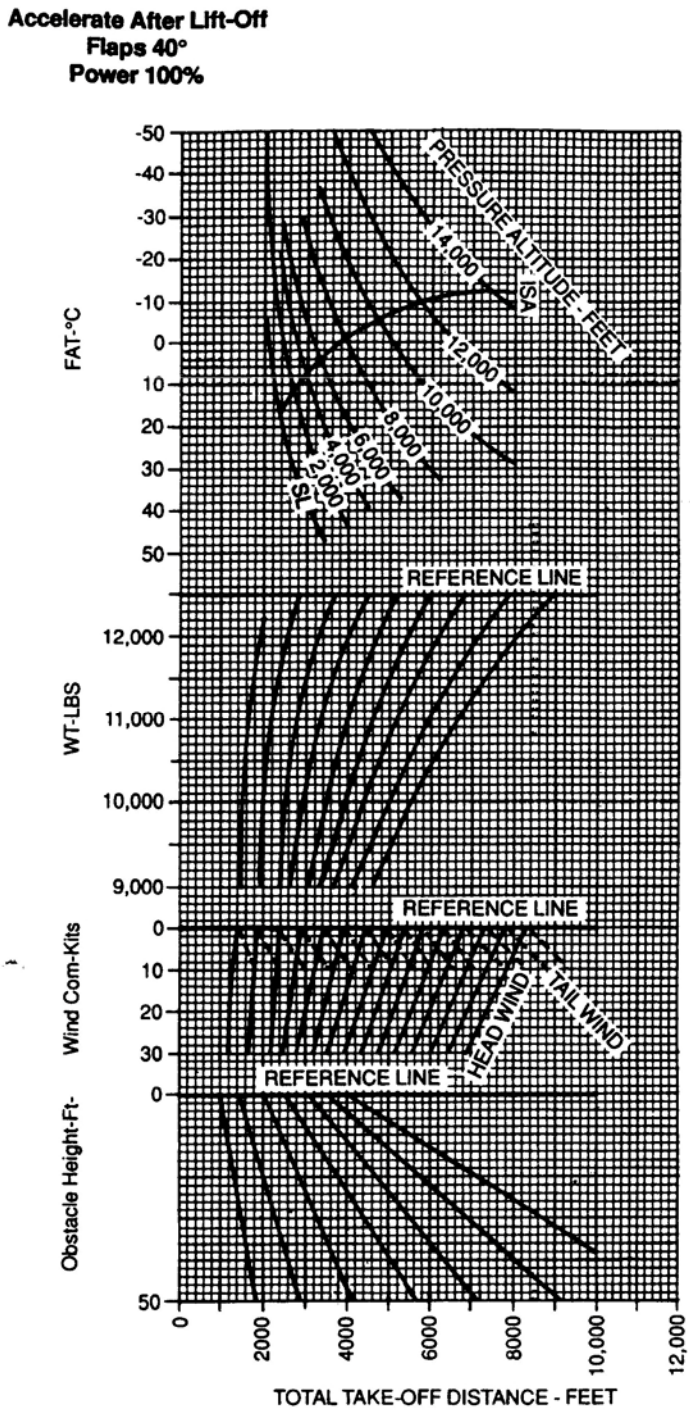

FIGURE 16. Accelerate after lift off chart.

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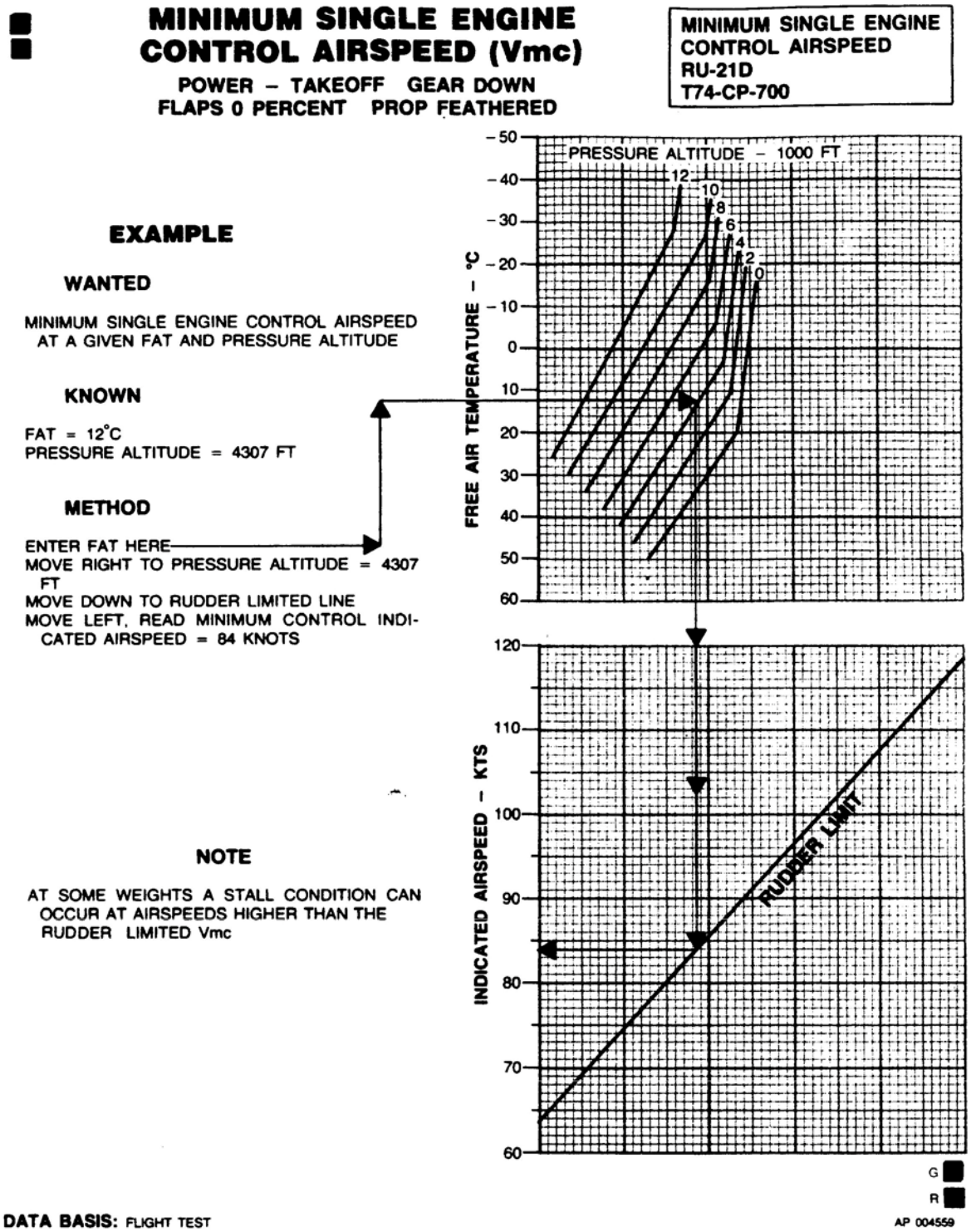

FIGURE 17. Minimum single engine control airspeed chart.

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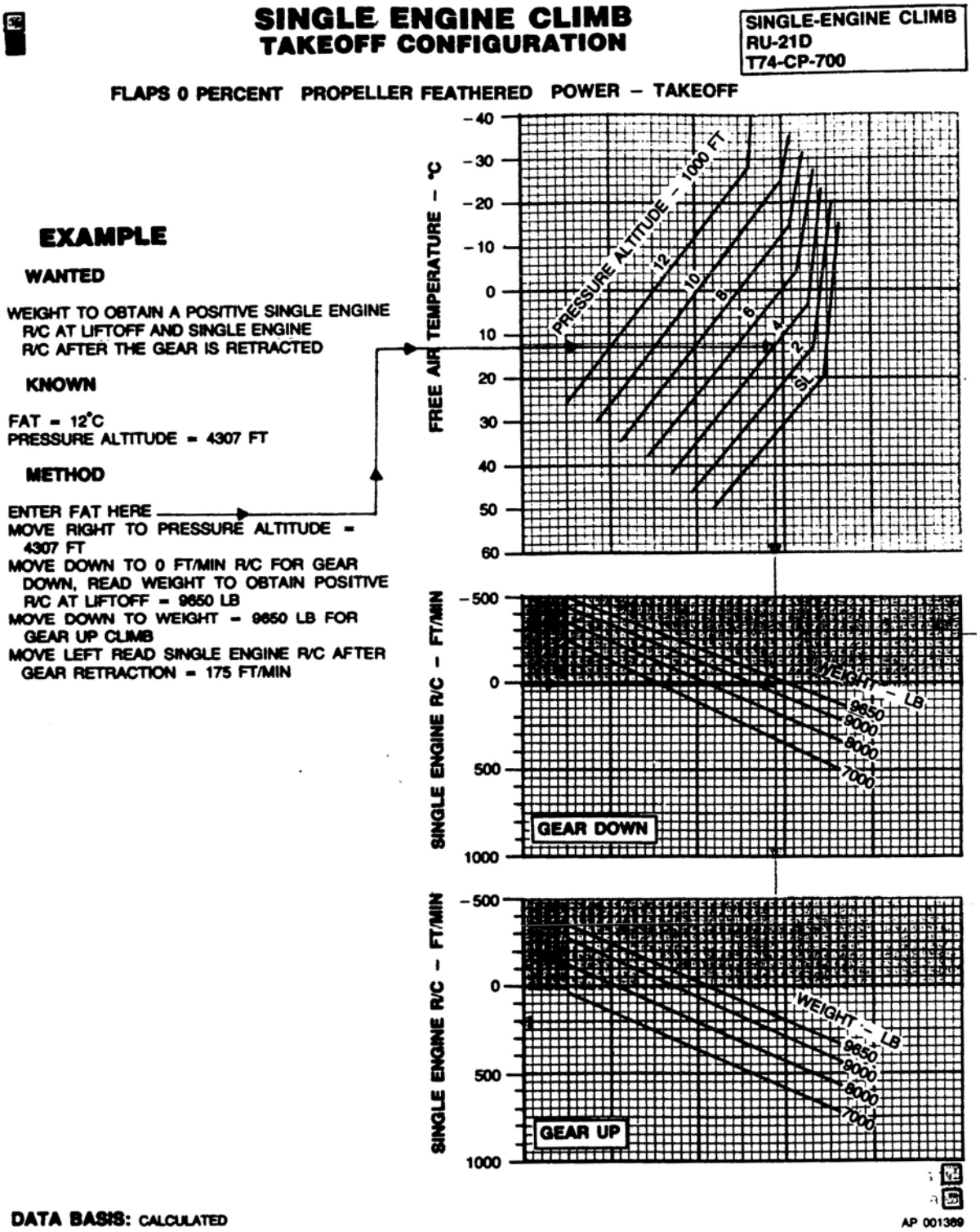

FIGURE 18. Single engine climb chart.

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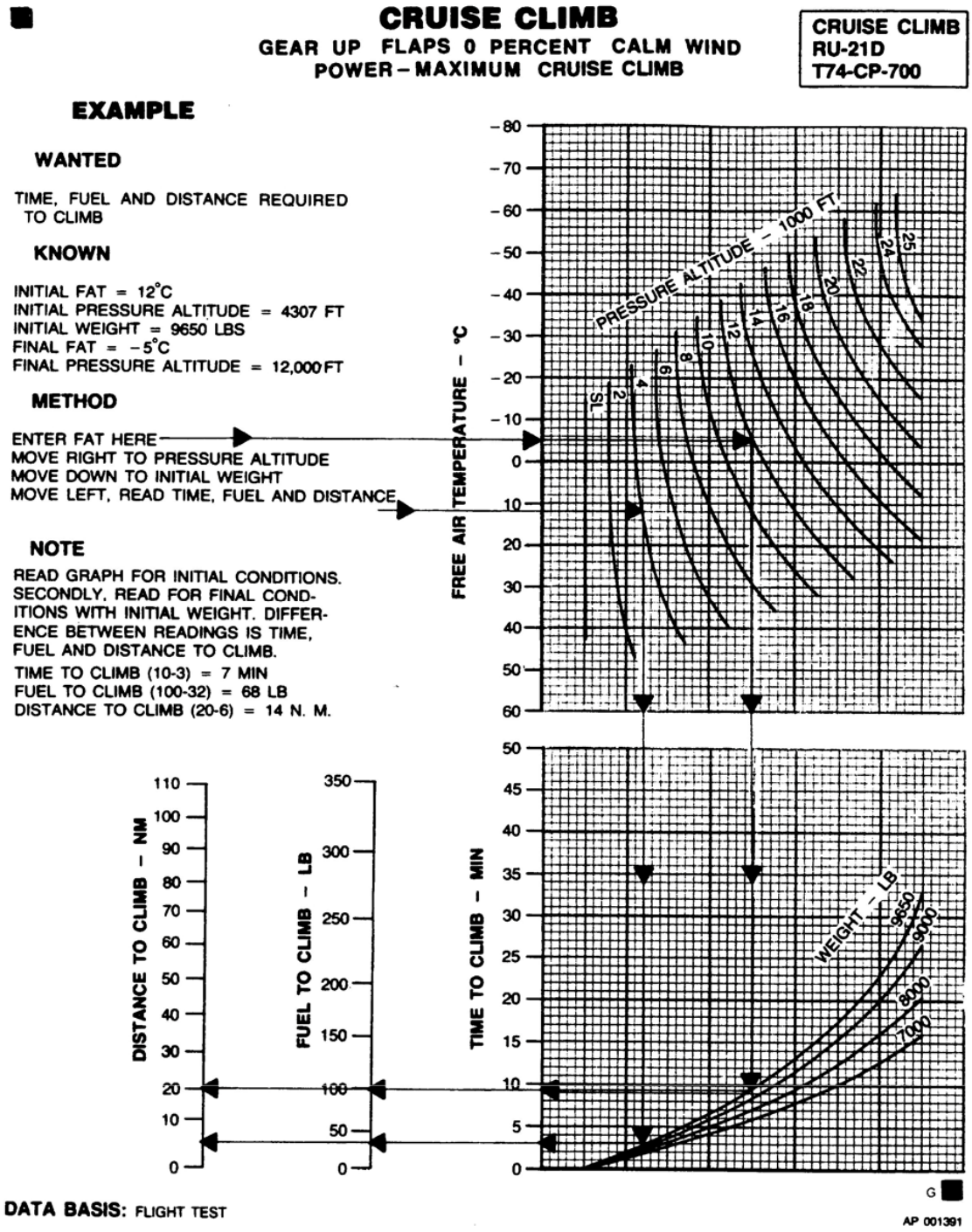

FIGURE 19. Cruise climb chart.

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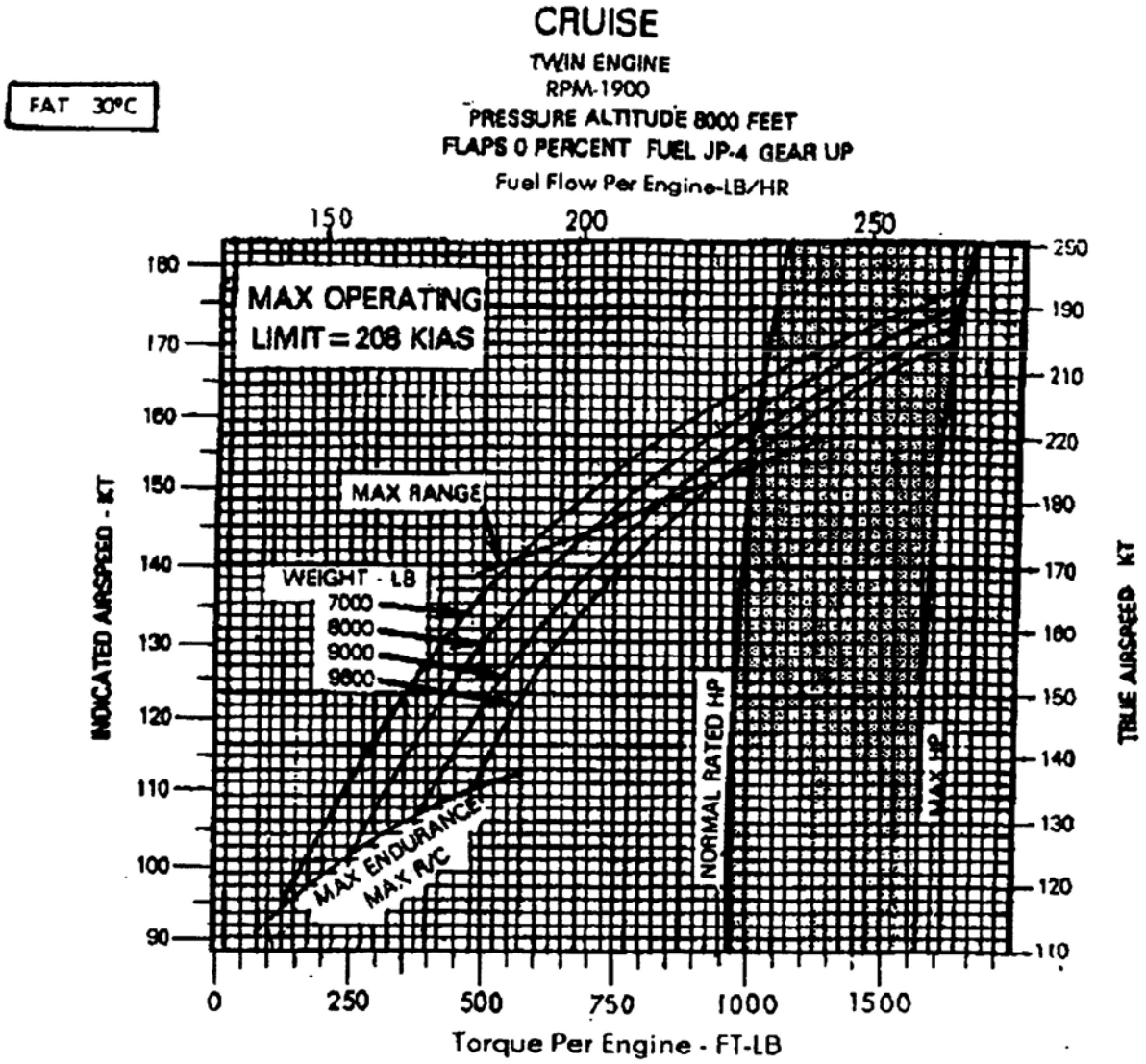

FIGURE 20. Cruise chart.

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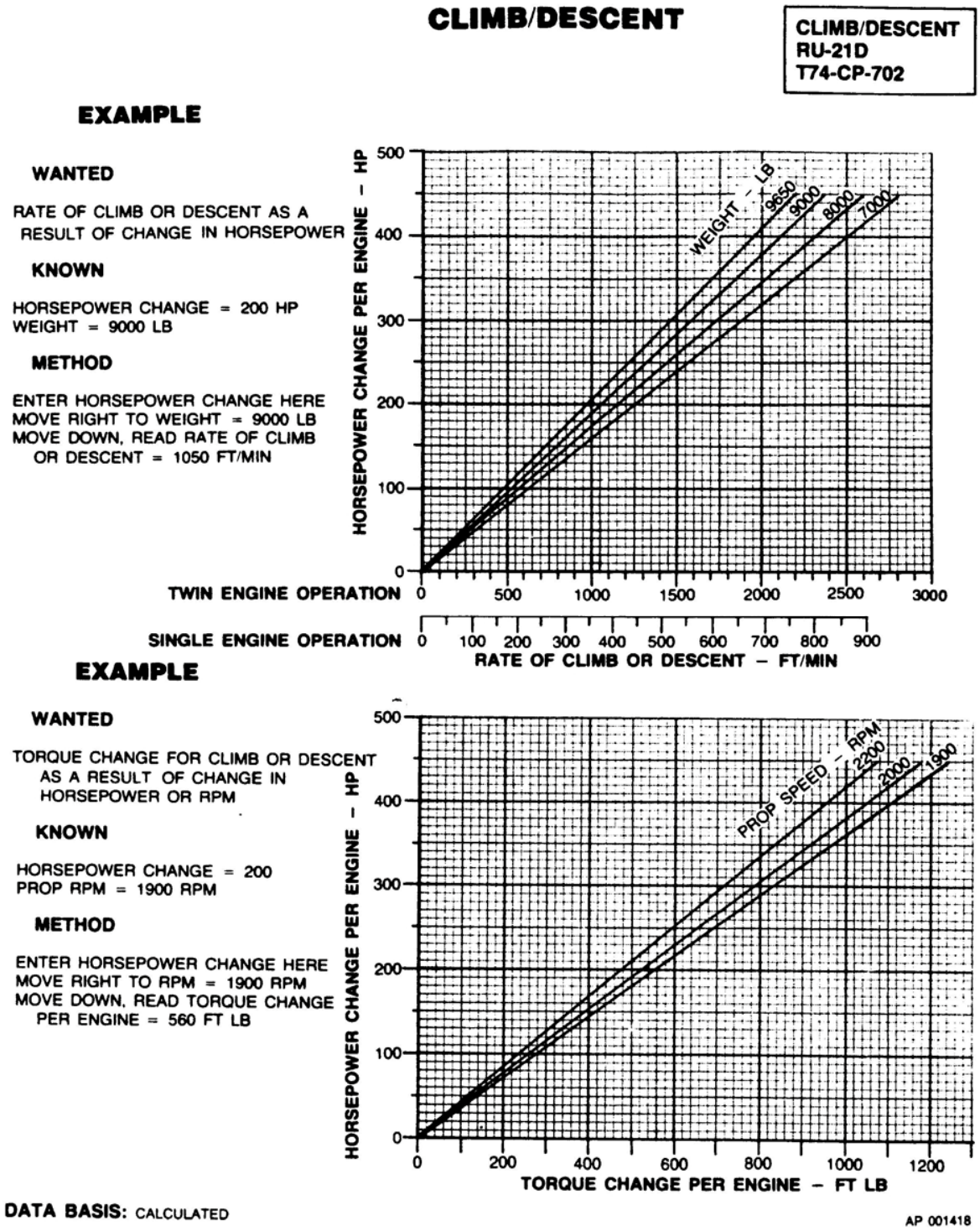

FIGURE 21. Climb/Descent chart.

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APPROACH SPEED

GEAR DOWN

EXAMPLE

WANTED

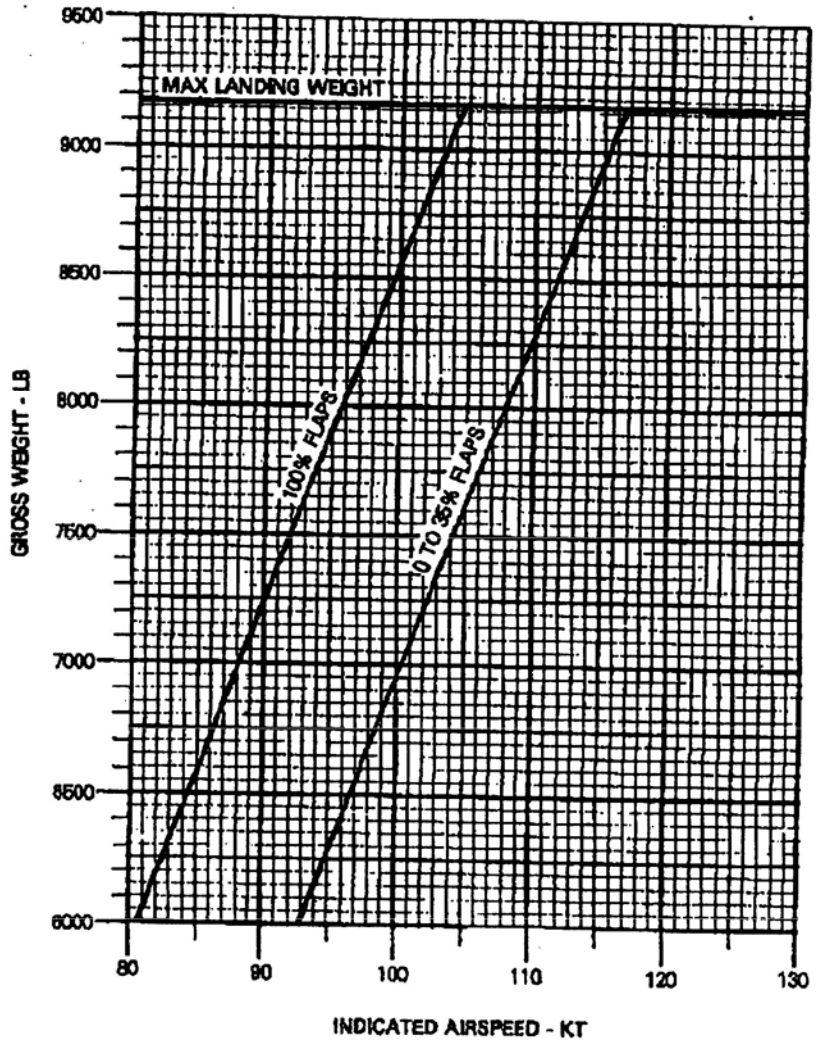
RECOMMENDED APPROACH SPEED FOR KNOWN WEIGHT

KNOWN

WEIGHT=8855 LB
FLAP SETTING=DOWN

METHOD

ENTER WEIGHT
MOVE RIGHT TO APPROACH SPEED LINE, FLAPS DOWN
MOVE DOWN, READ INDICATED AIRSPEED=103 KT



DATA BASIS: FLIGHT TEST

FIGURE 22. Approach speed chart.

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LANDING

CALM WINDS LEVEL, DRY, HARD SURFACE
MAX BRAKING AND IDLE POWER ON RUNWAY

EXAMPLE

WANTED

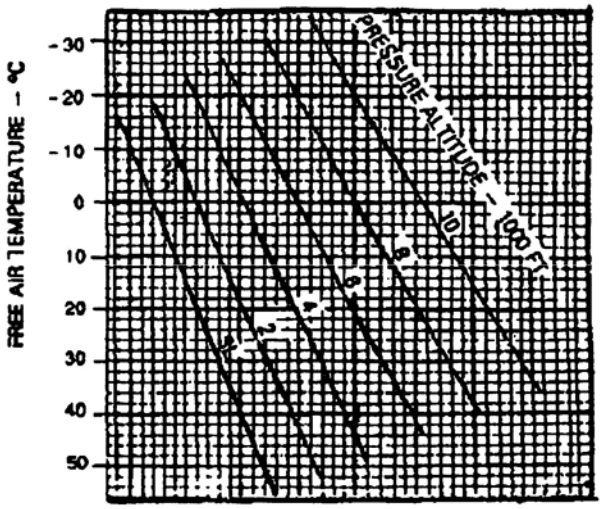
LANDING DISTANCE

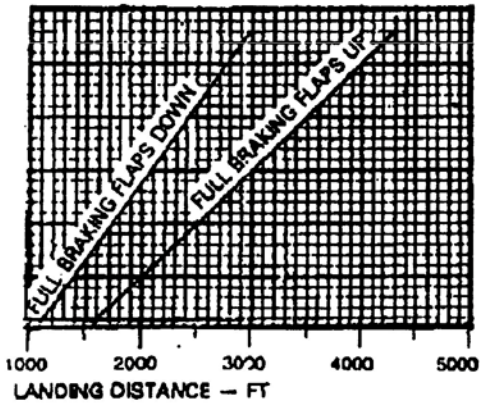
KNOWN

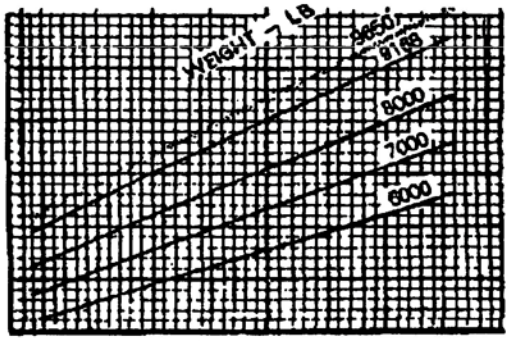
WEIGHT – 8855 LB
PRESSURE ALTITUDE – 4484 FT
FAT – 18°C
FLAPS DOWN

METHOD

ENTER FAT
MOVE RIGHT TO PRESSURE ALTITUDE – 4484 FT
MOVE DOWN TO WEIGHT – 8855 LB
MOVE LEFT TO FULL BRAKING WITH FLAPS DOWN
MOVE STRAIGHT DOWN, READ LANDING DISTANCE – 2150 FT







DATA BASIS: CALCULATED

FIGURE 23. Landing chart.

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5.115.1.15 Aircraft operator's manual Chapter 8 – Normal procedures.

5.115.1.15.1 General.

Procedures (amplified checklists) from the time a flight is planned until the flight is completed and the aircraft is properly parked and secured shall be provided. The checklists shall include all steps necessary to ensure safe flight under normal, night, and instrument conditions. Only the duties of the minimum crew necessary for the actual operation of the aircraft shall be included. Instructions for the operation of utility, avionic, mission equipment and controls are contained in Chapters 2 (refer to 5.115.1.9), 3 (refer to 5.115.1.10), and 4 (refer to 5.115.1.11) and shall be included in this chapter only if neglect would affect safety or efficiency of the flight or cause damage to the equipment. (This does not preclude the inclusion of utility equipment checklists in chapters to which they pertain.) Only unique feel, characteristics, and reaction of the aircraft during the various specified phases of operation, and the techniques or procedures used for operating the aircraft shall be described in detail. All precautions to be observed during the various operations shall be covered. Procedures for operation under all adverse environmental conditions shall be described. Instrument flight procedures shall be integrated with normal procedures as much as possible. For aircraft where no unique or abnormal techniques apply, reference shall be made to appropriate flight training publications.

5.115.1.15.2 Section I – Operational requirements (Crew duties).

Data Module Type: Crew/Operator Information Code: 130E

Unique crew responsibilities that result from the specific characteristics of the aircraft shall be described. When applicable, a description of mission planning shall also be included.

5.115.1.15.3 Section II – Operating procedures and maneuvers.

5.115.1.15.3.1 General.

Normal procedures including all steps necessary to ensure safe and efficient operation of the aircraft from the time preflight begins until the flight is completed and the aircraft is parked and secured shall be provided. Where applicable, performance charts provided in Chapter 7 that are required to carry out specific flight procedures or maneuvers shall be referenced or linked as necessary.

5.115.1.15.3.2 Normal operation procedures.

Data Module Type: Crew/Operator Information Code: 131A

Procedural steps shall be written so that crewmembers shall not be required to retrace steps. Insofar as possible, checks shall be grouped to keep control manipulation and ground operating time at a minimum. Phases shall be added or deleted to provide for special aircraft or special situations. However, the interpretation of the period of operation encompassed by a given phase shall be identical in all operator's manuals. In the checklists, the condition and response of a procedural step shall be separated by a long dash.

Sequence of phases and actions shall be arranged chronologically. All checks shall be made from left to right or top to bottom except where chronology shall take precedence. The following symbols shall be used in the checklist to identify certain conditions or duties (refer to 5.48.1.10) for values of the attribute **`crewStepCondition`**):

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a. The symbol "O", which shall precede the step, shall be used to indicate if equipment is installed or available.
b. Those duties that are the responsibility of the pilot/individual (not on the controls) shall be indicated by a circle around the step number, "④."
c. A "star" symbol ("★") that shall precede a step shall indicate that a detailed procedure for the step is located in the performance section of the condensed checklist.
d. The asterisk symbol ("*"), which shall precede the step, shall indicate that performance of the step is mandatory for all through-flights. The asterisked steps in this checklist shall be used for combat/tactical operations when authorized by the commander. The asterisk shall apply only to checks performed prior to takeoff.
e. The letter "N", which shall precede the step, shall indicate the performance of a step that is mandatory for night flights.
f. The letter "F", which shall precede the step, shall indicate a task or step that requires a flight engineer, external operator, payload operator, or ground crew personnel function or response.

5.115.1.15.3.3 Amplified checklist.

Data Module Type: Crew/Operator Information Code: 130B

The amplified checklist shall consist of numbered items supplemented where necessary by explanatory material. Where required for emphasis, a brief explanation shall be provided as to why it is required. These checklists shall be provided in the operator's manual for each aircraft, and they shall be the basis of all operators’ checklists. An amplified normal checklist shall be included for the pilot, pilot (not on the controls), payload operator, external operator, ground-crew personnel, and flight engineer, as applicable. A statement similar to the following shall be included only in the amplified checklist:

> Normal procedures are given primarily in checklist form and amplified as necessary in accompanying paragraph form when a detailed description of a procedure or maneuver is required. A condensed version of the amplified checklist, omitting all explanatory text including warnings, cautions, and notes, is contained in the Operator's Checklist, (*insert operator checklist CCL*). The procedural steps are numbered to coincide with the corresponding numbered steps in this manual.

5.115.1.15.3.4 Normal operation check - Preflight (Preflight check).

Data Module Type: Crew/Operator Information Code: 131M

The amplified preflight check shall include a before exterior check, if required, and the exterior and interior checks. The amplified checklist shall emphasize that the preflight is not intended to be a detailed mechanical inspection and that the order is a recommended sequence only. In addition the expanded sub-steps shall not need to be memorized or accomplished in a certain order. The preflight may be made as comprehensive as conditions warrant at the discretion of the pilot/UAS Mission Commander. UAS manuals shall include a thorough preflight of the ground control station and supporting equipment.

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5.115.1.15.3.5 Normal operation check - Preflight (Before exterior check).

Data Module Type: Crew/Operator Information Code: 131M

When required by the aircraft configuration, all necessary actions that shall be performed prior to starting the exterior check shall be included. Emphasis shall be placed on items that affect safety during the inspections to follow.

5.115.1.15.3.6 Normal operation check - Preflight (Exterior check).

Data Module Type: Crew/Operator Information Code: 131M

Only those exterior points that significantly affect the flight shall be included avoiding needless repetition of items which are the normal responsibility of the maintenance crew. The criteria on which these checks shall be based are safety of flight, items that have previously been a problem or that are anticipated to be a problem, and ease of accomplishing the check. Inspections usually should proceed counter-clockwise (as viewed from the top) around the aircraft.

5.115.1.15.3.7 Normal operation check - Preflight (Interior check).

Data Module Type: Crew/Operator Information Code: 131M

The complete interior check shall be described, including all necessary check items up to the point where the pilot is strapped in the seat. All necessary equipment including, but not limited to, a first aid kit, fire axes, pyrotechnic equipment, aircraft covers, tie downs, and control locks shall be stowed. A check of the headrest area of the ejection seat shall be included to determine that the face curtain handles are properly stowed, that the catapult pin is installed and connected to the removal mechanism, and that the catapult firing yoke is properly positioned and connected. Instructions shall be included to ensure that controls are positioned and connected. Instructions shall be included to ensure that controls are positioned as necessary to facilitate the exterior check (only for those aircraft where the interior check is performed before the exterior check). On large aircraft, it may be necessary to include an interior check diagram.

5.115.1.15.3.8 Normal operation check - Preflight (Crew/passenger briefing check).

Data Module Type: Crew/Operator Information Code: 131M

Instructions shall be provided to ensure that crew and passenger briefings have been completed prior to starting engines.

5.115.1.15.3.9 Normal operation – Preflight.

Data Module Type: Crew/Operator Information Code: 131B

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5.115.1.15.3.9.1 General.

a. Before starting engine(s). Precautions to be observed and checks to be accomplished before starting engine(s) shall be included. Such checks as should be accomplished before starting engine(s), but which could not be properly accomplished during the interior check shall be included. Instructions for positioning important controls and checking important indicators shall be included. Insofar as is practicable, all controls shall be positioned as required for engine starting. Functional checks shall be included for those systems that can be checked before the engines are started. For those aircraft in which engine power is not necessary, flight controls shall be checked for free and correct movement. Instructions shall be provided on the use of external power or auxiliary power units and any necessary switching involved in its use.
b. Starting engine(s). The complete procedure for starting the engine(s) shall be provided, including the order of starting for multi-engine aircraft. Except when significant differences in procedures are required for multi-engine aircraft, engine start procedures shall not be repeated. For jet and turbine powered aircraft, the means to avoid hot starts and procedures to follow when a hot start is experienced shall be included. Procedures for engaging rotors for rotary wing aircraft shall be given.
c. Engine ground operations. When required, warm-up and ground operation power setting shall be specified. Any special precaution or limitation shall be stated. For rotary wind aircraft a requirement for flight control checks before the rotor is engaged shall be included, if applicable.
d. Before taxiing. All checks to be accomplished before taxiing, such as check flight controls for free and correct movement (for those aircraft which require engine power to perform this check), windows and doors, control locks, and hydraulic pressure checks shall be included.
e. Taxiing. Any unusual taxiing characteristics or techniques shall be described, including special instructions for engine cooling, reverse pitch, and use of brakes. A requirement that flight instruments be checked during taxiing shall be included.
f. Engine run up. Instructions shall include, but shall not be limited to, checking engine propeller/rotor operation, including power, ignition, and use of brakes.
g. Before takeoff. All checks, which shall be accomplished immediately prior to takeoff/departure, shall be listed.

5.115.1.15.3.9.2 Lineup check.

Data Module Type: Crew/Operator Information Code: 130C

When aircraft configuration or mission requirements preclude performance of some of the takeoff checks before taxiing onto the active runway, a lineup check shall be provided. This may include activation of anti-icing/deicing system switches, transponder switches, setting or aligning gyros, and stabilizing power prior to starting takeoff.

5.115.1.15.3.10 Normal operation – Flight.

Data Module Type: Crew/Operator Information Code: 131C

a. Takeoff. Takeoff techniques required to produce the results shown on the takeoff charts in Chapter 7 shall be covered in detail. When appropriate, manipulation of brakes and throttles/power levers, etc., shall be described. Detailed information shall be given regarding unique reactions of the aircraft during takeoff. Criteria for continuing a takeoff

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or aborting under various circumstances shall be included. Operational consideration and general rules contributing to hovering capability and power availability shall be stated. Unique hover/taxi, sideward and rearward flight techniques, and power check shall be included. The necessity for a prepared runway shall be discussed for various conditions of altitude and weight of aircraft that may be required to operate from temporary or unfinished runways.

b. After takeoff. All actions and techniques to be accomplished immediately after takeoff shall be listed. If flap retraction procedures differ under various conditions including, but not limited to, heavy weight and weather, it shall be so stated. When applicable, minimum airspeed and altitude for retracting flaps shall be covered. A minimum flap retraction airspeed chart shall be included for aircraft of highly variable gross weight. All actions needed to establish the required climb shall be covered, including the airspeed at which the climb should be started.

c. Climb. A description of unique climb techniques required to produce the results stated in the climb charts in Chapter 7 shall be included. Unusual characteristics of the aircraft in climb shall be described. Since the preceding paragraph includes the climb checklist, this paragraph shall contain discussion only.

d. Cruise. An explanation shall be provided for all actions that shall be performed when the transition from climb to cruise is made. Any particular matters that shall be considered during cruise flight shall be described. Reference shall be made to Chapters 2 and 7 concerning fuel system management and other actions that should be considered during flight. Actual procedures shall not be covered here.

e. Descent-arrival. A checklist and discussion of this phase of operation shall be included as appropriate. The checklist shall include all checks that shall be made immediately before and during a descent preparatory to landing. Special instructions regarding various types of descent shall be included as applicable, including any special devices that may be provided to facilitate descent.

f. Before landing. All checks that shall be made immediately before entering the traffic pattern until the aircraft is committed to landing shall be covered.

g. Landing. A landing checklist and a narrative discussion of the landing problems and techniques shall be provided. The landing checklist shall include all actions to be performed from the time the landing is committed until it is affected. Landing techniques required to produce the results stated in the landing charts in Chapter 7 shall be included. Braking techniques and devices used during the landing and after-landing roll shall be described. Approach and landing airspeed corrections required to compensate for gusts shall be covered. In addition, landing techniques from the viewpoint of recommended maximum and minimum approach and landing airspeeds as related to aircraft flight classification, aircraft strength, aircraft touchdown bounce characteristics, and other aircraft characteristics shall be included. Reference shall be made to Chapter 7 for supplemental information provided by landing and approach speed charts. Coverage of approach and landing shall include cautions, when applicable, in the use of the engine during approach, performing a go-around, for the use of the angle-of-attack indicator in making an approach, etc. Shipboard landing techniques, when applicable, shall be included for rotary wing aircraft when unusual characteristics dictate.

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h. Touch and go landings/go-around. All instructions including, but not limited to, trim changes and flap settings for executing these procedures shall be included. Proper throttle/power lever technique shall be emphasized, when applicable.

5.115.1.15.3.11 Normal operation – Post flight.

Data Module Type: Crew/Operator Information Code: 131D

a. After landing. All checks and operations to be performed from immediately after landing until the parking area is reached shall be included.
b. Engine shutdown. A checklist shall be provided covering proper procedures and precautions for stopping engines.
c. Before leaving the aircraft. A checklist of settings of all controls, control locks, and safety devices for securing the aircraft shall be provided for pilots and crew. A statement similar to the following shall be included:

> In addition to established requirements for reporting any system defects or unusual and excessive operations such as hard landings, the flight crew shall also make entries on DA Form 2408-13-1 to indicate when any limits of the operator's manual have been exceeded.

d. Checklist changes. The specific checks described above may be deleted or new checks added when approved by the acquiring activity.

5.115.1.15.4 Section III – Normal operation – Instrument flight.

Data Module Type: Crew/Operator Information Code: 131G

Unique qualities and capabilities of the aircraft under instrument flight conditions shall be briefly described. Only those procedures and techniques that are used for instrument flight that are different from normal procedures in FM 3-04.240 shall be discussed. Instrument flight conditions to be considered shall include instrument takeoff, climb, cruise, descent, and approaches; holding; and automatic approaches.

5.115.1.15.5 Section IV – Normal operation – Flight characteristics.

Data Module Type: Crew/Operator Information Code: 131E

Detailed unique flight characteristics of the particular aircraft that may be different from FM 1-04.203 shall be provided. Emphasis shall be placed on advantageous flight characteristics as well as on any dangerous tendencies. The extent of coverage shall depend principally on the type of aircraft being discussed.

5.115.1.15.5.1 Stalls.

The power-off and power-on stalling characteristics of the airplane in the takeoff, landing, and cruise configurations shall be described. Stalling characteristics shall also be included for the approach configuration if sufficiently different from landing. A definition of power-off and power-on as used in the discussion shall be included. Information about the stall warning shall also be included. Normal and accelerated stalls shall be covered, and recommended procedures for initiating stalls shall be included. Stall recovery technique shall be emphasized. For helicopters, appropriate information shall be included on blade stalls.

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5.115.1.15.5.2 Stall chart **(fixed wing only)**.

Stalling airspeeds (with power-on and power-off configurations) for takeoff, landing, and cruise shall be presented showing the variations of bank angle and gross weight.

5.115.1.15.5.3 Spins **(fixed wing only)**.

Spin characteristics and limitations shall be given, including details of any special techniques recommended for recovery. Recovery techniques shall be given whether or not spins are permitted. Altitude lost in effecting a recovery and minimum altitude at which bailout shall be effected if aircraft has not been brought under control shall be stated.

5.115.1.15.5.4 Diving.

The diving characteristics of the aircraft shall be described with particular emphasis on high speed diving and compressibility effects. Dive recovery techniques and precautions shall be given, including any special information regarding power plant operation and trim changes. For highly maneuverable aircraft, dive recovery charts shall be included for various G pullouts given varying parameters of altitude, airspeed, and dive angle.

5.115.1.15.5.5 Maneuvering flight.

Maneuvering flight shall be described, including characteristics under accelerated flight conditions. Stick forces shall be included, emphasizing conditions that may result in stick reversal.

5.115.1.15.5.6 Flight controls.

Detailed coverage of the effectiveness and unusual reactions that may be encountered in the operation and use of the flight controls shall be included. All the various types of flight controls, such as ailerons, elevators, rudders, stabilators, trim tabs, speed brakes, slats, cyclic stick, and collective pitch shall be described. The text shall state when and how the various controls are used to achieve maximum benefits and what precautions shall be observed. The capabilities and limitations of power-boosted systems when power boost is inoperative shall be covered.

5.115.1.15.5.7 Level flight.

Characteristics of level flight under slow, cruising, and high speed conditions shall be described.

5.115.1.15.5.8 External loads.

Changes in flight characteristics due to external loads shall be described.

5.115.1.15.5.9 Asymmetrical loads.

Coverage of characteristics and techniques to be employed when operating with asymmetrical loads or configurations shall be presented.

5.115.1.15.6 Section V – Normal operation – Weather.

Data Module Type: Crew/Operator Information Code: 131F

Information relative to operations that are unique to the specific aircraft under adverse environmental conditions (snow, ice, rain, turbulent air flight, extreme cold and hot weather, desert operations, and high altitude operations) for parameters including, but not limited to, gross weight and aircraft configuration shall be provided. The information presented shall be primarily narrative in nature. Checklists shall be avoided; they shall be used only to cover specific

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procedures that are characteristic of all weather operations. A description of equipment shall not be included. An introductory paragraph shall be included explaining the function of this section. In addition coverage of duties to be accomplished before leaving the aircraft, including, but not limited to, leaving the canopy slightly open, positioning of doors, battery care, and installing covers shall be included for applicable environmental conditions.

5.115.1.15.6.1 Cold weather operations.

A brief discussion of the general problems involved in maintaining satisfactory operations in extreme cold shall be included. The relationship of proper engine shutdown to subsequent engine starting shall be emphasized, and operations under icing conditions shall be covered. Any special problems resulting from operations when snow is present shall be included.

5.115.1.15.6.1.1 Preparation for flight.

Special problems including, but not limited to, application of heat, removal of ice and snow from the aircraft surfaces, fuel and oil tank vents, pitot tubes, props, and supplying external power shall be addressed.

5.115.1.15.6.1.2 Engine starting.

Any special precautions that shall be observed before starting the engines shall be included. Cold weather starting techniques shall be explained including the use of special fuels and carburetor heat.

5.115.1.15.6.1.3 Warm-up and ground testing.

This shall include, but shall not be limited to, coverage of carburetor heat, cowl flap position, and technique of switching from a special starting fuel. If oil dilution is available, the fuel boil-off procedure shall be covered, including a reference to the oil dilution table. The importance of ground testing of systems that may be adversely affected by cold weather shall be included.

5.115.1.15.6.1.4 Taxiing and hovering instructions.

The unique techniques and precautions to be observed when taxiing on snow, ice, or slush covered water shall be explained, as well as, instructions for operator/ground crew to visually check wheels to ensure they are turning.

5.115.1.15.6.1.5 Before takeoff.

Checks for ice and snow buildup on the aircraft shall be included.

5.115.1.15.6.1.6 Takeoff.

Unique techniques and precautions to be observed when taking off under cold weather conditions shall be included. The effect of snow or ice covered runways on takeoff, of extremely cold weather on engine and aircraft performance, etc., shall be covered.

5.115.1.15.6.1.7 During flight.

Any special precautions that shall be observed during flight in extreme cold, such as cycling propeller governing systems, shall be described; procedures for dealing with in-flight icing shall be described.

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5.115.1.15.6.1.8 Descent.

Any special instructions regarding descent as may be applicable to cold weather operation shall be included, such as switching on the auxiliary power unit early to ensure that it is sufficiently warmed up prior to landing.

5.115.1.15.6.1.9 Landing.

Unique techniques and precautions to be observed during landing in cold weather shall be included. The use of brakes and reverse pitch propellers when landing on snow or ice covered runways shall be covered. Any restrictions regarding the use of landing or dive flaps when landing on snow or slush covered runways or slush covered water where ice is suspected shall be included.

5.115.1.15.6.1.10 Engine shutdown.

The proper method of shutting down the engine shall be given, including a table showing the required oil dilution time for various temperatures, and the techniques and precautions to be observed in using oil dilution shall be covered. Operation of systems depending on engine oil (including, but not limited to, supercharger clutch and propeller governor), to ensure that these systems are supplied with diluted oil, shall be included. Complete instructions for purging normal fuel from the system and replacing with special fuel shall be included. Time, speed or other requirements for turbine temperature stabilization prior to shutdown shall be stated.

5.115.1.15.6.2 Desert and hot weather operations.

The same requirements and procedures outlined in cold weather operations shall apply to desert and hot weather operation.

5.115.1.15.6.3 Turbulence and thunderstorm operations.

A discussion on the general qualities of the aircraft in turbulence and thunderstorms shall be included. A description of the techniques to be used shall be given and all preparations to be made before entering turbulence or thunderstorms shall be included.

5.115.1.15.6.4 Rain.

General coverage of the problem of rain during each phase of flight, including before takeoff, takeoff, climb, and cruise, shall be included. Performance of the rain removal systems shall be described.

5.115.1.15.6.5 Additional sections.

When specified by the acquiring activity, additional sections may be used.

5.115.1.16 Aircraft operator’s manual Chapter 9 - Emergency procedures.

5.115.1.16.1 General.

Procedures to be followed in dealing with emergencies that could reasonably be encountered shall be provided. Minor malfunctions that do not adversely affect the continued safe operation of the aircraft and compound or multiple failure emergency procedures shall not be included. Emergency procedure titles shall be based on how the pilot recognizes the emergency rather than what caused the emergency (for example, "Low RPM" not "Governor control failure"). Complete coverage shall be required regarding the feel, characteristics, and reaction of the

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aircraft during various emergencies affecting flight. All precautions to be observed in coping with an emergency shall be included. An emergency amplified checklist shall be included. Emergency procedures in connection with the utility systems shall be described in Chapter 2, Section IX. Emergency operation of utility systems shall be included only insofar as it may affect safety of flight. Emergencies shall be divided into the following twelve categories:

a. Engine
b. Propeller/rotor
c. Fire
d. Fuel
e. Electrical
f. Hydraulic
g. Landing and ditching (or for UAS: Takeoff, landing and ditching)
h. Flight controls
i. Bailout/ejection
j. Mission equipment (when applicable)
k. Shelter malfunctions
l. Other UAS components

Within an emergency classification, emergencies that have identical corrective actions may be combined under one paragraph heading. Those checks that shall be performed immediately in an emergency procedure shall be underlined, and a statement that such underlined steps shall be performed immediately without reference to the checklist shall be included. The underline presentation shall be achieved by using the attribute **`emphasisType`** (refer to 5.48.1.13).

5.115.1.16.2 Section I – Aircraft systems.

Data Module Type: Crew/Operator Information Code: 141B

Emergency procedures to be performed in the event of an aircraft system malfunction under various conditions shall be provided.

a. A statement similar to the one provided below shall be included:

"Emergency operation of mission equipment is provided insofar as its use affects safety of flight. Emergency procedures are presented in checklist form when applicable. A condensed version of these procedures is contained in the condensed checklist (*insert checklist CCL*)."

b. A note similar to the one provided below shall be included:

NOTE

The urgency of certain emergencies requires immediate and instinctive action by the pilot. The most important single consideration is aircraft control. All procedures are subordinate to this requirement.

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c. A statement similar to the one provided below shall also be included:

Terms may be defined as necessary to simplify the procedural memory steps within the existing emergency procedures. Each term shall be used as an emergency procedure step instead of listing the individual steps used to define the term. For example, the term "EMER ENG SHUTDOWN" is defined as engine stoppage without delay and is accomplished as follows:

1. Throttle - off.

2. FUEL switches - OFF.

3. BAT switch - OFF.

For rotary wing aircraft, the definitions of emergency terms shall be included near the beginning of Chapter 9 (refer to 5.115.1.16).

d. The following definitions shall be included:

(1) LAND WITHOUT DELAY (always underlined) is defined as a landing in which the primary consideration is continued control of the aircraft and survival of the occupants. It is meant to be more urgent than LAND AS SOON AS POSSIBLE. The situation may not permit the aircrew to maneuver the aircraft to a suitable landing area (e.g., open field). If maneuvering to an open area is not practical, then the crew shall make a decision to land in an area that will have the least amount of negative impact on crew survivability. (Over dense forest, select an area with the smallest trees; in the mountainous area, choose an area with the least amount of slope.)

(2) LAND AS SOON AS POSSIBLE is defined as landing at the nearest suitable landing area (e.g., open field) without delay. The primary consideration is to ensure the survival of occupants.

(3) LAND AS SOON AS PRACTICABLE is defined as landing at a suitable landing area. The primary consideration is the urgency of the emergency.

(4) AUTOROTATE is defined as adjusting the flight controls as necessary to establish an autorotational descent and landing.

5.115.1.16.2.1 Emergency equipment and exits.

The following emergency equipment and exits shall be illustrated.

a. The aircraft interior shall be illustrated showing life support equipment permanently installed in the aircraft including, but not limited to, fire axes, flares, pyrotechnic pistols, and hand fire extinguishers.
b. If the aircraft is large enough to permit movement of personnel, emergency stations and routes of egress to be followed in flight and after crash landing on land or water shall be indicated for all personnel. Coding shall be used to differentiate between routes and exits to be used in flight and those to be used after a crash landing (Figure 50). This illustration shall be an interior view or as viewed by the occupants of the aircraft. It may be combined with the emergency equipment diagram and the emergency entrance diagram, unless the resulting illustration would be confusing.
c. A diagram shall be included to show points at which emergency personnel can enter into the aircraft after it has crash landed. This illustration may be combined with the routes of escape and exits diagram, unless the resulting illustration would be confusing.

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5.115.1.16.2.2 Engine.

Emergency procedures shall be described in the event of an engine malfunction under a variety of conditions.

5.115.1.16.2.2.1 Flight characteristics under partial power conditions.

A description of the characteristics and reactions of the aircraft when flying with one or more inoperative engines or with an engine having only partial power capability shall be included. Emphasis shall be given to any special precautions that shall be observed and any dangerous tendencies of the aircraft. Information shall be included on how to determine which engine is inoperative. The problems of maintaining altitude, directional control, and any other special considerations shall be discussed.

5.115.1.16.2.2.2 Engine malfunction under specific conditions.

Additional paragraphs shall be included as necessary to indicate action to be taken in the event of engine malfunction under various conditions. Partial engine malfunctions as well as complete engine failure shall be described. A complete checklist procedure to be followed in shutting down the malfunctioning engine and establishing continued flight shall be included. Insofar as possible, shutdown procedure shall be identical to that required in the event of engine fire. Recommended best techniques and procedures for crash landing while operating within avoidance areas shall be discussed.

5.115.1.16.2.2.3 Engine malfunction during takeoff and low altitude/low airspeed flight.

This shall include an abort during the takeoff run, immediately after liftoff and continued flight. Coverage shall be included for both complete engine failure and partial loss of power. For rotary wing aircraft, differentiation between engine malfunction while at a hover and engine malfunction after takeoff (in translational lift) shall be included. Information shall be included, but not limited to, jettisoning external stores, landing gear retraction, pilot techniques, and best airspeed for minimum power required (partial loss of power).

5.115.1.16.2.2.4 Engine malfunction during cruise.

Reference shall be made to the performance chart data in Chapter 7 covering cruise control with one or more engines inoperative. The effect of loss of each engine on the various aircraft systems and equipment shall be included. Procedures to be followed in the event of partial power loss as well as for the complete engine failure shall be included.

5.115.1.16.2.2.5 Engine malfunction during final approach.

For multi-engine aircraft, procedures shall be provided for loss of one engine while on final approach in the landing configuration. Information shall be included concerning application of maximum controllable power, jettisoning external stores if applicable, landing gear position, use of flaps, pilot techniques, and airspeed requirements.

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5.115.1.16.2.2.6 Engine restart during flight.

Instructions for proper means for restarting an engine in flight and resuming normal flight shall be presented. Special emphasis shall be placed on parameters such as altitude, airspeed, and rpm. If considered advantageous, they may be presented in chart form. A warning shall be included that the engine should not be restarted unless it can be determined that it would be reasonably safe to do so.

5.115.1.16.2.2.7 Maximum glide.

Glide requirements that shall result in maximum range with no power available shall be provided. This information is required for all single-engine and twin-engine aircraft. A graph showing glide distance attainable from the service ceiling to sea level shall be included.

5.115.1.16.2.2.8 Autorotational descent.

A chart that presents autorotational rate of descent versus indicated airspeed at normal rotor speed shall be provided. The indicated airspeeds for minimum rate of descent and maximum glide distance shall be shown on the chart. Data and/or instructions for determining autorotational descent information for variations in aircraft configurations shall also be provided.

5.115.1.16.2.2.9 Landing with one or more engines inoperative.

The recommended procedure shall be described, including important precautions. A brief discussion of any changes that include, but are not limited to, the use of landing gear, wing flaps, and slats during such landing shall be included. For single-engine and twin-engine aircraft, proper landing procedures with no power shall be emphasized. For rotary wing aircraft, reference shall be made to the height velocity diagram.

5.115.1.16.2.2.10 Go-around with one or more engines inoperative (fixed wing).

Recommended procedures shall be described, including important precautions.

5.115.1.16.2.2.11 Height velocity.

The minimum height for safe landing following loss of power for both single and multi-engine helicopters shall be provided. Plots of height required for safe auto-rotational landing after loss of power and initial engine failure shall be included as applicable. For a multi-engine helicopter a recommended approach corridor with the critical engines inoperative shall be shown on the plot. Regions of caution, avoidance, and safe operation shall be shown. The plots shall be based on initiation of the necessary manual collective pitch control motion after at least a two-second delay following loss of power, or as approved by the acquiring activity.

5.115.1.16.2.3 Propeller/ rotor, transmissions, and drive systems.

Emergency procedures shall be described in the event of propeller/rotor, transmission, or drive system failure.

5.115.1.16.2.3.1 Propeller failure (fixed wing).

Instructions shall be given regarding recommended procedures in the event of a runaway propeller and other types of propeller failure. Instructions shall be included regarding action to be taken if propeller does not feather properly.

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5.115.1.16.2.3.2 Tail rotor failure and directional control malfunctions.

Instructions shall be given regarding all modes of directional control malfunctions and tall rotor failures. Coverage shall include emergency procedures to be used in the event of failures during takeoff, hovering, in flight, and while landing. Instructions for maintaining powered flight as opposed to autorotation shall be included.

5.115.1.16.2.3.3 Malfunctions of main rotor transmission and drive systems.

Differentiation between malfunctions with the drive system between the engine and transmission, and malfunctions of the drive system between the transmission and main rotor shall be included. Actual and erroneous instrument/warning light indications shall be discussed, including procedures for specific malfunctions.

5.115.1.16.2.4 Other emergencies.

Other emergencies such as ground resonance and mast bumping shall be described. Restrictions and preventive actions shall be described.

5.115.1.16.2.5 Fire.

Emergency procedures shall be included for aircraft fires as directed in the following paragraphs.

5.115.1.16.2.5.1 Engine fire.

Instructions shall be included regarding the recommended method of dealing with engine fires on the ground and during flight. Insofar as possible, engine shutdown procedures shall be identical to those used during engine failure.

5.115.1.16.2.5.2 Fuselage fire.

Instructions shall be included regarding procedures to be followed when a fuselage fire breaks out. Warnings regarding dangers involved in using fire extinguishing agents shall be included.

5.115.1.16.2.5.3 Wing fire.

Instructions shall be included on means of dealing with wing fires, including shutting down systems which may be feeding the fire.

5.115.1.16.2.5.4 Electrical fire.

Instructions for dealing with an electrical fire shall be included. If certain aircraft fire extinguishers are not to be used for electrical fires, that information shall be included.

5.115.1.16.2.5.5 Smoke and fume elimination.

Instructions shall be given for most rapid means of dissipating smoke and toxic fumes.

5.115.1.16.2.6 Fuel system.

Procedures shall be given for dealing with fuel system failures and shall include a description of metering system failures, fuel pump failures, and control linkage failures (loss of fuel control with fuel input in a fixed position). Emergency procedures shall be included for each condition.

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5.115.1.16.2.7 Electrical system.

Instructions shall be given for methods of dealing with electrical system failures. Procedures shall be expressed as actions to be taken involving circuit breakers. For push-pull types, procedures shall indicate in or out. Where the circuit breakers are a switch type, procedures shall indicate off or on.

5.115.1.16.2.8 Hydraulic system.

Instructions shall be given for dealing with hydraulic system component failures.

5.115.1.16.2.9 Landing and ditching.

Instructions shall be given regarding landing and ditching emergency procedures as described in the following paragraphs.

5.115.1.16.2.9.1 Emergency descent.

The means of accomplishing an emergency descent shall be provided. Emergency descent is a maximum effort in which damage to the aircraft or power plant is considered secondary to getting the aircraft on the ground.

5.115.1.16.2.9.2 Landing emergencies.

Preparation, warning signals to crew, approach, crew/passenger positions, harness locks, landing technique, routes, and methods of crew exits shall be included for both hard and soft ground. Landings with one or more landing gears retracted, flat tires, no wing flaps, and landing on unprepared runways shall also be covered. Information regarding pilot techniques for forced landings in trees or wooded areas shall also be included.

5.115.1.16.2.9.3 Body positions.

The body positions to be used by passengers and crew in emergency landings shall be illustrated.

5.115.1.16.2.9.4 Ditching.

Instructions shall be included for ditching the aircraft. The ditching capabilities of the aircraft and the advantages of ditching versus bailout shall be included. The following shall be described: preparation; warning signals to crew; approach; crew/passenger positions; ditching equipment, such as ditching belts and bulkheads; landing techniques; duties of each crewmember immediately after ditching; and methods of crew exits. As applicable, an illustration shall be included showing the position of each crewmember during ditching and crash landing.

5.115.1.16.2.10 Flight controls.

Procedures to be employed in event of flight control failure shall be provided.

5.115.1.16.2.11 Bailout/eject.

For all aircraft with established crew bailout or ejection procedures, the techniques, precautions, and warning signals for leaving the aircraft in flight shall be described, including instructions for separation from the seat. Bailout procedures to be used when seat ejection fails shall be included. The proper method of preparing the aircraft for bailout and method of jettisoning pilot's compartment enclosures and doors shall be described. A pictorial sequence of operations for ejection shall be provided, including alternate methods of removing safety pins where applicable.

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5.115.1.16.3 Section II – Mission equipment.

Data Module Type: Crew/Operator Information Code: 141C

Emergency procedures shall be outlined for malfunctioning mission equipment that constitutes a safety hazard.

5.115.1.16.3.1 Emergency jettisoning.

All means of accomplishing emergency jettisoning of fuel, cargo, and equipment shall be covered. Appropriate cautions relative to possible damage that may result, sudden shifting of CG, etc., shall be included.

5.115.1.16.3.2 Ground control malfunctions.

Emergency procedures shall be outlined for malfunctioning UAS Ground Control equipment that constitutes a safety hazard as described in the following paragraphs.

5.115.1.16.3.3 Ground control station malfunctions.

Procedures to be employed in event of ground control equipment failure shall be provided.

5.115.1.16.3.4 Data link malfunctions.

Procedures to be employed in event of Primary or secondary Data link failure shall be provided.

5.115.1.16.3.5 Ground control support equipment malfunctions.

Procedures to be employed in event of UAS system support equipment failure that constitutes a safety hazard during flight/system operation shall be provided. (Launcher/RATO/Arresting gear Failure, Automated Landing Systems Failure etc.)

5.115.1.17 Rear matter.

Refer to 5.128.3 for rear matter content requirements.

5.115.2 Project decisions.

5.115.2.1 Emergency systems.

Emergency systems may be located in Chapter 9 (refer to 5.115.1.16) at the discretion of the acquiring activity. When this is done, include the following statement in the section "Emergency equipment information is located in Chapter 9."

5.115.3 Aircraft operator checklist.

5.115.3.1 Army business rules.

5.115.3.1.1 General.

Aircraft operator checklist information sets shall be prepared using the data module types and info codes specified in the corresponding content selection matrix in A.5.

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5.115.3.1.2 Special style and format rules.

5.115.3.1.2.1 Standard checklist.

In the standard checklist, all text shall be prepared in a single column page. The alternate checklist shall be prepared in three columns equally spaced across the 11-inch page which is turned sideways. The alternate checklist shall be printed on card stock and consist of normal procedures on one side and emergency procedures on the opposite side. For alternate operator's checklist TMs, the following statement shall be added following the date or supersession notice and preceding the text: "This checklist applies only to the (*model number*) model of the (*aircraft nomenclature*)." or "Use only for the (*model number*) model of the (*aircraft nomenclature*)."

5.115.3.1.2.2 Standard operator’s checklist.

For standard operator's checklist TMs, whenever possible, material for in-flight emergency procedures shall be written so that the procedure is contained on a single page. Performance data and procedures such as exterior, interior and before leaving aircraft inspections need not meet this requirement. Each classification of emergency procedures such as engine, propeller/rotor, fire, and fuel shall begin on a new page. For alternate operator's checklist TMs, procedures may be split between columns but shall not be split between a page and the following page.

5.115.3.1.2.3 Fold-out pages.

Fold-out pages for textural data shall not be used for operator's checklist TMs. However, for ease of use, graphs included in the checklist may be placed on a foldout page. When this is done, a blank apron shall be used. Foldouts containing graphs shall be located at the end of the checklist.

5.115.3.1.3 Scope.

The operator’s checklist is a condensed version of Chapter 8 (refer to 5.115.1.15) and 9 (refer to 5.115.1.16) of the operator’s manual which consist of a series of controls (or checks) and the required actions. The sequence of items (or checks) appearing in the operator’s checklist shall be identical to those appearing in the amplified checklist of the operator's manual. In unusual circumstances, explanatory material shall be used in the operator’s checklist in the form of warnings, cautions, and notes, only if specified by the acquiring activity. The contents of the checklist shall be as described in the paragraphs below.

5.115.3.1.4 Standard operator's checklist.

Unless otherwise specified by the acquiring activity, the operator's checklist shall comply with the following requirements, except those which are designated as applying specifically to alternate operator's checklists.

5.115.3.1.4.1 Detailed requirements for standard operator's checklists.

Operator's standard checklists shall be prepared in accordance with the following outline indicated below:

a. Cover
b. Revision summary
c. General information and scope
d. Normal procedures
e. Emergency procedures
f. Performance data

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g. Foldouts

5.115.3.1.4.2 Front matter.

Refer to 5.128.1 for front matter content requirements.

5.115.3.1.4.3 Introduction (General information and scope).

Data Module Type: Crew Information Code: 018A

The general information and scope shall indicate the purpose of the checklist, how and when it is to be used, and scope, including an explanation of the content of the normal and emergency procedures that appear in the checklist. Information for reporting errors and making recommendations shall be included. DA Form 2028s shall not be included. An explanation of the symbols used throughout the procedures shall also be provided.

When applicable, information that a review for hazardous materials and ozone depleting chemicals has been done and non-hazardous materials and chemicals have been substituted when possible shall also be included.

5.115.3.1.4.4 Normal procedures.

Data Module Type: Crew/Operator Information Code: 130D

A condensed version of the normal procedures or crew duties portion of the applicable operator's manual shall be developed. When required by the acquiring activity, a list of crewmembers' duties shall be prepared.

5.115.3.1.4.5 Through-flight checklist.

Data Module Type: Crew/Operator Information Code: 131T

A through-flight checklist may be provided and consist of items marked by an asterisk. In addition to through-flight, this checklist shall be used for combat/tactical operations when authorized by the commander. Procedures shall be highly abbreviated and shall use abbreviations that are defined in the operator's manual.

5.115.3.1.4.6 Emergency operations procedures.

Data Module Type: Crew/Operator Information Code: 141A

A condensed version of the emergency procedures or crew duties portion of the applicable operator's manual (OPI) shall be developed. The emergency requirements shall be subdivided into 12 classifications as listed in 5.115.1.16. The underlined items shall be the steps that shall be performed immediately without reference to the checklist. Procedures shall be highly abbreviated and shall use abbreviations that are defined in the operator's manual (OPI). When required by the acquiring activity, a list of crewmembers' duties shall be prepared.

5.115.3.1.4.7 Normal operation checklist - Performance data.

Data Module Type: Crew/Operator Information Code: 131N

5.115.3.1.4.7.1 General.

a. Scope. Charts, tables, and checklists used during preflight, takeoff, cruise, landing, and shutdown shall be included.

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b. Performance data charts. The acquiring activity shall specify the use of performance data charts in the checklist and the format these charts shall follow. The data to be included in the performance data charts shall be the same data as provided in the charts appearing in the performance data portion of the operator's manual.
c. Performance checks. When applicable, detailed performance checks of selected procedures, as indicated by the acquiring activity, shall precede the performance data charts. Performance checks provided in Chapter 8 (refer to 5.115.1.15) of the Operator's manual that have the star symbol (★) preceding those checks shall be included in the performance data section. When applicable, performance checks for mission equipment shall follow the detailed performance checks. The detailed performance checks shall appear in the same order/sequence as they appear in the Chapter 8 checklist.
d. Through-flight checklist. If a through-flight checklist is required, it shall be included in normal procedures following the abbreviated checklist. It shall consist of all through-flight checks from the normal procedures section of the applicable operator's manual. The checks shall be numbered sequentially.

5.115.3.1.4.8 Rear matter.

Refer to 5.128.3.1 for rear matter content requirements.

5.115.3.1.4.8.1 Detailed requirements for alternate operator's checklists.

Alternate operator's checklists shall include normal and emergency procedures. The procedures shall be written in the same manner as indicated in 5.115.3.1.4.4 and 5.115.3.1.4.6.

5.115.3.2 Project decisions.

5.115.3.2.1 Standard or alternate checklist.

The acquiring activity shall have the option to specify that a one or two page alternate operator's checklist be prepared instead of the standard operator's checklist.

5.115.4 Aircraft operator Maintenance Test Flight (MTF) manual.

5.115.4.1 Army business rules.

5.115.4.1.1 General.

Aircraft operator MTF manual information sets shall be prepared using the data module types and info codes specified in the corresponding content selection matrix in A.5.

5.115.4.1.2 Content.

An MTF manual shall be prepared in accordance with the following outline indicated below:

a. Front matter.
b. Section 1. Introduction.
c. Section 2. Maintenance test flight manual.
d. Section 3. Troubleshooting guides.
e. Section 4. Special/detailed procedures.
f. Section 5. Charts and forms.
g. Authentication Page

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5.115.4.1.3 Front matter.

Refer to 5.128.1 for front matter content requirements.

5.115.4.1.4 Section I – Introduction.

Data Module Type: Crew/Operator Information Code: 018A

5.115.4.1.4.1 General.

Information of a general nature including the definition of an MTF, the purpose, and instructions specific to the checklist shall be provided.

5.115.4.1.4.2 Purpose.

The purpose of the MTF manual shall be to provide complete instructions for performing an MTF for a specific model, type, and series aircraft. For the specific criteria which require a general or limited MTF, reference shall be made to TM 1-1500-328-23 and the applicable aviation maintenance manuals.

5.115.4.1.4.3 Definitions.

The following definitions shall be included:

a. Maintenance test flight. A flight for which the primary mission is to determine airworthiness, i.e., that the airframe, power plant accessories and items of equipment are functioning in accordance with predetermined requirements in the intended operational environment.
b. Warnings, cautions, and notes. Warnings, cautions, and notes are used to emphasize important and critical instructions and are used for the following conditions.
    (1) WARNING - Highlights an essential operating or maintenance procedure, practice, condition, statement, etc., which if not strictly observed, could result in injury to, or death of, personnel or long term health hazards.
    (2) CAUTION - Highlights an essential operating or maintenance procedure, practice, condition, statement, etc., which, if not strictly observed, could result in damage to, or destruction of, equipment or loss of mission effectiveness.
    (3) NOTE - Highlights an essential operating or maintenance procedure, condition, or statement.

5.115.4.1.4.4 General information.

The following information shall be provided:

a. This manual shall cover only MTFs of aircraft (*insert type, model, and series*) and in no way supersedes any information contained in (*insert publication module code for operator manual and checklist*), but is to be used in conjunction with the operator's manual or checklist. For the purpose of MTFs only, the MTF manual shall satisfy all of the requirements of the checklist from Interior Check through Engine Shutdown.
b. Crew requirements shall be as specified in TM 1-1500-328-23 and (*insert publication module code for operator manual*).
c. The duration of a general or limited test flight shall be in accordance with the requirements of TM 1-1500-328-23.

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5.115.4.1.4.5 Special instructions.

The following special items of interest shall be included:

a. Cargo and passengers shall be prohibited on MTFs.
b. Forms and records shall be checked prior to the MTF to determine what maintenance has been performed and the type of MTF required (i.e., general or limited).
c. The configuration of the aircraft shall be established prior to each MTF in order to determine performance parameters.
d. A thorough post test flight inspection shall be performed to the extent necessary to ensure that deficiencies that may have developed as a result of the MTF are detected.
e. When an MTF is required to ensure proper operation of a specific system(s), references shall be made to the applicable maintenance manuals for the limits of that system.
f. The symbols identified and described in 5.115.1.15.3.2 shall be used in the MTF checklist to identify certain conditions or duties. In addition, the following symbols may be identified and described for certain conditions or duties (Refer to 5.48.1.10 for values of the attribute **`crewStepCondition`**):

    (1) Two asterisk symbols "**" (double-asterisk), shall precede the step, and shall indicate that the performance of the step is mandatory for all maintenance test flights.
    (2) The letter "T", (T-) shall precede the step, and shall indicate a task or step required by the operator’s manual.

g. A check sheet shall be developed for recording the results of test flights. When a test flight is performed to determine if specific equipment or systems are operating property, completion of only that portion of the MTF check sheet applicable to the specific equipment or system being tested shall be required. Continuation sheets may be used when necessary. Items that prove to be unsatisfactory during the test flight and require corrective action shall be listed in the remarks block during flight and transferred to DA Form 2408-13-1 immediately after termination of the flight. The sheet shall be attached to the DA Form 2408-13-1 upon completion. After accumulation of two or more sheets, the data shall be reviewed to determine if trends are developing.

5.115.4.1.5 Section 2 – Maintenance Test Flight (MTF) checklist.

Data Module Type: Crew/Operator Information Code: 135B

MTF requirements for specific Army aircraft shall be provided. Criteria for performing MTFs shall be in accordance with TM 1-1500-328-23. Requirements shall ensure a thorough inspection of the aircraft before flight, during flight, and upon completion of the MTF. Unless otherwise specified by the acquiring activity, checklist items shall include those that are contained in the applicable aircraft operator's checklist, plus those MTF checks peculiar to the aircraft in question.

5.115.4.1.6 Section 3 – Troubleshooting introduction.

Data Module Type: Descriptive Information Code: 018C

A statement that troubleshooting information is provided in the applicable maintenance manual shall be provided.

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5.115.4.1.7 Section 4 – Special/Detailed procedures.

Data Module Type: Crew/Operator Information Code: (unspecified)

Those special/detailed procedures that are referenced in Section 2 (refer to 5.115.4.1.5) shall be included. Complete instructions for each procedure shall be listed. Examples of special/detailed procedures shall include rotor smoothing techniques, speed trim checks, engine conditioning, engine starting, etc. The special/detailed procedures shall be specified by the acquiring activity.

5.115.4.1.8 Section 5 – Charts and forms.

Data Module Type: Crew/Operator Information Code: 00YB

5.115.4.1.8.1 General.

Forms and charts, shall be prepared, as necessary, to help perform and record MTFs. Charts shall be prepared that shall include, but not be limited to, bleed band opening envelope, turbine entire analysis check, and power adjusting. A list of required charts, including the contents, size, and format, shall be provided by the acquiring activity. The number of foldouts shall be kept to a minimum. Fold-up charts shall not be used. The forms shall be used to record readings, pressures, rpm, etc., obtained during MTFs.

5.115.4.1.8.2 List of charts.

A complete list of charts shall be provided. The figure number, title, and page number shall be included. The charts shall be listed in order of their appearance.

5.115.4.1.8.3 Maintenance test flight check sheets.

A check sheet shall be provided for use by the person(s) conducting the checks.

5.115.4.1.9 Appendices.

Appendices shall immediately follow the last chapter of the manual. Appendixes shall be included when specified by the acquiring activity.

5.115.4.1.10 Rear matter.

Refer to 5.128.3.1 for rear matter content requirements.

5.115.4.1.10.1 Metric conversion chart.

A chart shall be included at the back of the manual.

5.115.4.2 Project decisions.

5.115.4.2.1 Aerodynamic report.

In addition to the draft manual, the acquiring activity may require submission of an aerodynamic report illustrating the derivation of the data entered on the charts included in the manual. The report should include an analysis leading to the establishment of lift and drag values used in the calculations, aircraft efficiency and compressibility correction factors, methods of computing power or thrust required and available, a discussion of duct loss and propeller efficiencies, and adequate references to appropriate wind tunnel or flight test data. Calculation methods need to be fully explained and a sample calculation given. The calculations should be presented in sufficient detail to permit ready review and check of conclusions and to enable additional calculations to be made.

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5.116 Technical description **(aircraft troubleshooting manuals only)**.

Data Module Type: Descriptive Information Code: 011C

5.116.1 Army business rules.

5.116.1.1 General.

A technical description information set may be developed for each system and subsystem of the weapon system, as applicable. A single descriptive data module shall be used for the technical description, including the following required content.

5.116.1.2 Equipment description and data.

When equipment description and data is required to support the testing and troubleshooting procedures it shall be prepared in accordance with the requirements provided in, as applicable. If this information is provided in another TM/IETP, a reference to the TM/IETP may be included in lieu of including the descriptive data.

5.116.1.3 Controls and indicators.

When it is necessary to provide information concerning the description and use of the controls and indicators to support the testing and troubleshooting procedures, it shall be prepared in accordance with the requirements provided in 5.97.5.1.7.2, as applicable. If this information is provided in another TM/IETP, a reference to the TM/IETP may be included in lieu of including the controls and indicator data.

5.116.1.4 Theory of operation.

When theory of operation is required to support the troubleshooting procedures, it shall be prepared in accordance with the requirements provided in the Theory of Operation information set, as applicable. If this information is provided in another TM/IETP, a reference to the TM/IETP may be included in lieu of including the theory data.

5.116.2 Project decisions.

None.

5.117 Preventive Maintenance Services (PMS)/Preventive Maintenance Daily (PMD) inspection **(aircraft preventive maintenance services only)**.

Data Module Type: Checklist Information Code: 310E (PMS inspection)

Data Module Type: Checklist Information Code: 310P (PMD inspection)

5.117.1 Army business rules.

5.117.1.1 General.

PMS inspection data modules shall be developed for each specific inspection interval (e.g., daily, intermediate, periodic, 10 hour/14 day, 30 hr/42 day, etc.), as applicable to the aircraft. Inspection checklists shall be divided by areas of the aircraft. All items requiring inspection shall be listed in the logical sequence of inspection that would require a minimum of time and motion on the part of the individual performing the inspection. The checklist data shall be formatted and delivered to support the inspection requirements in DA PAM 738-751 as prescribed by the acquiring activity.

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The following warning shall appear prior to first step of procedure:

"WARNING

Accidental actuation of aircraft power plant or hydraulic system, or (*insert aircraft specific equipment as applicable, i.e., firing of armament, jettison ballistics*) may cause severe injury or death, Before starting inspection, aircraft safety check shall be performed, if applicable IAW (*insert specific technical manual here*) ."

If applicable the following statement may be appended to the above warning text:

"and all armament shall be safetied, deactivated, and cleared IAW (*insert technical manuals here*)."

5.117.1.2 Mandatory safety-of-flight inspection items.

Mandatory safety-of-flight inspection items shall be highlighted using the element **`<inlineSignificantData>`** (refer to 5.48.1.30). Mandatory safety of flight inspection items shall have WARNING on the WARNING SUMMARY page at the front of the manual. The WARNING shall be verbatim as follows:

"CSI WARNING

Certain inspections are mandatory Safety of Flight requirements, and the inspection intervals cannot be exceeded. In the event these inspections cannot be accomplished at the specified interval, the aircraft condition status symbol will be immediately changed to a red X."

5.117.1.3 Area diagram.

Area diagram of the aircraft, showing sequences for inspection by area shall be included. The area identified shall include all surfaces, material, components, and equipment pertaining to that specific location.

5.117.1.4 Standard checklists.

If applicable, the standard inspection checklist shall be further divided into Power Off checks and Power On checks.

a. The following statement shall be the first item for each aircraft and shall read:

"Inspect aircraft forms and records for recorded discrepancies (DA PAM 738-751, Functional Users Manual for the Army Maintenance Management System Aviation (TAMMS-A))."

b. It shall be divided into the proper sequence of steps as outlined in the area diagrams. For PMD manuals, there shall be one data module for each inspection area.

c. The following statement will be the final procedure of the checklist:

"Inspect for foreign object damage and ensure all access panels or doors opened or removed for this inspection are closed or reinstalled."

5.117.2 Project decisions.

None.

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5.118 Phased Maintenance (PM) inspection **(aircraft phased maintenance checklist only)**.

Data Module Type: Checklist Information Code: 310F

5.118.1 Army business rules.

5.118.1.1 General.

PM inspection information set shall be prepared.

5.118.1.2 Inspection area diagrams.

Diagrams locating the inspection areas and the access doors and panels which require removal at various phased maintenance inspections of the aircraft shall be included.

5.118.1.3 Phased maintenance checklist.

The following information shall be developed for the phased maintenance checklist. The inspection data shall be formatted and presented to support the inspection requirements in DA PAM 738-751 as prescribed by the acquiring activity. The information set shall begin with the following note:

"NOTE

Prior to start of the Phased Maintenance Inspection, it is recommended that a pre-inspection maintenance test flight (MTF) be conducted. Accomplishment of the MTF shall be determined by the unit maintenance officer. The pre-inspection MTF should be conducted by a maintenance test pilot following a review of the aircraft forms and records and a briefing from the crew of the aircraft. The MTF is recommended to assess the aircraft performance and identify deficiencies that should be corrected while the aircraft is undergoing phased maintenance inspections."

5.118.2 Project decisions.

None.

5.119 Preventive maintenance inspection **(aircraft only)**.

Data Module Type: Checklist Information Code: 200D

5.119.1 Army business rules.

5.119.1.1 General.

Preventive maintenance inspections data module (**aircraft only**) shall be prepared as directed by acquiring activity.

5.119.1.2 General information and introduction.

The following paragraph shall be inserted.

"GENERAL INFORMATION

This data module contains complete requirements for special inspections, overhaul and retirement schedule, and standards of serviceability applicable to the aircraft. The inspections prescribed in this data module shall be accomplished at specified periods by aviation maintenance companies, with the assistance of aviation support battalions when required. Complete Daily, Intermediate, Periodic, or Phased inspections are contained in the (*insert applicable aircraft inspection checklist TM*)."

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5.119.1.3 Standards of serviceability.

The following paragraph shall be inserted.

"Standards of serviceability to be utilized in the day-to-day inspection and maintenance of the aircraft can be found as fits, tolerances, wear limits, and specifications in the aircraft maintenance manuals. Standards of serviceability for transfer to aircraft are contained in TM 1-1500-328-23."

5.119.1.4 Special inspections.

a. Definition and general information. The following paragraph shall be inserted.

"This information supplements scheduled inspections as outlined in the applicable aircraft inspection checklists. Inspection of items which are required to be inspected at intervals not compatible with airframe operating time or airframe inspection intervals is also included. Refer to DA PAM 738-751 (Functional Users Manual for the Army Maintenance Management System-Aviation (TAMMS-A)) for applicable forms, records, and worksheets required for these inspection intervals. Typical examples of this type of inspection are as follows.

(1) Inspections which are solely contingent upon specific conditions or incidents that occur (e.g., hard landings, over speed, or sudden stoppage), wherein immediate inspection is required to ensure safe flight.
(2) Inspection of components or airframe on a calendar basis: e.g., first aid kits, weight and balance check, aircraft inventory."

b. Requirements. Components and other items which qualify under the criteria for special inspections, e.g., hard landings, sudden stoppage, over speed shall be included. These inspections shall be grouped under specific aircraft areas. A line drawing of the aircraft or accessory showing sequence for inspection by area shall be included. The area identified shall include all surfaces, materials, components, and equipment pertaining to that specific location. The following inspection data entries shall be included, as applicable.

(1) Aircraft serial or tail number.
(2) Date of inspection.
(3) Area number.
(4) Inspection number.
(5) Inspection interval.
(6) Name of component being inspected.
(7) Inspection procedure.

5.119.2 Project decisions.

None.

5.120 Aircraft inventory master guide **(aircraft only)**.

Data Module Type: Descriptive Information Code: 102B

5.120.1 Army business rules.

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5.120.1.1 General.

The aircraft inventory master guide information set shall be prepared as directed by the acquiring activity and information shall be prepared on standard inventory procedures to allow determination of inventoriable items of installed and loose equipment authorized and required by the specific aircraft in performance of its mission. A single descriptive data module shall be used.

5.120.1.2 Introduction.

A short explanation of the scope and purpose of the aircraft inventory master guide information set shall be prepared. Information pertaining to necessary steps to ensure the list is accurate, exact, and complete (e.g., research of authorized changes, MWOs, additions/deletions for special mission requirements) shall be included. The introduction shall include a reference to DA PAM 738-751 for applicable forms and records.

5.120.1.3 Security.

It shall be stated here that aircraft inventory records should be unclassified but that any classification of the contents, if necessary, should be in accordance with the existing security regulations.

5.120.1.4 Inventoriable items.

The selection of inventoriable items to be listed is to be without regard to the agency (governmental or contractual) furnishing the items.

a. Items to be listed are as follows.

    (1) Items essential to the execution of the designated mission of the aircraft, such as electronic, photographic, armament, special mission instruments, and safety and comfort equipment.
    (2) Loose equipment delivered with the aircraft and items subject to pilferage or readily converted to personal use.
    (3) Modification kits which are reissued or distributed to using organizations for installation and which are not immediately placed in use. These shall be recorded on the affected aircraft's DA Form 2408-17, Aircraft Inventory Record, and identified as loose equipment until modification is completed.
    (4) Equipment required for operation in a specific environment.

b. Items to be excluded are as follows.

    (1) Nonaccountable items coded as expendable in the applicable stock lists.
    (2) Personal issue or items furnished on unit allowance or other authority.
    (3) Items or components considered as basic or integral parts of the airframe or basic aircraft, such as engines, propellers, wheels, and standard instruments.
    (4) Equipment publications, checklists, and aircraft forms.

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5.120.1.5 Periods of inventory.

The following text shall be included verbatim.

"PERIODS OF INVENTORY

Inventoriable items shall be checked against the Aircraft Inventory Record, DA Form 2408-17, at the following periods:

a. Upon receipt.
b. Prior to transfer of the aircraft to another organization.
c. Upon placing aircraft in storage and upon removal from storage. Aircraft need not be inventoried while in storage.
d. Twelve months after last inventory."

5.120.2 Project decisions.

None.

5.121 Storage of aircraft.

Data Module Type: Procedural	Information Code: 810B (Flyable storage of aircraft)
Data Module Type: Procedural	Information Code: 810F (Short term storage of aircraft)
Data Module Type: Procedural	Information Code: 810G (Intermediate storage of aircraft)

5.121.1 Army business rules.

5.121.1.1 General.

This information set shall be prepared as directed by the acquiring activity and information described in this section.

5.121.1.2 General information for storage of aircraft information set.

The following text shall be included verbatim in the element **`<commonInfo>`**.

"STORAGE OF AIRCRAFT GENERAL INFORMATION

Components Involved in an Accident

Any component removed for reason of accident shall not be preserved, but shall be shipped in the same condition it was in after the accident.

Categories of Storage

1. Flyable storage - no time limit.

2. Short term (administrative storage) - 1 to 45 days.

3. Intermediate storage - 46 to 180 days."

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5.121.1.3 Flyable storage, short term storage, and intermediate storage.

a. A general discussion shall be prepared for each category of aircraft storage, to include considerations for selection of the appropriate category (e.g., ground operation, motoring of engines, and other required maintenance for which personnel and materials are needed) and steps to be taken for care of the aircraft during exceptionally wet weather.
b. All essential information for each category of aircraft storage shall be prepared to include all procedures for preparing the complete aircraft for storage and removal from storage, excluding any information on when or why the aircraft are stored. Each category of storage shall make reference to inspection documents and inspection procedures to be conducted before, during, and after storage.

5.121.2 Project decisions.

None.

5.122 Shipment of Army aircraft.

5.122.1 Army business rules.

5.122.1.1 General.

Shipment of Army aircraft information sets shall be prepared using the data module types and info codes specified in the corresponding content selection matrix in A.5.

5.122.1.2 Specific contents and format.

Each TM/IETP shall apply to a single aircraft series. Specific requirements and procedures relating to shipment by cargo aircraft, vessel, truck, crated shipment, containerized shipment, and external transport by helicopter shall be detailed. Procedures necessary for tactical, minimum disassembly (logistical), maximum density (logistical) and palletized shipments shall be described. Each TM/IETP shall be written in the same format so that the same type of information is presented in the same order in each TM/IETP. The following is the format which shall be followed:

a. Front matter
b. Chapter 1 – Introduction
    (1) Section I – Purpose and scope
    (2) Section II – General
    (3) Section III – Aircraft description
    (4) Section IV – Shipping characteristics
    (5) Section V – Ground handling
    (6) Section VI – Safety
    (7) Section VII – Preservation/depreservation check sheets
c. Chapter 2 – Shipment by Cargo Aircraft
    (1) Section I – General
    (2) Section II – Shipment by C-5 aircraft
    (3) Section III – Shipment by C-17 aircraft
    (4) Section IV – Shipment by C-130 aircraft
d. Chapter 3 – Shipment by Vessel

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(1) Section I – General
(2) Section II – Tactical shipment
(3) Section III – Logistical shipment
(4) Section IV – Shipment by U.S. Navy air capable ships

e. Chapter 4 – Shipment by Truck

(1) Section I – General
(2) Section II – Aircraft recovery and tactical transport.
(3) Section III – Logistical (long haul) transport by truck

f. Chapter 5 – Crated and Intermodal Container Shipment

(1) Section I – Crated shipment
(2) Section II – Intermodal container shipment

g. Chapter 6 – Preservation and Packaging

(1) Section I – General
(2) Section II – Aircraft cleaning
(3) Section III – Preservation of aircraft
(4) Section IV – Preservation and packaging of components
(5) Section V – Marking of aircraft/preparation of shipping documents
(6) Section VI – Depreservation and assembly

h. Chapter 7 – Transportability Equipment Fabricated at Unit Level
i. Chapter 8 – Operator and Maintenance Instructions for Transportability Equipment
j. Including Repair Parts List

(1) Section I – Operator instructions
(2) Section II – Repair/overhaul procedures
(3) Section III – Illustrated Parts Data (IPD)

k. Chapter 9 – External Transport by Helicopter (Aerial Recovery)

(1) Section I – General
(2) Section II – Single cargo hook rotor head lift
(3) Section III – Single cargo hook hard point lift
(4) Section IV – Dual cargo hook rotor head lift
(5) Section V – Dual cargo hook hard point lift
(6) Section VI – Single cargo hook belly band lift

l. Appendices

(1) Appendix A – References
(2) Appendix B – Preservation/Depreservation Check Sheets
(3) Appendix C – Weight and Balance Information for Transportability
(4) Appendix D – Consumable Materials List
(5) Appendix E – Special Tools and Equipment List
(6) Appendix F – Quarantine Inspection/Customs Clearance
(7) Appendix G – Aircraft Protective Covering

m. Index (if applicable)

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5.122.1.3 Front matter.

Refer to 5.128.1 for front matter content requirements.

5.122.1.4 Shipment of Army aircraft – Chapter 1 – Introduction.

5.122.1.4.1 Section I – Introduction (Purpose and scope).

Data Module Type: Descriptive Information Code: 018A

This section shall state, among other things, the purpose of the TM/IETP, what it covers, who will use it, and its applicability.

5.122.1.4.2 Section II – How to use this manual (General).

Data Module Type: Descriptive Information Code: 018B

5.122.1.4.2.1 General.

This section shall include general administrative information relating to the use of the TM/IETP including:

5.122.1.4.2.2 Description and use of this manual.

Describe the layout and use of the manual. For example, indicate sections that are general in nature and those that apply to specific modes.

5.122.1.4.2.3 Classified materials.

If classified items are located in specific aircraft, that shall be noted, as well as specific handling requirements.

5.122.1.4.2.4 Warnings, cautions, and notes.

They shall be short, concise and used only to emphasize important or critical data. They shall state the hazard and result, or reason, unless obvious. Unless otherwise specified, warnings and cautions shall precede the text but follow paragraph headings to which they apply. Notes may precede or follow applicable text. Warnings, cautions, and notes shall not contain procedural steps nor shall the headings be numbered. If it is necessary to precede a paragraph with two or more of these notations, the more serious one shall precede the less serious one.

5.122.1.4.2.5 Deviations.

The following statement concerning deviations shall be included:

> "Deviations from the procedures of this manual shall be approved by Commander, U.S. Army Research, Development and Engineering Center, ATTN: AMSRD-AMR-SE-TD, Redstone Arsenal, AL 35898-5000."

5.122.1.4.3 Section III – Description (Aircraft description).

Data Module Type: Descriptive Information Code: 040A

This section shall include a description of the aircraft and identification drawings including elevation and plan drawings. If applicable, differences in models and other pertinent general information shall be provided. The basic weight of the aircraft shall be included.

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5.122.1.4.3.1 Line drawings.

Left side, front, and top view drawings shall be made of the aircraft in its operational configuration. The drawings shall include the dimensional data outlined in 5.122.1.4.3.3. For TMs covering different models that exhibit external differences, drawings shall be included for each model.

5.122.1.4.3.2 Scale.

The drawings shall be as large as practicable, consistent with the space available. Scale shall be indicated by use of a graphic bar.

5.122.1.4.3.3 Dimensional data.

All dimensions on drawings shall be shown to the nearest 1/10 of an inch, including the following (some dimensions are only applicable for certain types of aircraft):

a. Lateral dimensions

    (1) Landing gear width
    (2) Wingspan
    (3) Propeller diameter
    (4) Fuselage (maximum width)
    (5) Main rotor blade chord
    (6) Horizontal stabilizer span

b. Longitudinal dimensions

    (1) Fuselage length
    (2) Overall length
    (3) Main rotor diameter(s)
    (4) Tail rotor diameter
    (5) Wing chord
    (6) Horizontal stabilizer chord
    (7) Distance from the nose to centerline of nearest wheel or tip of skid and distance from the tail to centerline of nearest wheel or tip of skid
    (8) Centerline of front wheels to centerline of rear wheels
    (9) Skid length

c. Vertical dimensions

    (1) Ground to fuselage (minimum)
    (2) Ground to fuselage at midpoint between landing gear
    (3) Ground to propeller (minimum)
    (4) Ground to top of vertical stabilizer (maximum)
    (5) Ground to tip of tail rotor (maximum)
    (6) Ground to tip of main rotor (minimum)
    (7) Ground to topmost point of main rotor
    (8) Maximum height, if not previously covered
    (9) Ground to lowest part of wing
    (10) Ground to bottom of horizontal stabilizer

d. Additional dimensions relevant to clearances needed for transportability

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5.122.1.4.4 Section IV – Shipping characteristics.

Data Module Type: Descriptive Information Code: 800B

This section shall present a brief overview of the modes of shipment and include information applicable to more than one mode of shipment and deployment.

5.122.1.4.4.1 Flight delivery.

This paragraph shall provide a statement indicating self-deployment as the preferred method of delivery. Information on maximum range, availability of auxiliary fuel systems, and their capabilities shall be included.

5.122.1.4.4.2 Modes of shipment.

This paragraph shall describe the modes of shipment available (cargo aircraft, surface vessel, truck, helicopter, containerized shipment, and crated shipment) for transporting the aircraft and indicate the appropriate chapter in the TM/IETP that pertains to that specific mode.

5.122.1.4.4.3 Types of shipment.

This paragraph shall compare the types of shipment: tactical (flyable or nearly flyable), minimum disassembly (logistical), maximum density (logistical), and palletized (**cargo aircraft only**).

5.122.1.4.4.4 Tabular data.

Construct a table comparing the number of personnel and total man-hours required to prepare, load, tiedown, unload, and prepare for flight one aircraft for each mode and type of shipment.

5.122.1.4.4.5 Tiedowns.

This paragraph shall include a diagram of the aircraft showing tiedowns (lashing) for shipment, and the location and maximum strength of tiedown points. Strengths shall be shown fore and aft in longitudinal planes, left and right in lateral planes, and up and down in vertical planes. General tiedown methodology shall be presented using diagrams as needed.

5.122.1.4.4.6 Disassembly.

This paragraph shall make reference to the appropriate TMs/IETPs for disassembly. Also, a table shall be constructed comparing component removal required for each type and mode of shipment.

5.122.1.4.4.7 Unusual characteristics.

This paragraph shall list and explain aircraft peculiar equipment requiring special environmental, handling, and or security precautions.

5.122.1.4.4.8 International shipment.

Reference shall be made to Appendix F for information on customs and quarantine clearance.

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5.122.1.4.5 Section V – Ground handling.

Data Module Type: Descriptive/Procedural Information Code: 170F

This section shall include all information concerning towing and maneuvering the aircraft in accordance with TM 1-1500-204-23 and applicable operator and maintenance manuals. Included shall be information on operation of ground handling equipment, towing, maneuvering, operation of aircraft brakes, safety, and wing walker requirements. Illustrations shall be included as needed.

5.122.1.4.6 Section VI – Safety summary.

Data Module Type: Descriptive Information Code: 012J

This section shall include general safety information applicable to all modes and types of shipment. Also, the applicable chapters, sections, and paragraphs in the TM/IETP shall be referenced concerning safety considerations for specific modes of shipment.

5.122.1.4.7 Section VII – Preservation/depreservation check sheets.

Data Module Type: Descriptive Information Code: 810E

This section shall establish the requirement to use preservation/depreservation check sheets prepared on DA Form 2408-13-2E for preparation of aircraft for shipment and for the depreservation and reassembly of aircraft. Reference shall be made to Appendix B for examples and for instructions on the preparations, use, and disposition of checklists.

5.122.1.5 Shipment of Army aircraft – Chapter 2 – Shipment by cargo aircraft.

5.122.1.5.1 Section I – Shipment of aircraft – General.

Data Module Type: Descriptive Information Code: 812B

This section shall include all information of a general nature applying to the transport of the specific Army aircraft in cargo aircraft and an overview of requirements.

5.122.1.5.1.1 Types of shipment.

This paragraph shall specify all requirements for tactical shipment, minimum disassembly (logistical) shipment, maximum density (logistical) shipment, and palletized shipment in C-5, C-17 and C-130 aircraft and discuss the four types of shipment applicable to the aircraft and the relative advantages and disadvantages of each. It shall indicate which cargo aircraft may be used and the aircraft densities for each type of shipment. In addition to the text, a table shall be presented to compare the data. Air Force cargo restraint criteria shall be included.

5.122.1.5.1.2 Functions of cargo aircraft crew.

This paragraph shall list Air Force cargo aircraft crew responsibilities and the type and limits of assistance that Army personnel may expect. The TM/IETP shall make clear that the Air Force loadmaster is the final authority on all actions relating to the configuration, loading, tiedown, and unloading of all cargo on the cargo aircraft. The following functions shall be included in the TM/IETP:

a. Preparing the cargo aircraft for loading and unloading.
b. Rigging and operations of all loading/offloading aids that are part of the cargo aircraft.
c. Designating aircraft and equipment locations within the cargo aircraft.
d. Providing tiedown devices.

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e. Inspecting and determining acceptability of tiedowns.

5.122.1.5.1.3 Functions of the Army loading team.

This paragraph shall contain an overview of the responsibilities of the Army loading team. The following functions shall be included:

a. Plan all aspects of the move so that required materials, tools, equipment, and manpower are available.
b. Prepare the aircraft for shipment and ensure that fuel on board does not exceed 150 gallons, or 3/4 full per tank, whichever is less.
c. Ensure that Army aircraft are ready for loading on schedule.
d. Mark the longitudinal CG and weight on each side of the aircraft fuselage and provide the weight of each aircraft and major component. Ensure that the shipping weight does not exceed the maximum weight certified for shipment.
e. Provide all necessary dunnage, shoring, and/or ramps required to load aircraft and protect cargo aircraft floor.
f. Furnish, rig, and operate devices not integral to the cargo aircraft loading.
g. Furnish and operate auxiliary lighting necessary for night loading.
h. Load Army aircraft aboard cargo aircraft.
i. Furnish cargo aircraft commander with DD Form 1387-2 in accordance with TM 38-250.
j. Prepare manifest itemizing weight and location of aircraft, equipment and disassembled components stowed within the cargo aircraft.
k. Be prepared to demonstrate that disassembled components are packaged correctly and secured in accordance with Air Force restraint requirements.
l. Unload the aircraft at destination.
m. Depreserve, reassemble, and prepare aircraft for flight.

5.122.1.5.1.4 Facility requirements.

Indicate specific requirements such as shelter, fire protection, electrical power, grounding, and fresh water.

5.122.1.5.1.5 Weight and balance.

Indicate that the weight and longitudinal CG of the aircraft shall be provided to the loadmaster. Indicate that either of the following procedures is acceptable. The TM/IETP shall emphasize the critical nature of determining accurate weight and balance.

a. Provide procedures for weighing the aircraft in its shipping configuration. Reference the appropriate TM/IETP and note any exceptions. Provide instructions for computing the longitudinal CG based on actual weight.
b. Reference shall be made to procedures in Appendix C for computing aircraft shipping weight. Reference shall be made to the maintenance manual from where the instructions are located.

5.122.1.5.1.6 Security.

Specific physical security instructions relevant to shipment of aircraft and equipment onboard shall be provided.

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5.122.1.5.1.7 Safety.

General safety considerations applicable to shipment by cargo aircraft shall be listed.

5.122.1.5.2 Sections II, III, and IV – Shipment by C-5, C-17, and C-130 aircraft.

These sections shall contain all information specific to transporting the aircraft by C-5, C-17, and C-130 cargo aircraft respectively. Each section shall contain the same paragraphs and subparagraphs with the same type of information; the only differences shall be the specific information unique to that particular cargo aircraft.

5.122.1.5.2.1 Shipping characteristics.

Data Module Type: Procedural	Information Code: 800C (C-5)
Data Module Type: Procedural	Information Code: 800D (C-17)
Data Module Type: Procedural	Information Code: 800F (C-130)

This paragraph shall provide a brief introduction to the cargo aircraft, its physical characteristics, its operational capabilities, and shall include the following items:

a. Line drawings shall be included showing the cargo aircraft in its operational configuration and configured for loading. Drawings of the operational configuration shall provide overall dimensional data including height, wingspan, and length. Drawings of the loading configuration shall provide all dimensions critical to loading, including ramp dimensions and angles.
b. A general statement shall be made as to the number of aircraft the cargo aircraft can transport for the following types of shipments: tactical; minimum disassembly logistical), maximum density (logistical), and palletized. The maximum certified shipping weight of the aircraft for transport by cargo aircraft shall be provided.
c. The TM/IETP shall include any responsibilities that Army personnel have for preparation of the cargo aircraft. Requirements for ramps and shoring needed for loading and/or protection of the cargo aircraft floor shall be included. Procedures shall be included for calculating shoring dimensions.
d. The TM/IETP shall describe safety considerations. Included shall be warnings on jet or prop blasts, engine intakes, and noise hazard diagrams.

5.122.1.5.2.2 Preparing the aircraft.

Data Module Type: Procedural	Information Code: 800N (C-5) (may be combined with 800C)
Data Module Type: Procedural	Information Code: 800P (C-17) (may be combined with 800D)
Data Module Type: Procedural	Information Code: 800R (C-130) (may be combined with 800F)

This paragraph shall detail all requirements for preparing the aircraft for shipment. Requirements shall be included for the four types of shipment. The following shall also be included:

a. Left side, front, and top view drawings shall be made of the aircraft in its operational configuration. For TMs covering different models that exhibit external differences, drawings shall be included for each model.

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b. Resources required to ship the aircraft shall be detailed. Quantities shall be shown both for shipping one aircraft and a full load. Notes shall be provided to indicate requirements on a per unit basis, such as one each per aircraft shipped or one per cargo aircraft. This information shall be provided for each type of shipment.

(1) All tools and equipment shall be listed by nomenclature, reference number, NSN, and quantity required. A table shall be included providing comparative quantity data for equipment for the four different types of shipment. Reference shall be made to Appendix E (refer to 5.122.1.17) for part number and quantity required, Chapter 7 (refer to 5.122.1.10) for fabrication of equipment at the unit level, and Chapter 8 for equipment operating instructions, as applicable.

(2) All consumable materials shall be listed by nomenclature, reference number, NSN, and quantity required. Reference shall be made to Appendix D (refer to 5.122.1.16) for part number and unit of issue. Include a table to show comparative data for consumable materials, for each type of shipment.

(3) Each element and task to be accomplished to prepare for shipment, loading, tiedown, unloading, and preparing the aircraft for flight shall be stated. Personnel requirements, man-hours, and elapsed time shall be provided in a table for each type of shipment.

c. Reference shall be made to Chapter 6 (refer to 5.122.1.9) for detailed information on preservation and packaging.

d. All tasks required for aircraft disassembly for each type of shipment shall be listed in the order of accomplishment. The appropriate chapter of the maintenance manual shall be referenced for each task. Tasks that are transportability peculiar shall be completely described with drawings or diagrams as necessary.

e. A scale drawing of the floor plan of the aircraft to be shipped shall be included showing the location and method of securing each item stowed inside. If required for clarification of internal loading, elevation and/or perspective drawings shall be included.

5.122.1.5.2.3 Loading.

Data Module Type: Procedural	Information Code: 831B (C-5)
Data Module Type: Procedural	Information Code: 831C (C-17)
Data Module Type: Procedural	Information Code: 831E (C-130)

This paragraph shall provide detailed information for loading the aircraft. A subparagraph shall be provided for each type of shipment, containing clearance dimensional diagrams for loading ramps and shoring placement. A cargo floor diagram shall be included showing the placement of each aircraft for each of the four types of shipment. Step-by-step instructions shall be provided for loading each aircraft and component. Equipment provided by the Air Force shall be indicated.

5.122.1.5.2.4 Tiedown.

Data Module Type: Procedural	Information Code: 811G (C-5)
Data Module Type: Procedural	Information Code: 811H (C-17)
Data Module Type: Procedural	Information Code: 811K (C-130)

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Detailed procedures required to tiedown the aircraft and components shall be noted. Provide plan, front, rear, and side views to show tiedown installation. This paragraph shall detail equipment and material requirements for shoring and securing the aircraft and components. All equipment used shall be described and pictured, and instructions for use shall be provided. A table shall be provided listing quantities required to ship one aircraft and also a full load of aircraft for each type of shipment. Equipment to be provided by the Air Force shall be noted.

5.122.1.5.2.5 Unloading.

Data Module Type: Procedural Information Code: 841B (C-5)
Data Module Type: Procedural Information Code: 841C (C-17)
Data Module Type: Procedural Information Code: 841E (C-130)

Step-by-step procedures for unloading shall be provided for each type of shipment.

5.122.1.5.2.6 Depreservation and reassembly.

Data Module Type: Procedural Information Code: 870F (C-5)
Data Module Type: Procedural Information Code: 870G (C-17)
Data Module Type: Procedural Information Code: 870J (C-130)

Step-by-step procedures shall be provided for depreservation and reassembly to return the aircraft to flyable status. Appropriate maintenance manuals shall be referenced by chapter for the procedures. Tasks that are unique to transportability shall be completely described with drawings and diagrams provided as needed.

5.122.1.6 Shipment of Army aircraft – Chapter 3 – Shipment by vessel.

5.122.1.6.1 Section I – Shipment of aircraft – General.

Data Module Type: Descriptive Information Code: 812B

5.122.1.6.1.1 General.

This section shall include all information of a general nature applying to the transport of Army aircraft by vessel and an overview of requirements.

5.122.1.6.1.2 Types of shipment.

This paragraph shall define and describe tactical (flyable) and logistical shipments by Lift On/Lift Off (LOLO) ships, Roll On/Roll Off (RORO) ships, and U.S. Navy air capable ships and the relative merits and disadvantages of each. Reference shall be made to Chapter 5 (refer to 5.122.1.8) for complete information on crated and intermodal shipments.

5.122.1.6.1.3 Responsibilities of Surface Deployment and Distribution Command (SDDC).

The following responsibilities shall be included:

a. When contacted by the appropriate command, the SDDC commander will arrange with the Military Sealift Command commander for vessel shipment.
b. The SDDC will prepare the shipment loading plan and manifest based on information provided by the Army loading team.
c. The SDDC will make arrangements with a stevedore or commercial stevedore firm to load and tiedown the aircraft. The SDDC and Military Sealift Command will supervise all loading and tiedown procedures.

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5.122.1.6.1.4 Functions of marine terminal personnel.

The marine terminal personnel will do the following:

a. Prepare the vessel for loading.
b. Provide all necessary dunnage, shoring, and/or ramps needed for loading and unloading.
c. Rig and operate all loading/offloading devices.
d. Perform all loading and offloading functions.
e. Tiedown aircraft.

5.122.1.6.1.5 Functions of the Army loading team.

The responsibilities of the Army loading team will include:

a. Coordinate with SDDC the number, type, and weight of aircraft to be shipped, vessel to be used, and the date and time of shipping.
b. Plan all aspects of the shipment so that required materials, tools, equipment, and manpower are available.
c. Prepare the aircraft for shipment.
d. Ensure that aircraft are ready for loading on schedule.
e. Provide technical assistance to SDDC as required for ground handling, loading, tie-down, and unloading.
f. Ensure that provisions are made for enroute maintenance and daily tie-down inspections by Army escort personnel.
g. Depreserve, reassemble, and prepare aircraft for flight upon arrival at destination.
h. Coordinate with personnel at AMCOM as to the number and type of aircraft to be shipped, vessel to be used, and the date and time of the movement.

5.122.1.6.1.6 Equipment requirements.

All tools and equipment shall be listed by nomenclature, reference number, NSN, and quantity required. A table shall be included providing comparative quantity data for equipment for the four different types of shipment. References shall be made to Appendix E (refer to 5.122.1.17) for part and quantity required, Chapter 7 (refer to 5.122.1.10) for fabrication of equipment at the unit level, and Chapter 8 (refer to 5.122.1.11) for equipment operating instructions, as applicable.

5.122.1.6.1.7 Material requirements.

All consumable materials shall be listed by nomenclature, reference number, NSN, and quantity required. Reference Appendix D (refer to 5.122.1.16) for part number and unit of issue. Include a table to show comparative data for consumable materials for each type of shipment.

5.122.1.6.1.8 Manpower requirements.

Each element and task to be accomplished to prepare for shipment, loading, tiedown, unloading, and preparing the aircraft for flight shall be stated. Personnel requirements, man-hours, and elapsed time shall be provided in a table for each type of shipment.

5.122.1.6.1.9 Facility requirements.

Indicate specific requirements such as shelter, fire protection, electrical power, fresh water, and grounding.

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5.122.1.6.1.10 Aircraft security.

Physical security requirements during preparation and shipment shall be listed.

5.122.1.6.1.11 Safety.

State general safety considerations applicable to shipment by vessel.

5.122.1.6.1.12 Characteristics.

Provide an introduction and general information pertaining to vessel shipment. SDDC restraint criteria for shipment by vessel shall be included. The following three statements shall be included in the TM:

a. Because of the wide variety of vessel designs, the ship to be used shall be surveyed. The physical characteristics of the vessel will determine its capabilities. In the pre-deployment survey, note layout of tiedown fittings, hatch, hold, door clearances, ventilation system, fire fighting equipment, and capabilities of lifting devices. Ramp angles and ship construction shall be surveyed to determine if RORO operations are feasible. Suitability of the below deck environmental conditions shall also be determined.
b. The number of aircraft that can be shipped in a given vessel is determined by the type of aircraft, the configuration of the aircraft (tactical vs. logistical), and other cargo on board the ship. Stowage of aircraft is normally limited to the first deck below the weather deck due to vessel trim considerations.
c. Shipment of aircraft above deck (on the weather deck) is considered a high risk option. It should only be used under exceptional conditions because damage to the aircraft is likely.

5.122.1.6.2 Section II – Tactical shipment.

This section shall contain all information pertaining to transporting aircraft in a tactical configuration by vessel.

5.122.1.6.2.1 Preparing the aircraft – Vessel, Tactical.

Data Module Type: Descriptive Information Code: 800S

This paragraph shall detail all requirements for preparing the aircraft for tactical shipment by vessel. The categories of information to be entered here shall include the following: drawings; required resources (equipment, consumable materials, and manpower requirements); disassembly, preservation and packing; and load plan. Follow the requirements in 5.122.1.5 for details of the type of information that will go into this paragraph.

5.122.1.6.2.2 Loading – Vessel, Tactical.

Data Module Type: Procedural Information Code: 831F

Detailed information shall be presented for loading the aircraft for LOLO and RORO vessels.

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a. For LOLO vessels detailed instructions shall be included for installing hoisting equipment and tag lines (guide ropes) on the aircraft. Diagrams and/or drawings shall be included as required for clarification. Rigging procedures shall be complete and not reference other publications. Step-by-step instructions shall be provided for loading each aircraft and piece of equipment on-board the vessel. Instructions for maintaining hatch clearance shall be provided as required. Diagrams and/or drawings shall be provided as needed. Hoisting procedures shall be complete without reference to other publications.
b. State detailed procedures for loading aircraft on RORO ships. Provide the maximum ramp angles that the aircraft can negotiate without shoring.
c. A plan drawing of the deck shall be provided indicating the placement of aircraft and components.

5.122.1.6.2.3 Tiedown – Vessel, Tactical.

Data Module Type: Procedural Information Code: 811L

This paragraph shall contain all information needed to tiedown aircraft and associated components. The use of "dead man" chains to provide additional tiedown points shall be explained. Provide plan, front, rear, and side views to show tiedown installation. This paragraph shall detail equipment and material requirements for shoring and securing the aircraft and components. All equipment used shall be described and pictured, and instructions for use shall be provided. A table shall be provided listing quantities required to ship one aircraft and also a full load of aircraft for each type of shipment. Equipment provided by the Navy shall be noted.

5.122.1.6.2.4 Unloading – Vessel, Tactical.

Data Module Type: Procedural Information Code: 841F

This paragraph shall provide all information required to offload the aircraft for LOLO and RORO shipments.

5.122.1.6.2.5 Depreservation and reassembly – Vessel, Tactical.

Data Module Type: Procedural Information Code: 870K

Provide step-by-step procedures for depreservation and reassembly to return the aircraft to flyable status. Reference appropriate maintenance manuals by chapter for the procedures. Tasks that are unique to transportability shall be completely described with drawings and diagrams provided as needed.

5.122.1.6.3 Section III – Logistical shipment.

This section shall contain all information specific to transporting the aircraft in maximum density logistical configuration.

5.122.1.6.3.1 Preparing the aircraft – Vessel, Logistical.

Data Module Type: Descriptive Information Code: 800T

This paragraph shall detail all requirements for preparing the aircraft for logistical movement by vessel. The categories of information to be entered here shall include: drawings; required resources (equipment, consumable materials, and manpower requirements); disassembly, preservation and packing; and load plan. Paragraph 5.122.1.5 shall be followed for details of the type of information that will go into this paragraph.

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5.122.1.6.3.2 Loading – Vessel, Logistical.

Data Module Type: Procedural Information Code: 831G

a. Detailed information shall be presented for loading the aircraft for LOLO and RORO vessels.
b. For LOLO vessels detailed instructions shall be included for installing hoisting equipment and tag lines (guide ropes) on the aircraft. Diagrams and/or drawings shall be included as required for clarification. Rigging procedures shall be complete and not reference other publications. Step-by-step instructions shall be provided for loading each aircraft and piece of equipment on-board the vessel. Instructions for maintaining hatch clearance shall be provided as required. Diagrams and/or drawings shall be provided as needed. Hoisting procedures shall be complete and not reference other publications.
c. State detailed procedures for loading aircraft on RORO ships. Provide the maximum ramp angles that the aircraft can negotiate without shoring.
d. A plan drawing of the deck shall be provided indicating the placement of aircraft and components.

5.122.1.6.3.3 Tiedown – Vessel, Logistical.

Data Module Type: Procedural Information Code: 811M

This paragraph shall contain all information needed to tiedown aircraft and components. The use of "dead man" chains to provide additional tiedown points shall be explained. Provide plan, front, rear, and side views to show tiedown installation. This paragraph shall detail equipment and material requirements for shoring and securing the aircraft and components. All equipment used shall be described and pictured, and instructions for use shall be provided. A table shall be provided listing quantities required to ship one aircraft and also a full load of aircraft for each type of shipment. Equipment provided by the Navy shall be noted.

5.122.1.6.3.4 Unloading – Vessel, Logistical.

Data Module Type: Procedural Information Code: 841G

This paragraph shall provide all information required to offload the aircraft from LOLO and RORO vessels.

5.122.1.6.3.5 Depreservation and reassembly – Vessel, Logistical.

Data Module Type: Procedural Information Code: 870L

Provide step-by-step procedures for depreservation and reassembly to return the aircraft to flyable status. Appropriate maintenance manuals shall be referenced by chapter for the procedures. Tasks that are unique to transportability shall be completely described with drawings and diagrams provided as needed.

5.122.1.6.4 Section IV – Shipment by U.S. Navy air capable ships.

This section shall contain information specific to transport by and operation from amphibious assault ships (LHA, LHD, LPH), amphibious transport docks (LPD), dock landing ships (LSD), and aircraft carriers (CNV, CV).

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5.122.1.6.4.1 Preparing the aircraft- Vessel, U.S. Navy capable.

Data Module Type: Descriptive Information Code: 800U

This paragraph shall detail all requirements for preparing the aircraft for shipment on an air capable vessel. The categories of information to be entered here shall include: drawings; required resources (equipment, consumable materials, and manpower requirements); disassembly, preservation and packing; and load plan. Paragraph shall be followed for details of the type of information that will go into this paragraph. The differences in preparation requirements shall be specified for aircraft that will be operated and /or maintained during transport and those that will not.

5.122.1.6.4.2 Loading – Vessel, U.S. Navy capable.

Data Module Type: Procedural Information Code: 831H

Detailed information shall be presented for LOLO operations and fly on/fly-off operations

a. For LOLO vessels detailed instructions shall be included for installing hoisting equipment and tag lines (guide ropes) on the aircraft. Diagrams and/or drawings shall be included as required for clarification. Rigging procedures shall be complete and not reference other publications. Step-by-step instructions shall be provided for loading each aircraft and piece of equipment on-board the vessel. Instructions for maintaining hatch clearance shall be provided as required. Diagrams and/or drawings shall be provided as needed. Hoisting procedures will be complete and not reference other publications.
b. Provide references that govern fly on/fly off operations aboard U.S. Navy ships and the sources for the documents.
c. A plan drawing of the deck shall be provided indicating the placement of aircraft and components as configured for transport.

5.122.1.6.4.3 Tiedown – Vessel, U.S. Navy capable.

Data Module Type: Procedural Information Code: 811N

This paragraph shall contain all information needed to tiedown aircraft and associated components. The use of "dead man" chains to provide additional tiedown points shall be explained. Provide plan, front, rear, and side views to show tiedown installation. This paragraph shall detail equipment and material requirements for shoring and securing the aircraft and components. All equipment used shall be described and pictured, and instructions for use shall be provided. A table shall be provided listing quantities required to ship one aircraft and also a full load of aircraft for each type of shipment. Equipment provided by the Navy shall be noted.

5.122.1.6.4.4 Unloading – Vessel, U.S. Navy capable.

Data Module Type: Procedural Information Code: 841H

This paragraph shall provide all information needed to unload the aircraft.

5.122.1.6.4.5 Depreservation and reassembly – Vessel, U.S. Navy capable.

Data Module Type: Procedural Information Code: 870M

Provide step-by-step procedures for depreservation and reassembly to return the aircraft to flyable status. Reference appropriate maintenance manuals by chapter for the procedures. Tasks that are unique to transportability shall be completely described with drawings and diagrams provided as needed.

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5.122.1.7 Shipment of Army aircraft – Chapter 4 – Shipment by truck.

5.122.1.7.1 Section I – Shipment of aircraft – General.

Data Module Type: Descriptive Information Code: 812B

5.122.1.7.1.1 General.

This section shall present information of a general nature pertaining to tactical and logistical shipment by truck. SDDC restraint criteria for shipment by truck shall be included.

5.122.1.7.1.2 Types of truck shipments.

This shall define the various types of truck shipments, including the following:

a. Tactical (short haul) truck shipments are defined as short haul (less than 100 miles) movement (including aircraft recovery) by an appropriately sized trailer, such as the Army's M270A1 semi-trailer. It is intended to evacuate a disabled aircraft to a maintenance base for repair or preparation for a different mode of transport. In this configuration, the load shall not normally exceed maximum waiverable U.S. highway limits.
b. Logistical truck shipments are defined as long haul (over 100 miles) movements by standard commercial 30 inch high, low boy semi-trailer. It is intended to evacuate a disabled aircraft to a maintenance facility. In this configuration the load will not normally exceed legal U.S. limits. Serviceable aircraft may be shipped by logistical truck mode when prepared in accordance with these procedures. The following statement shall be included:

"Contact for technical assistance in preparing structurally damaged aircraft for shipment can be made with Commander, U.S. Army Research, Development and Engineering Center, ATTN: AMSRD-AMR-SE-TD, Redstone Arsenal, AL 35898-5000."

5.122.1.7.1.3 Responsibilities of the shipper.

This paragraph shall contain an overview of the responsibilities of the shipper and shall include the following:

a. All shipments shall be coordinated through the supporting transportation office. The shipper shall ensure that required highway permits, plus route information, are obtained from the supporting transportation office. The supporting Transportation Officer will provide necessary coordination with the SDDC and local authorities. The shipper will provide the Transportation Officer details and characteristics of the shipment in accordance with AR 55-162 for CONUS shipments and local directives for OCONUS shipments.
b. Coordinate the availability of appropriate lifting devices for loading the aircraft. Also, coordinate as needed, with the receiving activity to ensure the availability of appropriate lifting devices for unloading the aircraft.
c. Prepare the aircraft for shipment.
d. Provide all necessary equipment and materials to prepare, load, and secure aircraft to the trailer.
e. Furnish and rig all lifting devices.
f. Provide lifting device operator with technical assistance, if needed, in lifting the aircraft.

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g. Secure aircraft and components to the trailer as specified in the preparations for shipment manual.

5.122.1.7.1.4 Equipment requirements.

All tools and equipment shall be listed by nomenclature, reference number, NSN, and quantity required. A table shall be included providing comparative quantity data for equipment for the four different types of shipment. References shall be made to Appendix E (refer to 5.122.1.17) for part and quantity required, Chapter 7 (refer to 5.122.1.10) for fabrication of equipment at the unit level, and Chapter 8 (refer to 5.122.1.11) for equipment operating instructions, as applicable.

5.122.1.7.1.5 Material requirements.

All consumable materials shall be listed by nomenclature, reference number, NSN, and quantity required. Reference Appendix D (refer to 5.122.1.16) for part number and unit of issue. Include a table to show comparative data for consumable materials for each type of shipment.

5.122.1.7.1.6 Manpower requirements.

Each element and task required to be accomplished to prepare for shipment, loading, tiedown, unloading, and assembly shall be listed by personnel requirements, man-hours, and elapsed time.

5.122.1.7.1.7 Facility requirements.

Specific facility needs shall be listed.

5.122.1.7.1.8 Safety requirements.

Safety considerations applicable to shipment by truck shall be listed.

5.122.1.7.2 Section II – Aircraft recovery and tactical transport.

This section shall contain information relevant to tactical shipment and recovery of the aircraft by truck.

5.122.1.7.2.1 Shipping characteristics – Aircraft recovery.

Data Module Type: Descriptive Information Code: 800G

5.122.1.7.2.1.1 Drawings.

Left side, front, and top view drawings shall be made of the aircraft prepared for shipment and secured to the M270A1 trailer.

5.122.1.7.2.1.2 Dimensions.

The length, height, and width of the trailer and the overall length, height, and width of the load shall be stated.

5.122.1.7.2.1.3 Capabilities.

Capabilities of the M270A1 trailer shall be listed.

5.122.1.7.2.1.4 Limitations.

Limitations of the loaded trailer shall be discussed including terrain, surface, slope, speed, weight, and permit requirements.

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5.122.1.7.2.1.5 Load characteristics.

Gross weight and axle load and spacing for the shipment shall be provided.

5.122.1.7.2.1.6 Highway permits.

In order to help the shipper in obtaining highway permits, this paragraph shall contain the following:

> "It is the responsibility of the shipper to ensure that required highway permits are obtained. Permits and routing information are obtained by contacting the supporting Transportation Office. The supporting Transportation Officer will provide necessary coordination with SDDC and local authorities. The shipper will provide the Transportation Officer details and characteristics of the shipment in accordance with AR 55-162 for CONUS shipments and local directives for OCONUS shipments."

5.122.1.7.2.2 Preparing the aircraft – Aircraft recovery and tactical transport.

Data Module Type: Procedural Information Code: 800X

This paragraph shall detail all requirements for preparing the aircraft for tactical shipment/recovery by truck.

a. All tools and equipment shall be listed by nomenclature, reference number, NSN, and quantity required. A table shall be included providing comparative quantity data for equipment for the four different types of shipment. References shall be made to Appendix E (refer to 5.122.1.17) for part and quantity required, Chapter 7 (refer to 5.122.1.10) for fabrication of equipment at the unit level, and Chapter 8 (refer to 5.122.1.11) for equipment operating instructions, as applicable.
b. Each element and task to be accomplished to prepare for shipment, loading, tiedown, unloading, and preparing the aircraft for flight shall be stated. Personnel requirements, man-hours, and elapsed time shall be provided in a table for each type of shipment.
c. Reference shall be made to Chapter 6 (refer to 5.122.1.9) for detailed information on preservation and packaging and to Appendix G (refer to 5.122.1.19) for aircraft protective covering.
d. All tasks required for aircraft disassembly shall be listed in the order of accomplishment. The appropriate maintenance manual shall be referenced for each task. Tasks that are transportability peculiar shall be completely described with drawings or diagrams as needed.
e. If components and/or equipment are required to be placed inside the aircraft for shipment, a scale diagram of the aircraft shall be provided showing components placement and security. Elevations and/or perspective drawings shall be included if required for clarification.
f. This paragraph shall provide detailed information required to load the aircraft on the semi-trailer. It shall include the following:

    (1) Detailed instructions shall be included for installing hoisting equipment and tag lines on the aircraft. Diagrams and/or drawings shall be included as required for clarification.
    (2) Step-by-step instructions shall be included for loading the aircraft and each piece of equipment onboard the trailer. Diagrams and/or drawings shall be provided as needed.

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(3) A plan drawing of the trailer shall be provided indicating the placement of the aircraft and each component. If ballast is required, the amount and location shall be detailed.

(4) Information needed to tiedown the aircraft and components shall be stated. Material and equipment requirements for shoring and tiedown of aircraft and components shall be listed. Also, detailed procedures shall be listed. Plan, front, rear, and side views of tiedown installations shall be shown.

g. Provide step-by-step procedures for unloading the aircraft and components.

h. Provide step-by-step procedures for depreservation and reassembly. Reference appropriate maintenance publications for each step. Tasks that are transportability peculiar shall be completely described with drawings and diagrams provided as needed.

5.122.1.7.3 Section III – Shipment of aircraft - Truck (Long haul).

Data Module Type: Procedural Information Code: 812E

This section shall contain information for logistical shipment of the aircraft by truck. This paragraph shall provide an introduction to the standard commercial, 30-inch high, lowboy semi-trailer, its capabilities and limitations. The paragraphs and subparagraphs in this section shall have the same headings and contain the same types of information as found in 5.122.1.7.2.

5.122.1.8 Shipment of Army aircraft – Chapter 5 – Crated and intermodal container shipment.

5.122.1.8.1 Section I – Shipment of aircraft – General (Crated shipment).

Data Module Type: Descriptive Information Code: 812B

5.122.1.8.1.1 General.

Procedures applicable to crated shipments shall be included in this section. If crated shipment procedures are not applicable to certain aircraft, the following statement shall be included,

"Crated shipment is not applicable to Army model (*insert model and nomenclature of the aircraft*)."

5.122.1.8.1.2 Characteristics.

This paragraph shall include the intended use of crated shipment, intended modes of transport, and the advantages and disadvantages of crated shipment.

5.122.1.8.1.3 Handling methods.

Handling methods and devices shall be identified, described, and pictured as required.

5.122.1.8.1.4 Security requirements.

Physical security needs relevant to crated shipment of the aircraft and components shall be indicated.

5.122.1.8.1.5 Facility requirements.

Information on facility requirements such as shelter, overhead crane, electricity, etc., required during crating of the aircraft shall be provided.

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5.122.1.8.1.6 Equipment.

All tools and equipment shall be listed by nomenclature, reference number, NSN, and quantity required. A table shall be included providing comparative quantity data for equipment for the four different types of shipment. References shall be made to Appendix E (refer to 5.122.1.17) for part and units of issue, Chapter 7 (refer to 5.122.1.10) for fabrication of equipment at the unit level, and Chapter 8 (refer to 5.122.1.11) for equipment operating instructions, as applicable.

5.122.1.8.1.7 Consumable materials.

All consumable materials shall be listed by nomenclature, reference number, NSN, and quantity required. Reference Appendix D (refer to 5.122.1.16) for part number and unit of issue. Include a table to show comparative data for consumable materials, for each type of shipment.

5.122.1.8.1.8 Manpower requirements.

A listing shall be made for each element and task required to prepare for shipment, disassemble, preserve, crate, uncrate, reassemble, and return the aircraft to flyable status. Personnel requirements, man-hours, and elapsed time shall be provided for each task.

5.122.1.8.1.9 Preparing the aircraft – Crated.

Data Module Type: Procedural Information Code: 800V

This paragraph shall provide all information needed to prepare the aircraft for crating.

a. Step-by-step instructions shall be provided for preparing the aircraft for intermediate storage. Reference shall be made to applicable maintenance manuals or Chapter 6 (refer to 5.122.1.9) of the TM, as appropriate.
b. This paragraph shall provide step-by-step instructions for aircraft disassembly required for crated shipment. Procedures in the maintenance manuals shall be referenced. For procedures peculiar to crated shipment and/or transportability, detailed instructions shall be included with drawings and diagrams as needed for clarification.

5.122.1.8.1.9.1 Crating.

Data Module Type: Procedural Information Code: 830B

This paragraph shall include dimensioned drawings and all instructions for constructing the crate, packing the aircraft and components, and marking the crates.

a. Include the list of materials, working drawings, and instructions for constructing the crates.
b. Include step-by-step instructions for packing the aircraft and components. A drawing shall be included showing the completed crating.
c. This subparagraph shall contain marking information. It shall include the following:
    (1) Mark each side and end of each crate with 2-inch letters, "USE NO GRAB HOOKS."
    (2) Stencil opening instructions in 1-inch letters on one end of each crate.
    (3) Indicate the center of balance of loaded crates with a painted vertical strip on each side of the crate. Stencil "CENTER OF BALANCE" in 1-inch letters adjacent to the strips.
    (4) Indicate sling points by conspicuous arrows and "SLING HERE" in 1-inch letters.

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(5) Stencil in 1-inch letters adjacent to inspection doors, "PRESERVED FOR INTERMEDIATE STORAGE. REPRESERVE IF NOT ACTIVATED BY (*insert that date which is 180 days after the aircraft was initially preserved*)."

(6) The level of preservation shall be marked as level C, which is designed to protect an item for limited storage and immediate use. The preservation level shall be comparable to that described in MIL-STD-129 (part 4). The level of packing shall also be marked as level C, which provides minimum protection to meet conditions of a known favorable logistics path. The packing level shall be comparable to that described in MIL-STD-129. Refer to MIL-STD-129 (part 4) for additional reference.

5.122.1.8.1.10 Unpacking and reassembly.

Data Module Type: Procedural Information Code: 870D

Step-by-step instructions shall be provided for uncrating, depreservation, reassembly, and returning the aircraft to flyable status. Applicable procedures in maintenance manuals shall be referenced. For tasks unique to crated shipment and/or transportability, detailed procedures shall be provided to include drawings and diagrams, as needed.

5.122.1.8.2 Section II – Shipment of aircraft – General (Intermodal container shipment).

Data Module Type: Descriptive Information Code: 812B

5.122.1.8.2.1 General.

This section shall contain information specific to containerized transport of the aircraft. If containerized shipment is not appropriate for a specific aircraft, the following statement shall be included,

"Intermodal container shipment is not applicable to Army model (*insert the model and nomenclature of the aircraft*)."

5.122.1.8.2.2 Characteristics.

This paragraph shall provide an introduction to intermodal containers and a description of available containers. It shall also include the intended use of containerized shipment and its advantages and disadvantages.

5.122.1.8.2.3 Drawings.

Drawings showing interior dimensions of containers and of the aircraft prepared for containerized shipment shall be provided.

5.122.1.8.2.4 Security requirements.

Physical security requirements for containerized shipment shall be listed.

5.122.1.8.2.5 Facility requirements.

Information shall be provided on facility requirements such as electricity, overhead crane, shelter, etc., needed during loading of the aircraft into a container.

5.122.1.8.2.6 Safety requirements.

Indicate special safety considerations applicable to containerized shipment.

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5.122.1.8.2.7 Equipment requirements.

All tools and equipment shall be listed by nomenclature, reference number, NSN, and quantity required. A table shall be included providing comparative quantity data for equipment for the four different types of shipment. References shall be made to Appendix E (refer to 5.122.1.17) for part and quantity required, Chapter 7 (refer to 5.122.1.10) for fabrication of equipment at the unit level, and Chapter 8 (refer to 5.122.1.11) for equipment operating instructions, as applicable.

5.122.1.8.2.8 Consumable materials.

All consumable materials shall be listed by nomenclature, reference number, NSN, and quantity required. Reference Appendix D (refer to 5.122.1.16) for part number and unit of issue. Include a table to show comparative data for consumable materials, for each type of shipment.

5.122.1.8.2.9 Manpower requirements.

A listing shall be made for each element and task required to prepare for shipment, disassemble, preserve, containerize, remove from container, reassemble, and return the aircraft to flyable status. Personnel requirements, man-hours, and elapsed time shall be provided for each task.

5.122.1.8.2.10 Preparing the aircraft – Intermodal container.

Data Module Type: Procedural Information Code: 800W

This paragraph shall provide all information needed to prepare the aircraft for containerized shipment

a. This paragraph shall provide step-by-step instructions for aircraft disassembly required for crated shipment. Procedures in the applicable maintenance manuals shall be listed. .For procedures peculiar to crated shipment and/or transportability, detailed instructions shall be included with drawings and diagrams as needed for clarification.
b. If components and/or equipment are required to be placed inside the aircraft for shipment, a scale diagram of the aircraft shall be provided showing components placement and security. Elevations and/or perspective drawings shall be included if required for clarification.

5.122.1.8.2.11 Loading – Intermodal container.

Data Module Type: Procedural Information Code: 831J

This paragraph shall provide detailed information needed to load the aircraft in an intermodal container. Step-by-step instructions shall be provided for loading the aircraft and each component in the container. Instructions for maintaining wall clearance shall be provided as required. Diagrams and/or drawings shall be provided as needed for clarification. A plan view of the container shall be provided indicating the placement of the aircraft and each component.

5.122.1.8.2.12 Tiedown – Intermodal container.

Data Module Type: Procedural Information Code: 811P

This paragraph shall contain all information required to tiedown aircraft and components in the container.

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a. List equipment and material requirements needed to tiedown the aircraft and components. Instructions for use of tiedown equipment shall be provided.
b. Detailed procedures for tiedown shall be included. Provide plan, front, rear, and side views to show tiedown installation.

5.122.1.8.2.13 Unloading – Intermodal container.

Data Module Type: Procedural Information Code: 841J

Provide step-by-step procedures for unloading the container.

5.122.1.8.2.14 Depreservation and reassembly – Intermodal container.

Data Module Type: Procedural Information Code: 870N

Step-by-step procedures shall be provided for depreservation, reassembly, and returning the aircraft to flyable status. Reference shall be made to appropriate maintenance publications for each step. Tasks that are transportability peculiar shall be completely described with drawings and diagrams as needed.

5.122.1.9 Shipment of Army aircraft – Chapter 6 – Preservation and packaging.

5.122.1.9.1 Section I – Preservation, packaging, and marking (General).

Data Module Type: Descriptive Information Code: 810H

This section shall explain the necessity for preservation measures. It shall identify and discuss the three types of storage (flyable, short term, and intermediate) and the preservation methods of each.

5.122.1.9.2 Section II – Aircraft cleaning.

Data Module Type: Procedural Information Code: 811E

This paragraph shall describe the need for cleaning the aircraft prior to shipment and the consequences if it is not done.

a. Equipment requirements. All tools and equipment shall be listed by nomenclature, reference number, NSN, and quantity required. A table shall be included providing comparative quantity data for equipment for the four different types of shipment. References shall be made to Appendix E (refer to 5.122.1.17) for part and quantity required, Chapter 7 (refer to 5.122.1.10) for fabrication of equipment at the unit level, and Chapter 8 (refer to 5.122.1.11) for equipment operating instructions, as applicable.
b. Materials. All consumable materials shall be listed by nomenclature, reference number, NSN, and quantity required. Reference Appendix D (refer to 5.122.1.16) for part number and unit of issue. Include a table to show comparative data for consumable materials for each type of shipment.
c. Manpower. A list of personnel requirements, man-hours, and elapsed time shall be provided to clean the aircraft.
d. Procedures. Step-by-step procedures for cleaning the aircraft shall be listed. Reference shall be made to specific procedures in maintenance manuals.

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5.122.1.9.3 Section III – Preservation of aircraft.

Data Module Type: Procedural Information Code: 811B

a. Rationale. Rationale shall be provided for preserving aircraft for the various periods of inactivity.
b. Equipment. Equipment required for aircraft preservation shall be listed. Make reference to Appendix E for part numbers and NSNs. Provide a table indicating equipment needed for each term of inactivity.
c. Materials. List materials needed for aircraft preservation by noun nomenclature , reference number, and quantity. Make reference to Appendix D (refer to 5.122.1.16) for part number and unit of issue. Provide a table indicating materials needed for each term of inactivity.
d. Manpower. A list of personnel requirements, man-hours, and elapsed time to preserve the aircraft shall be provided in tabular form for each task and each term of inactivity.
e. Preservation. Step-by-step procedures for preserving aircraft for each period of inactivity shall be listed. Reference procedures in maintenance manuals, as applicable.

5.122.1.9.4 Section IV – Preservation and packaging of components.

Data Module Type: Procedural Information Code: 811C

Procedures shall be provided for preservation and packaging of each component that may be removed from the aircraft for shipping. These procedures shall be complete and referenced by the applicable TM.

a. Manpower. A table shall be prepared listing personnel, man-hours, and elapsed time to complete preservation and packaging operations for each component that requires removal.
b. Materials. All consumable materials shall be listed by nomenclature, reference number, NSN, and quantity required. Reference Appendix D (refer to 5.122.1.16) for part number and unit of issue. A table indicating materials needed for each term of inactivity shall be provided.
c. Packaging. Special containers used for transportability, if applicable, shall be described in this paragraph and listed in Appendix E (refer to 5.122.1.17). Containers manufactured at unit level with multiple transportability mode usage shall be described. Drawings, materials lists, and construction procedures shall be contained in Chapter 7 (refer to 5.122.1.10) and referenced.

5.122.1.9.5 Section V – Marking of aircraft/preparation of shipping documents.

Data Module Type: Descriptive Information Code: 811D

This section shall contain all information pertaining to marking and labeling the aircraft and components. Also included shall be instructions for completing shipper-prepared documents.

a. Identification. Instructions shall be provided to identify each removed component with the serial number of the aircraft from which it was removed and the component's condition.
b. Color coding. Indicate that rotor blades and controls shall be properly color coded prior to removal to ensure that they will be installed in the proper position.

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c. Preservation information. Note that such information shall be supplied by tagging each aircraft in a conspicuous location with the following:

"AIRCRAFT PRESERVED FOR UP TO (*insert specified number of days*)",

and

"REPRESERVE IF NOT ACTIVATED BY (*insert that date which is equal to the "preserved to" date plus a specified number of additional days*)."

The same information shall be included with the shipping documents.

5.122.1.9.6 Section VI – Depreservation and reassembly.

Data Module Type: Procedural Information Code: 870E

Step-by-step procedures shall be provided for depreservation and reassembly to return the aircraft to flyable status. Reference appropriate maintenance manuals by chapter and paragraph for the procedures. Tasks that are unique to transportability shall be completely described with drawings and diagrams provided as needed.

5.122.1.10 Shipment of Army aircraft – Chapter 7 – Transportability equipment fabricated at unit level.

5.122.1.10.1 General.

This chapter shall include drawings, materials, instructions, and manpower requirements for the construction of equipment made at the unit level. If such equipment is not used for preparing specific aircraft for shipment, the TM/IETP shall make it clear that transportability equipment fabricated at the unit level does not apply to that specific aircraft.

5.122.1.11 Shipment of Army aircraft – Chapter 8 – Operator and maintenance instructions for transportability equipment including illustrated parts data.

5.122.1.11.1 Section I – Normal operation procedures (Operator instructions).

Data Module Type: Procedural Information Code: 131A

This section shall provide detailed instructions on the proper installation and use of all transportability equipment. Separate instructions shall be provided for the disassembly of equipment and special packaging for the return of transportability equipment to the specialized control point. A separate paragraph shall be included for each item.

5.122.1.11.2 Section II – Repair/overhaul procedures.

Data Module Type: Procedural Information Code: 664B

This section shall describe unit, intermediate, and depot repair/overhaul procedures for transportability equipment.

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5.122.1.11.3 Section III – Repair parts information.

Data Module Type: IPD Information Code: 941A

This section shall be arranged in figure and item number sequence. It shall provide an illustrated breakdown and tabular listing. The listing shall show illustration figure and item number, SMR Code, NSN, CAGEC, part number, description, unit of issue, and quantity required. A separate paragraph shall be provided for each item of transportability equipment and in the same format as the aircraft IPD.

5.122.1.12 Shipment of Army aircraft – Chapter 9 – External transport by helicopter (Aerial recovery).

5.122.1.12.1 Section I – Aerial recovery - General.

Data Module Type: Descriptive Information Code: 812F

5.122.1.12.1.1 Types of transport.

This paragraph shall list the types of helicopters capable of providing external transport of the aircraft and an overview of the types of rigging available. Data shall be provided indicating the relative advantages and disadvantages of each.

5.122.1.12.1.2 Functions of aircraft recovery team.

The following functions shall be included:

a. Provide information to the recovery aircraft crew including type, weight, location, and condition of the aircraft to be recovered.
b. Provide all equipment and materials required to prepare and rig disabled aircraft for transport.
c. Prepare and rig disabled aircraft.
d. Hook up disabled aircraft to recovery helicopter.

5.122.1.12.1.3 Safety.

Safety considerations applicable to external transport by helicopter shall be listed. This shall include inspection and load testing of rigging equipment.

5.122.1.12.1.4 Structurally damaged aircraft.

Include the following statement in Chapter 9 (refer to 5.122.1.12) of the TM, "When structural damage causes doubt as to the successful use of the procedures in this chapter for transportation, contact Commander, U.S. Army Research, Development and Engineering Center, ATTN: AMSRD-AMR-SE-TD, Redstone Arsenal, AL 35898-5000."

5.122.1.12.1.5 Drag.

Data shall be presented in the TM/IETP concerning the approximate flat plate drag equivalent of the external load.

5.122.1.12.2 Section II – Single cargo hook rotor head lift.

This section shall provide all information required to rig and transport the helicopter using the rotor head as the lift point and a recovery helicopter equipped with a single cargo hook.

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5.122.1.12.2.1 Aerial recovery - Lift factors.

Data Module Type: Descriptive Information Code: 812G

This paragraph shall provide specific lift information including the recovery helicopters appropriate for this type lift, weight of the aircraft to be recovered, and flight parameters of the recovery helicopter including, but not limited to, maximum air speed, maximum angle of bank, maximum wind velocity during pickup, and requirement for a drogue chute, when necessary.

5.122.1.12.2.2 Preparing the aircraft – Aircraft recovery, single cargo hook rotor head lift.

Data Module Type: Procedural Information Code: 800X

This paragraph shall list requirements for preparing the aircraft for external transport using a single cargo hook rotor head lift. The following information shall be included:

a. All tools and equipment shall be listed by nomenclature, reference number, NSN, and quantity required. A table shall be included providing comparative quantity data for equipment for the four different types of shipment. References shall be made to Appendix E for part number and quantity required, Chapter 7 for fabrication of equipment at the unit level, and Chapter 8 for equipment operating instructions, as applicable.
b. All consumable materials shall be listed by nomenclature, reference number, NSN, and quantity required. Reference shall be made to Appendix D (refer to 5.122.1.16) for part number and unit of issue. Include a table to show comparative data for consumable materials for each type of shipment.
c. A list shall be provided for the required personnel, man-hours, and elapsed time for each task to be accomplished in preparing, rigging, and hooking up the aircraft for transport. d. All tasks required for aircraft preparation shall be listed in the order of accomplishment. The appropriate chapter of the maintenance manual shall be referenced for each task. Tasks that are transportability peculiar shall be completely described with drawings or diagrams, as needed.
d. If components and/or equipment are required to be placed inside the aircraft for shipment, a scale diagram of the aircraft shall be provided showing components placement and security. Elevations and/or perspective drawings shall be included, if required for clarification.
e. Detailed instructions shall be included for installing rigging equipment on the aircraft to be transported. Drawings and/or diagrams shall be included as required. Detailed information shall be provided on sling leg dimensions and link count.
f. Detailed instructions shall be provided for hook up of the rigged aircraft to the transport helicopter.

5.122.1.12.2.3 Reassembly.

Data Module Type: Procedural Information Code: 710D

Step-by-step instructions shall be provided for removing rigging and reassembly of the helicopter. Detailed instructions shall be provided for any needed special inspections. Reference shall be made to appropriate maintenance manuals for each task. Tasks that are transportability peculiar shall be completely described with drawings and/or diagrams provided as necessary.

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5.122.1.12.3 Section III – Aerial recovery - Single cargo hook hard point lift.

Data Module Type: Procedural Information Code: 812H

This section shall provide all information needed to rig and transport the helicopter using airframe hard points as the lift point and a recovery helicopter equipped with a single cargo hook. The paragraphs and subparagraphs in this section shall have the same format and the same type of information found in Section II (refer to 5.122.1.4.2).

5.122.1.12.4 Section IV – Aerial recovery - Dual cargo hook rotor head lift.

Data Module Type: Procedural Information Code: 812K

This section shall provide all information required to rig and transport the helicopter using the rotor head as the lift point and a recovery helicopter equipped with dual cargo hooks. The paragraphs and subparagraphs in this section shall have the same format and contain the same type of information found in Section II (refer to 5.122.1.4.2).

5.122.1.12.5 Section V – Aerial recovery - Dual cargo hook hard point lift.

Data Module Type: Procedural Information Code: 812J

This section shall provide all information required to rig and transport the helicopter using the airframe hard points as the lift point and a recovery helicopter equipped with dual cargo hooks. The paragraphs and subparagraphs in this section shall have the same format and the same type of information found in Section II (refer to 5.122.1.4.2).

5.122.1.12.6 Section VI – Aerial recovery - Single cargo hook belly band lift.

Data Module Type: Procedural Information Code: 812M

5.122.1.12.6.1 General.

This section shall provide all information required to rig and transport the aircraft using belly band type rigging and a recovery helicopter equipped with a single cargo hook. The paragraphs and subparagraphs in this section shall have the same format and contain the same types of information found in Section II (refer to 5.122.1.4.2).

5.122.1.12.6.2 Alternate methods.

The five methods of aerial recovery discussed in Chapter 9 (refer to 5.122.1.12) are applicable to aircraft in the inventory. If future aircraft require a different method to conduct an aerial recovery, then such a method(s) shall be described in detail in the same format as the existing methods are.

5.122.1.13 Shipment of Army aircraft – Appendix A – References.

Data Module Type: Descriptive Information Code: 017B

This appendix shall list all references used with the TM/IETP or cited in it.

5.122.1.14 Shipment of Army aircraft – Appendix B – Preservation/Depreservation check sheets.

Data Module Type: Descriptive Information Code: 810E

This appendix shall provide instructions on the preparation, use, and disposition of check sheets prepared on DA Form 2408-13-2-E. Sample check sheets shall be provided for transport by cargo aircraft, vessel, truck, and external lift helicopter. The instructions that are to be provided shall be in accordance with DA Pam 738-751. Each check sheet shall list all steps necessary to

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disassemble, preserve, depreserve, reassemble, and prepare the aircraft for flight for the worst case scenario of preservation for each mode of shipment. Items that apply only to depreservation shall be included on the form and the appropriate status symbol will be entered at the time the aircraft is prepared for shipping. Instructions shall note that the entry will be signed off as required upon depreservation.

5.122.1.15 Shipment of Army aircraft – Appendix C – Weight and balance (Information for transportability).

Data Module Type: Descriptive Information Code: 169A

This appendix shall contain all weight and arm data required to compute weight and balance data for each type of transport by cargo aircraft.

5.122.1.16 Shipment of Army aircraft – Appendix D – Consumable materials list.

Data Module Type: IPD Information Code: 070B

This appendix shall alphabetically list all consumable materials used in disassembly, packaging, loading, tiedown, unloading, depreservation, and reassembly of aircraft for all types and modes of shipment. The list shall include noun nomenclature, reference number, NSN, P/N, specification number, source of supply, unit of issue, and quantity needed per aircraft. The remarks section shall also note to which mode of transportation the item pertains.

5.122.1.17 Shipment of Army aircraft – Appendix E – Support equipment and tools (Special tools and equipment list).

Data Module Type: IPD Information Code: 061B

This appendix shall alphabetically list all tools and equipment used in disassembly, preservation, loading, tiedown, unloading, depreservation, and reassembly of the aircraft for all types and modes of shipment. The list shall include noun nomenclature, reference number, NSN, P/N, quantity required, and line item number, if applicable. There shall be a remarks section to indicate if equipment is fabricated at the unit level, level of support where the item is available, and if the item is part of a kit or set. If the item is part of a set or kit, the nomenclature, NSN, and line item number of the kit or set shall be included. The remarks section shall also note which mode of transportation to which the item pertains. Also, a notation shall be made that the item is either transportability peculiar (TP) or multipurpose (MP). MP tools and equipment are those items used for both transportability and maintenance.

5.122.1.18 Shipment of Army aircraft – Appendix F – Quarantine inspection/Customs clearance.

Data Module Type: Procedural Information Code: 812L

This appendix shall outline procedures for preparing the aircraft and removed components for quarantine inspection. The step-by-step procedures shall be in accordance with TM 5-632. Procedures shall also be included for customs clearance.

5.122.1.19 Shipment of Army aircraft – Appendix G – Heat shrink film protective covering.

5.122.1.19.1 Preparation of aircraft – Protective covering.

Data Module Type: Procedural Information Code: 812Q

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5.122.1.19.1.1 General.

This appendix shall provide procedures to assist personnel in the installation of protective covering on the aircraft. The first paragraph shall identify required safety procedures for application of heat shrink film. Subsequent paragraphs shall provide instructions for the preparation of the aircraft for the application of heat shrink film. Instructions for needed padding shall also be included.

5.122.1.19.1.2 Application of film.

This paragraph shall describe the characteristics of the film, the operation of the heat cannon, and the procedures for covering, fusing, shrinking, and inspecting the covering.

5.122.1.19.1.3 Fuel and battery vents.

This paragraph shall list procedures to ensure that fuel and battery vents are vented to the atmosphere during shipment.

5.122.1.19.1.1 Installation of ventilators.

Information on the need to vent the covering and instructions for the installation of ventilators shall be provided.

5.122.1.19.2 Hoisting.

Data Module Type: Procedural Information Code: 812R

Procedures for hoisting the aircraft with the shrink film covering installed shall be provided.

5.122.1.19.3 Tiedown - General.

Data Module Type: Procedural Information Code: 811F

Procedures for restraining the aircraft with shrink film covering installed shall be listed.

5.122.1.19.4 Enroute maintenance.

Data Module Type: Procedural Information Code: 664B

Instructions shall be provided for enroute maintenance of the shrink film.

5.122.1.19.5 Shipment of aircraft - Protective covering, removal.

Data Module Type: Procedural Information Code: 812S

Procedures shall be provided for the removal of shrink film covering.

5.122.1.19.6 Shipment of Army aircraft – Tools and equipment, consumable materials, and manpower.

Data Module Type: Descriptive Information Code: 802A

5.122.1.19.6.1 General.

All tools and equipment shall be listed by nomenclature, reference number, NSN, and quantity required. References shall be made to Appendix E for part number and quantity required, Chapter 7 (refer to 5.122.1.10) for fabrication of equipment at the unit level, and Chapter 8 (refer to 5.122.1.11) for equipment operating instructions, as applicable.

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5.122.1.19.6.2 Consumable materials.

All consumable materials shall be listed by nomenclature, reference number, NSN, and quantity required. Reference Appendix D (refer to 5.122.1.16) for part number and unit of issue. Include a table to show comparative data for consumable materials for each type of shipment.

5.122.1.19.6.3 Manpower.

An estimate shall be made of the personnel needs, required man-hours, and elapsed time for application and removal of heat shrink film.

5.122.1.19.7 Shipment of Army aircraft – Safety check sheet.

Data Module Type: Descriptive Information Code: 012C

A safety check sheet shall be developed for the application of heat shrink film. These requirements shall be included in the preservation/depreservation check sheets for truck and vessel shipment in Appendix B (refer to 5.122.1.14).

5.122.1.20 Shipment of Army aircraft – Rear matter.

Refer to 5.128.3.1 for rear matter content requirements

5.122.2 Project decisions.

5.122.2.1 Stand alone.

Shipment of Army Aircraft information sets may be produced as either a stand-alone TM/IETP or as part of a more comprehensive publication. If this content is produced as a stand-alone publication, the chapter/section/paragraph numbering requirements apply. If the content is included in a publication with a larger scope, the content requirements apply but the chapter/section/paragraph numbering requirements do not.

5.123 S1000D Chapter 5.2.3.1 – Land/Sea specific information sets – Crew/operator descriptive information.

The information referenced in S1000D Chapter 5.2.3.1 is not required for U.S. Army TMs/IETPs. Refer to the Content Selection matrices for content requirements. This S1000D-provided information set does not support existing Army requirements. Any project desiring to acquire technical data matching this information set shall coordinate with LOGSA to ensure consistent implementation across the Army.

5.124 S1000D Chapter 5.2.3.2 – Land/sea specific information sets – Crew/operator operation.

The information referenced in S1000D Chapter 5.2.3.2 is not required for U.S. Army TMs/IETPs. Refer to the Content Selection matrices for content requirements. This S1000D-provided information set does not support existing Army requirements. Any project desiring to acquire technical data matching this information set shall coordinate with LOGSA to ensure consistent implementation across the Army.

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5.125 S1000D Chapter 5.2.3.3 – Land/sea specific information sets – Crew/operator sequential operation.

The information referenced in S1000D Chapter 5.2.3.3 is not required for U.S. Army TMs/IETPs. Refer to the Content Selection matrices for content requirements. This S1000D-provided information set does not support existing Army requirements. Any project desiring to acquire technical data matching this information set shall coordinate with LOGSA to ensure consistent implementation across the Army.

5.126 S1000D Chapter 5.2.3.4 – Land/sea specific information sets – Crew/operator fault detection, isolation and resolution.

The information referenced in S1000D Chapter 5.2.3.4 is not required for U.S. Army TMs/IETPs. Refer to the Content Selection matrices for content requirements. This S1000D-provided information set does not support existing Army requirements. Any project desiring to acquire technical data matching this information set shall coordinate with LOGSA to ensure consistent implementation across the Army.

5.127 S1000D Chapter 5.2.3.5 – Land/sea specific information sets – International, national and regulatory scheduled check.

The information referenced in S1000D Chapter 5.2.3.5 is not required for U.S. Army TMs/IETPs. Refer to the Content Selection matrices for content requirements. This S1000D-provided information set does not support existing Army requirements. Any project desiring to acquire technical data matching this information set shall coordinate with LOGSA to ensure consistent implementation across the Army.

5.128 S1000D Chapter 5.3.1.1 – Common requirements – Front matter.

5.128.1 Front matter – Page oriented materials.

5.128.1.1 Army business rules.

5.128.1.1.1 Content, Page-based.

Material preceding the first text data module for all manuals except those referenced in 5.128.1.1.2 shall consist of the following descriptive DMs in the order specified below. (R=Required, AR=As Required [Project Decision])

a. (R) Front cover (auto generated from publication module meta data)
b. (AR) Promulgation letter (information code 023M) (Mandatory for Marine Corps only)
c. (R) Safety summary (Warning summary) (information code 012J)
d. (AR) Revision summary, if applicable. (information code 003C) [1]
e. (R) List of effective data modules (information code 00SA)
f. (R) Title page (information code 001B)[2]
g. (R) Table of contents (information code 009A)
h. (AR) Glossary
i. (AR) "How To Use This Manual" information (information code 018B)

[1] A revision summary is only required when changes exist in the manual.

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[2] Environmental/hazardous material information (**for aircraft operator manuals only**). When the manual has been reviewed for the presence of environmental and/or hazardous material information, a statement similar to the following ODC and/or Hazardous Materials statement shall be provided on the title page:

OZONE DEPLETING CHEMICALS INFORMATION
This document has been reviewed for the presence of Class I Ozone Depleting Chemicals. As of provided date, the status is: All references to Class I Ozone Depleting Chemicals have been removed from this document by substitution with chemicals that do not cause atmospheric ozone depletion.

HAZARDOUS MATERIALS INFORMATION
This document has been reviewed for the presence of Solvents used as cleaning solutions containing hazardous materials as defined by EPCRA 302 and 313 lists by the engineering, environment, and logistics oversight office. As of the base document dated provided date, all references to cleaning solvents containing hazardous materials have been removed from this document by substitution with non–hazardous or less hazardous materials where possible.

5.128.1.1.2 Content, Reduced page-based.

For Hand Receipts, Checklists, MWOs, Demilitarization of Surplus Items, Warranty Technical Bulletins, Depot Test, Measurement, and Diagnostic Equipment manuals, material preceding the first text data module shall consist of the following descriptive DMs in the order specified below. All other front matter content is prohibited. (R=Required, AR=As Required [Project Decision])

a. (R) Front cover (auto generated from publication module meta data)
b. (AR) Promulgation letter (information code 023M) (Mandatory for Marine Corps only)
c. (R) Title page (information code 001B)[1, 2]
d. (R) Table of contents (information code 009A)[3]
e. (AR) "How To Use This Manual" information (information code 018B)

[1] By project decision, a combined cover/title block may be used.

[2] Environmental/hazardous material information (**for aircraft operator manuals only**). When the manual has been reviewed for the presence of environmental and/or hazardous material information, a statement similar to the following ODC and/or Hazardous Materials statement shall be provided on the title page:

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OZONE DEPLETING CHEMICALS INFORMATION

This document has been reviewed for the presence of Class I Ozone Depleting Chemicals. As of provided date, the status is: All references to Class I Ozone Depleting Chemicals have been removed from this document by substitution with chemicals that do not cause atmospheric ozone depletion.

HAZARDOUS MATERIALS INFORMATION

This document has been reviewed for the presence of Solvents used as cleaning solutions containing hazardous materials as defined by EPCRA 302 and 313 lists by the engineering, environment, and logistics oversight office. As of the base document dated provided date, all references to cleaning solvents containing hazardous materials have been removed from this document by substitution with non–hazardous or less hazardous materials where possible.

[3] A table of contents is not required for Operator's Checklists or manuals that are less than eight pages.

5.128.1.1.3 Front cover.

5.128.1.1.3.1 General.

A front cover shall be prepared for each publication using a descriptive data module. Unless otherwise specified the front cover shall contain the following content information in the order listed. If the front cover is generated by a publishing system it is not required to be prepared with a Descriptive data module. (R=Required, AR=As Required [Project Decision])

a. (AR) Security classification.
b. (R) Publication module code.
c. (AR) National Overhaul Standard Statement (**DMWRs/NMWRs with NMP overhaul standards only**).
d. (R) Publication title.
e. (AR) NSN for item(s) covered.
f. (AR) EIC, as specified in the Army Master Data File (AMDF).
g. (AR) Subtitle.
h. (AR) Weapon system name.
i. (AR) Equipment illustration.
j. (AR) Availability statement (**DMWR/NMWR only**).
k. (AR) Supersedure notice.
l. DELETED.
m. (R) Distribution statement.
n. (AR) Export control notice warning.
o. (AR) Destruction notice.
p. (AR) General purpose notices.
q. (AR) Service nomenclature.
r. (AR) Publication date.

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s. (MC) (R) Publications Control Number (PCN)

5.128.1.1.3.2 National overhaul standards statement (**DMWRs/NMWRs with NMP overhaul standards only**).

The following shall be added to the title of NMWRs/DMWRs which document national overhaul standards for the National Maintenance Program:

"Containing National Overhaul standards for."

5.128.1.1.3.3 National Stock Number (NSN) and End Item Code (EIC).

NSN and EIC shall be included on the front cover of equipment publications but may not be required for general equipment and other types of publications.

5.128.1.1.3.4 Availability statement.

For DMWRs/NMWRs only, the following availability statement shall be included:

"This publication is not available through the St. Louis Media Distribution Division. This publication is available through (*insert the name and address of the proponent activity*)."

5.128.1.1.3.5 Supersedure notice.

When a supersedure notice is included, an asterisk (*) shall prefix the supersedure notice and the publication module code.

5.128.1.1.3.6 DELETED.

5.128.1.1.3.7 Distribution statement.

All publications shall have a distribution statement placed on the front cover for each manual or revision. The appropriate distribution statement shall be provided by the acquiring activity as selected from DODI 5230.24.

5.128.1.1.3.8 Export control warning.

For those publicationss with export controlled data, the export control notice contained in DODI 5230.24 shall be included.

5.128.1.1.3.9 Destruction notice.

All publications marked with distribution statements "B," "C," "D," "E," "F," or "X" shall be marked with the destruction notice provided by the acquiring activity from DODI 5230.24.

5.128.1.1.3.10 General purpose notice.

When specified by the acquiring activity, additional notice(s) may be included. The notice shall have a title followed by the notice text.

5.128.1.1.3.11 Publication date.

The publication date shall be the official publication date assigned by the acquiring activity. If the publication is produced in more than one media, the date shall be the same on all media.

5.128.1.1.3.12 (MC) Publications Control Number (PCN).

A publication control number shall be placed beneath the publication number(s) for Marine Corps only manuals and for joint service manuals involving the Marine Corps.

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5.128.1.1.4 Promulgation letter (**MC only**).

Data Module Type: Descriptive Information Code: 023M

A promulgation letter provided by the acquiring activity shall be included.

5.128.1.1.5 Safety summary (Warning summary).

Data Module Type: Descriptive Information Code: 012J

The Warning Summary is a general description of the warnings that should be provided in the front of the publication using a descriptive data module. The warning summary is not a word-for-word repetition of all the warnings in the publication and should be limited to alerting the user of the different types of hazards, in general terms, that will be encountered in operating and maintaining the weapon system or equipment covered within the manual. Icons used throughout the manual should be included in the warning summary at the beginning of the manual along with their definitions. The warning summary shall include first aid data, and explanations of all general safety warning icons and hazardous material icons used in the manual. It shall also include descriptions and hazardous materials warnings that have major impact throughout the publication. Only warnings that meet these criteria shall be included. Warnings shown in the warning summary shall not be acknowledged. As applicable, the warning summary shall consist of the following in the order specified below:

a. First aid data
b. Warning icons
c. Warning description.
d. Hazardous materials icons
e. Hazardous materials descriptions

5.128.1.1.5.1 First aid.

First Aid data shall be included in warning summary. The first paragraph shall reference TC 4-02.1. Any additional first aid data not described in TC 4-02.1 shall be described in this section.

5.128.1.1.5.2 Warning summary.

The publication shall have a warning summary when at least one of the following conditions exists

a. Warnings
b. Hazardous material warnings and/or icons
c. Additional equipment unique first aid data beyond TC 4-02.1.

5.128.1.1.6 Revision summary.

Data Module Type: Descriptive Information Code: 003C

Revision summary data (change transmittal page) shall be prepared and shall be included in the change package. The revision summary data module shall not have page numbers and shall be located following the warning summary. When updates are prepared, the change date shall be shown in the revision summary data module. Unless specified otherwise by the acquiring activity, the change date shall be the date at which the material to be included was received (copy freeze date, provided by the acquiring activity).

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5.128.1.1.7 List Of Effective Data Modules (LOEDM).

Data Module Type: Descriptive Information Code: 00SA

A list of effective data modules shall be prepared. The LOEDM shall be included with the basic version of the publication and each subsequent change or revision. It shall immediately follow the warning summary. When included in a change, it shall immediately follow the revision summary if the warning summary is not included in the change. All data modules in the publication shall be listed except exempted pages identified in these business rules. List each data module by DMC and put the total number of pages in the data module in parentheses next to the data module number. The words "deleted," "added," or "blank" may be placed next to the DMC when applicable. All data modules, except the following shall be included in LOEDM. The following data modules shall not be included in a LOEDM:

a. Revision summary.
b. LOEDM.
c. DA Forms 2028.
d. Authentication page data module.

The following types of publications shall have LOEDM:

a. Technical Manuals (TMs).
b. Illustrated parts lists.
c. DMWRs.
d. NMWRs.
e. PMS Manuals.
f. Preventive Maintenance Inspections Manuals.
g. Aircraft Troubleshooting Manuals.
h. TBs (paper TBs with 8 or more pages only).

The following types of publications shall not have a LOEDM:

a. Pocketbook TMs.
b. Publications less than 8 pages.
c. Hand Receipt (-HR) manuals.

5.128.1.1.7.1 List of effective data modules content.

The LOEDM shall contain data module code, title, sequence number, and issue number. (JS-109)

5.128.1.1.7.2 Multi-volume manuals.

A LOEDM covering all volumes shall be prepared and included in volume 1. Each volume number shall be listed followed by the pages in that volume. Each volume, except volume 1, shall include a list of data modules listing the data modules provided in that particular volume.

5.128.1.1.7.3 Dates of issue for changes.

At the top of the LOEDM, the date of the basic manual and the date of each change shall be listed.

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5.128.1.1.8 Title page.

Data Module Type: Descriptive Information Code: 001A

A title block page shall be prepared and follow the LOEDM. The title block page shall include the reporting errors and recommended improvement statement. When depot level repair parts are included in lower level parts information, the following statement shall be added to the repair parts information title: "(Including Depot Maintenance Repair Parts)." When the publication contains National Overhaul Standards, the title block shall include the National Overhaul Standards Statement. The title block page shall contain the same statements as shown on the front cover. Parts manuals and narrative manuals which include a parts list shall have a current as of date on the title block page. If the title block page is generated by a publishing system, it is not required to be prepared with a Descriptive data module.

5.128.1.1.8.1 Reporting errors and recommending improvements statement.

A reporting errors and recommending improvements statement shall appear below the prime title, NSN, EIC, and subtitle (if any) on the title block page. The mailing address, e-mail address, and fax number of the responsible proponent shall be inserted in the statement. Additional information may be added as required by the acquiring activity (e.g., how to submit an electronic 2028).

a. Unclassified/standard publication. Except for classified publications, oversize publications, pocket size publications, and publications with less than eight pages, the following statement shall precede the table of contents title.

(1) Army only publications. The following statements shall be included:

"REPORTING ERRORS AND RECOMMENDING IMPROVEMENTS

You can help improve this manual. If you find any mistakes or if you know of a way to improve the procedures, please let us know. Mail your letter or DA Form 2028 (Recommended Changes to Publications and Blank Forms), located in the back of this manual directly to: (*insert name and address of proponent*). You may also send in your recommended changes via e-mail or by fax. Our fax number is *(insert DSN and commercial number of proponent*). Our e-mail address is (*insert address of proponent*). A reply will be furnished to you."

(2) Marine only publications. The following statements shall be included:

" Submit notice of discrepancies or suggested changes on a NAVMC 10772. For instructions on how to submit NAVMC 10772 go to http://www.marcorsyscom.marines.mil/ProfessionalStaff/AcquisitionLogisticsProductSupport.aspx and click on "NAVMC 10772 submittal". Problems or quesitons regarding the NAVMC 10772 program should be reported by calling DSN 567-6439, DSN 567- 7575, or DSN 567-7542 (Commercial numbers are (229) 639-6439, (229) 639-7575, or (229) 639-7542)."

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(3) Multi-service publications. The following statements shall be included only for multi-service technical publication and use only applicable services (e.g., if the Navy does not use the publication, do not include a statement for that Service):

"REPORTING ERRORS AND RECOMMENDING IMPROVEMENTS

You can help improve this manual. If you find any mistakes or if you know of a way to improve the procedures, please let us know. Service, should be submitted as follows:

(a) (A) Army - Mail your letter or DA Form 2028 (Recommended Changes to Publications and Blank Forms), located in the back of this manual directly to: (*insert name and address of proponent*). You may also send in your recommended changes via e-mail or by fax. Our fax number is (*insert DSN and commercial number of proponent*). Our e-mail address is (*insert address of proponent*).

(b) (MC) Submit notice of discrepancies or suggested changes on a NAVMC 10772. The NAVMC may be submitted using either of the following:

1. The preferred method of submittal is using https://portal.logcom.usmc.mil/sites/pubs URL which will allow direct entry to the LOGCOM SharePoint Pubs site (LOGCOM SharePoint access and Common Access Card (CAC) required) where the form (Part I or Part II) can be filled out and submitted to the NAVMC database. Problems or questions regarding the NAVMC 10772 program should be reported by calling DSN 567-7628 or DSN 567-5017 (Commercial number is (229) 639-7628 or (229) 639-5017).

2. The alternate method of submittal does not require a CAC to access the form. Go to https://navalforms.documentservices.dla.mil/web/public/home. Once there, click on "FORMS", then click the "Keyword Search" button. Enter 10772 in the "Search Criteria" Box. Under "type" click on download page button. Click on PDF button. Enter user data in appropriate fields. Must have users contact information block filled in with Unit address and telephone number. click on the "envelope" icon in the tool bar. Select "Send Copy", then click "OK". When the PDF document is created, an Outlook Email screen will open with the .PDF as an attachment. On the TO line type SMB.LOG.TechPubs.fct@usmc.mil. In the body of the e-mail, type any additional information you wish to provide. Click "SEND".

.(c) (N) Navy - By letter directly to (*insert name and address of proponent*). You may also send in your recommended changes via e-mail or by fax. Our fax number is (*insert DSN and commercial number of proponent*). Our e-mail address is (*insert address of proponent*).

(d) (F) Air Force - By Air Force AFTO Form 22 directly to (*insert name and address of proponent*). You may also send in your recommended changes via e-mail or by fax. Our fax number is (*insert DSN and commercial number of proponent*). Our e-mail address is (*insert address of proponent*). A reply will be furnished to you."

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b. Pocket size publications, oversize publications, and publications with less than eight pages. For pocket-size publications, oversize publications, and publications with less than eight pages, the following statement shall precede the table of contents title.

(1) Army only publications. The following statements shall be included:

"REPORTING ERRORS AND RECOMMENDING IMPROVEMENTS

You can help improve this manual. If you find any mistakes or if you know of a way to improve the procedures, please let us know. Mail your letter or DA Form 2028 (Recommended Changes to Publications and Blank Forms) directly to: (*insert name and address of proponent*). You may also send in your recommended changes via e-mail or by fax. Our fax number is (*insert DSN and commercial number of proponent*). Our e-mail address is (*insert address of proponent*). A reply will be furnished to you."

(2) Marine only publications. The following statements shall be included:

"REPORTING ERRORS AND RECOMMENDING IMPROVEMENTS

You can help improve this manual. If you find any mistakes or if you know of a way to improve the procedures, please let us know. Submit by NAVMC form 10772 directly to *(insert name and address of proponent*). You may also send in your recommended changes via e-mail or by fax. Our fax number is (*insert DSN and commercial number of proponent*). Our e-mail address is (*insert address of proponent*). A reply will be furnished to you."

(3) Multi-service publications. The following statements shall be included only for multi-service technical publication and use only applicable services (e.g., if the Navy does not use the publication, do not include a statement for that Service):

"REPORTING ERRORS AND RECOMMENDING IMPROVEMENTS

You can help improve this manual. If you find any mistakes or if you know of a way to improve the procedures, please let us know. Reports, as applicable by the acquiring Service, should be submitted as follows:

(a) (A) Army - Mail your letter or DA Form 2028 (Recommended Changes to Publications and Blank Forms) directly to: (name and address of proponent). You may also send in your recommended changes via e-mail or by fax. Our fax number is (*insert DSN and commercial number of proponent).* Our e-mail address is *(insert address of proponent*).

(b) (MC) Marine Corps - Submit notice of discrepancies or suggested changes on a NAVMC 10772. The NAVMC may be submitted using either of the following:

1. The preferred method of submittal is using https://portal.logcom.usmc.mil/sites/pubs URL which will allow direct entry to the LOGCOM SharePoint Pubs site (LOGCOM SharePoint access and Common Access Card (CAC) required) where the form (Part I or Part II) can be filled out and submitted to the NAVMC database. Problems or questions regarding the NAVMC 10772 program should be reported by calling DSN 567-7628 or DSN 567-5017 (Commercial number is (229) 639-7628 or (229) 639-5017).

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2. The alternate method of submittal does not require a CAC to access the form. Go to https://navalforms.documentservices.dla.mil/web/public/home. Once there, click on "FORMS", then click the "Keyword Search" button. Enter 10772 in the "Search Criteria" Box. Under "type" click on download page button. Click on PDF button. Enter user data in appropriate fields. Must have users contact information block filled in with Unit address and telephone number. click on the "envelope" icon in the tool bar. Select "Send Copy", then click "OK". When the PDF document is created, an Outlook Email screen will open with the .PDF as an attachment. On the TO line type SMB.LOG.TechPubs.fct@usmc.mil. In the body of the e-mail, type any additional information you wish to provide. Click "SEND".

(c) (N) Navy - By letter directly to (*insert name and address of proponent*). You may also send in your recommended changes via e-mail or by fax. Our fax number is (*insert DSN and commercial number of proponent*). Our e-mail address is (*insert address of proponent*).

(d) (F) Air Force - By Air Force AFTO Form 22 directly to (*insert name and address of proponent*). You may also send in your recommended changes via e-mail or by fax. Our fax number is (*insert DSN and commercial number of proponent*). Our e-mail address is (*insert address of proponent*). A reply will be furnished to you."

c. Classified publications. For classified publications, the following statement shall precede the table of contents title:

(1) Army or Marine only publications. The following statements shall be included:

"REPORTING ERRORS AND RECOMMENDING IMPROVEMENTS

You can help improve this manual. If you find any mistakes or if you know of a way to improve this manual, write and tell us about it. Address your correspondence to (*insert name and address of proponent*). When dealing with classified information, make sure that your correspondence is properly marked and is handled in accordance with current security regulations."

(2) Multi-service publications. The following statements shall be included only for multi-service technical publication and use only applicable services (e.g., if the Navy does not use the publication, do not include a statement for that Service):

"REPORTING ERRORS AND RECOMMENDING IMPROVEMENTS

You can help improve this manual. If you find any mistakes or if you know of a way to improve this manual, write and tell us about it. Service, should be submitted as follows:

(a) (A) Army - Address your correspondence to (*insert name and address of proponent*).

(b) (MC) Marine Corps - Address your correspondence to (*insert name and address of proponent*).

(c) (N) Navy - Address your correspondence to (*insert name and address of proponent*).

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(d) (F) Air Force - Address your correspondence to (*insert name and address of proponent*).

When dealing with classified information, make sure that your correspondence is properly marked and is handled in accordance with current security regulations."

5.128.1.1.8.2 Preventive maintenance services and phased maintenance inspection manuals title block page with warning data (**Aviation only**).

For preventive maintenance services and phased maintenance inspection only, the warning data page shall include the reporting errors and recommending improvement statement and the following additional verbatim statement.

"WARNING

Certain inspections are Mandatory Safety-of-Flight requirements, and the inspection intervals cannot be exceeded. In the event these inspections cannot be accomplished at the specified interval, the aircraft condition status symbol will be changed to a red X. Mandatory Safety-of-Flight inspection items are printed in bold face type.

NOTE

Inspection items contained in this manual are considered the minimum requirements for performing phased maintenance and shall be performed. The cumulative effects of inspection deferrals are unknown and could result in catastrophic failure or increased maintenance at a later date. Therefore, the use of special lettering to emphasize Mandatory Safety-of-Flight Items is not to be construed as authority for deferral of other inspections."

5.128.1.1.9 Table of contents.

Data Module Type: Descriptive Information Code: 009A

5.128.1.1.9.1 General.

A table of contents listing all chapters and data modules shall be prepared for all publications. They shall have the exact same title and shall be listed in the same order they appear in the publication. Figures and tables may be listed in the table of contents. If the figures and/or tables are listed in the table of contents, they shall be listed, in order as they appear, under the corresponding data module except for foldouts which shall be listed separately at the end of the table of contents. The how-to-use this manual information shall be listed on the table of contents including page number. The warning summary shall not be listed on the table of contents. The table of contents shall begin on the first available page following the title block page.

a. The security classification, if any, of chapters, data modules, figures, and tables shall be indicated.
b. Figures if listed in the table of contents shall be listed under the corresponding data module by the figure number, title, and page number of each figure. A parts manual shall not include figures in the table of contents.
c. Tables if listed in the table of contents shall be listed under the corresponding data module by the table number, title, and page number of each table.
d. Each volume of a multi-volume manual shall contain its own table of contents and shall reference companion volumes for the same publication. Volume 1 shall contain a complete table of contents covering the entire set. Entries shall indicate the volume in which the referenced material appears.

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e. The following requirements are applicable to parts list entries.

(1) The introduction shall be the first data module listed in the parts information.
(2) Titles of parts data modules, including the FGCs as applicable, shall be listed by the same nomenclature and in the same sequence in which they appear in the first tabular listing. The data module code shall be referenced with each title. The figure number may be included in the data module title.
(3) NSN, P/N, and (as applicable) reference designator cross-reference indexes shall be listed.

NOTE: It is not required that the table of contents be prepared using a descriptive data module. Alternate methods (e.g., preparation with a style sheet based on publication module data) is acceptable.

5.128.1.1.9.2 Contents.

The table of contents for page-based publications shall include data module code or hierarchical indicator such as chapter/section/paragraph, data module title and page number. The project may stipulate other elements as needed (e.g., Effectivity). (JS-060)

5.128.1.1.9.3 List of tables.

The overall publication list of tables for page based publications shall include data module code, table number, title, and data module sequence/page number. The project may stipulate other elements as needed (e.g., Effectivity). (JS-061)

5.128.1.1.9.4 List of illustrations.

The list of illustrations for page-based publications shall include data module code, figure title and page number. The project may stipulate other elements as needed (e.g., applicability). (JS-062)

5.128.1.1.10 List of terms (Glossary).

Data Module Type: Descriptive Information Code: 006A

A glossary shall be prepared for publications only when the terms are uncommon and are not adequately defined in the text or in the Army, DOD, or standard dictionary. The glossary shall include a list of terms followed by definitions. The terms shall be listed in alphabetical order. If a glossary is required, it shall begin on a separate, right-hand page and immediately following the table of contents. Page numbers for a glossary shall begin with Glossary-1, Glossary-2, etc.

5.128.1.1.11 How to use this manual (**except illustrated parts data, DMWR, and NMWR**).

Data Module Type: Descriptive Information Code: 018B

If required, "How to Use This Manual" information shall be prepared as follows:

a. "How to Use This Manual" information shall begin on the page immediately following the glossary (if present).
b. Information to familiarize the user with special or unusual features of the publication shall be prepared. Coverage shall lead the user through the publication and explain important features of the organization and content. For example, the format is explained; operating, troubleshooting, PMCS are explained; and repair, maintenance instructions, and other pertinent information are explained.

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c. Any peculiarities in the basic arrangement of the publication shall be described. "How To Use This Manual" information shall not repeat instructions given within the chapters.
d. For all publications (excluding operators) the "How To Use This Manual" information shall include reference to the associated illustrated parts data and an explanation on how to use the parts data in conjunction with the manual.
e. For all publications with a glossary, reference to the glossary shall be made and an explanation of its features and use shall be provided.
f. For Troubleshooting publications, an explanation on how troubleshooting data is presented in the manual shall be included. The explanation shall explain how failure symptom indexes and malfunction codes correspond to maintenance operational checks and troubleshooting procedures for individual systems and components. If necessary, for multi-volume troubleshooting manuals, examples of the troubleshooting process shall be provided to illustrate how specific troubleshooting volumes are used together to locate and isolate faults.

5.128.1.1.11.1 International standardization agreements.

When provisions of the data is subject to an international standardization agreement, the "How To Use This Manual" information shall contain the following.

"NOTE

Certain provisions of this technical manual (identify by chapter, data module, paragraph, or similar manner, if appropriate) are the subject of international standardization agreement (*insert the ABCA or ASCC standard number; the NATO, STANAG, NETR, or NEPR number; or appropriate documentary reference*). When revision or cancellation of this technical manual is proposed which will modify the international agreement concerned, the technical manual management activity will take appropriate action through international standardization channels, including departmental standardization offices, to change the agreement or make other appropriate accommodations."

5.128.1.2 Project decisions.

5.128.1.2.1 Use of a descriptive data module to prepare table of contents.

The project shall decide if table of contents shall be prepared using a descriptive data module or some other means.

5.128.1.2.2 Part figures.

When a publication includes the parts information chapter, the listing of part figures in the table of contents is optional.

5.128.1.2.3 Access illustrations.

The project shall decide if access illustrations should be included and what should be contained in Access illustrations.

5.128.1.2.4 List of symbols.

The project shall decide if list of symbols should be included and what should be contained in list of symbols.

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5.128.1.2.5 Technical standard record.

The project shall decide if technical standard record should be included and what should be contained in technical standard record.

5.128.1.2.6 List of applicable specifications and documentation.

The project shall decide if List of applicable specifications and documentation should be included and what should be contained in List of applicable specifications and documentation.

5.128.2 Front matter – Interactive Electronic Technical Publication (IETP).

5.128.2.1 Army business rules.

5.128.2.1.1 General.

As applicable, material preceding the first text data module shall consist of the following descriptive DMs in the order specified below. (R=Required, AR=As Required [Project decision])

a. (R) IETP Installation data
b. (R) CD content screen
c. (AR) Promulgation letter (information code 023M) (Mandatory for Marine Corps only)
d. (AR) Safety summary (Warning summary) (information code 012J)
e. (AR) Revision summary (information code 003C). NOTE: A revision summary is required only when changes exist in the manual.
f. (R) Identification information (auto generated from publication module meta data)
g. (R) Table of contents (information code 009A)
h. (AR) How to use this manual (information code 018B)
i. (R) Reporting errors and recommending improvements (DA Form 2028) (information code 023B)

5.128.2.1.2 Interactive Electronic Technical Publication (IETP) installation data/data access.

Information on installing the disc on the computer and launching the IETP shall be prepared. The installation routine shall have an uninstall capability and shall determine if ample space is available for the install. Installation data shall include instructions for operating the IETP with and without Web access. Installation routine shall check for previously installed versions of the IETP or display software and shall prompt the user to indicate whether they want to overwrite older versions of the software and/or IETP. The viewer software shall not have hardcoding of software versions within the viewing software for other software required for use with the viewing software (e.g., Java). The installation information shall be printed and shall be part of the packaging of the disc. The following types of install/capabilities shall be available to the user

a. The minimum installation, which is loading to the viewer only those files necessary to access the program and data on the disc. This requires that the programs for the IETPs be executable from the disc and be able to read the data from the disc. This is the preferred method. To enable running from disc, all IETP information shall be contained on either 1 CD or 1 DVD unless otherwise specified by the acquiring activity.

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b. Installation of the required files for the viewer to operate as a workstation on a LAN. In these cases, the program and data would be loaded to a server, and the PMA would access the program and data via a LAN. This type of install may be desirable in a flight line or motor pool environment. IETP viewers shall be server-based rather than client-based so that multiple users can view the IETP from LAN or web simultaneously.
c. Loading the executable program to the hard drive. This will require the data be accessed from the disc. This may be used when multiple discs for a system use the same reader program and the program is loaded to the hard drive for faster operation.

5.128.2.1.3 Disc content screen.

When more than one publication (e.g., IETP, PDF, etc) is resident on a disc, the first information that shall appear on the viewer is the disc content frame. This frame shall provide the publication number and title of all publications that are contained on the disc. Only DA-authenticated publications shall be placed on a DA-authenticated disc or disc set. Unauthenticated commercial publications, contractor publications, command-authenticated publications, etc, shall not be placed on a DA-authenticated disc or disc set.

5.128.2.1.4 Promulgation letter (MC Only).

Data Module Type: Descriptive Information Code: 023M

The promulgation letter shall be included any joint service publication with the Marine Corps as the lead service. For joint service publications where Army is the lead service, the promulgation letter shall not be included. The promulgation letter shall be inserted in the publication as a graphic and not as tagged text.

5.128.2.1.5 Safety summary (Warning summary).

Data Module Type: Descriptive Information Code: 012J

When required, a warning summary shall be provided. The warning summary shall include first aid data, and explanations of all general safety warning icons and hazardous material icons used in the manual. It shall also include descriptions and hazardous materials warnings that have major impact throughout the IETP. Only warnings that meet these criteria shall be included. Warnings shown in the warning summary shall not be acknowledged. As applicable, the warning summary shall consist of the following in the order specified below:

a. First aid data. The first paragraph shall reference TC 4-02.1. Any additional first aid data not described in TC 4-02.1 shall be described in this section.
b. Warning icons.
c. Warning description.
d. Hazardous materials icons.
e. Hazardous materials descriptions.

5.128.2.1.5.1 Warning summary.

The publication shall have a warning summary when at least one of the following conditions exists

a. Warnings
b. Hazardous material warnings and/or icons
c. Additional equipment unique first aid data beyond TC 4-02.1.

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5.128.2.1.6 Revision summary.

Data Module Type: Descriptive Information Code: 003C

When a revision to an IETP is issued, a revision summary screen shall be displayed containing a list of data modules by DMC and title that have been revised. The revised data module listed on the revision summary screen shall be linked to the data module containing the revised information.

5.128.2.1.7 Identification information.

Identification information shall be prepared for each IETP. Identification information shall include NSN and EIC for equipment publications. However, NSN and EIC are not required for other publications such as general equipment and software manuals. The following data shall be included: (R=Required, AR=As Required [Project Decision])

a. (AR) Security classification (when required).
b. (R) IETP number.
c. (AR) National Overhaul Standards Statement (**TM/DMWR/NMWR with NMP overhaul standards only).**
d. (R) TM title.
e. (AR) NSN for item(s) covered (when required).
f. (AR) EIC, as specified in the AMDF (when required).
g. (AR) Subtitle.
h. (AR) Weapon system name.
i. (AR) Equipment illustration.
j. (R) Reporting errors and recommending improvements
k. (AR) Availability statement (**DMWR/NMWR only**).
l. (AR) Supersedure notice.
m. DELETED.
n. (R) Distribution statement.
o. (AR) Export control notice warning.
p. (AR) Destruction notice.
q. (AR) General purpose notices.
r. (R) Service nomenclature.
s. (R) Publication date.
t. (R) User feedback link.

5.128.2.1.7.1 Interactive Electronic Technical Publication (IETP) number.

IETPs shall be numbered the same as page-based publications in accordance with 5.70.1.1. Publication medium shall never be IETP, IETM, ETM, or EP.

5.128.2.1.7.2 National overhaul standards statement (**DMWR/NMWR with NMP overhaul standards only**).

The following shall be added to the title of NMWRs/DMWRs which document national overhaul standards for the National Maintenance Program: "Containing National Overhaul standards for."

5.128.2.1.7.3 Weapon system name.

When required the name of the weapon system to which this publication applies shall be included.

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5.128.2.1.7.4 Reporting errors and recommending improvements statement.

A reporting errors and recommending improvements statement shall be included. The mailing address, e-mail address, and fax number of the responsible proponent shall be inserted in the statement. Additional information may be added as required by the acquiring activity (e.g., how to submit an electronic 2028).

a. Unclassified IETP. Except for classified IETPs, the following statement shall be included.

(1) Army Only TM. The following statements shall be included:

"REPORTING ERRORS AND RECOMMENDING IMPROVEMENTS

You can help improve this IETP. If you find any mistakes or if you know of a way to improve the procedures, please let us know. If your IETP supports online forms, fill in the electronic publication change request and when connected to the internet, transmit the form. If your IETP does not support online forms, obtain a copy of a DA Form 2028, Recommended Changes to Publications and Blank Forms. Your IETP may include a partially completed DA 2028. Print out the form and complete filling in the pertinent information. For IETPs without a printable DA Form 2028, blank forms should be available through your publications system. Complete the DA Form 2028 and mail it directly to: (*insert name and address of proponent*). If you are unable to obtain a DA Form 2028, you may provide the recommendations by letter to the above address. You may also send in your recommended changes via e-mail or by fax. Our fax number is (*insert DSN and commercial number of proponent*). Our e-mail address is (*insert address of proponent*). A reply will be furnished to you."

(2) Marine Only TM. The following statements shall be included:

"REPORTING ERRORS AND RECOMMENDING IMPROVEMENTS

You can help improve this IETP. If you find any mistakes or if you know of a way to improve the procedures, please let us know. If your IETP supports online forms, fill in the electronic publication change request and when connected to the internet, transmit the form. If your IETP does not support online forms, obtain a copy of a NAVMC Form 10772, Recommended Changes to Publications and Blank Forms. Your IETP may include a partially completed NAVMC Form 10772. Print out the form and complete filling in the pertinent information. For IETPs without a printable NAVMC Form 10772, blank forms should be available through your publications system. Complete the NAVMC Form 10772 and mail it directly to: (*insert name and address of proponent*). If you are unable to obtain a NAVMC Form 10772, you may provide the recommendations by letter to the above address. You may also send in your recommended changes via e-mail or by fax. Our fax number is (*insert DSN and commercial number of proponent*). Our e-mail address is (*insert address of proponent*). A reply will be furnished to you."

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(3) Multi-Service TM. The following statements shall be included only for multiservice technical publication and use only applicable services (e.g., if the Navy does not use the publication, do not include a statement for that Service):

"REPORTING ERRORS AND RECOMMENDING IMPROVEMENTS

You can help improve this IETP. If you find any mistakes or if you know of a way to improve the procedures, please let us know. Service, should be submitted as follows:

(a) Army - If your IETP supports online forms, fill in the electronic publication change request and when connected to the internet, transmit the form. If your IETP does not support online forms, obtain a copy of a DA Form 2028, Recommended Changes to Publications and Blank Forms. Your IETP may include a partially completed DA 2028. Print out the form and complete filling in the pertinent information. For IETPs without a printable DA Form 2028, blank forms should be available through your publications system. Complete the DA Form 2028 and mail it directly to: (*insert name and address of proponent*). If you are unable to obtain a DA Form 2028, you may provide the recommendations by letter to the above address.

(b) Marine Corps - Submit notice of discrepancies or suggested changes on a NAVMC 10772. The NAVMC may be submitted using either of the following:

a. The preferred method of submittal is using https://portal.logcom.usmc.mil/sites/pubs URL which will allow direct entry to the LOGCOM SharePoint Pubs site (LOGCOM SharePoint access and Common Access Card (CAC) required) where the form (Part I or Part II) can be filled out and submitted to the NAVMC database. Problems or questions regarding the NAVMC 10772 program should be reported by calling DSN 567-7628 or DSN 567-5017 (Commercial number is (229) 639-7628 or (229) 639-5017).

b. The alternate method of submittal does not require a CAC to access the form. Go to https://navalforms.documentservices.dla.mil/web/public/home. Once there, click on "FORMS", then click the "Keyword Search" button. Enter 10772 in the "Search Criteria" Box. Under "type" click on download page button. Click on PDF button. Enter user data in appropriate fields. Must have users contact information block filled in with Unit address and telephone number. click on the "envelope" icon in the tool bar. Select "Send Copy", then click "OK". When the PDF document is created, an Outlook Email screen will open with the .PDF as an attachment. On the TO line type SMB.LOG.TechPubs.fct@usmc.mil. In the body of the e-mail, type any additional information you wish to provide. Click "SEND"

(c) Navy - If your IETP supports online forms, fill in the electronic publication change request and when connected to the internet, transmit the form. If your IETP does not support online forms, you may provide the recommendations by letter to the above address.

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(d) Air Force - If your IETP supports online forms, fill in the electronic publication change request and when connected to the internet, transmit the form. If your IETP does not support online forms, obtain a copy of an AFTO Form 22, Technical Order Publications Improvement Report. Your IETP may include a partially completed AFTO Form 22. Print out the form and complete filling in the pertinent information. For IETPs without a printable AFTO Form 22, blank forms should be available through your publications system. Complete the AFTO Form 22 and mail it directly to: (*insert name and address of proponent*). If you are unable to obtain an AFTO Form 22, you may provide the recommendations by letter to the above address. You may also send in your recommended changes via e-mail or by fax. Our fax number is (*insert DSN and commercial number of proponent*). Our e-mail address is (*insert address of proponent*). A reply will be furnished to you."

b. Classified IETPs. Classified IETPs use the same wording as unclassified IETPs, except that the statement "When dealing with classified information, make sure that your correspondence is properly marked and is handled in accordance with current security regulations." shall be included in the beginning of the reporting errors and recommending improvements statement as follows:

"REPORTING ERRORS AND RECOMMENDING IMPROVEMENTS

You can help improve this IETP. If you find any mistakes or if you know of a way to improve the procedures, please let us know. When dealing with classified information, make sure that your correspondence is properly marked and is handled in accordance with current security regulations…"

5.128.2.1.7.5 Availability statement **(DMWR/NMWR only)**.

For DMWRs/NMWRs only, the following availability statement shall be included:

"This publication is not available through the St. Louis Media Distribution Division. This publication is available through (*insert the name and address of the proponent activity*)."

5.128.2.1.7.6 Supersedure notice for revisions only.

When a manual is updated, a supersedure notice shall be included and an asterisk (*) shall prefix the supersedure notice and the TM number.

5.128.2.1.7.7 DELETED.

5.128.2.1.7.8 Distribution statement.

All IETPs shall have a distribution statement for each manual or revision. The appropriate distribution statement shall be provided by the acquiring activity as selected from DODI 5230.24.

5.128.2.1.7.9 Export control notice warning.

For those publications with export controlled data, the export control notice contained in DODI 5230.24 shall be included.

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5.128.2.1.7.10 Destruction notice.

All IETPs marked with distribution statements "B," "C," "D," "E," "F," or "X" shall be marked with the destruction notice. For classified and unclassified documents, destruction notice shall contain the following text "Destroy by any means possible to prevent disclosure of contents or reconstruction of the document." For classified documents, the program must also be compliant with DOD 5220.22-M and DODM 5200.01, volumes 1-4.

5.128.2.1.7.11 General purpose notice.

When specified by the acquiring activity, additional notice(s) may be included that are not addressed by the notices in 5.128.2.1.7.5 through 5.128.2.1.7.10. The notice shall have a title followed by the notice text.

5.128.2.1.7.12 Service nomenclature.

All TMs shall include the service or acquiring activity's nomenclature.

5.128.2.1.7.13 Publication date.

The publication date shall be the estimated authentication/issue date of the publication as assigned by the project. If the publication is produced in more than one media, the date shall be the same on both media. The day, month, and year shall be given in that sequence (for example, 10 JULY 1988).

5.128.2.1.7.14 For Army Communications Security (COMSEC) manuals use.

Unless otherwise specified by the acquiring activity, unclassified IETPs shall contain the notice FOR OFFICIAL USE ONLY. Classified COMSEC IETPs shall be appropriately marked at the level of classification.

5.128.2.1.8 Table of contents.

Data Module Type: Descriptive Information Code: 009A

A descriptive data module using information code 009A shall be used if the table of contents is not otherwise generated by the IETP software. The table of contents shall list and link to all publication modules and data modules within the IETP.

5.128.2.1.8.1 List of tables.

The overall publication list of tables for IETP shall include data module code and title. In addition, each entry shall be linked to the referenced table. Projects may stipulate other elements as needed (e.g., applicability). (JS-079)

5.128.2.1.8.2 Authentication information.

An authentication block, provided by the acquiring activity, shall be included. The authentication block is not displayed unless accessed through an entry in the table of contents.

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5.128.2.1.9 How to use this IETP.

Data Module Type: Descriptive Information Code: 018B

If required, information to familiarize the user with special or unusual features of the IETP shall be prepared. Coverage shall lead the user through the IETP and explain important features of the organization and content. For example, the format is explained; operating, troubleshooting, module identification code PMCS are explained; and repair, maintenance instructions, and other pertinent information are explained. Any peculiarities in the basic structure of the IETP shall be described. "How To Use This IETP" information shall not repeat instructions given within the data modules.

a. For all IETPs (excluding operators) the "How To Use This IETP" information shall include an explanation on how and where parts information is available in the data modules and how the parts information is accessed.
b. For troubleshooting, an explanation on how troubleshooting data is presented in the IETP shall be included. If applicable, an explanation on how failure symptom indexes and malfunction codes correspond to maintenance operational checks and troubleshooting procedures for individual systems and components.
c. An explanation on how to identify hotspots and how they are used and activated.
d. If a double king sized paged-based paper TM containing the supporting schematic and wiring diagrams has been authorized and developed, a reference to this TM by TM number shall be provided.
e. When a standard form (i.e., DA 2408-13, DA 2404, etc.) shall be used in the process of performing a task, instructions shall be provided on how these forms are accessed, used, and filled out.
f. Provide an explanation on how to fill out a DA Form 2028 and emphasize that reference shall be made to a data module by the exact title that is provided in the table of contents.
g. An explanation and use of all icons and buttons.
h. A link may be made to an IETP tutorial (when required) to explain use of the IETP.
i. When specified by the acquiring activity, the "How To Use This Manual" information shall contain the following.

"NOTE

Certain provisions of this manual (identify by DMC, paragraph, or similar manner, if appropriate) are the subject of international standardization agreement *(insert the ABCA or ASCC standard number; the NATO, STANAG, NETR, or NEPR number; or appropriate documentary reference*). When revision or cancellation of this IETP is proposed which will modify the international agreement concerned, the technical manual management activity will take appropriate action through international standardization channels, including departmental standardization offices, to change the agreement or make other appropriate accommodations."

5.128.2.1.10 Reporting errors and recommending improvements (DA Form 2028).

Data Module Type: Descriptive Information Code: 023B

An electronic equivalent of DA Form 2028 should be provided in the IETP so the users can notify the proponent if any mistakes are found or any recommended improvements can be made to the IETP. Guidelines shall be included for completing the form. When an electronic equivalent of this form is not provided on the IETP, the paper form shall be used.

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5.128.2.1.10.1 Blank forms.

Unless otherwise specified, blank forms (DA Form 2028) shall not be included in IETPs.

5.128.2.1.11 Glossary.

If a glossary or index is used in an IETP, it shall be located in the general information section.

5.128.2.2 Project decisions.

5.128.2.2.1 "How To Use This IETP" information.

Project shall decide whether to prepare "How To Use This IETP" information.

5.128.3 Common requirements – Rear matter.

5.128.3.1 Rear matter – Page oriented manuals.

5.128.3.1.1 Army business rules.

5.128.3.1.1.1 General.

As applicable, material after the last text data module shall consist of the following descriptive DMs in the order specified below. (R=Required, AR=As Required [Project Decision])

a. (AR) Alphabetical index (information code 014B)
b. (R) Reporting errors and recommending improvements (DA Form 2028, or an electronic equivalent) (information code 023B). Maintenance Test Flight, Checklists, and manuals smaller than A-size do not require DA-Form 2028.
c. (R) Authentication page (information code 023C)
d. (AR) Foldout pages (foldouts are generated at output and do not reside in a dedicated data module)
e. (R) Back cover (information code 001C)

5.128.3.1.1.2 Alphabetical index.

Data Module Type: Descriptive Information Code: 014B

An alphabetical index shall be prepared unless specified otherwise by the acquiring activity. All applicable data module references for each entry shall be indicated. Page references may be included in a detailed index. The index shall be located at the end of the publication but shall precede the sample DA Form 2028. Indexes shall begin on a separate, right-hand page. Page numbers for an index shall begin with Index-1, Index-2, etc.

5.128.3.1.1.3 Authentication page.

Data Module Type: Descriptive Information Code: 023C

The authentication page shall be the last printed text page of the publication, or if there are foldout pages, the authentication page shall be the last printed text page prior to the foldout pages. For changes, the authentication block shall be included on the change transmittal sheet(s). The authentication block shall be placed after all of the other information on the change transmittal sheet(s).

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5.128.3.1.1.4 Reporting errors and recommending improvements (DA Form 2028).

Data Module Type: Descriptive Information Code: 023B

One filled-out sample copy of DA Form 2028, provided by the acquiring activity, and a minimum of three blank DA Forms 2028 with the publication module code, date, and title shall be included and shall precede the authentication page of every unclassified publication (except for oversize manuals, pocket-size manual, and manuals with less than eight pages). The filled out sample shall include guidelines for completing the form.

5.128.3.1.1.5 Foldout pages.

If foldout pages are approved by the acquiring activity, they shall be the last printed material in the manual or volume. Foldout pages shall not be included in illustrated parts manuals.

5.128.3.1.1.6 Back cover.

Data Module Type: Descriptive Information Code: 001C

The outside back cover shall be blank, except for pocket-size manuals and classified manuals. For pocket-size manuals, the outside back cover shall include the publication module code. For classified publications, security classification markings shall be included on the back cover. **For Maintenance Test Flight manuals only**, a metric conversion table, covering applicable units included in the publication, shall be placed on the inside back cover. The PIN shall be placed in the lower right hand corner of the back cover.

5.128.3.1.2 Project decisions.

5.128.3.1.2.1 Alphabetical index use.

Project shall determine the use of an alphabetical index.

5.128.3.1.2.2 Alphabetical index detail.

The alphabetical index may be an index of data modules only or it may be a detailed index.

5.128.4 Rear matter – Interactive Electronic Technical Publication (IETP).

No rear matter is required for IETP.

5.129 S1000D Chapter 5.3.1.2 – Common requirements – Technical content.

The technical content referenced in S1000D Chapter 5.3.1.2 is not required for U.S. Army TMs/IETPs. Refer to the Content Selection matrices for content requirements.

5.130 S1000D Chapter 5.3.1.3 – Common requirements – Illustrated parts data.

The parts data referenced in S1000D Chapter 5.3.1.3 are not required for U.S. Army TMs/IETPs. Refer to the Content Selection matrices and 5.93 for content requirements.

5.131 S1000D Chapter 5.3.2 – Publications – Requirements for air specific publications.

The air specific publications referenced in S1000D Chapter 5.3.2 are not required for U.S. Army TMs/IETPs. Refer to the Content Selection matrices for content requirements.

5.132 S1000D Chapter 5.3.2.1 – Air specific publications – Aircrew information.

The aircrew information referenced in S1000D Chapter 5.3.2.1 is not required for U.S. Army TMs/IETPs. Refer to the Content Selection matrices and 5.115 for content requirements.

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5.133 S1000D Chapter 5.3.2.2 – Air specific publications – Cross servicing guide.

The cross servicing guide referenced in S1000D Chapter 5.3.2.2 is not required for U.S. Army TMs/IETPs. Refer to the Content Selection matrices for content requirements.

5.134 S1000D Chapter 5.3.3 – Publications – Requirements for land/sea specific publications.

The land/sea publications referenced in S1000D Chapter 5.3.3 are not required for U.S. Army TMs/IETPs. Refer to the Content Selection matrices for content requirements.

5.135 S1000D Chapter 6 – Information presentation/use.

There are no Army business rules or project decisions in the following S1000D chapters:

a. Chapter 6 Information presentation/use
b. Chapter 6.1 Information presentation/use – Introduction
c. Chapter 6.3 Information presentation/use – IETP
d. Chapter 6.4.3 Functionality – Acquisition management

NOTE

Paragraphs 5.136 through 5.140 address presentation requirements for page-based and IETP output. These paragraphs use informal tables to more clearly connect the requirements in this standard to related requirements defined in S1000D.

5.136 S1000D Chapter 6.2 – Information presentation/use – Page-oriented publications.

5.136.1 Army business rules.

5.136.1.1 Use of the S1000D standard page-oriented presentation chapters.

The requirements and guidance of the S1000D Chapter 6.2, Chapter 6.2.1, and Chapter 6.2.2 as augmented by these business rules shall be mandatory.

5.136.2 Project decisions.

None.

5.137 S1000D Chapter 6.2.1 – Information presentation/use – Page layout, paper publications, headers and footers.

5.137.1 Page layout.

5.137.1.1 Army business rules.

The following table contains Army business rules related to page layout of paper publications.

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TABLE XLIII. Army business rules – page layout of paper publications.

Topic	Army Requirements	S1000D Reference
Page size	Technical manual page sizes shall be selected from the following list: a. Standard page size shall be 11 inches by 8 ½ inches. The usable area shall be 10 inches by 7 inches. In addition to standard manuals, the following shall also use the standard page size: (1) Operator's technical manual (2) Alternate operator's Maintenance Test Flight (MTF) manual (3) Alternate operator's checklist b. Double standard page size shall be 17 inches by 11 inches. The usable area shall be 15 3/4 inches by 9 inches. c. Logbook page size shall be 9 ½ inches by 6 ½ inches. The usable area shall be 8 ½ inches by 5 ½ inches. d. Pocket page size shall be 5 ½ inches by 4 inches. The usable area shall be 5 inches by 3 1/8 inches. e. The standard operator's checklist and standard operator's MTF manual page size shall be 4 ½ inches wide by 8 inches in length. Usable area: 3 1/2 x 7 1/2.	Chapter 6.2.1 paragraph 2.1, including Fig. 3 which is the page layout diagram for standard page size Army publications.
Text position	Text shall be positioned above and below the illustration, and not on the illustration’s left or right sides.	Chapter 6.2.1 paragraph 2.1.

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TABLE XLIII. Army business rules – page layout of paper publications - Continued.

Topic	Army Requirements	S1000D Reference
Pocket-size manuals	Text for pocket-size manuals shall be on the right-hand pages with supporting illustration on the facing left-hand pages.	Chapter 6.2.1 paragraph 2.1.
Emergency procedures	The checklist pages that contain emergency procedure information/steps shall have heavy black diagonal lines around three edges. However, for operator's alternate checklists, page borders for emergency procedures shall be placed in the left and right margins only, instead of on three sides of the page.	Chapter 6.2.1 paragraph 2.1.
In-work	When a data module in the stage of "in-work" is presented as a paper copy or PDF file, the planned issue number and the time of printing shall be included on each page.	Chapter 6.2.1 paragraph 2.2.
Organization responsible for printing	The S1000D option for printing the identity of the organization responsible for producing the page-oriented output on each page shall not be allowed. (JS-063)	Chapter 6.2.1 paragraph 2.3.

5.137.1.2 Project decisions.

5.137.1.2.1 Page sizes.

Project shall determine when to use the available page sizes.

5.137.1.2.2 Page orientation.

Orientation of pages, either vertical (portrait) or horizontal (landscape) shall be consistent throughout a given manual except where exceptions are allowed elsewhere by these business rules.

5.137.2 Header and footer.

5.137.2.1 General.

5.137.2.1.1 Army business rules.

The following table contains Army business rules related to headers and footers of paper publications.

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TABLE XLIV. Army business rules – header and footer of paper publications.

Topic	Army Requirements	S1000D Reference
Page placement	Headers and footers shall be placed outside the area of the page used for text, full-page tabular data, or full-page illustrations, but within the printing area dimensions of the page.	Chapter 6.2.1 paragraph 2.4.
Use	Headers and footers shall be prepared for all pages except covers, authentication pages, and forms (e.g., DA Form 2028).	Chapter 6.2.1 paragraph 2.4.
Use of mirrored headers and footers	Mirrored headers and footers shall be used (to accomplish double-sided printing).	Chapter 6.2.1 paragraph 2.4.

5.137.2.1.2 Project decisions.

5.137.2.1.2.1 Applicability.

When applicability is used, the project shall determine the use of either applicability codes, or a human readable expression.

5.137.2.2 Page identification.

5.137.2.2.1 Army business rules.

The following table contains Army business rules related to page identification.

TABLE XLV. Army business rules – page identification.

Topic	Army Requirements	S1000D Reference
Presentation of publication module code	The project shall use the S1000D standard page-oriented presentation rules for the publication module code.	Chapter 6.2.1 paragraph 2.4.1.1.
Presentation of data module code	The project shall use the S1000D standard page-oriented presentation rules for the data module code.	Chapter 6.2.1 paragraph 2.4.1.2.
Presentation of issue date	The project shall use the S1000D standard page-oriented presentation rules for the issue date.	Chapter 6.2.1 paragraph 2.4.1.3.
Issue date	The Issue date in the page footer shall be the publication date for the entire manual. This Issue date shall be updated when the entire manual is revised.	Chapter 6.2.1 paragraph 2.4.1.3.
Presentation of page number	The project shall use the S1000D standard page-oriented presentation rules for the page number.	Chapter 6.2.1 paragraph 2.4.1.4.

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TABLE XLV. Army business rules – page identification - Continued.

Topic	Army Requirements	S1000D Reference
Blank pages, general	Blank pages normally require no copy. However, if the reverse side of a blank page contains classified material, security markings for the blank page shall be bold and at the top and bottom center of the blank page. The blank page shall reflect the highest classification of the reverse side, and include the statement "This page is unclassified."	Chapter 6.2.1 paragraph 2.4.1.4.
Blank pages, numbering	A blank page shall be assigned a number, but it shall appear on the preceding or following page.	Chapter 6.2.1 paragraph 2.4.1.4.
Use of page numbers.	Page numbers shall be published as follows: a. Each data module shall initially be assigned a four digit data module sequence number beginning with the number 0001. The data module sequence numbers shall run consecutively throughout the manual. b. Pages shall be numbered with the data module-sequence number followed by a page number beginning at 1 separated by a hyphen. For example, "0021-4" is the 4th page in the 21st data module in a manual. c. If a data module needs to be inserted between two existing data modules, the new data module-sequence number is increased by a decimal number. For example if a data module is added between the 21st and 22nd data modules, its number will be 0021.1. When a manual is revised, data modules shall be renumbered so that there are no decimal sequence numbers.	Chapter 6.2.1 paragraph 2.4.1.4.

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TABLE XLV. Army business rules – page identification - Continued

Topic	Army Requirements	S1000D Reference
Front and rear matter page numbering	Front matter and rear matter data modules shall be numbered consistently with the rest of the manual. Neither alphabetic nor roman numerals shall be used.	Chapter 6.2.1 paragraph 2.4.1.4.
Foldout page numbering	Foldout page numbers shall be numbered consecutively using Arabic numbers prefixed by the letters "FP." The reverse side of foldout pages shall be blank and each foldout page number shall include a blank page notation.	Chapter 6.2.1 paragraph 2.4.1.4.
Presentation of applicability annotation	The project shall use the S1000D standard page-oriented presentation rules for the applicability annotation.	Chapter 6.2.1 paragraph 2.4.1.5.

5.137.2.2.2 Project decisions.

5.137.2.2.2.1 Double sided printing of foldout pages.

The project shall decide whether to use double sided printing on foldout pages.

5.137.2.3 Security markings.

5.137.2.3.1 Army business rules.

The following table contains Army business rules related to security markings.

TABLE XLVI. Army business rules – security markings.

Topic	Army Requirements	S1000D Reference
Classification	The overall security classification assigned to a manual shall agree with the highest security classification assigned to any data module within, and shall be marked accordingly at the top and bottom of the front cover, title block page, and rear cover sheets. The security classification markings for every page, including those for unclassified pages, shall be bold and at the top and bottom center of each page.	Chapter 6.2.1 paragraph 2.4.2.
Markings	Classification markings are not required at the top and bottom of pages in an unclassified manual.	Chapter 6.2.1 paragraph 2.4.2.

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TABLE XLVI. Army business rules – security markings - Continued.

Topic	Army Requirements	S1000D Reference
Presentation of commercial classification and/or caveat as security markings	Neither commercial classification nor national caveat shall be used as an alternative to security classification.	Chapter 6.2.1 paragraph 2.4.2.
Retention of security classification	Army requirements: The retention of security classification markings shall be in accordance with DOD information security program instructions/directives. The project or organization business rules shall identify the latest instructions/directives at time of contract award. (JS-094) As of the issuance of this update, the current doucment is DODM 5200.01, volumes 1-4.	Chapter 6.2.1 paragraph 2.4.2.
Marking of security classification	Army requirements: Security classifications shall be marked in accordance with DOD information security program instructions/directives. The project or organization business rules shall identify the latest instructions/directives at time of contract award. (JS-095) As of the issuance of this update, the current doucment is DODM 5200.01, volumes 1-4.	Chapter 6.2.1 paragraph 2.4.2.

5.137.2.3.2 Project decisions.

None.

5.137.2.4 Logotype.

5.137.2.4.1 Army business rules.

The following table contains an Army business rule related to logotype.

TABLE XLVII. Army business rules – logotype.

Topic	Army Requirements	S1000D Reference
Logotype	Manufacturer's, project's, or sponsor's logotype shall not be included in the header.	Chapter 6.2.1 paragraph 2.4.3.

5.137.2.4.2 Project decisions.

None.

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5.137.2.5 End of data module.

5.137.2.5.1 Army business rules.

The following table contains an Army business rule related to the use of "End of."

TABLE XLVIII. Army business rules – End of.

Topic	Army Requirements	S1000D Reference
End of	The words "End of [*data module title*]" shall be placed at the end of every data module.	Chapter 6.2.1 paragraph 2.4.4.

5.137.2.5.2 Project decisions.

None.

5.137.3 Double column text.

5.137.3.1 Army business rules.

None.

5.137.3.2 Project decisions.

5.137.3.2.1 Use of double column text.

The project shall decide whether or not to use double column text and under what circumstances.

5.137.4 Folding and binding.

5.137.4.1 Army business rules.

The following table contains Army business rules related to folding and binding.

TABLE XLIX. Army business rules – folding and binding.

Topic	Army Requirements	S1000D Reference
Foldout size	Foldout pages, if needed, shall be the same height as regular pages in the standard manual only, and shall be folded 2, 4, or 6 times, depending on the width necessary.	Chapter 6.2.1 paragraph 2.6.1.
Apron	Each foldout shall have a blank apron wide enough for the user to look at the data while reading text elsewhere in the manual.	Chapter 6.2.1 paragraph 2.6.1.
Use with IPD	Foldouts shall not be used in IPD or operator-only manuals.	Chapter 6.2.1 paragraph 2.6.1.

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TABLE XLIX. Army business rules – folding and binding - Continued.

Topic	Army Requirements	S1000D Reference
Foldout placement	Foldout pages shall be the last printed material in the manual or volume. It is recommended that foldout figures be authored (tagged) into the DMs they are associated with and produced at the end of the manual or volume by means of the style sheet. This method will enable individual DMs to be reused in both paper and IETP outputs. The reference to the printed foldout can be uniquely styled on the element **`<foldout>`**.	Chapter 6.2.1 paragraph 2.6.1.

5.137.4.2 Project decisions.

5.137.4.2.1 Foldouts.

The project shall determine if and when to use foldouts.

5.138 S1000D Chapter 6.2.2 – Information presentation/use – Typography – Layout elements.

5.138.1 Font.

5.138.1.1 Army business rules.

The following table contains Army business rules related to font.

TABLE L. Army business rules – font.

Topic	Army Requirements	S1000D Reference
Text	All text (except where fixed font is required) shall be written in Arial font. (JS-065)	Chapter 6.2.2 paragraph 2.1.
Fixed font	Fixed font, if needed, shall be Courier New.	Chapter 6.2.2 paragraph 2.1.
Text color	Only black print shall be used for operator's checklist manuals.	Chapter 6.2.2 paragraph 2.1.

5.138.1.2 Project decisions.

None.

5.138.2 Headings and titles.

5.138.2.1 Army business rules.

The following table contains Army business rules related to headings and titles.

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TABLE LI. Army business rules – headings and titles.

Topic	Army Requirements	S1000D Reference
Side heads	Primary side heads shall divide text within chapters or sections. There shall be at least one primary side head in each chapter or section. Primary side heads shall begin two spaces below the preceding paragraph at the left margin. They shall be followed by a period and are stand alone (are not run in with text). (JS-067)	Chapter 6.2.2 paragraph 2.3.2.2.
Table caption	The caption "Table" shall not be added before the table number in the list of tables.	Chapter 6.2.2 paragraph 2.3.2.2.2.
Fig. caption	The caption "Fig." shall not be added before the figure number in the list of illustrations. (JS-117)	Chapter 6.2.2 paragraph 2.3.2.2.3.

5.138.2.2 Project decisions.

None

5.138.3 Paragraphs of text.

5.138.3.1 Army business rules.

The following table contains Army business rules related to paragraphs of text.

TABLE LII. Army business rules – paragraphs of text.

Topic	Army Requirements	S1000D Reference
Text justification	Text shall be left margin justified, with ragged (unjustified) right-hand edge. (JS-066)	Chapter 6.2.2 paragraph 2.3 and 2.4.
Primary paragraphs	Primary paragraph titles shall be capital case, and bold. Block text shall start on a separate line and shall have a blank line between title and text block.	Chapter 6.2.2 paragraph 2.3 and 2.4.

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TABLE LII. Army business rules – paragraphs of text - Continued.

Topic	Army Requirements	S1000D Reference
Subparagraphs	Subparagraph shall be presented in accordance with S1000D with the exception of Sidehead 4 which shall be bold (not Roman), and Sidehead 5 which shall be bold (and not italic).	Chapter 6.2.2 paragraph 2.3 and 2.4.
Text wrap	Lines of text should wrap, so that no line extends beyond the limits of the data pane or right margin, including when resized. Lines should be broken only between individual words or within a word when that word is explicitly hyphenated.	Chapter 6.2.2 paragraph 2.3 and 2.4.
Paragraph titles	Paragraphs and subparagraphs shall have titles. The title shall begin at the left margin. Multiple blocks of text under a title are allowed.	Chapter 6.2.2 paragraph 2.3 and 2.4.
Paragraph spanning two pages	When a paragraph is continued on subsequent pages, the first level paragraph title shall be placed at the top of those pages (e.g., REMOVAL - Cont).	Chapter 6.2.2 paragraph 2.3 and 2.4.

5.138.3.2 Project decisions.

None.

5.138.3A Steps.

5.138.3A.1 Army business rules.

The following table contains Army business rules related to steps.

TABLE LIIA. Army business rules – steps

Topic	Army Requirements	S1000D Reference
Step numbering	Procedural steps shall be used to present detailed step-by-step instructions for performing an operational or maintenance task. Subordinate steps may be used to further breakdown the step. When required, procedural steps shall be divided into no more than six levels. The following demonstrates, by example, how procedural steps and subordinate steps levels shall be formatted and numbered.	Chapter 6.2.2 paragraph 2.5.

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TABLE LIIA. Army business rules – steps - Continued.

Topic	Army Requirements	S1000D Reference
First level step	1. The first level of a procedural step shall be numbered using arabic numbers (e.g., 1, 2, 3, etc.). The numbers shall be flush left. Text shall begin two spaces after the period following the numeral. The text shall be blocked.	Chapter 6.2.2 paragraph 2.5.
Second step level	The second step level shall be numbered with lower case letters (e.g., a, b, c, etc.). The second level of the steps shall be immediately below the text of the first level of the step. The text shall be blocked. If additional second level subordinate step letters are required, use aa., ab., etc., after z.	Chapter 6.2.2 paragraph 2.5.
Third step level	The third level steps shall be numbered using arabic numbers in parentheses (e.g., (1), (2), (3), etc.). The third level steps shall be immediately below the text of the second level steps. The text shall be blocked.	Chapter 6.2.2 paragraph 2.5.
Fourth step level	The fourth level steps shall be numbered using letters in parentheses (e.g., (a), (b), (c), etc.). The fourth level steps shall be immediately below the text of third level steps. The text shall be blocked. If additional fourth level step letters are required, use (aa), (ab), etc., after (z).	Chapter 6.2.2 paragraph 2.5.
Fifth step level	The fifth level steps shall be numbered using underlined arabic numbers (e.g., 1, 2, 3, etc.). The fifth level steps shall be immediately below the text of fourth level steps. The text shall be blocked.	Chapter 6.2.2 paragraph 2.5.
Sixth step level	The sixth level steps shall be numbered using underlined letters (e.g., a, b, c, etc.). Sixth level steps shall be immediately below the text of the fifth level steps. The text shall be blocked. If additional sixth level step letters are required, use aa, ab, etc., after z.	Chapter 6.2.2 paragraph 2.5.

5.138.4 Lists.

5.138.4.1 Army business rules.

The following table contains Army business rules related to lists.

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TABLE LIII. Army business rules – lists.

Topic	Army Requirements	S1000D Reference
Checklist titles	All checklist titles shall be left justified and in boldfaced type. The main titles shall not be numbered. Checklist entries shall be listed numerically, in Arabic numbers, in the order they are to be performed and shall be blocked. Checklist entries shall have the first letters of each line of type aligned. Placarded items shall be boldfaced capital letters. If a series of checks continues from a right-hand page to a left-hand page, requiring that the page be turned to continue the procedure, the checklist title shall be repeated at the upper comer of the left-hand page followed by "(Cont.)."	Chapter 6.2.2 paragraph 2.6.1.

5.138.4.2 Project decisions.

None.

5.138.5 Footnotes.

5.138.5.1 Army business rules.

The following table contains Army business rules related to footnotes.

TABLE LIV. Army business rules – footnotes.

Topic	Army Requirements	S1000D Reference
Inline footnotes	Inline footnotes shall not be used.	Chapter 6.2.2 paragraph 2.7.2.
Markers	Superscripted numbers shall be used for table footnote markers. Unless numbers would cause confusion, use consecutive superior numbers beginning with 1 for numbering footnotes to tables. The numbering system is by table. Superior lowercase letters, asterisks, or other designations may be used where numbers would cause confusion. Place footnote references at the right of letters, words, or symbols, and at the left of numbers (also at the left of such words as "None" in columns with numbers). Number references to footnotes across the page from left to right. Separate two or more footnote references occurring together by spaces, not commas.	Chapter 6.2.2 paragraph 2.7.3.

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TABLE LIV. Army business rules – footnotes - Continued.

Topic	Army Requirements	S1000D Reference
Table footnotes	Table footnotes shall be placed at the bottom of the table or the bottom of the page, whichever is encountered first. Indent all table footnotes five spaces from the left margin of the table and return carryover lines to the left margin of the table. Separate the footnote numbers or other designators. (JS-070)	Chapter 6.2.2 paragraph 2.7.3.

5.138.5.2 Project decisions.

None.

5.138.6 Tables.

5.138.6.1 Army business rules.

The following table contains Army business rules related to tables.

TABLE LV. Army business rules – tables.

Topic	Army Requirements	S1000D Reference
Alignment	Lists of alphabetic data in table columns should be vertically aligned with left justification. Numerical data should be justified with respect to a fixed decimal point. In cases where there is no decimal point, the numerical data should be right justified.	Chapter 6.2.2 paragraph 2.8.1.
Table titles	Table titles shall appear above the table. If a table appears on more than one page, the table title shall be presented (above the table) on each page that the table appears. Column headers shall be repeated as the first row on each page that the table appears.	Chapter 6.2.2 paragraph 2.8.1.
Linking	Tables shall be linked to the appropriate text to allow for display.	Chapter 6.2.2 paragraph 2.8.1.
Column headers	Table column headers shall be in boldface, uppercase letters.	Chapter 6.2.2 paragraph 2.8.1.
Vertical rule	All tables shall have outside vertical rules	Chapter 6.2.2 paragraph 2.8.1.

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TABLE LV. Army business rules – tables - Continued.

Topic	Army Requirements	S1000D Reference
Placement	Tables shall be inserted in the manual on the same page or as soon after the first reference in the text as possible. Full-page tables using a horizontal (landscape) format shall be positioned so that the page shall be rotated 90 degrees clockwise to be read. The table number and title shall be placed at the top of the table.	Chapter 6.2.2 paragraph 2.8.1.
Dense tables	For dense tables with more than 20 rows of single line text shall have 4 extra points of leading inserted at every 5th line to improve readability.	Chapter 6.2.2 paragraph 2.8.1.

5.138.6.2 Project decisions.

None.

5.138.7 Figures.

5.138.7.1 Army business rules.

The following table contains Army business rules related to figures.

TABLE LVI. Army business rules – figures.

Topic	Army Requirements	S1000D Reference
Multi-sheet illustration numbering	When an illustration requires several sheets, identification similar to (Sheet X of Y) shall be added after the title. All sheets of a multi-sheet illustration shall be considered one figure. All sheets of a multi-sheet illustration shall be considered one figure. Multisheet figures shall be consecutively numbered and the total number of sheets following the title; for example, "Figure 1. Wing Hydraulic Assembly (Sheet 1 of 3)." Remaining sheets shall be numbered in consecutive order, "Figure 1. Wing Hydraulic Assembly (Sheet 2 of 3)," "Figure 1. Wing Hydraulic Assembly (Sheet 3 of 3)." (JS-071)	Chapter 6.2.2 paragraph 2.9.1.

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TABLE LVI. Army business rules – figures - Continued.

Topic	Army Requirements	S1000D Reference
Presentation of Information Control Number (ICN)	ICN shall be placed outside the graphic .The information control numbers are normally derived from the XML attribute infoEntityIdent and put in place by the publishing system. An ICN shall only be presented once with each illustration. In cases where legacy graphics already contain an identifier within the graphic and the project would encounter expense to remove it, this BR does not apply. (JS-052)	Chapter 6.2.2 paragraph 2.9.1.

5.138.7.2 Project decisions.

5.138.7.2.1 Color.

Unless specified otherwise by the acquiring activity, black and shades of black (gray scale) shall be used for figures in page oriented publications.

5.138.8 Warnings, cautions, and notes.

5.138.8.1 Army business rules.

The following table contains Army business rules related to warnings, cautions, and notes.

TABLE LVII. Army business rules – warnings, cautions, and notes.

Topic	Army Requirements	S1000D Reference
Placement	Warnings shall be presented immediately after the label (step or para number) and the associated title (if present) and immediately preceding the associated text. Cautions shall be presented immediately after the label (step or para number) and the associated title (if present) and immediately preceding the associated text. If multiple warnings, cautions, and notes apply to the same text, warnings shall appear first, cautions shall appear second, and notes shall appear last. (JS-013)	Chapter 6.2.2 paragraph 2.10.1.

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TABLE LVII. Army business rules – warnings, cautions, and notes - Continued.

Topic	Army Requirements	S1000D Reference
Headers	The header WARNING, CAUTION, or NOTE shall be bold and centered above the appropriate text. Headers shall not be numbered. When a warning, caution, or note consists of two or more paragraphs, the header WARNING, CAUTION, or NOTE shall not be repeated above each paragraph.	Chapter 6.2.2 paragraph 2.10.1.
Multiple warnings, cautions, and notes	Warnings, cautions, and notes on unrelated topics that pertain to the same task, procedure, or step(s) may be grouped under one heading. When grouping warnings, cautions, or notes each warning, caution, or note shall be separated by at least one line and may be bulleted.	Chapter 6.2.2 paragraph 2.10.1.
Indentation	Warning, caution, and note text shall be indented on the right and left.	Chapter 6.2.2 paragraph 2.10.1.
Printing warnings, cautions, and notes	Warnings, cautions, or notes shall not be divided so that first lines or groups of icons appear on one page and remaining lines or group of icons appear on another page. In printed publications, warning, cautions, and notes shall appear on the same page as the associated text unless the length of the warning, caution, or note exceeds a full page. (JS-068)	Chapter 6.2.2 paragraph 2.10.1.
First aid	Warnings shall include basic first aid instructions/guidance in the event of exposure/injury (e.g., flush eyes with water, seek medical attention, cleanse affected area with soap and water, etc).	Chapter 6.2.2 paragraph 2.10.1.
Icons	Warnings may have safety or hazard icon(s) and shall appear below the warning header. Cautions may have icon(s) depicting equipment damage and shall appear below the caution header.	Chapter 6.2.2 paragraph 2.10.1.1.2.
Use of numbered notes	Numbered notes shall not be used within a data module.	Chapter 6.2.2 paragraph 2.10.1.

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5.138.8.2 Project decisions.

None.

5.138.9 Change marks.

5.138.9.1 Army business rules.

The following table contains Army business rules related to change marks.

TABLE LVIII. Army business rules – change marks.

Topic	Army Requirements	S1000D Reference
Issue number	All pages of a changed data module shall include the applicable issue number located on the outer edge of the page opposite the binding side.	Chapter 6.2.2 paragraph 2.13.
Change bars	Changes shall be presented with a change bar in the form of a vertical black line in the outside margin adjacent to the changed lines. (JS-069)	Chapter 6.2.2 paragraph 2.13.
Tables	Changes to tables shall be indicated by a vertical bar opposite the updated, deleted, or added table row. A change bar shall be placed adjacent to the table title only if the table title is changed or a new table is added. (JS-072)	Chapter 6.2.2 paragraph 2.13.
Illustrations – General	Changes to illustrations shall be indicated by a pointing hand symbol opposite the updated content. Revisions confined to the same general area of an illustration shall be indicated only once.	Chapter 6.2.2 paragraph 2.13.
Illustrations – Callouts	If a callout is deleted from an illustration, the word "DELETED" may be placed after the appropriate number in the legend, if applicable. If a callout is deleted from an illustration without a legend, such as those used to supplement illustrated parts data, the word "DELETED" may be placed on the illustration at the end of the leader line.	Chapter 6.2.2 paragraph 2.13.

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TABLE LVIII. Army business rules – change marks - Continued.

Topic	Army Requirements	S1000D Reference
Illustrations – Index numbers	When an illustration is changed, index numbers added between existing numbers may be the same as the preceding index number with added alpha characters. This system may also be used in basic manuals when errors are discovered so late in preparation that renumbering of all following index numbers would delay submittal. Index numbers with added alpha characters shall be eliminated for a complete revision.	Chapter 6.2.2 paragraph 2.13.
Illustrations – References	When an illustration contains embedded references (this practice is highly discouraged) to other illustrations or tables, the referenced table and illustration numbers shall not be changed. When an illustration or table, in the data module, is added or deleted prior to the referenced table or illustration the use of point illustration or table number is permitted and shall be in accordance with the LPD plan.	Chapter 6.2.2 paragraph 2.13.
Presentation of data module titles in the reference table	Data module titles shall be presented in the reference table	Chapter 6.2.2 paragraph 2.13.

5.138.9.2 Project decisions.

5.138.9.2.1 Presentation of publication module/non S1000D publication titles in the reference table.

The project shall decide whether to present the title (**`<pmTitle>`**/**`<externalPubTitle>`**) or the short title (**`<shortPmTitle>`**/**`<shortExternalPubTitle>`**), or both, in the reference table.

5.138.9.2.2 Inline presentation of non S1000D publication titles.

The project shall decide whether to present the external publication code (**`<externalPubCode>`**), the title (**`<externalPubTitle>`**) or the short title (**`<shortExternalPubTitle>`**) as the inline reference.

5.138.9.2.3 Presentation of name of spares, supplies and support equipment.

The project shall decide whether to present the name (**`<name>`**) or the abbreviated alternate name (**`<shortName>`**), as the cross-reference in the text.

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5.138.10 References.

5.138.10.1 Army business rules.

The following table contains an Army business rule related to references.

TABLE LIX. Army business rules – references.

Topic	Army Requirements	S1000D Reference
Presentation of references.	Page-oriented publication references to data modules shall include the referenced data module title followed by the data module sequence number (e.g., "See Radio XYZ – Safety Summary [DMC]."). References shall not include the issue number of the referenced data module.	Chapter 6.2.2 paragraph 2.14.

5.138.10.2 Project decisions.

None.

5.138.11 Aircraft operator style and format.

5.138.11.1 Army business rules.

5.138.11.1.1 Linear dimensions.

Except for weight and balance values in Chapter 6 (refer to 5.115.1.13) of an Operator's manual, linear dimensions shall be stated in feet and inches or in inches and decimal fractions, unless otherwise specified by the acquiring activity. No more than 3 decimal places shall be used. When dimensions are less than a foot, they shall be expressed in inches and decimal fractions. All dimensions, tolerances, clearances, measurements, and decimal equivalents appearing in Chapters 8 (refer to 5.115.1.15) and 9 (refer to 5.115.1.16). of an Operator's manual shall be stated in bold capital lettering in the text and on illustrations.

5.138.11.1.2 Use of manufacturer's names.

The use of manufacturers' names in the operator's manual shall be prohibited without prior approval of the acquiring activity.

5.138.11.1.3 Emergency procedures.

Pages of the operator's manual (Chapter 9) that contain emergency procedure information/steps shall have heavy black diagonal lines around three edges.

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5.138.11.1.4 Designator symbols.

Designator symbols such as 🅱 shall be used in conjunction with text headings, text contents, and illustrations to show limited applicability of the material. Designator symbols shall be defined by the use of the element **`<inlineSignificantData>`** and the attribute **`significantParaDataType`** with the value "**`psd55`**" (refer to 5.48.1.30). If more than one model is described or the aircraft has a variety of configurations, one or more symbols may follow a text heading or illustration title to highlight that part of the text that pertains to the aircraft or systems in question. If the material applies to all series and configurations, no designator symbols shall be used. Where practicable, descriptive information shall be condensed and combined for all series to avoid duplication. A table showing designator symbols shall be included.

5.138.11.1.5 Checklist titles.

All checklist titles, such as "BEFORE EXTERIOR CHECK" shall be boldfaced capital type. Checklist entries shall be listed numerically and shall be blocked. Checklist entries shall have the first letters of each line of type aligned. Placarded items shall be in boldfaced capital letters. Paragraphs shall have type returned to the left margin.

5.138.11.2 Project decisions.

None.

5.139 S1000D Chapter 6.2.3 – Information presentation/use – Layout.

The page layout examples in Chapters 6.2.3 though 6.2.3.5 are not to be interpreted as the only interpretation of S1000D layout rules. No new requirements are described in these chapters.

5.140 S1000D Chapter 6.3.1 – IETP – Output specification.

5.140.1 General.

5.140.1.1 Army business rules.

The following table contains an Army business rule related to IETP output specification.

TABLE LX. Army business rules – IETP output specification.

Topic	Army Requirements	S1000D Reference
Use of S1000D Chapter 6.3.1	The requirements and guidance of the S1000D Chapter titled, "IETP Output specification" as augmented by these business rules shall be mandatory. (JS-073)	Chapter 6.3.1 paragraph 1.

5.140.1.2 Project decisions.

None.

5.140.2 Title bar.

5.140.2.1 Army business rules.

The following table contains an Army business rule related to title bar.

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TABLE LXI. Army business rules – title bar.

Topic	Army Requirements	S1000D Reference
General	The Title Bar shall contain the following items: security classification of the displayed PM (if the publication is classified), PM title, and PMC. The security classification shall be presented first. (JS-075)	Chapter 6.3.1 paragraph 2.3.2.

5.140.2.2 Project decisions.

None.

5.140.3 Inner shell.

5.140.3.1 General.

5.140.3.1.1 Army business rules.

The following table contains an Army business rule related to general requirements for the inner shell.

TABLE LXII. Army business rules – inner shell.

Topic	Army Requirements	S1000D Reference
General	The inner shell shall contain, as a minimum: a. Reset area b. Table of contents panel c. Navigation panel d. Subtitle bar e. Main menu bar f. Main content area (JS-077)	Chapter 6.3.1 paragraph 2.3.3.

5.140.3.1.2 Project decisions.

5.140.3.1.2.1 Main menu bar.

By project decision, the main menu bar may contain additional project functions appearing to the right of the nine mandatory functions. Additional functions may optionally be added to the additional information bar.

5.140.3.1.2.2 Additional information bar.

The project shall decide if the inner shell will contain an additional information bar. The additional information bar can be used if additional functions are required, e.g., ordering of spares. It is presented below the main menu bar and shall include the functionality to be toggled on and off.

5.140.3.2 Inner shell status bar.

5.140.3.2.1 Army business rules.

The following table contains Army business rules related to the inner shell status bar.

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TABLE LXIII. Army business rules – inner shell status bar.

Topic	Army Requirements	S1000D Reference
General	The status bar shall be a horizontal bar located at the bottom of the inner shell. The status bar shall contain status information including status indicators and icons for active (persistent) warnings, cautions, and notes. The status bar may be toggled on and off when there are no persistent alert icons. The status bar shall not be toggled off when persistent alert icons are displayed.	Chapter 6.3.1 paragraph 2.3.3.
Toggle	The inner shell status bar shall have the capability to be toggled on or off.	Chapter 6.3.1 paragraph 2.3.3.

5.140.3.2.2 Project decisions.

None.

5.140.3.3 Table of contents panel.

5.140.3.3.1 Army business rules.

The following table contains Army business rules related to the table of contents panel.

TABLE LXIV. Army business rules – table of contents panel.

Topic	Army Requirements	S1000D Reference
General	The table of contents panel shall include at a minimum (links to): a. Table of contents b. Safety summary (as applicable) c. List of illustrations d. List of tables (JS-078)	Chapter 6.3.1 paragraph 2.3.4.
TOC order	TOC information shall be displayed in the order mandated by the applicable content selection matrix.	Chapter 6.3.1 paragraph 2.3.4.
TOC items	TOC items shall be generated from every data module title.	Chapter 6.3.1 paragraph 2.3.4.

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TABLE LXIV. Army business rules – table of contents panel - Continued.

Topic	Army Requirements	S1000D Reference
TOC initial display	When the TOC is initially displayed only the first level (publication module and first level nested publication modules) items shall be shown. When subordinate items are collapsed, an expand indicator shall be displayed before the item name, this is shown as a plus sign button. Clicking the expand indicator displays the subordinate items and changes the indicator to a collapse indicator, shown as a minus sign button.	Chapter 6.3.1 paragraph 2.3.4.
Front and rear matter	Information that is normally considered part of the front and rear matter but are typically not part of the page-based table of contents, shall be accessible from the IETPs table of contents or the navigation panel.	Chapter 6.3.1 paragraph 2.3.4.
TOC References	TOC references shall require a single click.	Chapter 6.3.1 paragraph 2.3.4.

5.140.3.3.2 Project decisions.

5.140.3.3.2.1 Additional Table Of Contents (TOC) items.

The project shall decide the use of additional items in the TOC.

5.140.3.4 Reset area.

5.140.3.4.1 Army business rules.

The following table contains Army business rules related to the reset area.

TABLE LXV. Army business rules – reset area.

Topic	Army Requirements	S1000D Reference
General	The mandatory reset area provides a special mechanism for navigation and preferences.	Chapter 6.3.1 paragraph 2.3.5.
Placement	The reset area shall be large enough to be visible and user selectable. It shall be located above the TOC panel and to the left of the Main Menu Bar and Subtitle Bar. It shall be resized with the TOC panel, navigation panel, and classification bar.	Chapter 6.3.1 paragraph 2.3.5.

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TABLE LXV. Army business rules – reset area - Continued.

Topic	Army Requirements	S1000D Reference
Use of a compass rose icon in the reset area	If a compass rose icon is used, it shall be a graphical representation of the Webdings character (108) for a compass rose. (JS-080)	Chapter 6.3.1 paragraph 2.3.5.
Functions	The reset area shall provide the following mandatory functions: a. Reset user interface to standard default view. b. View revision summary/link to highlights c. Exit reset area menu d. Suspend (conditional). e. Restart (conditional) If any of the above are not applicable to the data module being displayed, it shall be grayed out. (JS-081)	Chapter 6.3.1 paragraph 2.3.5.
Suspend and restart	Suspend and restart functionalities are required if the IETP includes state table functionality. They are prohibited if the IETP does not include the use of a state table.	Chapter 6.3.1 paragraph 2.3.5.

5.140.3.4.2 Project decisions.

5.140.3.4.2.1 General.

The reset area may provide the following optional functions:

a. Print screen – prints the entire screen, even content that shall be scrolled to view on screen.
b. Print Data Module – prints the entire data module, which may include more information than the screen.
c. Change to page view – displays a printable view of the data module formatted (to the extent possible) as a MIL-specification compliant printed manual.
d. Open new IETP.
e. Toggle browse mode.
f. Toggle screen panels/bars on and off – this functionality includes individual toggles for each panel or bar that can be minimized.
g. Drill up/drill down.
h. Other custom functions as determined by the acquiring activity.

5.140.3.5 Navigation panel.

5.140.3.5.1 Army business rules.

The following table contains Army business rules related to the navigation panel.

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TABLE LXVI. Army business rules – navigation panel.

Topic	Army Requirements	S1000D Reference
Placement	The navigation panel shall appear above the main content area. (JS-074)	Chapter 6.3.1 paragraph 2.4.
Subtitle bar.	The subtitle bar is mandatory and may have the capability to be toggled on or off.	Chapter 6.3.1 paragraph 2.4.1.
Subtitle bar contents.	The Subtitle Bar shall contain the following items: security classification of the displayed data module (if the data module or the publication module is classified), the data module title, and DMC. The security classification shall be presented first. (JS-076)	Chapter 6.3.1 paragraph 2.4.1.
Security markings	If the data module content is classified, security markings shall be displayed in the subtitle bar as well as the title bar of the outer shell.	Chapter 6.3.1 paragraph 2.4.1.
Main menu bar	The main menu bar is mandatory and may have the capability to be toggled on or off.	Chapter 6.3.1 paragraph 2.4.2.
IETP main menu bar contents	The main menu bar shall provide the following minimum set of mandatory navigation and control functions, which shall be made available to the user and common to all IETPs. The functions shall be provided in the following exact order: Previous, Next, TOC, History, Search, Print, Feedback, Exit, Help, and IDSTATUS. (JS-082)	Chapter 6.3.1 paragraph 2.4.2.
Cascading menus	Cascading menus may appear as a child of a function when selected. In a drop-down menu, this appears next to the function selected. There may be several levels of cascading menus. Functions that are not active during any rendering shall be presented as disabled (grayed out).	Chapter 6.3.1 paragraph 2.4.2.
Print icon	The Print icon function provide access to a menu allowing the user to choose either Print Screen or Print Data Module. The Print Screen function is a part of the operating system and shall not be additionally included as an IETP function.	Chapter 6.3.1 paragraph 2.4.2.6.

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TABLE LXVI. Army business rules – navigation panel - Continued.

Topic	Army Requirements	S1000D Reference
Custom IETP functions	Any custom functions that the IETP provides shall be placed in the additional information bar.	Chapter 6.3.1 paragraph 2.4.3.
Session Control	Session control is the ability to stop and start an IETP session in the middle of work. Session control shall involve saving the state of the session to re-establish the session back to the previous state before the interruption. IETPs shall support the "complete" (save and update history file) and "suspend/restart" functionality. The "abort" function shall only be allowed in "browse" mode on the end-user client.	Chapter 6.3.1 paragraph 2.4.3.
IETP busy	If the IETP viewer is expected to be busy for more than 2 seconds, the cursor shall change to an hourglass until the busy condition passes. Once the busy condition passes, the cursor shall return to its previous form.	Chapter 6.3.1 paragraph 2.4.3.

5.140.3.5.2 Project decisions.

None.

5.140.3.6 Main content area.

5.140.3.6.1 Army business rules.

None.

5.140.3.6.2 Project decisions.

None.

5.140.4 Icons.

5.140.4.1 Army business rules.

5.140.4.1.1 Session control icons.

The following table contains the preferred session control icons. The exact icons provided are not required, but icons used shall match the visual intent of the icons provided.

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TABLE LXVII. Session control icons.

SESSION	DESCRIPTION	INDICATOR	ICON
Complete	Normal exit save and update history. Clear state table.	Icon: Check Mark (Unicode = E3B0) Text: Complete (Optional)	✓
Suspend	Save current state and do not update history.	Icon: Pause (two vertical bars) (Unicode = E0CB) Text: Pause Session (Optional)	⏸
Restart	Reinstate previous suspended session.	Text: Session Restart	Session Restart
Abort	Browse only - Do not save session or update history. Clear state table.	Icon: Rain Clouds (E16A) Text: Abort (Optional)	☔

5.140.4.1.2 Bookmark icons.

The following table contains the preferred bookmark icons. The exact icons provided are not required, but icons used shall match the visual intent of the icons provided.

TABLE LXVIII. Bookmark icons.

BOOKMARK	FUNCTION	INDICATOR	ICON
Create	Shall ask whether creating or navigating to Bookmark.	Icon: Open Book (Unicode = E005) Location: Additional information bar.	🕮
Goto	Shall ask whether creating or navigating to Bookmark Navigating to a bookmark, the TOC shall be updated and the content pane shall display bookmark destination	Icon: Open Book (Unicode = E005) Location: Additional information bar.	🕮
Minimized	Indicates location is a bookmark.	Icon: Open Book (Unicode = E005) Location: Content pane.	🕮

5.140.4.1.3 Annotation function icons.

The following table contains the preferred annotation function icons. The exact icons provided are not required, but icons used shall match the visual intent of the icons provided.

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TABLE LXIX. Annotation function icons.

ELEMENT	FUNCTION	INDICATOR	ICON
Create User Note	A dialog box is displayed to insert the user note at the current cursor location.	Icon: Black (public) and blue (personal) hand with pen (Unicode = E01E) Location: Additional information bar.	✍
User Note Minimized	Selecting opens the user note as a dialog message box.	Icon: Black (public) and blue (personal) hand with pen (Unicode = E01E) Location: Content pane.	✍

5.140.4.1.4 Redline function icons.

The following table contains the preferred redline function icons. The exact icons provided are not required, but icons used shall match the visual intent of the icons provided.

TABLE LXX. Redline function icons.

ELEMENT	FUNCTION	INDICATOR	ICON
Redline mode	Toggle on and off redline functionality	Icon: Red pencil (Unicode = E000) Location: Additional information bar.	✎
Create comment	A dialog box is displayed to insert the redline comment at the current cursor location.	Icon: Piece of paper with upper right corner turned in (Unicode = E10E) Location: Additional information bar.	
Comment minimized	Selecting opens the redline comments as a dialog message box.	Icon: Piece of paper with upper right corner turned in (Unicode = E38F) Location: Content pane.	🗋

5.140.4.1.5 Browsing display icons.

The following table contains the preferred browsing display icons. The exact icons provided are not required, but icons used shall match the visual intent of the icons provided.

TABLE LXXI. Browsing display icons.

ELEMENT	FUNCTION	INDICATOR	ICON
Begin	Initiates browse mode capability by single click on icon button. Denotes to user the system is in browse mode	Icon: Eyeglasses unselected (Unicode = E003) Location: Additional information bar.	👓
Browse previous	Act similar to PREVIOUS functions except no interaction system variables are set.	Icon: Double left pointing arrows (unicode = 21C7) Location: Additional information bar.	⇇

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TABLE LXXI. Browsing display icons - Continued.

ELEMENT	FUNCTION	INDICATOR	ICON
Browse next	Act similar to NEXT functions except no interaction system variables are set.	Icon: Double right pointing arrows (Unicode = 21C9) Location: Additional information bar.	⇉
Mode indicator	Denotes to user the system is in browse mode.	Icon: Eyeglasses (Unicode = E003) Text: Browse Mode On Location: Status bar	
	Denotes to user the system is not in browse mode.	Icon: Eyeglasses (Unicode = E003) with "no or don't" slash (Unicode = E3B7) Text: Browse Mode Off Location: Status bar	
End	Ends browse mode capability by single click on icon button. Denotes to user the system is not in browse mode.	Icon: Eyeglasses unselected (Unicode = E003) Location: Additional information bar.	

5.140.4.1.6 Navigation icons.

The following table contains the preferred navigation icons. The exact icons provided are not required, but icons used shall match the visual intent of the icons provided.

TABLE LXXII. Navigation icons.

ELEMENT	FUNCTION	INDICATOR	ICON
Save to a disk	Save a graphic to a disk	Icon: 3.5" Floppy Disk (Unicode = E01B) Location: Navigation panel	
Print	Print the graphic	Icon: Printer (Unicode = E396) Location: Navigation panel	
E-Mail	E-mail the graphic	Icon: Unopened envelope (Unicode = E009) Location: Navigation panel	
Save to a folder	Saving graphic to graphic/photo area folder	Icon: Folder (Unicode = E00F) Location: Navigation panel	
Zoom In	Toggle on and off graphic zoom in function	Icon: Magnifying glass with plus (Graphic) (Unicode = 2BEA) Location: Navigation panel	
Zoom Out	Toggle on and off graphic zoom out function	Icon: Magnifying glass with minus (Graphic) (Unicode = 2BEB) Location: Navigation panel	
Pan graphic	Toggle on and off pan graphic	Icon: Open hand (Unicode = E028) Location: Navigation panel	
	Move graphic in the pane	Icon: Open hand (Unicode = E028) Location: Content pane	

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5.140.4.2 Project decisions.

5.140.4.2.1 Icons.

The project shall decide if the main menus bar functions are presented as text, graphics, or text and graphics. Graphical presentation of the functions is the preferred method. If graphic icons are implemented, the icons provided at the LOGSA Web site (https://www.logsa.army.mil/mil40051/tmsspecs.cfm) are mandatory and the function text shall be presented on mouseover.

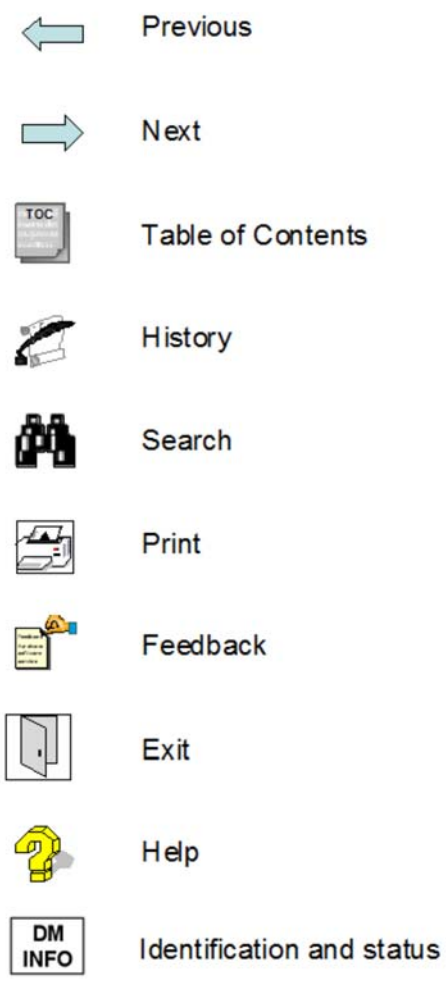

FIGURE 24. Main menu bar navigation icons.

5.140.4.2.2 Printing of classified data.

The project shall decide whether or not to allow the printing of classified data. If not allowed, the print function shall be disabled when classified data is presented in the IETP viewer.

5.140.5 Style and format.

5.140.5.1 Army business rules.

The following table contains Army business rules related to style and format.

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TABLE LXXIII. Army business rules – Style and format.

Topic	Army Requirements	S1000D Reference
Use of color	Any colors used shall comply with the rules in Chapter 3.9.2. The recommended color scheme for standard text display shall be black on a white background.	Chapter 6.3.1 paragraph 2.5.2.
Font (general) and background colors	The text shall be black (#000000 or #000033) arial font except as noted elsewhere. Background shall be white (#FFFFFF) except as noted elsewhere. This aids printing without loss of content. There may be operational exceptions such as night operations and where color has special meaning. (JS-083)	Chapter 6.3.1 paragraph 2.5.3.
Font (specific)	Arial font shall be used for all titles, headings, narrative, callouts and special characters.	Chapter 6.3.1 paragraph 2.5.3.
IETP font size	Text shall not be displayed smaller than 8 points.	Chapter 6.3.1 paragraph 2.5.3.

5.140.5.2 Project decisions.

5.140.5.2.1 Font size.

The minimum recommended font size is 12 pt. Based on intended viewing environment, projects may decide upon an alternate minimum font size.

5.140.6 Dialog boxes.

5.140.6.1 Army business rules.

The following table contains Army business rules related to dialog boxes.

TABLE LXXIV. Army business rules – Dialog boxes.

Topic	Army Requirements	S1000D Reference
Curser movement	Cursor movement within dialog boxes shall be consistent throughout the IETP.	Chapter 6.3.1 paragraph 2.6.
Curser location	The default location of the cursor (the location of the cursor when the dialog box is initially displayed) in a dialog box shall be at the first selectable item (uppermost).	Chapter 6.3.1 paragraph 2.6.

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TABLE LXXIV. Army business rules – Dialog boxes - Continued.

Topic	Army Requirements	S1000D Reference
Tab key	Cursor forward movement shall be accomplished through the Tab key or pointing device, such as a mouse, trackball, or stylus. When tabbed, the cursor shall move only to items, which require input from the user. The user shall be able to move the cursor back within the dialog box either through the Shift-Tab key or pointing device. Pressing the Enter key when the push button is highlighted shall perform the action associated with the push button.	Chapter 6.3.1 paragraph 2.6.
Push buttons, general	Dialog boxes shall contain graphical controls called push buttons as a means for the user to communicate with the IETP.	Chapter 6.3.1 paragraph 2.6.2.
Push buttons, display	A push button shall be a word or graphic icon on the screen used to select or initiate an action. Push buttons shall be large enough allow positioning of the cursor on the push button. Push buttons shall provide visual feedback when selected. Push buttons shall be found on every type of dialog box. They shall each be single action entities. Push buttons shall indicate selections made or invoke a general action (e.g., "CANCEL" or "OK"). Push button shapes shall be consistent, such as a box, circle, or button. Function push buttons shall contain the name of the selection or action written inside of the shape. Common function push buttons ("OK", "CANCEL", "HELP") shall be displayed along the bottom of the dialog box. The common function buttons shall correspond to completing the last selection before leaving the dialog box.	Chapter 6.3.1 paragraph 2.6.2.

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TABLE LXXIV. Army business rules – Dialog boxes - Continued.

Topic	Army Requirements	S1000D Reference
Push button functions	The common function push buttons shall be displayed in the following order centered along the bottom of the dialog box: "OK", and where they exist, "CANCEL" and "HELP." a. The "OK" push button shall communicate the entered or selected information to the IETP and proceed to the next action. b. The "CANCEL" push button shall not send user-inputted information to the IETP and the IETP shall return to its previous display. c. The "HELP" function shall provide further information about the current dialog box in message dialog box.	Chapter 6.3.1 paragraph 2.6.2.

5.140.6.2 Project decisions.

5.140.6.2.1 Tool tips.

Controls can have tool tips. Tool tips display further information about what the purpose of the control. They appear when the user hovers over the control with the mouse pointer.

5.140.6.2.2 Help.

The optional help function will provide further information about the dialog box. The project shall determine if help will be provided as a dialog function and the decision shall be documented in the functionality matrix (Context Sensitive Help).

5.140.6.2.3 Display.

The project shall specify in their project-specific business rules how the viewer will handle dialogs (pop-up vs. in-line).

5.140.7 Lists.

5.140.7.1 Army business rules.

None.

5.140.7.2 Project decisions.

None.

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5.140.8 Steps/Procedural.

5.140.8.1 Army business rules.

The following table contains Army business rules related to procedural steps.

TABLE LXXV. Army business rules – procedural steps.

Topic	Army Requirements	S1000D Reference
General	Procedural steps and their corresponding illustrations shall be presented together. Illustrations shall not be presented with non-corresponding steps.	Chapter 6.3.1 paragraph 2.8.

5.140.8.2 Project decisions.

None.

5.140.9 Tables.

5.140.9.1 Army business rules.

The following table contains Army business rules related to tables.

TABLE LXXVI. Army business rules – tables.

Topic	Army Requirements	S1000D Reference
Table titles	Table titles shall appear above the table. If a table is scrollable, the table shall have "sticky" column headers.	Chapter 6.3.1 paragraph 2.9.
Shading	If shading alternate rows is decided by the project, the alternate shaded rows shall be gray (Hexadecimal value: #CECECE).	Chapter 6.3.1 paragraph 2.9.
IETP footnote presentation	For IETP presentations, footnotes shall be linked from the marker to their location at the end of the table. Mouse over of the marker may be used to display the footnote in addition to the hyperlink. (JS-085)	Chapter 6.3.1 paragraph 2.9.1.1.

5.140.9.2 Project decisions.

5.140.9.2.1 Background.

It is preferred that the background be white. Where the table is long, it can be acceptable to change the background colors of alternate rows to aid readability.

5.140.9.2.2 Display.

Tables may appear in-line or within the inner shell main content area in a pane separate from the text content. Tables may, by exception and project decision, appear in a separate window if necessary for clear and proper display.

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5.140.10 Hyperlinks.

5.140.10.1 Army business rules.

The following table contains Army business rules related to hyperlinks.

TABLE LXXVII. Army business rules – hyperlinks.

Topic	Army Requirements	S1000D Reference
Presentation of references.	References to data modules in IETPs shall include the referenced data module title and optionally the data module code (e.g., "See Radio XYZ – Safety summary [DMC-RADIOXYZ-001-001-23-4750-01000-012J-A].").	Chapter 6.3.1 paragraph 2.10.
References to tables and figures	References to tables and figures shall be hyperlinked, and may be presented as text or as inline thumbnails or icons.	Chapter 6.3.1 paragraph 2.10.
Links to multimedia	Links to view animations, videos, etc., shall require a single click of a text hotspot or an icon hotspot. The object shall display in a separate pane or application window. The links or hotspots for multimedia (animation, video, etc.) clips shall precede the step(s) to which they apply. A note shall also precede the step(s) to which the multimedia clips apply which tells the user to follow the written instructions after viewing the multimedia clips and which step(s) the multimedia clips apply to.	Chapter 6.3.1 paragraph 2.10.
Inline figures and tables	A single click of an inline figure or table reference shall display the object in a separate pane of the main content area.	Chapter 6.3.1 paragraph 2.10.
Pop up windows	Pop up windows to display a graphic or table shall only be used if necessary to display large and very detailed graphics or tables. To avoid problems related to screen stacking, all pop up windows shall close when the user navigates to or views switches to other content.	Chapter 6.3.1 paragraph 2.10.
Display	Hyperlink formatting shall be consistent throughout the IETP.	Chapter 6.3.1 paragraph 2.10.

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5.140.10.2 Project decisions.

5.140.10.2.1 Presentation of references.

The project shall decide if the data module codes for referenced data modules will be presented inline as part of the references (e.g., "See Radio XYZ – Safety summary [DMC-RADIOXYZ-001-001-23-4750-01000-012J-A]."), as mouse over tool tips, or not at all.

5.140.11 Warnings, cautions, and notes.

5.140.11.1 Army business rules.

The following table contains Army business rules related to warnings, cautions, and notes.

TABLE LXXVIII. Army business rules – warnings, cautions, and notes.

Topic	Army Requirements	S1000D Reference
Placement	Warnings and cautions shall appear in-line as follows: a. For data modules, they shall follow the preliminary requirements and precede any procedures or tasks. b. For tasks, they shall follow the title of the associated task. c. For procedures, they shall follow the title of the associated procedure. d. For steps, they shall precede the associated step(s). If a warning or caution applies to multiple steps, it shall precede the first step it applies to and indicate in the warning or caution the steps to which it applies. e. Alert paragraphs shall be indented from left and right margins.	Chapter 6.3.1 paragraph 2.11.
Multiple warnings and cautions, general	Warnings and cautions on unrelated topics that pertain to the same task, procedure or step(s) may be grouped under one heading. When grouping warnings and cautions, each warning or caution shall be separated by at least one line and may be bulleted.	Chapter 6.3.1 paragraph 2.11.

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TABLE LXXVIII. Army business rules – warnings, cautions, and notes - Continued.

Topic	Army Requirements	S1000D Reference
Multiple warnings and cautions, order	If multiple warnings and cautions apply to the same text, warnings shall appear first and cautions shall appear second. If notes are also applicable to the text, they shall appear after the applicable warnings and cautions.	Chapter 6.3.1 paragraph 2.11.
Display	The WARNING or CAUTION shall be displayed described below. Headers shall not be numbered. When a warning or caution consists of two or more paragraphs, the header WARNING or CAUTION shall not be repeated above each paragraph.	Chapter 6.3.1 paragraph 2.11.
Warning header	The warning header shall have the word WARNING in white text preceded with a white exclamation point surrounded with a black triangle (⚠) and inside a red rectangle box with a black border. Warnings may have safety or hazard icon(s) and shall appear below the warning header. The warning header, icons, text, and "OK" pushbutton shall be enclosed within a larger white box with a red border.	Chapter 6.3.1 paragraph 2.11.
Caution header	The caution header shall have the word CAUTION in black text preceded with a white exclamation point surrounded with a black triangle (⚠) and inside a yellow rectangle box with a black border. Cautions may have icon(s) depicting equipment damage and shall appear below the caution header. The header, icons, text, and "OK" pushbutton shall be enclosed within a larger white box with a yellow border.	Chapter 6.3.1 paragraph 2.11.
Numbering	Warning and caution headers shall not be numbered. When a warning or caution consists of two or more paragraphs, the header WARNING or CAUTION shall not be repeated above each paragraph.	Chapter 6.3.1 paragraph 2.11.

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TABLE LXXVIII. Army business rules – warnings, cautions, and notes - Continued.

Topic	Army Requirements	S1000D Reference
First aid	Warnings shall include basic first aid instructions/guidance in the event of exposure/injury (e.g., flush eyes with water, seek medical attention, cleanse affected area with soap and water, etc).	Chapter 6.3.1 paragraph 2.11.
Acknowledgement of alerts	If acknowledgment of alerts is used, alerts shall be displayed and acknowledged as follows: a. An "OK" pushbutton in the alert shall be used for acknowledgment. The text following the alert shall not be displayed until the alert is acknowledged. The alerts shall stay inline after the user acknowledges the alert. All functions (including the scrolling function if provided) shall be disabled until the alert has been acknowledged. b. When multiple alerts are displayed in the same pane, the "OK" pushbutton in each alert shall be used for acknowledgment. The text following an alert shall not be displayed until that alert is acknowledged. c. When alerts apply to the entire task or procedure, the alerts shall be displayed in-line prior to the applicable data. d. After an alert has been acknowledged, the applicable persistent alert icon shall be displayed in the status bar of the inner shell and remain persistent until the applicable step, task and/or procedure has been completed. Clicking on the persistent alert icon, at any time during the task or procedure, shall display the applicable alert(s).	Chapter 6.3.1 paragraph 2.11.

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TABLE LXXVIII. Army business rules – warnings, cautions, and notes - Continued.

Topic	Army Requirements	S1000D Reference
Icons	The following rules apply to warning and caution icons. a. Equipment damage caution icons shall be approved by the acquiring activity. Icons used shall be defined in the General Data data module (info code 010A) under the list of abbreviations/acronyms. b. The use of standardized icons to improve readers' recognition of hazards is required (https://www.logsa.army.mil/mil40051/tmsspecs.cfm). Additional non-standardized warning icons shall be approved by the acquiring activity. c. Hazards that result from a combination of materials shall clearly be identified to indicate that mixing or combining the materials creates the hazard. d. Hazardous materials warnings with icons consist of a WARNING header, the icon(s), and a full description of the hazardous material and the precautions to be taken.	Chapter 6.3.1 paragraph 2.11.
Hazardous materials icons	Hazardous materials icons shall be used in cases where hazardous materials are present. (JS-086)	Chapter 6.3.1 paragraph 2.11.
Notes, placement	Notes shall appear in-line as follows: a. For data modules, they shall follow the preliminary requirements and precede the procedures or tasks. b. For tasks, they shall follow the title of the associated task. c. For procedures, they shall follow the title of the associated procedure. d. For steps, they shall precede the associated step.	Chapter 3.9.3 paragraph 2.3.

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TABLE LXXVIII. Army business rules – warnings, cautions, and notes - Continued.

Topic	Army Requirements	S1000D Reference
Multiple notes	If multiple notes apply to the same text, the warnings shall appear first, cautions shall appear second, and notes shall appear last. Notes on unrelated topics that pertain to the same task, procedure or step(s) may be grouped under one heading. Each note shall be separated by at least one line and may be bulleted.	Chapter 3.9.3 paragraph 2.3.
Note numbering	The NOTE headers shall not be numbered. When a note consists of two or more paragraphs, the header NOTE shall not be repeated above each paragraph.	Chapter 3.9.3 paragraph 2.3.
Note headers	The note header shall have the word NOTE in blue text inside a white rectangle box with a black border. Notes may have an optional note icon below the note header. The note header, icons, and text shall be enclosed within a larger white box with a blue border. Notes used in the manual other than a task, a procedure or a step shall have the header NOTE in bold and centered above the note text. The note text shall be indented on right and left.	Chapter 3.9.3 paragraph 2.3.
Acknowledgement	A note shall be acknowledged if it is deemed important enough by the acquiring activity. The only push button in the note message dialog box shall be the "OK" push button which shall be used for acknowledgement. Unlike warnings and cautions, text that follows a note may be viewable prior to acknowledgement and a persistent note icon shall not be displayed in the status bar of the inner shell after the note is acknowledged.	Chapter 6.3.1 paragraph 2.11.

5.140.11.2 Project decisions.

5.140.11.2.1 Acknowledgement of alerts.

The project shall determine if acknowledgement of alerts will be required.

5.140.12 Change marks.

5.140.12.1 Army business rules.

The following table contains Army business rules related to change marks.

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TABLE LXXIX. Army business rules – change marks.

Topic	Army Requirements	S1000D Reference
General	Each change shall be discretely marked or identified in the IETP.	Chapter 6.3.1 paragraph 2.12.
Appearance	Change marks shall be vertical bars adjacent to the line where a change occurred. The text is not annotated with what has been revised only that a revision has occurred.	Chapter 6.3.1 paragraph 2.12.
Links	There shall not be links from changed material to the highlights page.	Chapter 6.3.1 paragraph 2.12.
Reason for update	Reason for update shall not be displayed to the user (via pop up or any other means).	Chapter 6.3.1 paragraph 2.12.

5.140.12.2 Project decisions.

None.

5.140.13 Acronyms and abbreviations.

5.140.13.1 Army business rules.

The following table contains Army business rules related to acronyms and abbreviations.

TABLE LXXX. Army business rules – acronyms and abbreviations.

Topic	Army Requirements	S1000D Reference
General	Any acronyms and abbreviations that are in the displayed data module can have a function that displays the meaning as a tool tip when the cursor hovers over the acronym or abbreviation.	Chapter 6.3.1 paragraph 2.13.

5.140.13.2 Project decisions.

None.

5.140.14 Illustrations.

5.140.14.1 Army business rules.

The following table contains Army business rules related to illustrations.

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TABLE LXXXI. Army business rules – illustrations.

Topic	Army Requirements	S1000D Reference
Modes of visual indication	The following shall be the three acceptable modes of visual indication of hotspots in graphics: a. Persistent visual indication that an area is hot. b. Cursor changes shape or color when cursor is over a hotspot area. c. Object changes shape or color when cursor is over a hotspot area.	Chapter 6.3.1 paragraph 2.14.
Borders	Border rules and boxes shall not be used for single illustrations, but are used to separate multi-section illustrations in the same pane or for locator/detail views.	Chapter 6.3.1 paragraph 2.14.
Tool tips	Tooltips shall not be used in IPD graphics.	Chapter 6.3.1 paragraph 2.14.

5.140.14.2 Project decisions.

5.140.14.2.1 Pop up windows.

The project shall decide on one of two methods for displaying pop ups and use that method consistently throughout the IETP: replacing the current window (i.e., inline), or in a separate window on top of the current window (i.e., pop up).

5.140.14.2.2 Tool tips.

The project shall decide on the use of tool tips. If required, hovering over an area of a graphic tool tips can provide some means of descriptive data. Tool tip pop ups shall not interfere with the ability of a user to access any area of the graphic (including access to another tool tip).

5.140.14.2.3 Display.

Illustrations may appear in-line or within the inner shell main content area in a pane separate from the text content. Illustrations may, by exception and project decision, appear in a separate window if necessary for clear and proper display.

5.140.15 Printed output from Interactive Electronic Technical Publication (IETP).

5.140.15.1 Army business rules.

The following table contains Army business rules related to printed output from IETPs.

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TABLE LXXXII. Army business rules – printed output from printed IETPs.

Topic	Army Requirements	S1000D Reference
General	The IETP may provide the capability to print a discrete data module. Beyond the printed technical data, the following additional information shall be printed: Time/Date stamp, classified security marks, and the following statement: "Destruction procedures shall follow unit Standard Operating Procedure (SOP)."	Chapter 6.3.1 paragraph 2.15.

5.140.15.2 Project decisions.

None.

5.141 S1000D Chapter 6.4 – Information presentation/use – Functionality.

5.141.1 Army business rules.

5.141.1.1 Use of the functionality matrix.

The functionality matrix shall be completed and included in contract documents. The use of IETP classes in contracts is disallowed. (JS-087)

5.141.2 Project decisions.

None.

5.142 S1000D Chapter 6.4.1 – Functionality – Background and explanation.

5.142.1 Access.

5.142.1.1 Army business rules.

5.142.1.1.1 Login.

The login shall be used to identify key information by the user and/or weapon system. A password for log on may be required.

5.142.1.1.2 Session control.

Session control shall involve saving the state of the session to re-establish the session back to the previous state before the interruption. IETPs shall support the "complete" (save and update history file) and "suspend/restart" functionality. The "abort" function shall only be allowed in "browse" mode on the end-user client. When specified by the acquiring activity through the IETP functionality matrix, all the following functionalities shall be provided.

5.142.1.1.3 Suspend.

The ability to suspend a session at any time (e.g., for a break or emergency) shall be provided.

5.142.1.1.4 Restart.

A restart function shall be capable of restarting the session at the same point it was suspended.

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5.142.1.1.5 Restart conditions.

At the time of restart, the user shall be advised that some key parameters/condition settings may be out-of-date.

5.142.1.1.6 Exit.

The system shall support the three exit modes.

a. Complete (save and update history)
b. Abort (do not save or update history) (Browse mode only)
c. Suspend (save current session state and do not update history).

5.142.1.2 Project decisions.

None.

5.142.2 Annotations.

5.142.2.1 Army business rules.

5.142.2.1.1 Global data annotations.

Global data annotations (a functionality listed in S1000D, but not in D.5) shall not be acquired as a functionality for Army IETPs. It is a prohibited functionality.

5.142.2.2 Project decisions.

None.

5.142.3 Delivery and distribution.

5.142.3.1 Army business rules.

5.142.3.1.1 Interactive Electronic Technical Publication (IETP) installation.

The following rules apply to IETP installation.

a. Information on installing the disc on the computer and launching the IETP shall be prepared.
b. The installation routine shall have an uninstall capability and shall determine if ample space is available for the install.
c. Installation data shall include instructions for operating the IETP with and without web access.
d. Installation routine shall check for previously installed versions of the IETP and display software and shall prompt the user to indicate whether they want to overwrite older versions of the software and/or IETP.
e. The viewer software shall not have hardcoding of software versions within the viewing software for other software required for use with the viewing software (e.g., Java)
f. The installation information shall be printed and shall be part of the packaging of the disc.

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g. The following types of install/capabilities shall be available to the user.

(1) The minimum installation is loading to the viewer only those files necessary to access the program and data on the disc. This requires that the programs for the IETPs be executable from the disc and be able to read the data from the disc. This is the preferred method. To enable running from disc, all IETP information shall be contained on either 1 CD or 1 DVD unless otherwise specified by the acquiring activity.

(2) Installation of the required files for the viewer to operate as a workstation on a LAN. In these cases, the program and data would be loaded to a server, and the PMA would access the program and data via a LAN. This type of install may be desirable in a flight line or motor pool environment. IETP viewers shall be server-based rather than client-based so that multiple users can view the IETP from LAN or web simultaneously.

(3) Loading the executable program to the hard drive. This will require the data be accessed from the disc. This may be used when multiple CDs for a system use the same reader program and the program is loaded to the hard drive for faster operation.

h. When more than one publication (e.g., IETP, PDF, etc) is resident on a disc, the first information that shall appear on the viewer is the disc content frame. This frame shall provide the publication number and title of all publications that are contained on the disc. Only DA-authenticated publications shall be placed on a DA-authenticated disc or disc set. Unauthenticated commercial publications, contractor publications, command-authenticated publications, etc, shall not be placed on a DA-authenticated disc or disc set.

5.142.3.1.2 Deliverable media.

Unless otherwise directed by the acquiring activity, all maintenance instructions (operators through overhaul (depot)) for major weapon systems and all types of equipment, including test and support equipment, shall be provided on a single CD-ROM or DVD.

5.142.3.1.3 Deliverable contents.

Textual material marked up in accordance with S1000D and the Army business rules shall be referred to as a source file. A complete XML-tagged source file(s) shall be a mandatory part of each final product delivered. XML applications shall contain document instance and a style sheet.

5.142.3.2 Project decisions.

None.

5.142.4 Diagnostics.

5.142.4.1 Army business rules.

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5.142.4.1.1 Non-automatic test equipment.

Troubleshooting procedures using non-automatic test equipment shall be established on a system test concept. To meet the objectives of reduced maintenance downtime and decreased fault detection time, malfunction symptoms shall be identified to specific points of entry into the testing/troubleshooting cycle. Every effort shall be employed to avoid repetition of time consuming end-to-end tests.

5.142.4.1.2 Lookup tables and software.

Lookup tables for manually tested systems or software coding for semi-automatic and automatic systems shall be prepared so the maintenance technician may properly interpret these displays and isolate and correct malfunctions.

5.142.4.2 Project decisions.

None.

5.142.5 External processes.

5.142.5.1 Army business rules.

None.

5.142.5.2 Project decisions.

None.

5.142.6 Graphics.

5.142.6.1 Army business rules.

5.142.6.1.1 Photos.

Photos shall not be the primary instruction to perform the task, but shall be a supplement to the narrative instruction.

5.142.6.2 Project decisions.

None.

5.142.7 Linking.

5.142.7.1 Army business rules.

None.

5.142.7.2 Project decisions.

None.

5.142.8 Navigation and tracking.

5.142.8.1 Army business rules.

5.142.8.1.1 Browse, general.

The following browse capability shall be available.

a. User controlled access mode
b. No tracking of activities

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c. Not rigidly tied to IETP controls

5.142.8.1.2 Browse navigation, general.

The BROWSE PREVIOUS and BROWSE NEXT functions shall act as NEXT and PREVIOUS, but shall not set or reset system variables automatically or through dialogs. Once either BROWSE PREVIOUS or BROWSE NEXT is selected, other navigation functions shall not be available until the user returns to the originating window by invoking the BROWSE EXIT function.

5.142.8.1.3 Browse navigation, logical.

When either the BROWSE PREVIOUS or the BROWSE NEXT function is not logical (such as at the beginning of a string or at a mandatory branch point), only the complementary BROWSE function shall be active. Browse system variables shall be set, activated, and logged to a temporary state table and shall not be posted permanently in the state table.

5.142.8.1.4 Browse, distinct visual indication.

The presentation system shall provide a distinct visual indication that the system is in browse mode.

5.142.8.1.5 Voice navigation.

Voice I/O should be used only as supplemental input/output and navigation. Keyboard and pointing devices should be the primary input, and visual display should be the primary output.

5.142.8.2 Project decisions.

5.142.8.2.1 Audit trail.

The project shall determine which IETP audit trail data is collected for maintenance data collection or other purposes. Maintenance data shall be exported in accordance with MIL-STD-3008.

5.142.9 Printing.

5.142.9.1 Army business rules.

None.

5.142.9.2 Project decisions.

None.

5.142.10 Special content.

5.142.10.1 Army business rules.

5.142.10.1.1 Multimedia.

Multimedia shall never be the primary means of presenting information.

5.142.10.1.2 Animation.

Audio, video, and animation techniques shall only be used in an IETP when it results in enhancing the presentation of the information or makes the procedures more effective.

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5.142.10.1.3 Classified information.

Neither audio nor video shall be provided for classified information.

5.142.10.1.4 Sounds.

Sounds may be used by the technician to identify possible faults or system is producing the correct sound. The technician should take action to hear the sound.

5.142.10.1.5 How to use the manual.

The following rules apply relative to the how to use the IETP data module.

a. A link may be made to an IETP tutorial (when required) to explain use of the IETP.
b. Information to familiarize the user with special or unusual features of the IETP shall be prepared using a descriptive "How to use this manual" data module (info code 018B). Coverage shall lead the user through the IETP and explain important features of the organization and content.
c. Any peculiarities in the basic structure of the IETP shall be described. "How to Use This IETP" information shall not repeat instructions given within the data modules.
d. For all IETPs (excluding operators) the "How to Use This IETP" information shall include an explanation on how and where parts information is located and accessed.
e. For troubleshooting, an explanation on how troubleshooting data is presented in the IETP shall be included. If applicable, an explanation on how failure symptom indexes and malfunction codes corresponds to maintenance operational checks and troubleshooting procedures for individual systems and components shall be provided.
f. An explanation on how to identify hotspots and how they are used and activated shall be provided.
g. An explanation and use of all icons and buttons shall be provided.
h. If a double king sized paged-based paper manual containing the supporting schematic and wiring diagrams has been authorized and developed, a reference to this manual by TM number shall be provided.
i. When a standard form (i.e., DA Form 2408-13, DA Form 2404, etc.) shall be used in the process of performing a task, instructions shall be provided on how these forms are accessed, used, and filled out.
j. Provide an explanation on how to fill out a DA Form 2028 (or equivalent) and emphasize that reference shall be made to a data module by the exact title that is provided in the table of contents.

5.142.10.2 Project decisions.

None.

5.142.11 Updates.

5.142.11.1 Army business rules.

None.

5.142.11.2 Project decisions.

None.

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5.142.12 User operation mode.

5.142.12.1 Army business rules.

None.

5.142.12.2 Project decisions.

None.

5.143 S1000D Chapter 6.4.2 – Functionality – Functionality matrices.

5.143.1 Army business rules.

5.143.1.1 Mandatory functionalities.

The following functionalities are mandatory:

a. Deficiency Report
b. Parts Ordering
c. Table of Contents
d. Logon
e. Exit
f. History of Traversed Links
g. Next and Previous
h. Search - Full Text
i. Print Screen
j. Data Module specific printing
k. Content Sensitive Help
l. Context Sensitive Help
m. Reset Area (Reset User Interface To Standard Default, View Revision Summary, Drill Up/Drill Down, Exit Guide Post)
n. Active Change Indications and markings.

5.143.2 Project decisions.

5.143.2.1 Optional functionalities.

The project shall determine which of the remaining optional functionalities will be acquired. The project shall also determine implementation requirements for these functionalities.

5.144 S1000D Chapter 7 – Information processing.

There are no Army business rules or project decisions in the following S1000D chapters:

a.	Chapter 7	Information processing
b.	Chapter 7.3.1	CSDB objects – Data module Schema
c.	Chapter 7.3.1.1	Data module Schema – Version summary
d.	Chapter 7.3.1.2	Data module Schema – Modular structure
e.	Chapter 7.3.1.3	Data module Schema – Invocation
f.	Chapter 7.3.1.4	Data module Schema – Backwards compatibility
g.	Chapter 7.3.1.5	Data module Schema – Configuration of attributes
h.	Chapter 7.3.2	CSDB objects – Graphics
i.	Chapter 7.4	Information processing – Generation of publications
j.	Chapter 7.4.1	Generation of publications – IETP

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k. Chapter 7.4.1.2 IETP – Resource resolution
l. Chapter 7.4.2 Generation of publications – Publication module Schema
m. Chapter 7.4.2.1 Publication module Schema – Version summary
n. Chapter 7.5 Information processing – Information interchange
o. Chapter 7.5.2 Information interchange – Interchange Schemas
p. Chapter 7.5.2.1 Interchange Schema – Version summary
q. Chapter 7.5.4 Information interchange – LOM metadata
r. Chapter 7.6 Information processing – Software requirements
s. Chapter 7.6.1 Software requirements – Process data module requirements
t. Chapter 7.7 Information processing – Guidance and examples
u. Chapter 7.7.1 Guidance and examples – Logic engine
v. Chapter 7.7.2 Guidance and examples – Process data module nodes
w. Chapter 7.7.3 Guidance and examples – Resource resolution
x. Chapter 7.7.4 Guidance and examples – XLink
y. Chapter 7.7.5 Guidance and examples – XPath

5.145 S1000D Chapter 7.1 – Information processing – Introduction.

5.145.1 Army business rules.

5.145.1.1 Use of S1000D schemas.

Only S1000D promulgated schemas shall be used; the project shall use the schemas related to the issue of the specification used. Only those schemas available on the S1000D Web site (http://www.s1000d.org) shall be used.

5.145.2 Project decisions.

None.

5.146 S1000D Chapter 7.2 – Information processing – Basic concepts.

5.146.1 Army business rules.

5.146.1.1 Use of Extensible Markup Language (XML).

Data modules shall be coded in XML.

5.146.1.2 Extensible Markup Language (XML) and the Common Source Data Base (CSDB).

Authored data modules and publication modules shall reside in the CSDB in XML format.

5.146.1.3 Use of modularized or flattened schemas.

Unless dictated differently by an authoring tool or software, the modularized version of the Schemas shall not be used.

5.146.2 Project decisions.

None.

5.147 S1000D Chapter 7.3.3 – CSDB Objects – Multimedia.

5.147.1 Army business rules.

None

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5.147.2 Project decisions.

5.147.2.1 Use of multimedia.

The project shall determine if multimedia is suitable for the environment in which the project will operate.

5.147.2.2 Media player.

Multimedia objects shall be developed and produced for the chosen project viewer or display platforms used; i.e., plug-ins and viewers, shall be defined in the project rules for non-textual data

5.147.2.3 Capture rates.

To ensure consistency of a given type, the project shall determine the capture rates to be used.

5.147.2.4 Multimedia types.

The project shall determine the multimedia types used.

5.148 S1000D Chapter 7.4.1.1 – IETP – Generation process.

5.148.1 Army business rules.

5.148.1.1 Transformation of references.

The rules specified in S1000D Chapter 7.4.1.1 shall be used for transformation of references for viewing and navigation purposes.

5.148.1.2 Use of S1000D schemas.

S1000D provided Schemas shall not be modified. (JS-088)

5.148.1.3 Resource Description Framework (RDF) metadata.

rdf.xsd shall be used and the metadata shall be auto generated during the publication process. (JS-089)

5.148.1.4 Autogeneration of metadata.

rdf.xsd, dc.xsd, and xlink.xsd Schemas shall be used, and the metadata shall be auto generated during the publication process. (JS-089)

5.148.2 Project decisions.

None.

5.149 S1000D Chapter 7.4.3 – Generation of publications – Inclusion of legacy information.

5.149.1 Army business rules.

None.

5.149.2 Project decisions.

5.149.2.1 Population of the element **`<externalPubCode>`**.

The project shall decide the preferred syntax applied to identify legacy data by a publication code.

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5.149.2.2 Use of the attribute **pubCodingScheme**.

The project shall decide if the attribute will be used and, if so, the set of allowed coding schemes and the syntax used to specify those schemes.

5.149.2.3 Method to include legacy information in an Interactive Electronic Technical Publication (IETP).

The project shall decide whether to include legacy information by encapsulating it in data modules or by referencing it as external publications using the publication module.

5.149.2.4 Interactive Electronic Technical Publication (IETP) reference format.

The project shall decide the syntax and semantic of the links established to reference legacy data.

5.150 S1000D Chapter 7.5.1 – Software interchange – File based transfer.

5.150.1 Army business rules.

None.

5.150.2 Project decisions.

5.150.2.1 Use of file compression techniques.

The project shall decide whether to use compression techniques on files being transferred or not.

5.150.2.2 Defined file formats.

The project shall decide on the allowable file formats, if any, beyond those given in S1000D Chapter 7.5.1.

5.150.2.3 Use of multimedia.

The project shall decide on the use of multimedia.

5.150.2.4 Media options.

A variety of computer media are available and in widespread use for the interchange of technical information. The most appropriate medium, or combination of media, shall be agreed at the project level. Whichever interchange medium is selected, file naming, file types and file structure shall be implemented as described in S1000D.

5.150.2.5 Training Data Module Code (DMC) extensions.

The project shall decide whether to use the learn code and learn event code or not.

5.151 S1000D Chapter 7.5.3 – Information interchange – RDF/DC metadata.

5.151.1 Army business rules.

None.

5.151.2 Project decisions.

5.151.2.1 Inclusion of Resource Description Framework/Dublin Core (RDF/DC) metadata.

The project shall decide whether to include RDF/DC metadata in data dispatch notes, data module lists and comments or not. It is recommended that inclusion is applied consistently across all CSDB objects, including data modules.

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5.152 S1000D Chapter 7.6.2 – Software requirements – Resource resolution service.

5.152.1 Army business rules.

5.152.1.1 Resource resolution.

The guidelines in S1000D Chapter 7.6.2 shall be used when implementing a resolution service.

5.152.2 Project decisions.

None.

5.153 S1000D Chapter 7.8 – Information processing – Applicability.

5.153.1 Army business rules.

None.

5.153.2 Project decisions.

5.153.2.1 Generation of display text.

The project or shall decide whether to populate the element **`<displayText>`** within the applicability annotation or to rely on the publication engine and/or IETP viewer to generate the displayed applicability annotation from the computable applicability annotation.

5.153.2.2 Format of generated display text.

The project shall determine the format for generating the displayed applicability annotation from the computable applicability annotation that will best fulfill industry and/or customer display requirements.

5.154 S1000D Chapter 8 – Standard numbering systems, information codes and learn codes.

There are no Army business rules or project decisions in the following S1000D chapters:

a. Chapter 8.0 Standard numbering systems, information codes and learn codes
b. Chapter 8.2 SNS information and learn codes - Maintained SNS - General
c. Chapter 8.4.1 Information codes – Short definitions
d. Chapter 8.4.2 Information codes – Full definitions
e. Chapter 8.5 SNS, information and learn codes – Learn codes
f. Chapter 8.5.1 Learn codes – Human performance technology codes
g. Chapter 8.5.2 Learn codes – Training codes

5.155 S1000D Chapter 8.1 – SNS, information and learn codes – General.

5.155.1 Army business rules.

None.

5.155.2 Project decisions.

5.155.2.1 Use of Standard Numbering System (SNS).

The project shall decide whether to use the maintained SNS, the example SNS or to write their own.

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5.156 S1000D Chapter 8.2.1 – Maintained SNS – Generic.

5.156.1 Army business rules.

5.156.1.1 Use of the generic Standard Numbering System (SNS).

The SNS shall reflect the equipment for which it applies except in cases where the data module applies across multiple model identification codes or does not apply to any specific model identification code. The generic SNS provided in S1000D Chapter 8.2.1 shall only be used by project decision and in these excepted cases.

5.156.2 Project decisions.

5.156.2.1 Use of the generic Standard Numbering System (SNS).

Within the constraints of 5.156.1.1, the project shall decided if and how to use the generic SNS provided in S1000D Chapter 8.2.1.

5.156.2.2 Definitions.

If the Generic SNS is used, the project shall allocate definitions to the SNS that are defined as "Available for projects."

5.157 S1000D Chapter 8.2.2 – Maintained SNS – Support and training equipment.

5.157.1 Army business rules.

None.

5.157.2 Project decisions.

5.157.2.1 Use of the support and training equipment Standard Numbering System (SNS).

The project shall decided if and how to use the support and training equipment SNS provided in S1000D Chapter 8.2.2.

5.157.2.2 Definitions.

If the support and training equipment SNS is used, the project shall allocate definitions to the SNS that are defined as "Available for projects."

5.158 S1000D Chapter 8.2.3 – Maintained SNS – Ordnance.

5.158.1 Army business rules.

None.

5.158.2 Project decisions.

5.158.2.1 Use of the ordnance Standard Numbering System (SNS).

The project shall decided if and how to use the ordnance SNS provided in S1000D Chapter 8.2.3.

5.158.2.2 Definitions.

If the ordnance SNS is used, the project shall allocate definitions to the SNS that are defined as "Available for projects."

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5.159 S1000D Chapter 8.2.4 – Maintained SNS – General communications.

5.159.1 Army business rules.

None.

5.159.2 Project decisions.

5.159.2.1 Use of the general communications Standard Numbering System (SNS).

The project shall decided if and how to use the general communications SNS provided in S1000D Chapter 8.2.4.

5.159.2.2 Definitions.

If the general communications SNS is used, the project shall allocate definitions to the SNS that are defined as "Available for projects."

5.160 S1000D Chapter 8.2.5 – Maintained SNS – Air vehicle, engines and equipment.

5.160.1 Army business rules.

None.

5.160.2 Project decisions.

5.160.2.1 Use of the air vehicle Standard Numbering System (SNS).

The project shall decided if and how to use the air vehicle SNS provided in S1000D Chapter 8.2.5.

5.160.2.2 Definitions.

If the air vehicle SNS is used, the project shall allocate definitions to the SNS that are defined as "Available for projects."

5.161 S1000D Chapter 8.2.6 – Maintained SNS – Tactical missiles.

5.161.1 Army business rules.

None.

5.161.2 Project decisions.

5.161.2.1 Use of the tactical missiles Standard Numbering System (SNS).

The project shall decided if and how to use the tactical missiles SNS provided in S1000D Chapter 8.2.6.

5.161.2.2 Definitions.

If the tactical missiles SNS is used, the project shall allocate definitions to the SNS that are defined as "Available for projects."

5.162 S1000D Chapter 8.2.7 – Maintained SNS – General surface vehicles.

5.162.1 Army business rules.

None.

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5.162.2 Project decisions.

5.162.2.1 Use of the surface vehicles Standard Numbering System (SNS).

The project shall decided if and how to use the surface vehicles SNS provided in S1000D Chapter 8.2.7.

5.162.2.2 Definitions.

If the surface vehicles SNS is used, the project shall allocate definitions to the SNS that are defined as "Available for projects."

5.163 S1000D Chapter 8.2.8 – Maintained SNS – General sea vehicles.

5.163.1 Army business rules.

None.

5.163.2 Project decisions.

5.163.2.1 Use of the sea vehicle Standard Numbering System (SNS).

The project shall decided if and how to use the sea vehicle SNS provided in S1000D Chapter 8.2.8.

5.163.2.2 Definitions.

If the sea vehicle SNS is used, the project shall allocate definitions to the SNS that are defined as "Available for projects."

5.164 S1000D Chapter 8.3 – SNS, information codes – Example SNS.

5.164.1 Army business rules.

None.

5.164.2 Project decisions.

5.164.2.1 Use of the example Standard Numbering System (SNS).

The project shall decided if and how to use the example SNS provided at http://www.s1000d.org.

5.165 S1000D Chapter 8.4 – SNS, information and learn codes – Information codes.

5.165.1 Army business rules.

5.165.1.1 Information codes.

The information codes in Appendix A shall be used to identify the functional content of each data module. Programs that identify a data module function that cannot be satisfied with an existing information code shall propose a new code to the S1000D Steering Committee using the change process described in 5.3.1.1.

5.165.1.2 Use of unassigned information codes.

Projects shall not use unassigned information codes. If a project determines the need to assign a new information code, the information code and its corresponding information name and definition shall be submitted to the appropriate Service Representative to the Joint Service IETM Technology Working Group (JSITWG). (JS-090)

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5.165.1.3 Information code use with schemas.

The Joint Service information codes and information names shall be used. Projects or organizations shall assign a Schema(s) for each information code used. (JS-107)

5.165.1.4 Information code variants.

Information code variants shall be used as defined in B.5.

5.165.1.5 Information names.

The alternate Army information names shall be used in lieu of the S1000D short definition where stipulated in A.5 and B.5.

5.165.2 Project decisions.

None.

5.166 S1000D Chapter 9 – Terms and data dictionary.

There are no Army business rules or project decisions in the following S1000D chapters:

Chapter 9.0 Terms and data dictionary

Chapter 9.1 Terms and data dictionary – Introduction

Chapter 9.2 Terms and data dictionary – Glossary of terms, abbreviations and acronyms

Chapter 9.3 Terms and data dictionary – Data dictionary

6. NOTES.

(This section contains information of a general or explanatory nature that may be helpful, but is not mandatory.)

6.1 Intended use.

MIL-STD-3031 prescribes business rule requirements applicable to various types of technical publications developed for the Army using S1000D.

6.2 Acquisition requirements.

Acquisition documents should cite the following:

a. Title, number, and date of this standard.
b. Title, number, and date of S1000D.
c. Filled out functionality matrix.
d. Filled out content selection matrix.
e. Project-specific business rules.

6.3 Associated Data Item Descriptions (DIDs).

This standard has been assigned an Acquisition Management Systems Control (AMSC) number authorizing it as the source document for the following DIDs. When it is necessary to obtain the data, the applicable DIDs must be listed on the Contract Data Requirements List (DD Form 1423).

DID Number	DID Title
DI-TMSS-81784	ARMY S1000D PROJECT BUSINESS RULES

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The above DIDs were current as of the date of this standard. The ASSIST database should be researched at https://quicksearch.dla.mil/ to ensure that only current and approved DIDs are cited on the DD Form 1423.

6.4 Tailoring guidance.

The acquiring activity should tailor any required options offered herein in accordance with the following:

a. S1000D Chapter 1.4
b. This document (4.3 and A.1)

6.5 Subject term (key word) listing.

The following terms are to be used to identify the MIL-STD-3031A document during retrieval searches:

a. Additional Authorization List (AAL)
b. Basic Issue Items (BII)
c. Basis Of Issue (BOI)
d. Computer Graphics Metafile (CGM)
e. Components Of End Item (COEI)
f. Depot Maintenance Work Requirement (DMWR)
g. Expendable and durable items list
h. Extensible Markup Language (XML)

6.6 Changes from previous issue.

The margins of this standard are marked with vertical lines to indicate where changes from the previous issue were made. This was done as a convenience only and the Government assumes no liability whatsoever for any inaccuracies in these notations. Bidders and contractors are cautioned to evaluate the requirements of this document based on the entire content irrespective of the marginal notations and relationship to the last previous issue.

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CONTENT SELECTION MATRICES

A.1 SCOPE.

This appendix provides the publication technical content selection matrices for all major weapon systems and all types of equipment, including test and support equipment. This appendix is a mandatory part of this standard. The information contained herein is intended for compliance. These requirements are applicable for all maintenance levels through overhaul (depot), including DMWRs/NMWRs.

A.2 APPLICABLE DOCUMENTS.

This section is not applicable to this appendix.

A.3 DEFINITIONS.

This section is not applicable to this appendix.

A.4 GENERAL REQUIREMENTS.

A.4.1 General.

Content Selection Matrices list specific technical content requirements for each type of maintenance manual, including multilevel TMs/IETPs, covered by this standard. Each type of TM/IETP shall provide in detail the maintenance coverage prescribed for the applicable maintenance level(s) by the Maintenance Allocation Chart (MAC) and SMR-coded items.

A.4.2 Content selection.

Table A-II through Table A-XXXVII simplifies tailoring the technical content requirements of technical manuals prepared using this standard as a guide. The tables indicate which portions of this standard are applicable and list the content requirements for each type of TM/IETP. The content requirements for each applicable TM/IETP shall be arranged in the order presented in the tables.

A.4.3 Intended use.

First determine the types of TMs/IETPs required for each acquisition and then select the table(s) that contains the content requirements for those types of TMs/IETPs. Table A-II through Table A-XXXVII contain the following columns:

a. Column Heading: Content Requirement – Identifies the title of the content requirement.
b. Column Heading: Req. - For each type of TM/IETP selected, indicate in the open blocks of the information set desired by entering an "R" for "REQUIRED" content or a "P" for content that is "PROHIBITED." All blocks for the selected TM/IETP types shall be completed with an "R" or a "P" for each acquisition. The blocks that already contain an "R" are required by the Army and cannot be changed. The blocks containing "P" are prohibited by the Army for that type of TM/IETP and shall not be included. The blocks that already contain a "AR" are "AS REQUIRED" shall be required by the project when needed to support the equipment or condition. The blocks that are blank shall be filled in with "R", or "P." A block marked with a "AR" may be changed to "R" or "P." A remarks page can be used to provide the contractor additional instructions. Where applicable, this column heading will also identify the applicable publication code from Table XLVII.
c. Column Heading: Ref - Identifies the paragraph in this document that provides details about the content requirement in column 1.

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d. Column Heading: PM Type – Identifies the publication module entry type to be used with the corresponding content (refer to 5.48.1.23). The publication module type applies to all rows spanned by the cell. Unless otherwise directed by the acquiring activity, a single publication module shall be used for the content in the spanned rows. In some tables there is more than one column for PM Type, this indicates when nested publication modules are used.
e. Column Heading: DM Type – Identifies the data module type that shall be used for the corresponding content requirement. The data module type applies to all rows spanned by the cell. Unless otherwise directed by the acquiring activity, a single data module shall be used for the content in the spanned rows.
f. Column Heading: Info Code – Identifies the information code for the corresponding content requirement. A notation "PD" in this column indicates that the information code and information code variant shall be determined by the project based on the content of the data module.
g. Column Heading: ICV – Identifies the information code variant for the corresponding content requirement. A blank cell implies that the variant "A" shall be used.
h. Column Heading: Info Name – Identifies the information name for the corresponding content requirement.

A.4.3.1 Content that is not applicable.
If the "Req." column indicates a content requirement that is not applicable to the equipment (for example, the requirement for weapons weight and balance information for an aircraft that does not have weapons), the project shall indicate that "This content is not applicable."

A.4.4 Acquisition requirements.
The properly executed content selection matrix table becomes contractually binding when it is made part of the contract, statement of work or any other contractual instrument.

A.5 DETAILED REQUIREMENTS.

A.5.1 Tailoring requirements for technical manuals.
Tailoring of the technical content requirements can be achieved with the content selection matrices in Table A-II through Table A-XXXVII. The tables list applicable technical content requirements for the development of the following publications. This appendix is a mandatory part of this standard. The information contained herein is intended for compliance. Copies of the applicable tables will be completed and added as an attachment to the Document Summary List of the contract. Table A-II through Table A-XXXVII are available in Excel at https://www.logsa.army.mil/mil40051/S1000D.cfm.

A.5.2 Front and rear matter.
Table A-II through Table A-V contain the content selection requirements from IETP introductory matter and page-based front and rear matter. Depending on output requirements (either page-based or IETP), projects shall comply with the content requirements identified in the tables. These tables shall be combined with the other content selection matrices (Table A-VI through Table A-XXXVII) to form the basis for the project publication output requirements.

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A.5.3 Publication output types.

Although Table A-VI through Table A-IX are identified as "IETP" content selection matrices, there is no prohibition against using the contained content requirements for a page-based manual, nor is there any prohibition against using Table A-X through Table A-XXXVII for IETP.

A.5.4 Publication titles.

a. All publication titles shall correspond to the titles in Table A-VI through Table A-XXXVII.
b. If the publication does not contain parts list information, the words "including parts information" or "including parts list" shall be omitted from the title.

TABLE A-I. Publications Types, Titles and Associated Content Matrix Tables.

Title	Applicable Table	S1000D Code (Maint level)
Front and rear matter		
IETP Introductory Matter	Table A-II	NA
Page-Based Front Matter	Table A-III	NA
Page-Based Front Matter – Reduced	Table A-IV	NA
Page-Based Rear Matter	Table A-V	NA
Interactive Electronic Technical Publication (IETP)		
Operator Interactive Electronic Technical Publication (IETP) for *Insert System*	Table A-VI	OPI (-10)
Operator & Field Maintenance Interactive Electronic Technical Publication (IETP) for *Insert System*	Table A-VII	M3B (-13)
Operator, Field, & Sustainment Maintenance Interactive Electronic Technical Publication (IETP) for *Insert System*	Table A-VII	M1B (-14)
Field Maintenance Manual including Parts Information (IETP) for *Insert System*	Table A-VIII	M2B (-23&P)
Field and Sustainment Maintenance Manual including Parts Information (IETP) for *Insert System*	Table A-VIII	M4B (-24&P)
DMWR Interactive Electronic Technical Publication (IETP) for *Insert System*	Table A-IX	DWR
DMWR including Parts Information Interactive Electronic Technical Publication (IETP) for *Insert System*	Table A-IX	DWP
DMWR with National Overhaul Standards Interactive Electronic Technical Publication (IETP) for *Insert System*	Table A-IX	DWO
DMWR with National Overhaul Standards and including Parts Information Interactive Electronic Technical Publication (IETP) for *Insert System*	Table A-IX	DOR

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TABLE A-I. Publications Types, Titles and Associated Content Matrix Tables.

Title	Applicable Table	S1000D Code (Maint level)
NMWR Interactive Electronic Technical Publication (IETP) for *Insert System*	Table A-IX	NWR
NMWR including Parts Information Interactive Electronic Technical Publication (IETP) for *Insert System*	Table A-IX	NWP
Page-Based - Excluding Conventional and Chemical Ammunition		
Operator Manual for *Insert System*	Table A-X	OPI (-10)
Operator and Field Maintenance Manual for *Insert System*	Table A-X	MM3 (-13)
Operator and Field Maintenance Manual including Parts Information for *Insert System*	Table A-X	M3B (-13&P)
Operator, Field, and Sustainment Maintenance Manual for *Insert System*	Table A-X	MM1 (-14)
Operator, Field, and Sustainment Maintenance Manual including Parts Information for *Insert System*	Table A-X	M1B (-14&P)
Sustainment Maintenance Manual for *Insert System*	Table A-XI	MM0 (-40)
Sustainment Maintenance Manual including Parts Information for *Insert System*	Table A-XI	M0B (-40&P)
Field Maintenance Manual for *Insert System*	Table A-XII	MM2 (-23)
Field Maintenance Manual including Parts Information for *Insert System*	Table A-XII	M2P (-23&P)
Field and Sustainment Maintenance Manual for *Insert System*	Table A-XII	MM4 (-24)
Field and Sustainment Maintenance Manual including Parts Information for *Insert System*	Table A-XII	M4P (-24&P)
Aviation Field Maintenance Manual for *Insert System*	Table A-XIII	MM2 (-23)
Aviation Field Maintenance Manual including Parts Information for *Insert System*	Table A-XIII	M2B (-23&P)
Aviation Field and Sustainment Maintenance Manual for *Insert System*	Table A-XIII	MM4 (-24)
Aviation Field and Sustainment Maintenance Manual including Parts Information for *Insert System*	Table A-XIII	M4B (-24&P)

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TABLE A-I. Publications Types, Titles and Associated Content Matrix Tables.

Title	Applicable Table	S1000D Code (Maint level)
Field Maintenance Repair Parts and Special Tools Information Manual for *Insert System*	Table A-XIV	M2P (-23P)
Field and Sustainment Maintenance Repair Parts and Special Tools Information Manual for *Insert System*	Table A-XIV	M4P (-24P)
Sustainment Maintenance Repair Parts and Special Tools Information Manual for *Insert System*	Table A-XIV	M0P (-40P)
Depot Maintenance Work Requirements (DMWR) for *Insert System*	Table A-XV	DWR
Depot Maintenance Work Requirements (DMWR) Including Parts Information for *Insert System*	Table A-XV	DWP
National Maintenance Work Requirements (NMWR) for *Insert System*	Table A-XV	NWR
National Maintenance Work Requirements (NMWR) including Parts Information for *Insert System*	Table A-XV	NWP
DMWR with Overhaul Standards for *Insert System*	Table A-XVI	DWO
DMWR with Overhaul Standards including Parts Information for *Insert System*	Table A-XVI	DOR
Aviation Field Troubleshooting for *Insert System*	Table A-XVII	TTM
Aircraft Preventive Maintenance Daily for *Insert System*	Table A-XVIII	PMD (PMD)
Aircraft Preventive Maintenance Services for *Insert System*	Table A-XVIII	MSM (PMS)
Aircraft Phased Maintenance Inspection Checklist for *Insert System*	Table A-XIX	PMI
Page-Based - Conventional and Chemical Ammunition		
Operator Manual for *Insert System*	Table A-XX	OPI (-10)
Operator and Field Maintenance Manual for *Insert System*	Table A-XX	MM3 (-13)
Operator and Field Maintenance Manual including Parts Information for *Insert System*	Table A-XX	M3B (-13&P)
Operator, Field, and Sustainment Maintenance Manual for *Insert System*	Table A-XX	MM1 (-14)
Operator, Field, and Sustainment Maintenance Manual including Parts Information for *Insert System*	Table A-XX	M1B (-14&P)

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TABLE A-I. Publications Types, Titles and Associated Content Matrix Tables.

Title	Applicable Table	S1000D Code (Maint level)
Sustainment Maintenance Manual for *Insert System*	Table A-XXI	MM0 (-40)
Sustainment Maintenance Manual including Parts Information for *Insert System*	Table A-XXI	M0B (-40&P)
Field Maintenance Manual for *Insert System*	Table A-XXII	MM2 (-23)
Field Maintenance Manual including Parts Information for *Insert System*	Table A-XXII	M2B (-23&P)
Field and Sustainment Maintenance Manual for *Insert System*	Table A-XXII	MM4 (-24)
Field and Sustainment Maintenance Manual including Parts Information for *Insert System*	Table A-XXII	M4B (-24&P)
Specialized Content		
Hand Receipt Technical Manual for *Insert System*	Table A-XXIII	HDR (HR)
Supplemental Information for Commercial Off-The-Shelf (COTS) Manuals for *Insert System*	Table A-XXIV	NA
Preventive Maintenance Checklist for *Insert System*	Table A-XXV	PMC
Modification Work Order (MWO) for *Insert System*	Table A-XXVI	MWO
Battle Damage Assessment and Repair (BDAR) for *Insert System*	Table A-XXVII	BDR
Preparation for Shipment of Army Aircraft Manual for *Insert System*	Table A-XXVIII	CLG
Depot Maintenance Work Requirements (DMWRs) For Maintenance/Demilitarization of Conventional and Chemical Ammunition for *Insert System*	Table A-XXIX	DWR (Ammo DMWR)
Munition Equipment and Ammunition Data Sheet Manual for *Insert System*	Table A-XXX	NA (Ammo Data Sheet)
Aircraft Operator Manual for *Insert System*	Table A-XXXI	OPI (Aviation -10)
Aircraft Operator Checklist for *Insert System*	Table A-XXXII	CCL (-CL)

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TABLE A-I. Publications Types, Titles and Associated Content Matrix Tables.

Title	Applicable Table	S1000D Code (Maint level)
Maintenance Test Flight Manual for *Insert System*	Table A-XXXIII	FMM (-MTF)
Demilitarization of Surplus Military Items Manual for *Insert System*	Table A-XXXIV	NA (Demil manual)
Warranty Technical Bulletin (WTB) for *Insert System*	Table A-XXXV	WTB
Destruction of Equipment to Prevent Enemy Use Manual for *Insert System*	Table A-XXXVI	NA (Destruct manual)
Test, Measurement and Diagnostic Equipment Manual for *Insert System*	Table A-XXXVII	DWR (Depot Manual for TMDE)

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TABLE A-II. IETP Introductory Matter.

Content Requirement	Req.	Ref.	PM Type	DM Type	Info Code	ICV	Info Name
FRONT MATTER	R	5.128.2					
Identification Information	R	5.128.2.1.7	Generated from PM metadata		N/A	N/A	
(MC) Promulgation Letter	AR	5.128.2.1.4	Front Matter	Descriptive	023	M	Promulgation letter
Warning Summary	AR	5.128.2.1.5		Descriptive	012	J	Safety summary
Revision Summary Frame	AR	5.128.2.1.6		Descriptive	003	C	Revision summary
Table of Contents	R	5.128.2.1.8		Descriptive	009	A	Table of contents
How To Use This IETP	AR	5.128.2.1.9		Descriptive	018	B	How to use this manual
DA Form 2028	R	5.128.3.1.1.4		Descriptive / Comment	023	B	Reporting errors and recommending improvements

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TABLE A-III. Page-Based Front Matter.

Content Requirement	Req.	Ref.	PM Type	DM Type	Info Code	ICV	Info Name
FRONT MATTER		5.128.1					
Front Cover	R	5.128.1.1.3	Generated from PM metadata		N/A	N/A	
(MC) Promulgation Letter	AR	5.128.1.1.4	Front Matter PM	Descriptive	023	M	Promulgation letter
Warning Summary	AR	5.128.1.1.5		Descriptive	012	J	Safety summary
Revision Summary	AR	5.128.1.1.6		Descriptive	003	C	Revision summary
List of Effective Data Modules	R	5.128.1.1.7		Descriptive	00S	A	List of effective data modules
Title Block Page	R	5.128.1.1.8		Descriptive	001	A	Title page
Table of Contents	R	5.128.1.1.9		Descriptive	009	A	Table of contents
Glossary		5.128.1.1.10		Descriptive	006	A	List of terms
How to Use This Manual		5.128.1.1.11		Descriptive	018	B	How to use this manual

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TABLE A-IV. Page-Based Front Matter – Reduced.

Content Requirement	Req.	Ref.	PM Type	DM Type	Info Code	ICV	Info Name
FRONT MATTER	R	5.128.1					
Front Cover	R	5.128.1.1.3	Generated from PM metadata		N/A	N/A	
(MC) Promulgation Letter	AR	5.128.1.1.4	Front Matter PM	Descriptive	023	M	Promulgation letter
Title Block Page	R[1]	5.128.1.1.8		Descriptive	001	A	Title page
Table of Contents	R[2]	5.128.1.1.9		Descriptive	009	A	Table of contents
How to Use This Manual		5.128.1.1.11		Descriptive	018	B	How to use this manual

Notes:

1. By project decision, a combined cover/title block may be used.
2. A table of contents is not required for Operator's Checklists or manuals that are less than eight pages.

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TABLE A-V. Page-Based Rear Matter.

Content Requirement	Req.	Ref.	PM Type	DM Type	Info Code	ICV	Info Name
REAR MATTER	R	5.128.3.1	Rear Matter PM				
Alphabetical Index		5.128.3.1.1.2		Descriptive	014	B	Alphabetical index
DA Form 2028	R[1]	5.128.3.1.1.4		Descriptive	023	B	Reporting errors and recommending improvements
Authentication Page	R	5.128.3.1.1.3		Descriptive	023	C	Authentication page
Foldout Pages		5.128.3.1.1.5		Descriptive	PD		
Back Cover	R	5.128.3.1.1.6		Descriptive	001	C	Back cover

Notes:

1. Maintenance Test Flight, Checklists, and manuals smaller than standard size do not require DA Form 2028.

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TABLE A-VI. Operator's IETP requirements matrix for _____.

Content Requirement	OPI Req.	Ref.	PM Type	DM Type	Info Code	ICV	Info Name
FRONT MATTER	R	5.128	Front Matter PM				
GENERAL INFORMATION, EQUIPMENT DESCRIPTION AND THEORY OF OPERATION	R	5.86	Chapter PM				
GENERAL DATA	R	5.86.3		Descriptive	010	A	General data
Scope	R	5.86.3.1.2					
Ozone Depleting Substances (ODS)		5.86.3.1.3					
Destruction of Army Materiel to Prevent Enemy Use	R	5.86.3.1.4					
Preparation for Storage or Shipment	R	5.86.3.1.5					
Transportability Guidance	R	5.86.3.1.5A					
Nomenclature Cross-Reference List		5.86.3.1.6					
List of Abbreviations/Acronyms	R	5.86.3.1.7					
Safety, Care, and Handling	AR	5.86.3.1.8					
Calibration		5.86.3.1.9					
Copyright Credit Line		5.86.3.1.11					
Item Unique Identification (IUID)	AR	5.86.3.1.12					
GENERAL INFORMATION	R	5.86.4		Descriptive	010	B	General information
Maintenance Forms, Records, and Reports	R	5.86.4.1.2					
Reporting Equipment Improvement Recommendations (EIR)	R	5.86.4.1.3					
Hand Receipt (HR) Information		5.86.4.1.4					
Corrosion Prevention and Control (CPC)	R	5.86.4.1.5					
Warranty Information		5.86.4.1.6					
Nuclear Hardness		5.86.4.1.8					
EQUIPMENT DESCRIPTION AND DATA	R	5.86.5		Descriptive	000	B	Equipment description and data
Equipment Characteristics, Capabilities, and Features	R	5.86.5.1.2					

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TABLE A-VI. Operator's IETP requirements matrix for _____.

Content Requirement	OPI Req.	Ref.	PM Type	DM Type	Info Code	ICV	Info Name
Location and Description of Major Components (not Required for Conventional and Chemical Ammunition IETPs)	R	5.86.5.1.3					
Equipment Differences		5.86.5.1.4					
Equipment Data	R	5.86.5.1.5					
Instructions for the Use, Transportation, Handling, Storage, or Disposal		5.86.5.1.6		Procedural	800	L	Instructions for the use, transportation, handling, storage, or disposal
THEORY OF OPERATION	R	5.86.6		Descriptive	042	F	Theory of operation
OPERATOR INSTRUCTIONS	R	5.85.1.3	Chapter PM				
DESCRIPTION AND USE OF OPERATOR CONTROLS AND INDICATORS	R	5.85.3		Descriptive	111	A	Controls and indicators
OPERATION UNDER USUAL CONDITIONS	R	5.85.4					
Security Measures for Electronic Data	AR	5.85.4.1.2		Descriptive	990	D	Security measures for electronic data
Siting	AR	5.85.4.1.3		Procedural	122	A	Siting
Shelter	AR	5.85.4.1.4		Procedural	123	A	Shelter
Assembly and Preparation for Use	AR	5.85.4.1.5		Procedural	710	B	Assembly and preparation for use
Initial Adjustments, Before Use and Self-Test	AR	5.85.4.1.6		Procedural	121	B	Initial adjustments, before use and self-test
Operating Procedures	R	5.85.4.1.7		Procedural	131	A	Normal operation procedures
Operating Auxiliary Equipment	AR	5.85.4.1.9		Procedural	131	A	Normal operation procedures
Preparation for Movement	AR	5.85.4.1.10		Procedural	131	S	Preparation for movement
Decals and Instruction Plates	AR	5.85.4.1.11		Descriptive	067	A	Decals and instruction plates
OPERATION UNDER UNUSUAL CONDITIONS	R	5.85.5					
Security Measures for Electronic Data	AR	5.85.5.1.1		Descriptive	990	C	Security measures for electronic data (Unusual conditions)
Unusual Environment/ Weather	R	5.85.5.1.2		Procedural	142	B	Unusual environment / weather
Fording and Swimming	AR	5.85.5.1.3		Procedural	131	R	Fording and swimming

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TABLE A-VI. Operator's IETP requirements matrix for _____.

Content Requirement	OPI Req.	Ref.	PM Type	DM Type	Info Code	ICV	Info Name
Interim Chemical, Biological, Radiological, Nuclear, and Explosives (CBRNE) Decontamination Procedures	AR	5.85.5.1.4		Procedural	139	B	Interim Chemical, Biological, Radiological, Nuclear, and explosives (CBRNE) decontamination procedures
Jamming and Electronic Countermeasures (ECM) Procedures	AR	5.85.5.1.5		Procedural	144	A	Jamming and Electronic Countermeasures (ECM) procedures
Degraded Operation Procedures	AR	5.85.5.1.6		Procedural	142	C	Degraded operation procedures
Decals and Instruction Plates	AR	5.85.4.1.11		Descriptive	067	A	Decals and instruction plates
EMERGENCY		5.85.6		Procedural	140	B	Operation under emergency conditions
STOWAGE AND DECAL / DATA PLATE GUIDE		5.85.7		Descriptive	067	B	Stowage and decal / data plate guide
ON-VEHICLE EQUIPMENT LOADING PLAN		5.99.1.1		Descriptive	160	C	On-vehicle equipment loading plan
TROUBLESHOOTING PROCEDURES *NOTE: The notation (*) indicates that, if required, at least one of these content items shall be included.*		5.88					
INTRODUCTION		5.88.3		Descriptive	018	C	Troubleshooting introduction
TROUBLESHOOTING INDEX		5.88.35.88.4		Descriptive	410	F	Malfunction index
				Descriptive	410	B	Symptom index
				Descriptive	410	C	System/Subsystem index
**OPERATIONAL CHECKOUT*		5.88.7	Chapter PM	Descriptive	018	V	Operational checkout introduction
				Procedural	331	B	Pretest setup procedures
				Procedural	320	C	Operational checkout test procedure
				Descriptive	410	G	Message index
				Descriptive	410	H	Fault code reference index
				Procedural	334	C	Post-operational checkout shutdown procedures
**TROUBLESHOOTING PROCEDURES*		5.88.8		Descriptive	018	C	Troubleshooting introduction
				Procedural	PD		General troubleshooting procedures and precautions

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TABLE A-VI. Operator's IETP requirements matrix for _____.

Content Requirement	OPI Req.	Ref.	PM Type	DM Type	Info Code	ICV	Info Name
				Procedural	331	B	Pretest setup procedures
				Fault	421	B	Troubleshooting procedure
				Procedural	334	B	Post-troubleshooting shutdown procedures
**DIAGNOSTICS*		5.88.8.1.6.2		Process	429	A	Diagnostics
MAINTENANCE INSTRUCTIONS	R	5.87					
PMCS INTRODUCTION	R	5.87.5		Descriptive	018	F	PMCS introduction
PMCS, INCLUDING LUBRICATION INSTRUCTIONS	R	5.87.6		Checklist	200	B	PMCS
SERVICE UPON RECEIPT	R	5.87.3					
Siting		5.85.4.1.3		Procedural	122	A	Siting
Shelter requirements		5.85.4.1.4		Procedural	123	A	Shelter
Service upon receipt of materiel	R	5.87.3.1.2					
Unpacking	R	5.87.3.1.2.1		Procedural	840	B	Unpacking
Checking unpacked equipment	R	5.87.3.1.2.2		Checklist	870	B	Checking unpacked equipment
Processing unpacked equipment	R	5.87.3.1.2.3		Procedural	870	C	Processing unpacked equipment
Installation instructions	R	5.87.3.1.3	Chapter PM				
Assembly of equipment	R	5.87.3.1.3.1		Procedural	720	C	Install procedure
Installation of the equipment	R	5.87.3.1.3.2		Procedural	710	A	Assembly procedure
Special application installation instructions	R	5.87.3.1.3.3		Procedural	720	B	Special application installation instructions
Van and shelter procedure	R	5.87.3.1.3.4		Procedural	123	C	Van and shelter procedure
Preliminary servicing of equipment		5.87.3.1.4		Procedural	200	F	Preliminary servicing
Preliminary checks and adjustment of equipment		5.87.3.1.5		Procedural	271	B	Preliminary checks and adjustment of equipment
Preliminary calibration of equipment		5.87.3.1.6		Procedural	273	D	Preliminary calibration of equipment
Circuit alignment		5.87.3.1.7		Procedural	272	B	Circuit alignment
Ammunition markings		5.87.3.1.9		Procedural	067	C	Ammunition marking
Classification of defects		5.87.3.1.10		Procedural	350	C	Classification of defects

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TABLE A-VI. Operator's IETP requirements matrix for _____.

Content Requirement	OPI Req.	Ref.	PM Type	DM Type	Info Code	ICV	Info Name
Ammunition handling		5.87.3.1.11		Procedural	170	E	Handling ammunition
Procedures to activate ammunition		5.87.3.1.12		Procedural	120	G	Procedure to activate ammunition
Additional maintenance task		5.87.3.1.13		Procedural	PD		
Follow-on maintenance		5.87.9		Procedural	PD		
EQUIPMENT/USER FITTING INSTRUCTIONS (PERSONAL USE EQUIPMENT)		5.97.1		Procedural	913	B	Equipment/User fitting instructions
MAINTENANCE	R	5.87.8					
Inspect	AR	5.87.8.1.4					
Test and inspection		5.87.8.1.4.1		Procedural	300	B	Test and inspection
Inspection of conventional and chemical ammunition or components containing radioactive materials	P	5.87.8.1.4.2		Procedural	310	A	Visual examinations
Pre-embarkation inspection		5.87.8.1.4.3		Procedural	310	N	Pre-embarkation inspection
Inspection of installed items		5.87.8.1.4.4		Procedural	310	J	Inspection of installed items
Inspection-acceptance and rejection criteria		5.87.8.1.4.5		Procedural	310	D	Inspection – Acceptance and rejection criteria
Test	AR	5.87.8.1.5		Procedural	340	C	Testing
Service	AR	5.87.8.1.6		Procedural	200	A	Servicing
Adjust	AR	5.87.8.1.7		Procedural	271	A	Adjust
Align	AR	5.87.8.1.8		Procedural	272	A	Align
Calibrate	AR	5.87.8.1.9		Procedural	273	A	Calibrate
Remove	AR	5.87.8.1.10		Procedural	520	A	Removal procedure
Install	AR	5.87.8.1.11		Procedural	720	A	Install procedure
Replace	AR	5.87.8.1.12		Procedural	685	C	Replace
Repair	AR	5.87.8.1.13		Procedural	685	A	Repair
Paint	AR	5.87.8.1.14		Procedural	257	B	Painting
Overhaul	AR	5.87.8.1.15		Procedural	664	B	Overhaul procedure
Rebuild	AR	5.87.8.1.16		Procedural	664	C	Rebuild
Lubricate	AR	5.87.8.1.17		Procedural	240	A	Lubrication
Mark	AR	5.87.8.1.18		Procedural	067	D	Mark
Pack	AR	5.87.8.1.19		Procedural	713	A	Pack procedure
Unpack	AR	5.87.8.1.20		Procedural	840	B	Unpacking
Preserve	AR	5.87.8.1.21		Procedural	810	A	Preservation procedure

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TABLE A-VI. Operator's IETP requirements matrix for _____.

Content Requirement	OPI Req.	Ref.	PM Type	DM Type	Info Code	ICV	Info Name
Assemble and prepare for use	AR	5.87.8.1.22		Procedural	710	B	Assembly and preparation for use
Assemble	AR	5.87.8.1.23		Procedural	710	A	Assembly procedure
Disassemble	AR	5.87.8.1.24		Procedural	530	A	Disassembly procedure
Clean	AR	5.87.8.1.25		Procedural	PD		
Non-destructive inspection	AR	5.87.8.1.26		Procedural	350	B	Non-destructive testing inspection
Radio interference suppression	AR	5.87.8.1.27		Procedural	143	A	Radio interference suppression
Place in service	AR	5.87.8.1.28		Procedural	870	P	Placing in service
Ground handling	AR	5.87.8.1.29					
Towing		5.87.8.1.29.1		Procedural	174	A	Towing
Jacking		5.87.8.1.29.2		Procedural	172	A	Jacking
Parking		5.87.8.1.29.3		Procedural	170	J	Parking
Mooring		5.87.8.1.29.4		Procedural	17A	A	Mooring
Covering		5.87.8.1.29.5		Procedural	170	B	Covering
Hoisting		5.87.8.1.29.6		Procedural	171	B	Hoisting
Sling loading		5.87.8.1.29.7		Procedural	178	B	Sling loading
External power		5.87.8.1.29.8		Procedural	170	C	External power
Preparation storage	R	5.87.8.1.31		Procedural	810	C	Preparation for storage
Preparation for shipment	R	5.87.8.1.31A		Procedural	811 830	C	Preparation for shipment
Transport	R	5.87.8.1.31B		Procedural	831	C	Transport
Arm	AR	5.87.8.1.32		Procedural	120	G	Procedures to activate ammunition
Load	AR	5.87.8.1.33		Procedural	PD		
Unload	AR	5.87.8.1.34		Procedural	PD		
Install peripheral device	AR	5.87.8.1.35		Procedural	C96		
Uninstall peripheral device	AR	5.87.8.1.36		Procedural	C96		
Upgrade/patch	AR	5.87.8.1.37		Procedural	C96		
Configure	AR	5.87.8.1.38		Procedural	C96		
Debug	AR	5.87.8.1.39		Procedural	C96		
Additional maintenance task	AR	5.87.8.2.2		Procedural	PD		
Follow-on maintenance	AR	5.87.9		Procedural	PD		
GENERAL MAINTENANCE		5.87.10		Procedural	PD		
LUBRICATION INSTRUCTIONS		5.87.11		Procedural	240	B	Lubrication instructions

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TABLE A-VI. Operator's IETP requirements matrix for _____.

Content Requirement	OPI Req.	Ref.	PM Type	DM Type	Info Code	ICV	Info Name
AUXILIARY EQUIPMENT MAINTENANCE INSTRUCTIONS			Chapter PM				
AUXILIARY EQUIPMENT MAINTENANCE		5.97.2		Procedural	PD		
AMMUNITION MAINTENANCE INSTRUCTIONS			Chapter PM				
AMMUNITION MAINTENANCE		5.87.19		Procedural	200	K	Ammunition maintenance
AMMUNITION MARKING INFORMATION		5.87.20		Procedural	067	C	Ammunition marking
FOREIGN AMMUNITION (NATO)		5.87.21		Procedural	011	B	Foreign ammunition
DESTRUCTION OF EQUIPMENT TO PREVENT ENEMY USE *NOTE: If a separate destruction of material manual is not developed for this equipment, then the destruction chapter must be included.*		5.101.3	Chapter PM				
Introduction		5.101.3.1.6.2		Descriptive	997	D	Destruction general information
Authorization		5.101.2.1.6.3					
Reporting Destruction		5.101.3.1.6.4					
General Destruction Information		5.101.3.1.6.5					
Degree of Destruction		5.101.3.1.6.6					
Essential Components and Spare Parts		5.101.3.1.6.7					
SPECIFIC DESTRUCTION PROCEDURES							
Parts List		5.101.3.1.7		Descriptive	907	B	Parts list
Specific Destruction Procedures		5.101.3.1.8		Procedural	997	B	Destruction procedures
Classified Equipment and Documents		5.101.3.1.9		Procedural	997	C	Destruction procedures - Classified equipment
SUPPORTING INFORMATION	R	5.106.1	Chapter PM				
REFERENCES	R	5.106.1.1.2		Descriptive	017	B	References

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TABLE A-VI. Operator's IETP requirements matrix for _____.

Content Requirement	OPI Req.	Ref.	PM Type	DM Type	Info Code	ICV	Info Name
COMPONENTS OF END ITEM (COEI) AND BASIC ISSUE ITEMS (BII) LISTS	R	5.93.12		Descriptive	105	D	Components of End Item (COEI) list
		5.93.13		Descriptive	105	C	Basic Issue Items (BII) list
ADDITIONAL AUTHORIZATION LIST (AAL)		5.93.14		Descriptive	104	C	Additional Authorization List (AAL)
EXPENDABLE AND DURABLE ITEMS LIST	R	5.93.15		Descriptive	070	D	Expendable and durable items list
CRITICAL SAFETY ITEMS		5.93.17		Descriptive	075	E	Critical Safety Items (CSI)
ADDITIONAL SUPPORTING INFORMATION		5.106.1.1.4		Descriptive	PD		

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Table A-VII. Operator, Field & Sustainment Maintenance IETP requirements matrix for _____.

Content Requirement	M3B Req.	M1B Req.	Ref.	PM Type	DM Type	Info Code	ICV	Info Name
FRONT MATTER	R	R	5.128	Front Matter PM				
GENERAL INFORMATION, EQUIPMENT DESCRIPTION AND THEORY OF OPERATION	R	R	5.86	Chapter PM				
GENERAL DATA	R	R	5.86.3		Descriptive	010	A	General data
Scope	R	R	5.86.3.1.2					
Ozone Depleting Substances (ODS)			5.86.3.1.3					
Destruction of Army Materiel to Prevent Enemy Use	R	R	5.86.3.1.4					
Preparation for Storage or Shipment	R	R	5.86.3.1.5					
Transportability Guidance	R	R	5.86.3.1.5A					
Nomenclature Cross-Reference List			5.86.3.1.6					
List of Abbreviations/Acronyms			5.86.3.1.7					
Safety, Care, and Handling	AR	AR	5.86.3.1.8					
Calibration			5.86.3.1.9					
Supporting Information for Repair Parts, Special Tools, TMDE, and Support Equipment			5.86.3.1.10					
Copyright Credit Line			5.86.3.1.11					
Item Unique Identification (IUID)	AR	AR	5.86.3.1.12					
GENERAL INFORMATION	R	R	5.86.4		Descriptive	010	B	General information
Maintenance Forms, Records, and Reports	R	R	5.86.4.1.2					
Reporting Equipment Improvement Recommendations (EIR)	R	R	5.86.4.1.3					
Hand Receipt (HR) Information			5.86.4.1.4					
Corrosion Prevention and Control (CPC)	R	R	5.86.4.1.5					
Warranty Information			5.86.4.1.6					
Quality of Material	AR	AR	5.86.4.1.7					
Nuclear Hardness			5.86.4.1.8					

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Table A-VII. Operator, Field & Sustainment Maintenance IETP requirements matrix for _____.

Content Requirement	M3B Req.	M1B Req.	Ref.	PM Type	DM Type	Info Code	ICV	Info Name
EQUIPMENT DESCRIPTION AND DATA	R	R	5.86.5					
Equipment Characteristics, Capabilities, and Features	R	R	5.86.5.1.2					
Location and Description of Major Components (Not Required for Conventional and Chemical Ammunition TMs)	R	R	5.86.5.1.3		Descriptive	000	B	Equipment description and data
Equipment Differences			5.86.5.1.4					
Equipment Data	R	R	5.86.5.1.5					
Instructions for the Use, Transportation, Handling, Storage, or Disposal	R	R	5.86.5.1.6		Procedural	800	L	Instructions for the use, transportation, handling, storage, or disposal
THEORY OF OPERATION	R	R	5.86.6		Descriptive	042	F	Theory of operation
OPERATOR INSTRUCTIONS	R	R	5.85.1.3					
DESCRIPTION AND USE OF OPERATOR CONTROLS AND INDICATORS	R	R	5.85.3		Descriptive	111	A	Controls and indicators
OPERATION UNDER USUAL CONDITIONS	R	R	5.85.4					
Security Measures for Electronic Data	AR	AR	5.85.4.1.2		Descriptive	990	D	Security measures for electronic data
Siting	AR	AR	5.85.4.1.3		Procedural	122	A	Siting
Shelter	AR	AR	5.85.4.1.4		Procedural	123	A	Shelter
Assembly and Preparation for Use	AR	AR	5.85.4.1.5	Chapter PM	Procedural	710	B	Assembly and preparation for use
Initial Adjustments, Before Use and Self-Test	AR	AR	5.85.4.1.6		Procedural	121	B	Initial adjustments, before use and self-test
Operating Procedures	R	R	5.85.4.1.7		Procedural	131	A	Normal operation procedures
Operating Auxiliary Equipment	AR	AR	5.85.4.1.9		Procedural	131	A	Normal operation procedures
Preparation for Movement	AR	AR	5.85.4.1.10		Procedural	131	S	Preparation for movement
Decals and Instruction Plates	AR	AR	5.85.4.1.11		Descriptive	067	A	Decals and instruction plates
OPERATION UNDER UNUSUAL CONDITIONS	R	R	5.85.5					

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Table A-VII. Operator, Field & Sustainment Maintenance IETP requirements matrix for _____.

Content Requirement	M3B Req.	M1B Req.	Ref.	PM Type	DM Type	Info Code	ICV	Info Name
Security Measures for Electronic Data	AR	AR	5.85.5.1.1		Descriptive	990	C	Security measures for electronic data (Unusual conditions)
Unusual Environment/ Weather	R	R	5.85.5.1.2		Procedural	142	B	Unusual environment/weather
Fording and Swimming	AR	AR	5.85.5.1.3		Procedural	131	R	Fording and swimming
Interim Chemical, Biological, Radiological, Nuclear, and Explosives (CBRNE) Decontamination Procedures	AR	AR	5.85.5.1.4		Procedural	139	B	Interim Chemical, Biological, Radiological, Nuclear, and Explosives (CBRNE) decontamination procedures
Jamming and Electronic Countermeasures (ECM) Procedures	AR	AR	5.85.5.1.5		Procedural	144	A	Jamming and Electronic Countermeasures (ECM) procedures
Degraded Operation Procedures	AR	AR	5.85.5.1.6		Procedural	142	C	Degraded operation procedures
Decals and Instruction Plates	AR	AR	5.85.4.1.11		Descriptive	067	A	Decals and instruction plates
EMERGENCY			5.85.6		Procedural	140	B	Operation under emergency conditions
STOWAGE AND DECAL/DATA PLATE GUIDE			5.85.7		Descriptive	067	B	Stowage and decal/data plate guide
ON-VEHICLE EQUIPMENT LOADING PLAN			5.99.1.1		Descriptive	160	C	On-vehicle equipment loading plan
TROUBLESHOOTING PROCEDURES *NOTE: The notation (*) indicates that, if required, at least one of these content items shall be included.*	R	R	5.88					
INTRODUCTION			5.88.3	Chapter PM	Descriptive	018	C	Troubleshooting introduction
TECHNICAL DESCRIPTION			5.116		Descriptive	011	C	Technical description
Equipment Description and Data			5.116.1.2					
Controls and Indicators			5.116.1.3					
Theory of Operation			5.116.1.4					

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Table A-VII. Operator, Field & Sustainment Maintenance IETP requirements matrix for _____.

Content Requirement	M3B Req.	M1B Req.	Ref.	PM Type	DM Type	Info Code	ICV	Info Name
TROUBLESHOOTING INDEX			5.88.4		Descriptive	410	F	Malfunction index
					Descriptive	410	B	Symptom index
					Descriptive	410	C	System/subsystem index
**OPERATIONAL CHECKOUT*			5.88.7		Descriptive	018	V	Operational checkout introduction
					Procedural	331	B	Pretest setup procedures
					Procedural	320	C	Operational checkout test procedure
					Descriptive	410	G	Message index
					Descriptive	410	H	Fault code reference index
					Procedural	334	C	Post-operational checkout shutdown procedures
**TROUBLESHOOTING PROCEDURES*			5.88.8		Descriptive	018	C	Troubleshooting introduction
					Procedural	PD		General troubleshooting procedures and precautions
					Procedural	331	B	Pretest setup procedures
					Fault	421	B	Troubleshooting procedure
					Procedural	334	B	Post-troubleshooting shutdown procedures
**DIAGNOSTICS*			5.88.8.1.6.2		Process	429	A	Diagnostics
MAINTENANCE INSTRUCTIONS	R	R	5.87					
SERVICE UPON RECEIPT	R	R	5.87.3					
Siting	AR	AR	5.85.4.1.3		Procedural	122	A	Siting
Shelter requirements	AR	AR	5.85.4.1.4		Procedural	123	A	Shelter
Service upon receipt of materiel	R	R	5.87.3.1.2					
Unpacking	R	R	5.87.3.1.2.1	Chapter PM	Procedural	840	B	Unpacking
Checking unpacked equipment	R	R	5.87.3.1.2.2		Checklist	870	B	Checking unpacked equipment
Processing unpacked equipment	R	R	5.87.3.1.2.3		Procedural	870	C	Processing unpacked equipment
Installation instructions	R	R	5.87.3.1.3					
Assembly of equipment	R	R	5.87.3.1.3.1		Procedural	710	C	Assembly of equipment
Installation of the equipment	R	R	5.87.3.1.3.2		Procedural	710	A	Install procedure

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Table A-VII. Operator, Field & Sustainment Maintenance IETP requirements matrix for _____.

Content Requirement	M3B Req.	M1B Req.	Ref.	PM Type	DM Type	Info Code	ICV	Info Name
Special application installation instructions	R	R	5.87.3.1.3.3		Procedural	720	B	Special application installation instructions
Van and shelter procedure	R	R	5.87.3.1.3.4		Procedural	123	C	Van and shelter procedure
Preliminary servicing of equipment			5.87.3.1.4		Procedural	200	F	Preliminary servicing
Preliminary checks and adjustment of equipment			5.87.3.1.5		Procedural	271	B	Preliminary checks and adjustment of equipment
Preliminary calibration of equipment			5.87.3.1.6		Procedural	273	D	Preliminary calibration of equipment
Circuit alignment	AR	AR	5.87.3.1.7		Procedural	272	B	Circuit alignment
Ammunition markings	AR	AR	5.87.3.1.9		Procedural	067	C	Ammunition marking
Classification of defects	AR	AR	5.87.3.1.10		Procedural	350	C	Classification of defects
Ammunition handling	AR	AR	5.87.3.1.11		Procedural	170	E	Handling ammunition
Procedures to activate ammunition	AR	AR	5.87.3.1.12		Procedural	120	G	Procedures To activate ammunition
Additional maintenance task	AR	AR	5.87.3.1.13		Procedural	PD		
Follow-on maintenance	AR	AR	5.87.9		Procedural	PD		
EQUIPMENT / USER FITTING INSTRUCTIONS (PERSONAL USE EQUIPMENT)			5.97.1		Procedural	913	B	Equipment/User fitting instructions
PMCS INTRODUCTION	AR	AR	5.87.5		Descriptive	018	F	PMCS Introduction
PMCS, INCLUDING LUBRICATION INSTRUCTION	AR	AR	5.87.6		Checklist	200	B	PMCS
MAINTENANCE	R	R	5.87					
Inspect			5.87.8.1.4					
Test and inspection			5.87.8.1.4.1		Procedural	300	B	Test and inspection
Inspection of conventional and chemical ammunition or components containing radioactive materials			5.87.8.1.4.2		Procedural	310	A	Visual examinations
Pre-embarkation inspection			5.87.8.1.4.3		Procedural	310	N	Pre-embarkation inspection
Inspection of installed items			5.87.8.1.4.4		Procedural	310	J	Inspection of installed items

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Table A-VII. Operator, Field & Sustainment Maintenance IETP requirements matrix for _____.

Content Requirement	M3B Req.	M1B Req.	Ref.	PM Type	DM Type	Info Code	ICV	Info Name
Inspection-acceptance and rejection criteria			5.87.8.1.4.5		Procedural	310	D	Inspection – Acceptance and rejection criteria
Test			5.87.8.1.5		Procedural	340	C	Testing
Service			5.87.8.1.6		Procedural	200	A	Servicing
Adjust			5.87.8.1.7		Procedural	271	A	Adjust
Align			5.87.8.1.8		Procedural	272	A	Align
Calibrate			5.87.8.1.9		Procedural	273	A	Calibrate
Remove			5.87.8.1.10		Procedural	520	A	Removal procedure
Install			5.87.8.1.11		Procedural	720	A	Install procedure
Replace			5.87.8.1.12		Procedural	685	C	Replace
Repair			5.87.8.1.13		Procedural	685	A	Repair
Paint			5.87.8.1.14		Procedural	257	B	Painting
Overhaul			5.87.8.1.15		Procedural	664	B	Overhaul procedure
Rebuild			5.87.8.1.16		Procedural	664	C	Rebuild
Lubricate			5.87.8.1.17		Procedural	240	A	Lubrication
Mark			5.87.8.1.18		Procedural	067	D	Mark
Pack			5.87.8.1.19		Procedural	713	A	Pack procedure
Unpack			5.87.8.1.20		Procedural	840	B	Unpacking
Preserve			5.87.8.1.21		Procedural	810	A	Preservation procedure
Assemble and prepare for use			5.87.8.1.22		Procedural	710	B	Assembly and preparation for use
Assemble			5.87.8.1.23		Procedural	710	A	Assembly procedure
Disassemble			5.87.8.1.24		Procedural	530	A	Disassembly procedure
Clean			5.87.8.1.25		Procedural	PD		
Non-destructive inspection			5.87.8.1.26		Procedural	350	B	Non-destructive testing inspection
Radio interference suppression			5.87.8.1.27		Procedural	143	A	Radio interference suppression
Place in service			5.87.8.1.28		Procedural	870	P	Placing in service
Ground handling			5.87.8.1.29					
Towing			5.87.8.1.29.1		Procedural	174	A	Towing
Jacking			5.87.8.1.29.2		Procedural	172	A	Jacking
Parking			5.87.8.1.29.3		Procedural	175	B	Parking
Mooring			5.87.8.1.29.4		Procedural	17A	A	Mooring
Covering			5.87.8.1.29.5		Procedural	170	B	Covering
Hoisting			5.87.8.1.29.6		Procedural	171	B	Hoisting
Sling loading			5.87.8.1.29.7		Procedural	178	B	Sling loading

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Table A-VII. Operator, Field & Sustainment Maintenance IETP requirements matrix for _____.

Content Requirement	M3B Req.	M1B Req.	Ref.	PM Type	DM Type	Info Code	ICV	Info Name
External power			5.87.8.1.29.8		Procedural	170	C	External power
Preparation for storage	R	R	5.87.8.1.31		Procedural	810	C	Preparation for storage
Preparation for shipment	R	R	5.87.8.1.31A		Procedural	811 830	C	Preparation for shipment
Transport	R	R	5.87.8.1.31B		Procedural	831	C	Transport
Arm			5.87.8.1.32		Procedural	120	G	Procedures to activate ammunition
Load			5.87.8.1.33		Procedural	PD		
Unload			5.87.8.1.34		Procedural	PD		
Install peripheral device			5.87.8.1.35		Procedural	C96		
Uninstall peripheral device			5.87.8.1.36		Procedural	C96		
Upgrade/patch			5.87.8.1.37		Procedural	C96		
Configure			5.87.8.1.38		Procedural	C96		
Debug			5.87.8.1.39		Procedural	C96		
Additional maintenance task			5.87.8.2.2		Procedural	PD		
Follow-on maintenance			5.87.9		Procedural	PD		
GENERAL MAINTENANCE			5.87.10		Procedural	PD		
LUBRICATION			5.87.11		Procedural	240	B	Lubrication instructions
ILLUSTRATED LIST OF MANUFACTURED ITEMS			5.87.17		Descriptive	670	E	Illustrated List of Manufactured Items
TORQUE LIMITS			5.87.18		Procedural	711	B	Torque Limits
WIRING DIAGRAMS			5.92		Descriptive	051	A	Wiring Diagrams
AUXILIARY EQUIPMENT MAINTENANCE INSTRUCTIONS				Chapter PM				
AUXILIARY EQUIPMENT MAINTENANCE			5.97.2		Procedural	PD		
ILLUSTRATED LIST OF MANUFACTURED ITEMS (FIELD LEVEL ONLY)			5.87.17		Descriptive	670	E	Illustrated list of manufactured items
TORQUE LIMITS (FIELD LEVEL ONLY)			5.87.18		Procedural	711	B	Torque limits
WIRING DIAGRAMS			5.92		Descriptive	051	A	Wiring diagrams
AMMUNITION MAINTENANCE INSTRUCTIONS				Chapter PM				
AMMUNITION MAINTENANCE			5.87.19		Procedural	200	K	Ammunition maintenance

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Table A-VII. Operator, Field & Sustainment Maintenance IETP requirements matrix for _____.

Content Requirement	M3B Req.	M1B Req.	Ref.	PM Type	DM Type	Info Code	ICV	Info Name
AMMUNITION MARKING INFORMATION			5.87.20		Procedural	067	C	Ammunition marking
FOREIGN AMMUNITION (NATO)			5.87.21		Procedural	011	B	Foreign ammunition
PARTS INFORMATION	R	R	5.93					
INTRODUCTION	R	R	5.93.4		Descriptive	018	E	Parts introduction
REPAIR PARTS LIST	R	R	5.93.5		IPD	941	A	Repair parts information
REPAIR PARTS FOR SPECIAL TOOLS			5.93.7		IPD	607	B	Repair parts for special tools
KIT PARTS LIST			5.93.8	Chapter PM	IPD	607	C	Kit parts list
BULK ITEMS			5.93.9		IPD	603	B	Bulk items
SPECIAL TOOLS LIST			5.93.10		IPD	604	B	Special tools list
NSN INDEX	AR	AR	5.93.11.1.5		Descriptive	942	F	National Stock Number index
P/N INDEX	AR	AR	5.93.11.1.6		Descriptive	942	B	Part number index
REFERENCE DESIGNATOR INDEX	AR	AR	5.93.11.1.7		Descriptive	942	C	Reference designator index
DESTRUCTION OF EQUIPMENT TO PREVENT ENEMY USE *NOTE: If a separate destruction of material manual is not developed for this equipment, then the destruction chapter must be included.*			5.101.3					
Introduction			5.101.3.1.6.2					
Authorization			5.101.2.1.6.3					
Reporting Destruction			5.101.3.1.6.4					
General Destruction Information			5.101.3.1.6.5	Chapter PM	Descriptive	997	D	Destruction general information
Degree of Destruction			5.101.3.1.6.6					
Essential Components and Spare Parts			5.101.3.1.6.7					
SPECIFIC DESTRUCTION PROCEDURES								
Part List			5.101.3.1.7		Descriptive	907	B	Parts list
Specific Destruction Procedures			5.101.3.1.8		Procedural	997	B	Destruction procedures
Classified Equipment and Documents			5.101.3.1.9		Procedural	997	C	Destruction procedures - Classified equipment

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Table A-VII. Operator, Field & Sustainment Maintenance IETP requirements matrix for _____.

Content Requirement	M3B Req.	M1B Req.	Ref.	PM Type	DM Type	Info Code	ICV	Info Name
SUPPORTING INFORMATION	R	R	5.106.1	Chapter PM				
REFERENCES	R	R	5.106.1.1.2		Descriptive	017	B	References
INTRODUCTION FOR MAC (FIELD ONLY) Non-aviation Aviation	R R	R R	5.94.1 5.94.2		Descriptive	018	D	MAC Introduction
MAINTENANCE ALLOCATION CHART (FIELD ONLY)	R	R	5.94.3		Schedule	916	A	MAC
COMPONENTS OF END ITEM (COEI) AND BASIC ISSUE ITEMS (BII) LISTS (CREW (OPERATOR) ONLY)	R	R	5.93.12		Descriptive	105	D	Components of End Item (COEI) list
			5.93.13		Descriptive	105	C	Basic Issue Items (BII) list
ADDITIONAL AUTHORIZATION LIST (AAL)			5.93.14		Descriptive	104	C	Additional Authorization List (AAL)
EXPENDABLE AND DURABLE ITEMS LIST	R	R	5.93.15		Descriptive	070	D	Expendable and durable items list
TOOL IDENTIFICAITON LIST	R	R	5.103.1		Descriptive	062	B	Tool identification list
MANDATORY REPLACEMENT PARTS LIST	R	R	5.93.16		Descriptive	075	D	Mandatory replacement parts
CRITICAL SAFETY ITEMS (CSI)	AR	AR	5.93.17		Descriptive	075	E	Critical safety items (CSI)
ADDITIONAL SUPPORTING INFORMATION			5.106.1.1.4		Descriptive	PD		

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Table A-VIII. Field and Sustainment Maintenance Manual including Parts Information IETP requirements matrix for _____.

Content Requirement	M2B Req.	M4B Req.	Ref.	PM Type	DM Type	Info Code	ICV	Info Name
FRONT MATTER	R	R	5.101.3.1.7	Front Matter PM				
GENERAL INFORMATION, EQUIPMENT DESCRIPTION AND THEORY OF OPERATION	R	R		Chapter PM				
GENERAL DATA	R	R	5.86.3		Descriptive	010	A	General data
Scope	R	R	5.86.3.1.2					
Ozone Depleting Substances (ODS)			5.86.3.1.3					
Destruction of Army Materiel to Prevent Enemy Use	R	R	5.86.3.1.4					
Preparation for Storage or Shipment	R	R	5.86.3.1.5					
Transportability guidance	R	R	5.86.3.1.5A					
Nomenclature Cross-Reference List			5.86.3.1.6					
List of Abbreviations/Acronyms	R	R	5.86.3.1.7					
Safety, Care, and Handling	AR	AR	5.86.3.1.8					
Calibration			5.86.3.1.9					
Supporting Information for Repair Parts, Special Tools, TMDE, and Support Equipment			5.86.3.1.10					
Copyright Credit Line			5.86.3.1.11					
Item Unique Identification	AR	AR	5.86.4.1.2					
GENERAL INFORMATION	R	R	5.86.4		Descriptive	010	B	General information
Maintenance Forms, Records, and Reports	R	R	5.86.4.1.2					
Reporting Equipment Improvement Recommendations (EIR)	R	R	5.86.4.1.3					
Hand Receipt (HR) Information			5.86.4.1.4					
Corrosion Prevention and Control (CPC)	R	R	5.86.4.1.5					
Warranty Information			5.86.4.1.6					
Quality of Material	R	R	5.86.4.1.7					

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Table A-VIII. Field and Sustainment Maintenance Manual including Parts Information IETP requirements matrix for _____.

Content Requirement	M2B Req.	M4B Req.	Ref.	PM Type	DM Type	Info Code	ICV	Info Name
Nuclear Hardness			5.86.4.1.8					
Quality Assurance (QA) (Aviation Only) Aviation Non-Aviation	 R P	 R P	5.86.4.1.9					
Critical Safety Items (CSI) Aviation Non-Aviation	 R P	 R P	5.86.4.1.10					
EQUIPMENT DESCRIPTION AND DATA	R	R	5.86.5					
Equipment Characteristics, Capabilities, and Features	R	R	5.86.5.1.2					
Location and Description of Major Components (Not Required for Conventional and Chemical Ammunition IETPs)	R	R	5.86.5.1.3		Descriptive	000	B	Equipment description and data
Equipment Differences			5.86.5.1.4					
Equipment Data	R	R	5.86.5.1.5					
Instructions for the Use, Transportation, Handling, Storage, or Disposal			5.86.5.1.6		Procedural	800	L	Instructions for the use, transportation, handling, storage, or disposal
THEORY OF OPERATION	R	R	5.86.6		Descriptive	042	F	Theory of operation
TROUBLESHOOTING PROCEDURES *NOTE: The notation (*) indicates that, if required, at least one of these content items shall be included*	R	R	5.88					
INTRODUCTION			5.88.3	Chapter PM	Descriptive	018	C	Troubleshooting introduction
TECHNICAL DESCRIPTION			5.116					
Equipment Description and Data			5.116.1.2		Descriptive	011	C	Technical description
Controls and Indicators			5.116.1.3					
Theory of Operation			5.116.1.4					

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Table A-VIII. Field and Sustainment Maintenance Manual including Parts Information IETP requirements matrix for _____.

Content Requirement	M2B Req.	M4B Req.	Ref.	PM Type	DM Type	Info Code	ICV	Info Name
TROUBLESHOOTING INDEX			5.88.4		Descriptive	410	F	Malfunction index
					Descriptive	410	B	Symptom index
					Descriptive	410	C	System/Subsystem index
**OPERATIONAL CHECKOUT*			5.88.7		Descriptive	018	V	Operational checkout introduction
					Procedural	331	B	Pretest setup procedures
					Procedural	320	C	Operational checkout test procedure
					Descriptive	410	G	Message index
					Descriptive	410	J	Fault reports
					Procedural	334	C	Post-operational checkout shutdown procedures
**TROUBLESHOOTING PROCEDURES*			5.88.8		Descriptive	018	C	Troubleshooting introduction
					Procedural	PD		General troubleshooting procedures and precautions
					Procedural	331	B	Pretest setup procedures
					Fault	421	B	Troubleshooting procedure
					Procedural	334	B	Post-troubleshooting shutdown procedures
**DIAGNOSTICS*			5.88.8.1.6.2		Process	429	A	Diagnostics
MAINTENANCE INSTRUCTIONS	R	R	5.87					
SERVICE UPON RECEIPT	R	R	5.87.3					
Siting	AR	AR	5.85.4.1.3		Procedural	122	A	Siting
Shelter requirements	AR	AR	5.85.4.1.4		Procedural	123	A	Shelter
Service upon receipt of materiel	AR	AR	5.87.3.1.2					
Unpacking	AR	AR	5.87.3.1.2.1	Chapter PM	Procedural	840	B	Unpacking
Checking unpacked equipment	AR	AR	5.87.3.1.2.2		Checklist	870	B	Checking unpacked equipment
Processing unpacked equipment	AR	AR	5.87.3.1.2.3		Procedural	870	C	Processing unpacked equipment
Installation instructions	AR	AR	5.87.3.1.3					
Assembly of equipment	AR	AR	5.87.3.1.3.1		Procedural	710	C	Assembly of equipment
Installation of the equipment	AR	AR	5.87.3.1.3.2		Procedural	720	A	Install procedure

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Table A-VIII. Field and Sustainment Maintenance Manual including Parts Information IETP requirements matrix for _____.

Content Requirement	M2B Req.	M4B Req.	Ref.	PM Type	DM Type	Info Code	ICV	Info Name
Special application installation instructions	AR	AR	5.87.3.1.3.3		Procedural	720	B	Special application installation instructions
Van and shelter procedure	AR	AR	5.87.3.1.3.4		Procedural	123	C	Van and shelter procedure
Preliminary servicing of equipment	AR	AR	5.87.3.1.4		Procedural	200	F	Preliminary servicing
Preliminary checks and adjustment of equipment	AR	AR	5.87.3.1.5		Procedural	271	B	Preliminary checks and adjustment of equipment
Preliminary calibration of equipment	AR	AR	5.87.3.1.6		Procedural	273	D	Preliminary calibration of equipment
Circuit alignment	AR	AR	5.87.3.1.7		Procedural	272	B	Circuit alignment
Ammunition markings	AR	AR	5.87.3.1.9		Procedural	067	C	Ammunition marking
Classification of defects	AR	AR	5.87.3.1.10		Procedural	350	C	Classification of defects
Ammunition handling	AR	AR	5.87.3.1.11		Procedural	170	E	Handling ammunition
Procedures to activate ammunition	AR	AR	5.87.3.1.12		Procedural	120	G	Procedures to activate ammunition
Additional maintenance task	AR	AR	5.87.3.1.13		Procedural	PD		
Follow-on maintenance	AR	AR	5.87.9		Procedural	PD		
EQUIPMENT/USER FITTING INSTRUCTIONS (PERSONAL USE EQUIPMENT)			5.97.1		Procedural	913	B	Equipment/user fitting instructions
PMCS INTRODUCTION	AR	AR	5.87.5		Descriptive	018	F	PMCS introduction
PMCS Aviation Non-Aviation	AR P	AR P	5.87.6		Checklist	200	B	PMCS
PREVENTIVE MAINTENANCE INSPECTION (AIRCRAFT ONLY) Aviation Non-Aviation	R P	R P	5.119		Checklist	200	D	preventive maintenance inspection
MAINTENANCE	R	R	5.87.8					
Inspect	AR	AR	5.87.8.1.4					
Test and inspection	AR	AR	5.87.8.1.4.1		Procedural	300	B	Test and inspection

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Table A-VIII. Field and Sustainment Maintenance Manual including Parts Information IETP requirements matrix for _____.

Content Requirement	M2B Req.	M4B Req.	Ref.	PM Type	DM Type	Info Code	ICV	Info Name
Inspection of conventional and chemical ammunition or components containing radioactive materials	P	P	5.87.8.1.4.2		Procedural	310	A	Visual examinations
Pre-embarkation inspection	AR	AR	5.87.8.1.4.3		Procedural	310	A	Pre-embarkation inspection
Inspection of installed items	AR	AR	5.87.8.1.4.4		Procedural	310	J	Inspection of installed items
Inspection-acceptance and rejection criteria	AR	AR	5.87.8.1.4.5		Procedural	310	D	Inspection – Acceptance and rejection criteria
Test	AR	AR	5.87.8.1.5		Procedural	340	C	Testing
Service	AR	AR	5.87.8.1.6		Procedural	200	A	Servicing
Adjust	AR	AR	5.87.8.1.7		Procedural	271	A	Adjust
Align	AR	AR	5.87.8.1.8		Procedural	272	A	Align
Calibrate	AR	AR	5.87.8.1.9		Procedural	273	A	Calibrate
Remove	AR	AR	5.87.8.1.10		Procedural	520	A	Removal procedure
Install	AR	AR	5.87.8.1.11		Procedural	720	A	Install procedure
Replace	AR	AR	5.87.8.1.12		Procedural	685	C	Replace
Repair	AR	AR	5.87.8.1.13		Procedural	685	A	Repair
Paint	AR	AR	5.87.8.1.14		Procedural	257	B	Painting
Overhaul	AR	AR	5.87.8.1.15		Procedural	664	B	Overhaul procedure
Rebuild	AR	AR	5.87.8.1.16		Procedural	664	C	Rebuild
Lubricate	AR	AR	5.87.8.1.17		Procedural	240	A	Lubrication
Mark	AR	AR	5.87.8.1.18		Procedural	067	D	Mark
Pack	AR	AR	5.87.8.1.19		Procedural	713	A	Pack procedure
Unpack	AR	AR	5.87.8.1.20		Procedural	840	B	Unpacking
Preserve	AR	AR	5.87.8.1.21		Procedural	810	A	Preservation procedure
Assemble and prepare for use	AR	AR	5.87.8.1.22		Procedural	710	B	Assembly and preparation for use
Assemble	AR	AR	5.87.8.1.23		Procedural	710	A	Assemble procedure
Disassemble	AR	AR	5.87.8.1.24		Procedural	530	A	Disassembly procedure
Clean	AR	AR	5.87.8.1.25		Procedural	PD		
Non-destructive inspection	AR	AR	5.87.8.1.26		Procedural	350	B	Non-destructive testing inspection
Radio interference suppression	AR	AR	5.87.8.1.27		Procedural	143	A	Radio interference suppression
Place in service	AR	AR	5.87.8.1.28		Procedural	870	P	Placing in service

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Table A-VIII. Field and Sustainment Maintenance Manual including Parts Information IETP requirements matrix for _____.

Content Requirement	M2B Req.	M4B Req.	Ref.	PM Type	DM Type	Info Code	ICV	Info Name
Ground handling	AR	AR	5.87.8.1.29					
Towing	AR	AR	5.87.8.1.29.1		Procedural	174	A	Towing
Jacking	AR	AR	5.87.8.1.29.2		Procedural	172	A	Jacking
Parking	AR	AR	5.87.8.1.29.3		Procedural	170	J	Parking
Mooring	AR	AR	5.87.8.1.29.4		Procedural	17A	A	Mooring
Covering	AR	AR	5.87.8.1.29.5		Procedural	170	B	Covering
Hoisting	AR	AR	5.87.8.1.29.6		Procedural	171	B	Hoisting
Sling loading	AR	AR	5.87.8.1.29.7		Procedural	178	B	Sling loading
External power	AR	AR	5.87.8.1.29.8		Procedural	170	C	External power
Preparation storage	R	R	5.87.8.1.31		Procedural	810	C	Preparation for storage
Preparation for shipment	R	R	5.87.8.1.31A		Procedural	811 830		Preparation for shipment
Transport	R	R	5.87.8.1.31B		Procedural	831		Transport
Arm	AR	AR	5.87.8.1.32		Procedural	120	G	Procedures to activate ammunition
Load	AR	AR	5.87.8.1.33		Procedural	PD		
Unload	AR	AR	5.87.8.1.34		Procedural	PD		
Install peripheral device	AR	AR	5.87.8.1.35		Procedural	C96		
Uninstall peripheral device	AR	AR	5.87.8.1.36		Procedural	C96		
Upgrade/patch	AR	AR	5.87.8.1.37		Procedural	C96		
Configure	AR	AR	5.87.8.1.38		Procedural	C96		
Debug	AR	AR	5.87.8.1.39		Procedural	C96		
Additional maintenance task	AR	AR	5.87.8.2.2		Procedural	PD		
Follow-on maintenance	AR	AR	5.87.9		Procedural	PD		
GENERAL MAINTENANCE			5.87.10		Procedural	PD		
OVERHAUL AND RETIREMENT SCHEDULE (AIRCRAFT ONLY) Aviation Non-Aviation	 R P	 R P	5.87.13		Descriptive	288	A	Overhaul and retirement schedule.
LUBRICATION INSTRUCTION			5.87.11		Procedural	240	B	Lubrication instructions

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Table A-VIII. Field and Sustainment Maintenance Manual including Parts Information IETP requirements matrix for _____.

Content Requirement	M2B Req.	M4B Req.	Ref.	PM Type	DM Type	Info Code	ICV	Info Name
ILLUSTRATED LIST OF MANUFACTURED ITEMS			5.87.17		Descriptive	670	E	Illustrated List of manufactured items
TORQUE LIMITS			5.87.18		Procedural	711	B	Torque limits
AIRCRAFT INVENTORY MASTER GUIDE (AIRCRAFT ONLY)	Aviation R Non-Aviation P	Aviation R Non-Aviation P	5.120		Descriptive	102	B	Aircraft inventory master guide
STORAGE OF AIRCRAFT (AIRCRAFT ONLY)	Aviation R Non-Aviation P	Aviation R Non-Aviation P	5.121		Procedural	810	B	Flyable storage of aircraft
					Procedural	810	F	Short storage of aircraft
					Procedural	810	G	Intermediate storage of aircraft
WEIGHING AND LOADING (AIRCRAFT ONLY)	Aviation R Non-Aviation P	Aviation R Non-Aviation P	5.95.1		Procedural	160	B	Weighing and loading
WIRING DIAGRAMS			5.92		Descriptive	051	A	Wiring diagrams
AUXILIARY EQUIPMENT MAINTENANCE INSTRUCTIONS				Chapter PM				
AUXILIARY EQUIPMENT MAINTENANCE			5.97.2		Procedural	PD		
ILLUSTRATED LIST OF MANUFACTURED ITEMS			5.87.17		Descriptive	670	E	Illustrated list of manufactured items
TORQUE LIMITS			5.87.18		Procedural	711	B	Torque limits
WIRING DIAGRAMS			5.92		Descriptive	051	A	Wiring diagrams
AMMUNITION MAINTENANCE INSTRUCTIONS				Chapter PM				
AMMUNITION MAINTENANCE			5.87.19		Procedural	200	K	Ammunition maintenance
AMMUNITION MARKING INFORMATION			5.87.20		Procedural	067	C	Ammunition marking
FOREIGN AMMUNITION (NATO)			5.87.21		Procedural	011	B	Foreign ammunition

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Table A-VIII. Field and Sustainment Maintenance Manual including Parts Information IETP requirements matrix for _____.

Content Requirement	M2B Req.	M4B Req.	Ref.	PM Type	DM Type	Info Code	ICV	Info Name
AIRCRAFT PMS/PMD			5.117	Chapter PM				
GENERAL INFORMATION			5.86.7		Descriptive	010	D	General information (Preventive maintenance)
PMS/PMD INSPECTION			5.117		Checklist	310	E	PMS inspection
					Checklist	310	P	PMD inspection
AIRCRAFT PHASED MAINTENANCE			5.118	Chapter PM				
GENERAL INFORMATION			5.86.8		Descriptive	010	E	General information (Phased maintenance inspection)
PM INSPECTION			5.118		Checklist	310	F	PM inspection
PARTS INFORMATION	R	R	5.93	Chapter PM				
INTRODUCTION	R	R	5.93.4		Descriptive	018	E	Parts introduction
REPAIR PARTS LIST	R	R	5.93.5		IPD	941	A	Repair parts information
REPAIR PARTS FOR SPECIAL TOOLS			5.93.7		IPD	607	B	Repair parts for special tools
KIT PARTS LIST			5.93.8		IPD	607	C	Kit parts list
BULK ITEMS			5.93.9		IPD	603	B	Bulk items
SPECIAL TOOLS LIST			5.93.10		IPD	604	B	Special tools list
NSN INDEX	AR	AR	5.93.11.1.5		Descriptive	942	F	National Stock Number index
PART NUMBER INDEX	AR	AR	5.93.11.1.6		Descriptive	942	B	Part number index
REFERENCE DESIGNATOR INDEX	AR	AR	5.93.11.1.7		Descriptive	942	C	Reference designator index
BATTLE DAMAGE ASSESSMENT AND REPAIR (BDAR)			5.102	Chapter PM				
GENERAL INFORMATION			5.102.1.4		Descriptive	018	G	BDAR introduction
ASSESSING BATTLEFIELD DAMAGE								
General Fault Assessment Tables			5.102.1.5		Descriptive	410	E	General fault assessment tables
GENERAL REPAIR			5.102.1.6.1		Procedural	PD		
Repair Procedure			5.102.1.6.6		Procedural	PD		
MAJOR FUNCTIONAL GROUPS			5.102.1.6.3		Procedural	PD		
Repair Procedure			5.102.1.6.6		Procedural	PD		

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Table A-VIII. Field and Sustainment Maintenance Manual including Parts Information IETP requirements matrix for _____.

Content Requirement	M2B Req.	M4B Req.	Ref.	PM Type	DM Type	Info Code	ICV	Info Name
AUXILIARY EQUIPMENT			5.102.1.6.4		Procedural	PD		
Repair Procedure			5.102.1.6.6		Procedural	PD		
Special or Fabricated Tools			5.102.1.8		Descriptive	605	B	Support equipment and tools
Substitute Materials/Parts			5.102.1.10		Descriptive	607	D	Substitute materials/parts
DESTRUCTION OF EQUIPMENT TO PREVENT ENEMY USE *NOTE: If a separate destruction of material manual is not developed for this equipment, then the destruction chapter must be included.*			5.101.3					
Introduction			5.101.3.1.6.2					
Authorization			5.101.2.1.6.3					
Reporting Destruction			5.101.3.1.6.4	Chapter PM	Descriptive	997	D	Destruction general information
General Destruction Information			5.101.3.1.6.5					
Degree of Destruction			5.101.3.1.6.6					
Essential Components and Spare Parts			5.101.3.1.6.7					
SPECIFIC DESTRUCTION PROCEDURES								
Parts List			5.101.3.1.7		Descriptive	907	B	Parts list
Specific Destruction Procedures			5.101.3.1.8		Procedural	997	B	Destruction procedures
Classified Equipment and Documents			5.101.3.1.9		Procedural	997	C	Destruction procedures - Classified equipment
SUPPORTING INFORMATION	R	R	5.106.1	Chapter PM				
REFERENCES	R	R	5.106.1.1.2		Descriptive	017	B	References

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Table A-VIII. Field and Sustainment Maintenance Manual including Parts Information IETP requirements matrix for _____.

Content Requirement	M2B Req.	M4B Req.	Ref.	PM Type	DM Type	Info Code	ICV	Info Name
INTRODUCTION FOR STANDARD FORMAT MAC Non –Aviation Aviation	R	R	5.94.1 5.94.2		Descriptive	018	D	MAC introduction
MAINTENANCE ALLOCATION CHART (AVIATION) Non –Aviation Aviation	P	R	5.94.3		Schedule	916	B	Aviation MAC
MAINTENANCE ALLOCATION CHART (NON-AVIATION) Non –Aviation Aviation	R	P	5.94.3		Schedule	916	A	MAC
EXPENDABLE AND DURABLE ITEMS LIST	R	R	5.93.15		Descriptive	070	D	Expendable and durable items list
TOOL IDENTIFICATION LIST	R	R	5.103.1		Descriptive	062	B	Tool identification list
MANDATORY REPLACEMENT PARTS	R	R	5.93.16		Descriptive	075	D	Mandatory replacement parts
CRITICAL SAFETY ITEMS Aviation Non –Aviation	R AR	R AR	5.93.17		Descriptive	075	E	Critical safety items (CSI)
ADDITIONAL SUPPORTING INFORMATION			5.106.1.1.4		Descriptive	PD		

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TABLE A-IX. DMWR & NMWR IETP requirements matrix for _____.

Content Requirement	DWR & DWP Req.	DWO & DOR Req.	NWR & NWP Req.	Ref.	PM Type	DM Type	Info Code	ICV	Info Name
FRONT MATTER	R	R	R	5.128	Front Matter PM				
GENERAL INFORMATION, DESCRIPTION AND THEORY OF OPERATION	R	R	R	5.86	Chapter PM				
GENERAL DATA	R	R	R	5.86.3		Descriptive	010	A	General Data
Scope	R	R	R	5.86.3.1.2					
Ozone Depleting Substances (ODS)				5.86.3.1.3					
Destruction of Army Materiel to Prevent Enemy Use	R	R	R	5.86.3.1.4					
Preparation for Storage or Shipment	R	R	R	5.86.3.1.5					
Transportability Guidance	R	R	R	5.86.3.1.5A					
Nomenclature Cross-Reference List	R	R	R	5.86.3.1.6					
List of Abbreviations/Acronyms	R	R	R	5.86.3.1.7					
Safety, Care, and Handling	AR	AR	AR	5.86.3.1.8					
Calibration	AR	AR	AR	5.86.3.1.9					
Supporting Information for Repair Parts, Special Tools, TMDE, and Support Equipment	AR	AR	AR	5.86.3.1.10					
Copyright Credit Line	AR	AR	AR	5.86.3.1.11					
Item Unique Identification (IUID)	AR	AR	AR	5.86.3.1.12					
GENERAL INFORMATION	R	R	R	5.86.4					

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TABLE A-IX. DMWR & NMWR IETP requirements matrix for _____.

Content Requirement	DWR & DWP Req.	DWO & DOR Req.	NWR & NWP Req.	Ref.	PM Type	DM Type	Info Code	ICV	Info Name
Maintenance Forms, Records, and Reports	R	R	R	5.86.4.1.2		Descriptive	010	B	General Information
Reporting Equipment Improvement Recommendations (EIR)	R	R	R	5.86.4.1.3					
Corrosion Prevention and Control (CPC)	R	R	R	5.86.4.1.5					
Warranty Information	AR	AR	AR	5.86.4.1.6					
Quality of Material	R	R	R	5.86.4.1.7					
Nuclear Hardness				5.86.4.1.8					
Quality Assurance (QA)				5.86.4.1.9					
Critical Safety Items (CSI) (Aircraft Only)				5.86.4.1.10					
Engineering Change Proposals (ECP)	R	R	R	5.86.4.1.11					
Modifications				5.86.4.1.12					
Deviations and Exceptions	R	R	R	5.86.4.1.13					
Mobilization Requirements	R	R	R	5.86.4.1.14					
Cost Considerations	R	R	R	5.86.4.1.15					
EQUIPMENT DESCRIPTION AND DATA	R	R	R	5.86.5		Descriptive	000	B	Equipment Description and Data
Equipment Characteristics, Capabilities, and Features	R	R	R	5.86.5.1.2					
Location and Description of Major Components	R	R	R	5.86.5.1.3					
Equipment Differences				5.86.5.1.4					
Equipment Data	R	R	R	5.86.5.1.5					

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TABLE A-IX. DMWR & NMWR IETP requirements matrix for _____.

Content Requirement	DWR & DWP Req.	DWO & DOR Req.	NWR & NWP Req.	Ref.	PM Type	DM Type	Info Code	ICV	Info Name
Instructions for the Use, Transportation, Handling, Storage, or Disposal				5.86.5.1.6		Procedural	800	L	Instructions for the Use, Transportation, Handling, Storage, or Disposal
THEORY OF OPERATION	AR	AR	AR	5.86.6		Descriptive	042	F	Theory of Operation
TROUBLESHOOTING PROCEDURES	R	R	R	5.88					
INTRODUCTION				5.88.3		Descriptive	018	C	Troubleshooting Introduction
TECHNICAL DESCRIPTION				5.116		Descriptive	011	C	Technical Description
Equipment Description and Data	R	R	R	5.116.1.2					
Controls and Indicators				5.116.1.3					
Theory of Operation				5.116.1.4					
TROUBLESHOOTING INDEX				5.88.4	Chapter PM	Descriptive	410	F	Malfunction Index
						Descriptive	410	B	Symptom Index
						Descriptive	410	C	System/Subsystem Index
PRESHOP ANALYSIS	R	R	R	5.88.5		Procedural	341	C	Preshop Analysis
COMPONENT CHECKLIST				5.88.6		Descriptive	341	B	Component Checklist
OPERATIONAL CHECKOUT				5.88.7		Descriptive	018	V	Operational checkout introduction
						Procedural	331	B	Pretest Setup Procedures
						Procedural	320	C	Operational Checkout Test Procedure
						Descriptive	410	G	Message Index
						Descriptive	410	H	Fault Code Reference Index

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TABLE A-IX. DMWR & NMWR IETP requirements matrix for _____.

Content Requirement	DWR & DWP Req.	DWO & DOR Req.	NWR & NWP Req.	Ref.	PM Type	DM Type	Info Code	ICV	Info Name
						Procedural	334	C	Post-Operational Checkout Shutdown Procedures
TROUBLESHOOTING PROCEDURES				5.88.8		Descriptive	018	C	Troubleshooting Introduction
						Procedural	PD		General troubleshooting procedures and precautions
						Procedural	331	B	Pretest Setup Procedures
						Fault	421	B	Troubleshooting Procedure
						Procedural	334	B	Post-Troubleshooting Shutdown Procedures
DIAGNOSTICS				5.88.8.1.6.2		Process	429	A	Diagnostics
MAINTENANCE INSTRUCTIONS	R	R	R	5.87	Chapter PM				
MAINTENANCE	R	R	R	5.87.8					
Inspect	AR	AR	AR	5.87.8.1.4		l			
Test and inspection	AR	AR	AR	5.87.8.1.4.1		Procedural	300	B	Test and inspection
Inspection of conventional and chemical ammunition or components containing radioactive materials	P	P	P	5.87.8.1.4.2		Procedural	310	A	Visual Examinations
Pre-embarkation inspection	AR	AR	AR	5.87.8.1.4.3		Procedural	310	A	Pre-embarkation Inspection
Inspection of installed items	AR	AR	AR	5.87.8.1.4.4		Procedural	310	J	Inspection of installed items
Inspection-acceptance and rejection criteria	AR	AR	AR	5.87.8.1.4.5		Procedural	310	D	Inspection – Acceptance and rejection criteria
Test	AR	AR	AR	5.87.8.1.5		Procedural	340	C	Testing

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TABLE A-IX. DMWR & NMWR IETP requirements matrix for _____.

Content Requirement	DWR & DWP Req.	DWO & DOR Req.	NWR & NWP Req.	Ref.	PM Type	DM Type	Info Code	ICV	Info Name
Service	AR	AR	AR	5.87.8.1.6		Procedural	200	A	Servicing
Adjust	AR	AR	AR	5.87.8.1.7		Procedural	271	A	Adjust
Align	AR	AR	AR	5.87.8.1.8		Procedural	272	A	Align
Calibrate	AR	AR	AR	5.87.8.1.9		Procedural	273	A	Calibrate
Remove	AR	AR	AR	5.87.8.1.10		Procedural	520	A	Removal procedure
Install	AR	AR	AR	5.87.8.1.11		Procedural	720	A	Install procedure
Replace	AR	AR	AR	5.87.8.1.12		Procedural	685	C	Replace
Repair	AR	AR	AR	5.87.8.1.13		Procedural	685	A	Repair
Paint	AR	AR	AR	5.87.8.1.14		Procedural	257	B	Painting
Overhaul	AR	AR	AR	5.87.8.1.15		Procedural	664	B	Overhaul procedure
Rebuild	AR	AR	AR	5.87.8.1.16		Procedural	664	C	Rebuild
Lubricate	AR	AR	AR	5.87.8.1.17		Procedural	240	A	Lubrication
Mark	AR	AR	AR	5.87.8.1.18		Procedural	067	D	Mark
Pack	AR	AR	AR	5.87.8.1.19		Procedural	713	A	Pack procedure
Unpack	AR	AR	AR	5.87.8.1.20		Procedural	840	B	Unpacking
Preserve	AR	AR	AR	5.87.8.1.21		Procedural	810	A	Preservation Procedure
Assemble and prepare for use	AR	AR	AR	5.87.8.1.22		Procedural	710	B	Assembly and preparation for use
Assemble	AR	AR	AR	5.87.8.1.23		Procedural	710	A	Assemble Procedure
Disassemble	AR	AR	AR	5.87.8.1.24		Procedural	530	A	Disassembly procedure
Clean	AR	AR	AR	5.87.8.1.25		Procedural	PD		
Non-destructive inspection	AR	AR	AR	5.87.8.1.26		Procedural	350	B	Non-destructive testing inspection
Radio interference suppression	AR	AR	AR	5.87.8.1.27		Procedural	143	A	Radio Interference Suppression
Place in service	AR	AR	AR	5.87.8.1.28		Procedural	870	P	Placing In Service
Ground handling	AR	AR	AR	5.87.8.1.29					
Towing	AR	AR	AR	5.87.8.1.29.1		Procedural	174	A	Towing
Jacking	AR	AR	AR	5.87.8.1.29.2		Procedural	172	A	Jacking
Parking	AR	AR	AR	5.87.8.1.29.3		Procedural	175	B	Parking
Mooring	AR	AR	AR	5.87.8.1.29.4		Procedural	17A	A	Mooring

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TABLE A-IX. DMWR & NMWR IETP requirements matrix for _____.

Content Requirement	DWR & DWP Req.	DWO & DOR Req.	NWR & NWP Req.	Ref.	PM Type	DM Type	Info Code	ICV	Info Name
Covering	AR	AR	AR	5.87.8.1.29.5		Procedural	170	B	Covering
Hoisting	AR	AR	AR	5.87.8.1.29.6		Procedural	171	B	Hoisting
Sling loading	AR	AR	AR	5.87.8.1.29.7		Procedural	178	B	Sling loading
External power	AR	AR	AR	5.87.8.1.29.8		Procedural	170	C	External power
Preparation for storage	R	R	R	5.87.8.1.31		Procedural	810	C	Preparation for storage
Preparation for shipment	R	R	R	5.87.8.1.31A		Procedural	811 830		Preparation for shipment
Transport	R	R	R	5.87.8.1.31B		Procedural	831		Transport
Arm	AR	AR	AR	5.87.8.1.32		Procedural	120	G	Procedures to activate ammunition
Load	AR	AR	AR	5.87.8.1.33		Procedural	PD		
Unload	AR	AR	AR	5.87.8.1.34		Procedural	PD		
Install peripheral device	AR	AR	AR	5.87.8.1.35		Procedural	C96		
Uninstall peripheral device	AR	AR	AR	5.87.8.1.36		Procedural	C96		
Upgrade/patch	AR	AR	AR	5.87.8.1.37		Procedural	C96		
Configure	AR	AR	AR	5.87.8.1.38		Procedural	C96		
Debug	AR	AR	AR	5.87.8.1.39		Procedural	C96		
Additional maintenance task	AR	AR	AR	5.87.8.2.2		Procedural	PD		
Follow-on maintenance				5.87.9		Procedural	PD		
GENERAL MAINTENANCE				5.87.10		Procedural	PD		
OVERHAUL AND RETIREMENT SCHEDULE (AIRCRAFT ONLY)	AR	AR	AR	5.87.13		Descriptive	288	A	Overhaul and retirement schedule.
LUBRICATION INSTRUCTIONS				5.87.11		Procedural	240	B	Lubrication instructions
PRESERVATION, PACKAGING, AND MARKING				5.87.11A		Descriptive	810	H	Preservation, packaging, and marking
FACILITIES				5.87.12		Descriptive	915	A	Facilities

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Content Requirement	DWR & DWP Req.	DWO & DOR Req.	NWR & NWP Req.	Ref.	PM Type	DM Type	Info Code	ICV	Info Name
OVERHAUL INSPECTION PROCEDURES (OIP)				5.87.14		Procedural	310	C	Overhaul Inspection Procedures
DEPOT MOBILIZATION REQUIREMENTS				5.87.15		Descriptive	800	K	Depot Mobilization Requirements
QUALITY ASSURANCE REQUIREMENTS	R	R	R	5.87.16		Descriptive	315	A	Quality Assurance Requirements
ILLUSTRATION LIST OF MANUFACTURED ITEMS				5.87.17		Descriptive	670	E	Illustrated List of Manufactured Items
TORQUE LIMITS				5.87.18		Procedural	711	B	Torque Limits
AIRCRAFT INVENTORY MASTER GUIDE (AIRCRAFT ONLY)				5.120		Descriptive	102	B	Aircraft Inventory Master Guide
STORAGE OF AIRCRAFT (AIRCRAFT ONLY)			AR	5.121		Procedural	810	B	Flyable Storage of Aircraft
						Procedural	810	F	Short Storage of Aircraft
						Procedural	810	G	Intermediate Storage of Aircraft
WIRING DIAGRAMS				5.92		Descriptive	051	A	Wiring Diagrams
AUXILIARY EQUIPMENT MAINTENANCE INSTRUCTIONS					Chapter PM				
AUXILIARY EQUIPMENT MAINTENANCE				5.97.2		Procedural	PD		
ILLUSTRATED LIST OF MANUFACTURED ITEMS				5.87.17		Descriptive	670	E	Illustrated List of Manufactured Items
TORQUE LIMITS				5.87.18		Procedural	711	B	Torque Limits
WIRING DIAGRAMS				5.92		Descriptive	051	A	Wiring Diagrams

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TABLE A-IX. DMWR & NMWR IETP requirements matrix for _____.

Content Requirement	DWR & DWP Req.	DWO & DOR Req.	NWR & NWP Req.	Ref.	PM Type	DM Type	Info Code	ICV	Info Name
AMMUNITION MAINTENANCE INSTRUCTIONS					Chapter PM				
AMMUNITION MAINTENANCE				5.87.19		Procedural	200	K	Ammunition Maintenance
AMMUNITION MARKING INFORMATION				5.87.20		Procedural	067	C	Ammunition Marking
FOREIGN AMMUNITION (NATO)				5.87.21		Procedural	011	B	Foreign Ammunition
PARTS INFORMATION				5.93	Chapter PM				
DMWR, NMWR	P	P	P						
DMWR w/Parts, NMWR w/Parts	R	R	R						
INTRODUCTION	R	R	R	5.93.4		Descriptive	018	E	Parts Introduction
REPAIR PARTS LIST	R	R	R	5.93.5		IPD	941	A	Repair Parts Information
REPAIR PARTS FOR SPECIAL TOOLS				5.93.7		IPD	607	B	Repair Parts for Special Tools
KIT PARTS LIST				5.93.8		IPD	607	C	Kit Parts List
BULK ITEMS				5.93.9		IPD	603	B	Bulk Items
SPECIAL TOOLS LIST				5.93.10		IPD	604	B	Special Tools List
NSN INDEX	AR	AR	AR	5.93.11.1.5		Descriptive	942	F	National Stock Number Index
PART NUMBER INDEX	AR	AR	AR	5.93.11.1.6		Descriptive	942	B	Part number index
REFERENCE DESIGNATOR INDEX	AR	AR	AR	5.93.11.1.7		Descriptive	942	C	Reference designator index
SUPPORTING INFORMATION	R	R	R	5.106.1	Chapter PM				
REFERENCES	R	R	R	5.106.1.1.2		Descriptive	017	B	References

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TABLE A-IX. DMWR & NMWR IETP requirements matrix for _____.

Content Requirement	DWR & DWP Req.	DWO & DOR Req.	NWR & NWP Req.	Ref.	PM Type	DM Type	Info Code	ICV	Info Name
EXPENDABLE AND DURABLE ITEMS LIST	R	R	R	5.93.15		Descriptive	070	D	Expendable and Durable Items List
TOOL IDENTIFICATION LIST	R	R	R	5.103.1		Descriptive	062	B	Tool Identification List
MANDATORY REPLACEMENT PARTS	R	R	R	5.93.16		Descriptive	075	D	Mandatory Replacement Parts
CRITICAL SAFETY ITEMS (CSI)	R	R	R	5.93.17		Descriptive	075	E	Critical Safety Items (CSI)
SUPPORT ITEMS				5.106.1.1.3		Descriptive	061	B	Support Equipment and Tools
ADDITIONAL SUPPORTING INFORMATION				5.106.1.1.4		Descriptive	PD		

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Table A-X. Operator's Manual (Excluding Conventional and Chemical Ammunition) requirements matrix for _____.

Content Requirement	OPI Req.	MM3 & M3B Req.	MM 1 & M1B Req.	Ref.	PM Type	DM Type	Info Code	ICV	Info Name
FRONT MATTER	R	R	R	5.128	Front Matter PM				
CHAPTER 1. GENERAL INFORMATION, EQUIPMENT DESCRIPTION AND THEORY OF OPERATION	R	R	R	5.86	Chapter PM				
GENERAL DATA	R	R	R	5.86.3		Descriptive	010	A	General data
Scope	R	R	R	5.86.3.1.2					
Ozone Depleting Substances (ODS)				5.86.3.1.3					
Destruction of Army Materiel to Prevent Enemy Use	R	R	R	5.86.3.1.4					
Preparation for Storage or Shipment	R	R	R	5.86.3.1.5					
Transportability Guidance	R	R	R	5.86.3.1.5A					
Nomenclature Cross-Reference List	R	R	R	5.86.3.1.6					
List of Abbreviations/ Acronyms	R	R	R	5.86.3.1.7					
Safety, Care, and Handling				5.86.3.1.8					
Calibration				5.86.3.1.9					
Supporting Information for Repair Parts, Special Tools, TMDE, and Support Equipment	P			5.86.3.1.10					
Copyright Credit Line	AR	AR	AR	5.86.3.1.11					

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Table A-X. Operator's Manual (Excluding Conventional and Chemical Ammunition) requirements matrix for _____.

Content Requirement	OPI Req.	MM3 & M3B Req.	MM 1 & M1B Req.	Ref.	PM Type	DM Type	Info Code	ICV	Info Name
Item Unique Identification (IUID)	AR	AR	AR	5.86.3.1.12					
GENERAL INFORMATION	R	R	R	5.86.4		Descriptive	010	B	General information
Maintenance Forms, Records, and Reports	R	R	R	5.86.4.1.2					
Reporting Equipment Improvement Recommendations (EIR)	R	R	R	5.86.4.1.3					
Hand Receipt (HR) Manuals				5.86.4.1.4					
Corrosion Prevention and Control (CPC)	R	R	R	5.86.4.1.5					
Warranty Information				5.86.4.1.6					
Quality of Material	P	R	R	5.86.4.1.7					
Nuclear Hardness	AR	AR	AR	5.86.4.1.8					
EQUIPMENT DESCRIPTION AND DATA	R	R	R	5.86.5		Descriptive	000	B	Equipment description and data
Equipment Characteristics, Capabilities, and Features	R	R	R	5.86.5.1.2					
Location and Description of Major Components	R	R	R	5.86.5.1.3					
Equipment Differences				5.86.5.1.4					
Equipment Data	R	R	R	5.86.5.1.5					
Instructions for the Use, Transportation, Handling, Storage, or Disposal	R	R	R	5.86.5.1.6		Procedural	800	L	Instructions for the use, transportation, handling, storage, or disposal
THEORY OF OPERATION	R	R	R	5.86.6		Descriptive	042	F	Theory of operation

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Table A-X. Operator's Manual (Excluding Conventional and Chemical Ammunition) requirements matrix for _____.

Content Requirement	OPI Req.	MM3 & M3B Req.	MM 1 & M1B Req.	Ref.	PM Type	DM Type	Info Code	ICV	Info Name
CHAPTER X. OPERATOR INSTRUCTIONS	R	R	R	5.85.1.3	Chapter PM				
DESCRIPTION AND USE OF OPERATOR CONTROLS AND INDICATOR	R	R	R	5.85.3		Descriptive	111	A	Controls and indicators
OPERATION UNDER USUAL CONDITIONS	R	R	R	5.85.4					
Security Measures for Electronic Data	AR	AR	AR	5.85.4.1.2		Descriptive	990	D	Security measures for electronic data
Siting	AR	AR	AR	5.85.4.1.3		Procedural	122	A	Siting
Shelter	AR	AR	AR	5.85.4.1.4		Procedural	123	A	Shelter
Assembly and Preparation for Use	AR	AR	AR	5.85.4.1.5		Procedural	710	B	Assembly and preparation for use
Initial Adjustments, Before Use and Self-Test	AR	AR	AR	5.85.4.1.6		Procedural	121	B	Initial adjustments, before use and self-test
Operating Procedures	R	R	R	5.85.4.1.7		Procedural	131	A	Normal operation procedures
Operating Auxiliary Equipment	AR	AR	AR	5.85.4.1.9		Procedural	131	A	Normal operation procedures
Preparation for Movement	AR	AR	AR	5.85.4.1.10		Procedural	131	S	Preparation for movement
Decals and Instruction Plates	AR	AR	AR	5.85.4.1.11		Descriptive	067	A	Decals and instruction plates
OPERATION UNDER UNUSUAL CONDITIONS	R	R	R	5.85.5					
Security Measures for Electronic Data	AR	AR	AR	5.85.5.1.1		Descriptive	990	C	Security measures for electronic data (Unusual conditions)
Unusual Environment / Weather	R	R	R	5.85.5.1.2		Procedural	142	B	Unusual environment/weather

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Table A-X. Operator's Manual (Excluding Conventional and Chemical Ammunition) requirements matrix for _____.

Content Requirement	OPI Req.	MM3 & M3B Req.	MM 1 & M1B Req.	Ref.	PM Type	DM Type	Info Code	ICV	Info Name
Fording and Swimming	AR	AR	AR	5.85.5.1.3		Procedural	131	R	Fording and swimming
Interim Chemical, Biological, Radiological, Nuclear, and Explosives (CBRNE) Decontamination Procedures	AR	AR	AR	5.85.5.1.4		Procedural	139	B	Interim Chemical, Biological, Radiological, Nuclear, and Explosives (CBRNE) decontamination procedures
Jamming and Electronic Countermeasures (ECM) Procedures	AR	AR	AR	5.85.5.1.5		Procedural	144	A	Jamming and Electronic Countermeasures (ECM) procedures
Degraded Operation Procedures	AR	AR	AR	5.85.5.1.6		Procedural	142	C	Degraded operation procedures
Decals and Instruction Plates	AR	AR	AR	5.85.4.1.11		Descriptive	067	A	Decals and Instruction Plates
EMERGENCY				5.85.6		Procedural	140	B	Operation under emergency conditions
STOWAGE AND DECAL / DATA PLATE GUIDE				5.85.7		Descriptive	067	B	Stowage and Decal / Data plate guide
ON-VEHICLE EQUIPMENT LOADING PLAN				5.99.1.1		Descriptive	160	C	On-vehicle equipment loading plan
CHAPTER X. TROUBLESHOOTING MASTER INDEX					Chapter PM				
TROUBLESHOOTING INDEX				5.88.4.1.4		Descriptive	410	D	Master index

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Table A-X. Operator's Manual (Excluding Conventional and Chemical Ammunition) requirements matrix for _____.

Content Requirement	OPI Req.	MM3 & M3B Req.	MM 1 & M1B Req.	Ref.	PM Type	DM Type	Info Code	ICV	Info Name
CHAPTER X. TROUBLESHOOTING PROCEDURES *NOTE: The notation (*) indicates that, if required, at least one of these content items shall be included.*		R	R	5.88	Chapter PM				
TROUBLESHOOTING INTRODUCTION				5.88.3		Descriptive	018	C	Troubleshooting introduction
TROUBLESHOOTING INDEX				5.88.4		Descriptive	410	F	Malfunction index
						Descriptive	410	B	Symptom index
						Descriptive	410	C	System/subsystem index
**OPERATIONAL CHECKOUT*	AR	AR	AR	5.88.7		Descriptive	018	V	Operational checkout introduction
						Procedural	331	B	Pretest setup procedures
						Procedural	320	C	Operational checkout test procedure
						Descriptive	410	G	Message index
						Descriptive	410	H	Fault code reference index
						Procedural	334	C	Post-operational checkout shutdown procedures
**TROUBLESHOOTING PROCEDURES*	AR	AR	AR	5.88.8		Descriptive	018	C	Troubleshooting introduction
						Procedural	PD		General troubleshooting procedures and precautions
						Procedural	331	B	Pretest setup procedures
						Fault	421	B	Troubleshooting procedure
						Procedural	334	B	Post-troubleshooting shutdown procedures
**DIAGNOSTICS*	AR	AR	AR	5.88.8.1.6.2		Process	429	A	Diagnostics

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Table A-X. Operator's Manual (Excluding Conventional and Chemical Ammunition) requirements matrix for _____.

Content Requirement	OPI Req.	MM3 & M3B Req.	MM 1 & M1B Req.	Ref.	PM Type	DM Type	Info Code	ICV	Info Name
CHAPTER X. PMCS MAINTENANCE INSTRUCTIONS *NOTE: PMCS is required as a minimum in one maintenance chapter.*	R	R	R		Chapter PM				
PMCS INTRODUCTION	R	R	R	5.87.5		Descriptive	018	F	PMCS introduction
PMCS, INCLUDING LUBRICATION INSTRUCTIONS	R	R	R	5.87.6		Checklist	200	B	PMCS
CHAPTER X. MAINTENANCE INSTRUCTIONS *NOTE: PMCS is required as a minimum in one maintenance chapter.*	R	R	R	5.87	Chapter PM				
SERVICE UPON RECEIPT	P	R	R	5.87.3					
Siting	P	AR	AR	5.85.4.1.3		Procedural	122	A	Siting
Shelter requirements	P	AR	AR	5.85.4.1.4		Procedural	123	A	Shelter
Service upon receipt of materiel	P	R	R	5.87.3.1.2					
Unpacking	P	R	R	5.87.3.1.2.1		Procedural	840	B	Unpacking
Checking unpacked equipment	P	R	R	5.87.3.1.2.2		Checklist	870	B	Checking unpacked equipment
Processing unpacked equipment	P	R	R	5.87.3.1.2.3		Procedural	870	C	Processing unpacked equipment
Installation instructions	P	R	R	5.87.3.1.3					
Assembly of equipment	P	R	R	5.87.3.1.3.1		Procedural	710	C	Assembly of equipment

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Table A-X. Operator's Manual (Excluding Conventional and Chemical Ammunition) requirements matrix for _____.

Content Requirement	OPI Req.	MM3 & M3B Req.	MM 1 & M1B Req.	Ref.	PM Type	DM Type	Info Code	ICV	Info Name
Installation of the equipment	P	R	R	5.87.3.1.3.2		Procedural	720	A	Install procedure
Special application installation instructions	P	R	R	5.87.3.1.3.3		Procedural	720	B	Special application installation instructions
Van and shelter procedure	P	R	R	5.87.3.1.3.4		Procedural	123	C	Van and shelter procedure
Preliminary servicing of equipment	P	AR	AR	5.87.3.1.4		Procedural	200	F	Preliminary servicing
Preliminary checks and adjustment of equipment	P	AR	AR	5.87.3.1.5		Procedural	271	B	Preliminary checks and adjustment of equipment
Preliminary calibration of equipment	P	AR	AR	5.87.3.1.6		Procedural	273	D	Preliminary calibration of equipment
Circuit alignment	P	AR	AR	5.87.3.1.7		Procedural	272	B	Circuit alignment
Ammunition markings	P	AR	AR	5.87.3.1.9		Procedural	067	C	Ammunition marking
Classification of defects	P	AR	AR	5.87.3.1.10		Procedural	350	C	Classification of defects
Ammunition handling	P	AR	AR	5.87.3.1.11		Procedural	170	E	Handling ammunition
Procedures to activate ammunition	P	AR	AR	5.87.3.1.12		Procedural	276	G	Procedures to activate ammunition
Additional maintenance task	P	AR	AR	5.87.3.1.13		Procedural	PD		
Follow-on maintenance	P	AR	AR	5.87.9		Procedural	PD		
EQUIPMENT / USER FITTING INSTRUCTIONS (PERSONAL USE EQUIPMENT)	AR	AR	AR	5.97.1		Procedural	913	B	Equipment/User fitting instructions
PMCS INTRODUCTION	R	R	R	5.87.5		Descriptive	018	F	PMCS introduction
PMCS	R	R	R	5.87.6		Checklist	200	B	PMCS
MAINTENANCE	R	R	R	5.87.8					

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Table A-X. Operator's Manual (Excluding Conventional and Chemical Ammunition) requirements matrix for _____.

Content Requirement	OPI Req.	MM3 & M3B Req.	MM 1 & M1B Req.	Ref.	PM Type	DM Type	Info Code	ICV	Info Name
Inspect	AR	AR	AR	5.87.8.1.4					
Test and inspection	AR	AR	AR	5.87.8.1.4.1		Procedural	300	B	Test and inspection
Inspection of conventional and chemical ammunition or components containing radioactive materials	AR	AR	AR	5.87.8.1.4.2		Procedural	310	A	Visual examinations
Pre-embarkation inspection	AR	AR	AR	5.87.8.1.4.3		Procedural	310	N	Pre-embarkation inspection
Inspection of installed items	AR	AR	AR	5.87.8.1.4.4		Procedural	310	J	Inspection of installed items
Inspection-acceptance and rejection criteria	AR	AR	AR	5.87.8.1.4.5		Procedural	310	D	Inspection – Acceptance and rejection criteria
Test	AR	AR	AR	5.87.8.1.5		Procedural	340	C	Testing
Service	AR	AR	AR	5.87.8.1.6		Procedural	200	A	Servicing
Adjust	AR	AR	AR	5.87.8.1.7		Procedural	271	A	Adjust
Align	AR	AR	AR	5.87.8.1.8		Procedural	272	A	Align
Calibrate	AR	AR	AR	5.87.8.1.9		Procedural	273	A	Calibrate
Remove	AR	AR	AR	5.87.8.1.10		Procedural	520	A	Removal procedure
Install	AR	AR	AR	5.87.8.1.11		Procedural	720	A	Install procedure
Replace	AR	AR	AR	5.87.8.1.12		Procedural	685	C	Replace
Repair	AR	AR	AR	5.87.8.1.13		Procedural	685	A	Repair
Paint	AR	AR	AR	5.87.8.1.14		Procedural	257	B	Painting
Overhaul	AR	AR	AR	5.87.8.1.15		Procedural	664	B	Overhaul procedure
Rebuild	AR	AR	AR	5.87.8.1.16		Procedural	664	C	Rebuild
Lubricate	AR	AR	AR	5.87.8.1.17		Procedural	240	A	Lubrication
Mark	AR	AR	AR	5.87.8.1.18		Procedural	067	D	Mark
Pack	AR	AR	AR	5.87.8.1.19		Procedural	713	A	Pack procedure
Unpack	AR	AR	AR	5.87.8.1.20		Procedural	840	B	Unpacking
Preserve	AR	AR	AR	5.87.8.1.21		Procedural	810	A	Preservation procedure
Assemble and prepare for use	AR	AR	AR	5.87.8.1.22		Procedural	710	B	Assembly and preparation for use

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Table A-X. Operator's Manual (Excluding Conventional and Chemical Ammunition) requirements matrix for _____.

Content Requirement	OPI Req.	MM3 & M3B Req.	MM 1 & M1B Req.	Ref.	PM Type	DM Type	Info Code	ICV	Info Name
Assemble	AR	AR	AR	5.87.8.1.23		Procedural	710	A	Assembly procedure
Disassemble	AR	AR	AR	5.87.8.1.24		Procedural	530	A	Disassembly procedure
Clean	AR	AR	AR	5.87.8.1.25		Procedural	PD		
Non-destructive inspection	AR	AR	AR	5.87.8.1.26		Procedural	350	B	Non-destructive testing inspection
Radio interference suppression	AR	AR	AR	5.87.8.1.27		Procedural	143	A	Radio interference suppression
Place in service	AR	AR	AR	5.87.8.1.28		Procedural	870	P	Placing in service
Ground handling	AR	AR	AR	5.87.8.1.29					
Towing	AR	AR	AR	5.87.8.1.29.1		Procedural	174	A	Towing
Jacking	AR	AR	AR	5.87.8.1.29.2		Procedural	172	A	Jacking
Parking	AR	AR	AR	5.87.8.1.29.3		Procedural	170	J	Parking
Mooring	AR	AR	AR	5.87.8.1.29.4		Procedural	17A	A	Mooring
Covering	AR	AR	AR	5.87.8.1.29.5		Procedural	170	B	Covering
Hoisting	AR	AR	AR	5.87.8.1.29.6		Procedural	171	B	Hoisting
Sling loading	AR	AR	AR	5.87.8.1.29.7		Procedural	178	B	Sling loading
External power	AR	AR	AR	5.87.8.1.29.8		Procedural	170	C	External power
Preparation for storage	R	R	R	5.87.8.1.31		Procedural	810	C	Preparation for storage or shipment
Preparation for shipment	R	R	R	5.87.8.1.31A		Procedural	811 830		
Transport	R	R	R	5.87.8.1.31B		Procedural	831		
Arm	AR	AR	AR	5.87.8.1.32		Procedural	120	G	Procedures to activate ammunition
Load	AR	AR	AR	5.87.8.1.33		Procedural	PD		
Unload	AR	AR	AR	5.87.8.1.34		Procedural	PD		
Install peripheral device	AR	AR	AR	5.87.8.1.35		Procedural	C96		
Uninstall peripheral device	AR	AR	AR	5.87.8.1.36		Procedural	C96		
Upgrade/patch	AR	AR	AR	5.87.8.1.37		Procedural	C96		
Configure	AR	AR	AR	5.87.8.1.38		Procedural	C96		
Debug	AR	AR	AR	5.87.8.1.39		Procedural	C96		
Additional maintenance task	AR	AR	AR	5.87.8.2.2		Procedural	PD		

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Table A-X. Operator's Manual (Excluding Conventional and Chemical Ammunition) requirements matrix for _____.

Content Requirement	OPI Req.	MM3 & M3B Req.	MM 1 & M1B Req.	Ref.	PM Type	DM Type	Info Code	ICV	Info Name
Follow-on maintenance	AR	AR	AR	5.87.9		Procedural	PD		
GENERAL MAINTENANCE				5.87.10		Procedural	PD		
LUBRICATION INSTRUCTIONS				5.87.11		Procedural	240	B	Lubrication instructions
ILLUSTRATED LIST OF MANUFACTURED ITEMS				5.87.17		Descriptive	670	E	Illustrated list of manufactured items
TORQUE LIMITS				5.87.18		Procedural	711	B	Torque limits
WIRING DIAGRAMS				5.92		Descriptive	051	A	Wiring diagrams
CHAPTER X. AUXILIARY EQUIPMENT MAINTENANCE INSTRUCTIONS					Chapter PM				
AUXILIARY EQUIPMENT MAINTENANCE				5.97.2		Procedural	PD		
ILLUSTRATED LIST OF MANUFACTURED ITEMS				5.87.17		Descriptive	670	E	Illustrated list of manufactured items
TORQUE LIMITS				5.87.18		Procedural	711	B	Torque limits
WIRING DIAGRAMS				5.92		Descriptive	051	A	Wiring diagrams
CHAPTER X. AMMUNITION MAINTENANCE INSTRUCTIONS					Chapter PM				
AMMUNITION MAINTENANCE				5.87.19		Procedural	200	K	Ammunition maintenance
AMMUNITION MARKING INFORMATION				5.87.20		Procedural	067	C	Ammunition marking

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Table A-X. Operator's Manual (Excluding Conventional and Chemical Ammunition) requirements matrix for _____.

Content Requirement	OPI Req.	MM3 & M3B Req.	MM 1 & M1B Req.	Ref.	PM Type	DM Type	Info Code	ICV	Info Name
FOREIGN AMMUNITION (NATO)				5.87.21		Procedural	011	B	Foreign ammunition
CHAPTER X. PARTS INFORMATION									
Operator, Field and Sustainment Manuals	P	P	P	5.93					
Operator, Field and Sustainment Manuals with parts	P	R	R						
INTRODUCTION	P	R	R	5.93.4		Descriptive	018	E	Parts introduction
REPAIR PARTS LIST	P	R	R	5.93.5		IPD	941	A	Repair parts information
REPAIR PARTS FOR SPECIAL TOOLS	P			5.93.7	Chapter PM	IPD	607	B	Repair parts for special tools
KIT PARTS LIST	P			5.93.8		IPD	607	C	Kit parts list
BULK ITEM	P			5.93.9		IPD	603	B	Bulk items
SPECIAL TOOLS LIST	P			5.93.10		IPD	604	B	Special tools list
NSN INDEX	P	R	R	5.93.11.1.5		Descriptive	942	F	National Stock Number index
P/N INDEX	P	R	R	5.93.11.1.6		Descriptive	942	B	Part number index
REFERENCE DESIGNATOR INDEX	P			5.93.11.1.7		Descriptive	942	C	Reference designator index

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Table A-X. Operator's Manual (Excluding Conventional and Chemical Ammunition) requirements matrix for _____.

Content Requirement	OPI Req.	MM3 & M3B Req.	MM 1 & M1B Req.	Ref.	PM Type	DM Type	Info Code	ICV	Info Name
DESTRUCTION OF EQUIPMENT TO PREVENT ENEMY USE *NOTE: If a separate destruction of material manual is not developed for this equipment, then the destruction chapter must be included.*				5.101.3					
Introduction				5.101.3.1.6.2					
Authorization				5.101.2.1.6.3					
Reporting Destruction				5.101.3.1.6.4					
General Destruction Information				5.101.3.1.6.5	Chapter PM	Descriptive	997	D	Destruction general information
Degree of Destruction				5.101.3.1.6.6					
Essential Components and Spare Parts				5.101.3.1.6.7					
SPECIFIC DESTRUCTION PROCEDURES									
Parts List				5.101.3.1.7		Descriptive	907	B	Parts list
Specific Destruction Procedures				5.101.3.1.8		Procedural	997	B	Destruction procedures
Classified Equipment and Documents				5.101.3.1.9		Procedural	997	C	Destruction procedures - Classified equipment
CHAPTER X. SUPPORTING INFORMATION	R	R	R	5.106.1	Chapter PM				
REFERENCES	R	R	R	5.106.1.1.2		Descriptive	017	B	References

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Table A-X. Operator's Manual (Excluding Conventional and Chemical Ammunition) requirements matrix for _____.

Content Requirement	OPI Req.	MM3 & M3B Req.	MM 1 & M1B Req.	Ref.	PM Type	DM Type	Info Code	ICV	Info Name
INTRODUCTION FOR NON-AVIATION MAC	P	R	R	5.94.1		Descriptive	018	D	MAC introduction
MAINTENANCE ALLOCATION CHART	P	R	R	5.94.3		Schedule	916	A	MAC
COMPONENTS OF END ITEM (COEI) AND BASIC ISSUE ITEMS (BII) LISTS	R	R	R	5.93.12 5.93.13		Descriptive	105	D	Components of End Item (COEI) list
						Descriptive	105	C	Basic Issue Items (BII) list
ADDITIONAL AUTHORIZATION LIST (AAL)				5.93.14		Descriptive	104	C	Additional Authorization List (AAL)
EXPENDABLE AND DURABLE ITEMS LIST	R	R	R	5.93.15		Descriptive	070	D	Expendable and durable items list
TOOL IDENTIFICATION LIST	R	R	R	5.103.1		Descriptive	062	B	Tool identification list
MANDATORY REPLACEMENT PARTS	R	R	R	5.93.16		Descriptive	075	D	Mandatory replacement parts
CRITICAL SAFETY ITEMS	AR	AR	AR	5.93.17		Descriptive	075	E	Critical Safety Items (CSI)
ADDITIONAL SUPPORTING INFORMATION				5.106.1.1.4		Descriptive	PD		
REAR MATTER	R	R	R	5.128.3.1	Rear Matter PM				

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Table A-XI. Sustainment Maintenance Manual (Excluding Conventional and Chemical Ammunition) requirements matrix for _____.

Content Requirement	MM0 & M0B Req.	Ref.	PM Type	DM Type	Info Code	ICV	Info Name
FRONT MATTER	R	5.128	Front Matter PM				
CHAPTER 1. GENERAL INFORMATION, EQUIPMENT DESCRIPTION AND THEORY OF OPERATION	R	5.86	Chapter PM				
GENERAL DATA	R	5.86.3		Descriptive	010	A	General data
Scope	R	5.86.3.1.2					
Ozone Depleting Substances (ODS)		5.86.3.1.3					
Destruction of Army Materiel to Prevent Enemy Use	R	5.86.3.1.4					
Preparation for Storage or Shipment	R	5.86.3.1.5					
Transportability Guidance	R	5.86.3.1.5A					
Nomenclature Cross-Reference List		5.86.3.1.6					
List of Abbreviations	R	5.86.3.1.7					
Safety, Care, and Handling	AR	5.86.3.1.8					
Calibration		5.86.3.1.9					
Supporting Information for Repair Parts, Special Tools, TMDE, and Support Equipment		5.86.3.1.10					
Copyright Credit Line		5.86.3.1.11					
Item Unique identification (IUID)	AR	5.86.3.1.12					
GENERAL INFORMAITON	R	5.86.4		Descriptive	010	B	General information
Maintenance Forms, Records, and Reports	R	5.86.4.1.2					
Reporting Equipment Improvement Recommendations (EIR)	R	5.86.4.1.3					
Hand Receipt (HR) Manuals		5.86.4.1.4					
Corrosion Prevention and Control (CPC)	R	5.86.4.1.5					

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Table A-XI. Sustainment Maintenance Manual (Excluding Conventional and Chemical Ammunition) requirements matrix for _____.

Content Requirement	MM0 & M0B Req.	Ref.	PM Type	DM Type	Info Code	ICV	Info Name
Warranty Information		5.86.4.1.6					
Quality of Material	R	5.86.4.1.7					
Nuclear Hardness		5.86.4.1.8					
Quality Assurance Non-aviation Aviation	 P R	5.86.4.1.9					
Critical Safety Items Non-Aviation Aviation	 P R	5.86.4.1.10					
EQUIPMENT DESCRIPTION AND DATA	R	5.86.5					
Equipment Characteristics, Capabilities, and Features	R	5.86.5.1.2		Descriptive	000	B	Equipment description and data
Location and Description of Major Components	R	5.86.5.1.3					
Equipment Differences		5.86.5.1.4					
Equipment Data	R	5.86.5.1.5					
Instructions for the Use, Transportation, Handling, Storage, or Disposal		5.86.5.1.6		Procedural	800	L	Instructions for the use, transportation, handling, storage, or disposal
THEORY OF OPERATION	R	5.86.6		Descriptive	042	F	Theory of operation
CHAPTER X. TROUBLESHOOTING MASTER INDEX			Chapter PM				
TROUBLESHOOTING INDEX		5.88.4.1.4		Descriptive	410	D	Master Index
CHAPTER X. TROUBLESHOOTING PROCEDURES *NOTE: The notation (*) indicates that at least one of these content items shall be included.*	R	5.88	Chapter PM				
INTRODUCTION		5.88.3		Descriptive	018	C	Troubleshooting introduction
TROUBLESHOOTING INDEX		5.88.4		Descriptive	410	F	Malfunction index
				Descriptive	410	B	Symptom index
				Descriptive	410	C	System/Subsystem index

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Table A-XI. Sustainment Maintenance Manual (Excluding Conventional and Chemical Ammunition) requirements matrix for _____.

Content Requirement	MM0 & M0B Req.	Ref.	PM Type	DM Type	Info Code	ICV	Info Name
**OPERATIONAL CHECKOUT*		5.88.7		Descriptive	018	V	Operational checkout introduction
				Procedural	331	B	Pretest setup procedures
				Procedural	320	C	Operational checkout test procedure
				Descriptive	410	G	Message index
				Descriptive	410	H	Fault code reference index
				Procedural	334	C	Post-operational checkout shutdown procedures
**TROUBLESHOOTING PROCEDURES*		5.88.8		Descriptive	018	C	Troubleshooting introduction
				Procedural	PD		General troubleshooting procedures and precautions
				Procedural	331	B	Pretest setup procedures
				Fault	421	B	Troubleshooting procedure
				Procedural	334	B	Post-troubleshooting shutdown procedures
**DIAGNOSTICS*		5.88.8.1.6.2		Process	429	A	Diagnostics
CHAPTER X. PMCS MAINTENANCE INSTRUCTIONS			Chapter PM				
PMCS INTRODUCTION Non-aviation / Aviation	AR / P	5.87.5		Descriptive	018	F	PMCS introduction
PMCS, INCLUDING LUBRICATION INSTRUCTIONS Non-aviation / Aviation	AR / P	5.87.6		Checklist	200	B	PMCS
CHAPTER X. MAINTENANCE INSTRUCTIONS	R		Chapter PM				
SERVICE UPON RECEIPT(FIELD LEVEL ONLY)	P	5.87.3					

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Table A-XI. Sustainment Maintenance Manual (Excluding Conventional and Chemical Ammunition) requirements matrix for _____.

Content Requirement	MM0 & M0B Req.	Ref.	PM Type	DM Type	Info Code	ICV	Info Name
EQUIPMENT / USER FITTING INSTRUCTIONS (PERSONAL USE EQUIPMENT)		5.97.1		Procedural	913	B	Equipment/User fitting instructions
PREVENTIVE MAINTENANCE INSPECTION Non-Aviation Aviation	 P R	5.119		Checklist	200	D	Preventive maintenance inspection
MAINTENANCE	R	5.87.8					
Inspect	AR	5.87.8.1.4					
Test and inspection		5.87.8.1.4.1		Procedural	300	B	Test and inspection
Inspection of conventional and chemical ammunition or components containing radioactive materials		5.87.8.1.4.2		Procedural	310	A	Visual examinations
Pre-embarkation inspection		5.87.8.1.4.3		Procedural	310	N	Pre-embarkation inspection
Inspection of installed items		5.87.8.1.4.4		Procedural	310	J	Inspection of installed items
Inspection-acceptance and rejection criteria		5.87.8.1.4.5		Procedural	310	D	Inspection – Acceptance and rejection criteria
Test	AR	5.87.8.1.5		Procedural	340	C	Testing
Service	AR	5.87.8.1.6		Procedural	200	A	Servicing
Adjust	AR	5.87.8.1.7		Procedural	271	A	Adjust
Align	AR	5.87.8.1.8		Procedural	272	A	Align
Calibrate	AR	5.87.8.1.9		Procedural	273	A	Calibrate
Remove	AR	5.87.8.1.10		Procedural	520	A	Removal procedure
Install	AR	5.87.8.1.11		Procedural	720	A	Install procedure
Replace	AR	5.87.8.1.12		Procedural	685	C	Replace
Repair	AR	5.87.8.1.13		Procedural	685	A	Repair
Paint	AR	5.87.8.1.14		Procedural	257	B	Painting
Overhaul	AR	5.87.8.1.15		Procedural	664	B	Overhaul procedure
Rebuild	AR	5.87.8.1.16		Procedural	664	C	Rebuild
Lubricate	AR	5.87.8.1.17		Procedural	240	A	Lubrication
Mark	AR	5.87.8.1.18		Procedural	067	D	Mark
Pack	AR	5.87.8.1.19		Procedural	713	A	Pack procedure

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Table A-XI. Sustainment Maintenance Manual (Excluding Conventional and Chemical Ammunition) requirements matrix for _____.

Content Requirement	MM0 & M0B Req.	Ref.	PM Type	DM Type	Info Code	ICV	Info Name
Unpack	AR	5.87.8.1.20		Procedural	840	B	Unpacking
Preserve	AR	5.87.8.1.21		Procedural	810	A	Preservation procedure
Assemble and prepare for use	AR	5.87.8.1.22		Procedural	710	B	Assembly and preparation for use
Assemble	AR	5.87.8.1.23		Procedural	710	A	Assembly procedure
Disassemble	AR	5.87.8.1.24		Procedural	530	A	Disassembly procedure
Clean	AR	5.87.8.1.25		Procedural	PD		
Non-destructive inspection	AR	5.87.8.1.26		Procedural	350	B	Non-destructive testing inspection
Radio interference suppression	AR	5.87.8.1.27		Procedural	143	A	Radio interference suppression
Place in service	AR	5.87.8.1.28		Procedural	870	P	Placing in service
Ground handling	AR	5.87.8.1.29					
Towing		5.87.8.1.29.1		Procedural	174	A	Towing
Jacking		5.87.8.1.29.2		Procedural	172	A	Jacking
Parking		5.87.8.1.29.3		Procedural	170	J	Parking
Mooring		5.87.8.1.29.4		Procedural	17A	A	Mooring
Covering		5.87.8.1.29.5		Procedural	170	B	Covering
Hoisting		5.87.8.1.29.6		Procedural	171	B	Hoisting
Sling loading		5.87.8.1.29.7		Procedural	178	B	Sling loading
External power		5.87.8.1.29.8		Procedural	170	C	External power
Preparation for storage	R	5.87.8.1.31		Procedural	810	C	Preparation for storage or shipment
Preparation for shipment	R	5.87.8.1.31A		Procedural	811 830		
Transport	R	5.87.8.1.31B		Procedural	831		
Arm	AR	5.87.8.1.32		Procedural	120	G	Procedures to activate ammunition
Load	AR	5.87.8.1.33		Procedural	PD		
Unload	AR	5.87.8.1.34		Procedural	PD		
Install peripheral device	AR	5.87.8.1.35		Procedural	C96		
Uninstall peripheral device	AR	5.87.8.1.36		Procedural	C96		
Upgrade/patch	AR	5.87.8.1.37		Procedural	C96		
Configure	AR	5.87.8.1.38		Procedural	C96		
Debug	AR	5.87.8.1.39		Procedural	C96		
Additional maintenance task	AR	5.87.8.2.2		Procedural	PD		
Follow-on maintenance	AR	5.87.9		Procedural	PD		

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Table A-XI. Sustainment Maintenance Manual (Excluding Conventional and Chemical Ammunition) requirements matrix for _____.

Content Requirement	MM0 & M0B Req.	Ref.	PM Type	DM Type	Info Code	ICV	Info Name
OVERHAUL AND RETIREMENT SCHEDULE Non-Aviation Aviation	 P R	5.87.13		Descriptive	288	A	Overhaul and retirement schedule
GENERAL MAINTENANCE		5.87.10		Procedural	PD		
LUBRICATION INSTRUCTIONS		5.87.11		Procedural	240	B	Lubrication instructions
ILLUSTRATED LIST OF MANUFACTURED ITEMS		5.87.17		Descriptive	670	E	Illustrated list of manufactured items
TORQUE LIMITS		5.87.18		Procedural	711	B	Torque limits
AIRCRAFT INVENTORY MASTER GUIDE Non-Aviation Aviation	P	5.120		Descriptive	102	B	Aircraft inventory master guide
STORAGE OF AIRCRAFT Non-Aviation Aviation	P	5.121		Procedural	810	B	Flyable storage of aircraft
				Procedural	810	F	Short storage of aircraft
				Procedural	810	G	Intermediate storage of aircraft
WEIGHING AND LOADING Non-Aviation Aviation	 P R	5.95.1		Procedural	160	B	Weighing and loading
WIRING DIAGRAMS		5.92		Descriptive	051	A	Wiring diagrams
CHAPTER X. AUXILIARY EQUIPMENT MAINTENANCE INSTRUCTIONS							
AUXILIARY EQUIPMENT MAINTENANCE		5.97.2	Chapter PM	Procedural	PD		
ILLUSTRATED LIST OF MANUFACTURED ITEMS		5.87.17		Descriptive	670	E	Illustrated list of manufactured items
TORQUE LIMITS		5.87.18		Procedural	711	B	Torque limits
WIRING DIAGRAMS		5.92		Descriptive	051	A	Wiring diagrams

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Table A-XI. Sustainment Maintenance Manual (Excluding Conventional and Chemical Ammunition) requirements matrix for _____.

Content Requirement	MM0 & M0B Req.	Ref.	PM Type	DM Type	Info Code	ICV	Info Name
CHAPTER X. AMMUNITION MAINTENANCE INSTRUCTIONS							
AMMUNITION MAINTENANCE		5.87.19	Chapter PM	Procedural	200	K	Ammunition maintenance
AMMUNITION MARKING INFORMATION		5.87.20		Procedural	067	C	Ammunition marking
FOREIGN AMMUNITION (NATO)		5.87.21		Procedural	011	B	Foreign ammunition
AIRCRAFT PMS/PMD							
GENERAL INFORMATION		5.86.7	Chapter PM	Descriptive	010	D	General information
PMS/PMD INSPECTION		5.117		Checklist	310	E	PMS inspection
				Checklist	310	P	PMD inspection
AIRCRAFT PHASED MAINTENANCE							
GENERAL INFORMATION		5.86.8	Chapter PM	Description	010	E	General information
PM INSPECTION		5.118		Checklist	310	F	PM inspection
CHAPTER X. PARTS INFORMATION		5.93					
w/out parts	P						
w/parts	R						
INTRODUCTION	R	5.93.4	Chapter PM	Descriptive	018	E	Parts introduction
REPAIR PARTS LIST	R	5.93.5		IPD	941	A	Repair parts information
REPAIR PARTS FOR SPECIAL TOOLS		5.93.7		IPD	607	B	Repair parts for special tools
KIT PARTS LIST		5.93.8		IPD	607	C	Kit parts list
BULK ITEMS		5.93.9		IPD	603	B	Bulk items
SPECIAL TOOLS LIST		5.93.10		IPD	604	B	Special tools list
NSN INDEX	R	5.93.11.1.5		Descriptive	942	F	National Stock Number index
P/N INDEX	R	5.93.11.1.6		Descriptive	942	B	Part number index
REFERENCE DESIGNATOR INDEX		5.93.11.1.7		Descriptive	942	C	Reference designator index

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Table A-XI. Sustainment Maintenance Manual (Excluding Conventional and Chemical Ammunition) requirements matrix for _____.

Content Requirement	MM0 & M0B Req.	Ref.	PM Type	DM Type	Info Code	ICV	Info Name
DESTRUCTION TO PREVENT ENEMY USE *NOTE: If a separate destruction of material manual is not developed for this equipment, then the destruction chapter must be included.*		5.101.3	Chapter PM				
Introduction		5.101.3.1.6.2		Descriptive	997	D	Destruction general information
Authorization		5.101.3.1.6.3					
Reporting Destruction		5.101.3.1.6.4					
General Destruction Information		5.101.3.1.6.5					
Degree of Destruction		5.101.3.1.6.6					
Essential Components and Spare Parts		5.101.3.1.6.7					
SPECIFIC DESTRUCTION PROCEDURES							
Parts List		5.101.3.1.7		Descriptive	907	B	Parts list
Specific Destruction Procedures		5.101.3.1.8		Procedural	997	B	Destruction procedures
Classified Equipment and Documents		5.101.3.1.9		Procedural	997	C	Destruction procedures – Classified equipment
CHAPTER X. SUPPORTING INFORMATION	R	5.106.1	Chapter PM				
REFERENCES	R	5.106.1.1.2		Descriptive	017	B	References
EXPENDABLE AND DURABLE ITEMS	R	5.93.15		Descriptive	070	D	Expendable and durable items list
TOOL IDENTIFICATION LIST	R	5.103.1		Descriptive	062	B	Tool identification list
MANDATORY REPLACEMENT PARTS	R	5.93.16		Descriptive	075	D	Mandatory replacement parts
CRITICAL SAFETY ITEMS Non-Aviation Aviation		5.93.17		Descriptive	075	E	Critical Safety Items (CSI)
ADDITIONAL SUPPORTING INFORMATION		5.106.1.1.4		Descriptive	PD		

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Table A-XI. Sustainment Maintenance Manual (Excluding Conventional and Chemical Ammunition) requirements matrix for _____.

Content Requirement	MM0 & M0B Req.	Ref.	PM Type	DM Type	Info Code	ICV	Info Name
REAR MATTER	R	5.128.3.1	Rear Matter PM				

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Table A-XII. Field and Sustainment Maintenance Manual (Excluding Conventional and Chemical Ammunition) requirements matrix for _____.

Content Requirement	MM2, M2B Req.	MM4, M4B Req.	Ref.	PM Type	DM Type	Info Code	ICV	Info Name
FRONT MATTER	R	R	5.128	Front Matter PM				
CHAPTER 1. GENERAL INFORMATION, EQUIPMENT DESCRIPTION AND THEORY OF OPERATION	R	R	5.86	Chapter PM				
GENERAL DATA	R	R	5.86.3		Descriptive	010	A	General data
Scope	R	R	5.86.3.1.2					
Ozone Depleting Substances (ODS)			5.86.3.1.3					
Destruction of Army Materiel to Prevent Enemy Use	R	R	5.86.3.1.4					
Preparation for Storage or Shipment	R	R	5.86.3.1.5					
Transportability Guidance	R	R	5.86.3.1.5A					
Nomenclature Cross-Reference List			5.86.3.1.6					
List of Abbreviations/Acronyms	R	R	5.86.3.1.7					
Safety, Care, and Handling	AR	AR	5.86.3.1.8					
Calibration			5.86.3.1.9					
Supporting Information for Repair Parts, Special Tools, TMDE, and Support Equipment			5.86.3.1.10					
Copyright Credit Line			5.86.3.1.11					
Item Unique Identification (IUID)	AR	AR	5.86.3.1.12					
GENERAL INFORMATION	R	R	5.86.4					
Maintenance Forms, Records, and Reports	R	R	5.86.4.1.2		Descriptive	010	B	General Information
Reporting Equipment Improvement Recommendations (EIR)	R	R	5.86.4.1.3					
Hand Receipt (HR) Manuals			5.86.4.1.4					

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Table A-XII. Field and Sustainment Maintenance Manual (Excluding Conventional and Chemical Ammunition) requirements matrix for _____.

Content Requirement	MM2, M2B Req.	MM4, M4B Req.	Ref.	PM Type	DM Type	Info Code	ICV	Info Name
Corrosion Prevention and Control (CPC)	R	R	5.86.4.1.5					
Warranty Information			5.86.4.1.6					
Quality of Material	R	R	5.86.4.1.7					
Nuclear Hardness			5.86.4.1.8					
EQUIPMENT DESCRIPTION AND DATA	R	R	5.86.5					
Equipment Characteristics, Capabilities, and Features	R	R	5.86.5.1.2		Descriptive	000	B	Equipment description and data
Location and Description of Major Components	R	R	5.86.5.1.3					
Equipment Differences			5.86.5.1.4					
Equipment Data	R	R	5.86.5.1.5					
Instructions for the Use, Transportation, Handling, Storage, or Disposal			5.86.5.1.6		Procedural	800	L	Instructions for the use, transportation, handling, storage, or disposal
THEORY OF OPERATION	R	R	5.86.6		Descriptive	042	F	Theory of operation
CHAPTER X. TROUBLESHOOTING MASTER INDEX				Chapter PM				
TROUBLESHOOTING INDEX	R	R	5.88.4.1.4		Descriptive	410	D	Master index
CHAPTER X. TROUBLESHOOTING PROCEDURES *NOTE: The notation (*) indicates that, if required, at least one of the these content items shall be included.*	R	R	5.88	Chapter PM				
TROUBLESHOOTING INTRODUCTION			5.88.3		Descriptive	018	C	Troubleshooting introduction
TROUBLESHOOTING INDEX			5.88.4		Descriptive	410	F	Malfunction index
					Descriptive	410	B	Symptom index
					Descriptive	410	C	System/subsystem index

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Table A-XII. Field and Sustainment Maintenance Manual (Excluding Conventional and Chemical Ammunition) requirements matrix for _____.

Content Requirement	MM2, M2B Req.	MM4, M4B Req.	Ref.	PM Type	DM Type	Info Code	ICV	Info Name
**OPERATIONAL CHECKOUT*			5.88.7		Descriptive	018	V	Operational checkout introduction
					Procedural	331	B	Pretest setup procedures
					Procedural	320	C	Operational checkout test procedure
					Descriptive	410	G	Message index
					Descriptive	410	H	Fault code reference index
					Procedural	334	C	Post-operational checkout shutdown procedures
**TROUBLESHOOTING PROCEDURES*			5.88.8		Descriptive	018	C	Troubleshooting introduction
					Procedural	PD		General troubleshooting procedures and precautions
					Procedural	331	B	Pretest setup procedures
					Fault	421	B	Troubleshooting procedure
					Procedural	334	B	Post-troubleshooting shutdown procedures
**DIAGNOSTICS*			5.88.8.1.6.2		Process	429	A	Diagnostics
CHAPTER X. PMCS MAINTENANCE INSTRUCTIONS *NOTE: PMCS is required as a minimum in one maintenance chapter.*				Chapter PM				
PMCS INTRODUCTION	AR	AR	5.87.5		Descriptive	018	F	PMCS introduction
PMCS, INCLUDING LUBRICATION INSTRUCTIONS	AR	AR	5.87.6		Checklist	200	B	PMCS

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Table A-XII. Field and Sustainment Maintenance Manual (Excluding Conventional and Chemical Ammunition) requirements matrix for _____.

Content Requirement	MM2, M2B Req.	MM4, M4B Req.	Ref.	PM Type	DM Type	Info Code	ICV	Info Name
CHAPTER X. MAINTENANCE INSTRUCTIONS	R	R	5.87					
SERVICE UPON RECEIPT	R	R	5.87.3					
Siting	AR	AR	5.85.4.1.3		Procedural	122	A	Siting
Shelter requirements	AR	AR	5.85.4.1.4		Procedural	123	A	Shelter
Service upon receipt of materiel	R	R	5.87.3.1.2					
Unpacking	R	R	5.87.3.1.2.1		Procedural	840	B	Unpacking
Checking unpacked equipment	R	R	5.87.3.1.2.2		Checklist	870	B	Checking unpacked equipment
Processing unpacked equipment	R	R	5.87.3.1.2.3		Procedural	870	C	Processing unpacked equipment
Installation instructions	R	R	5.87.3.1.3					
Assembly of equipment	R	R	5.87.3.1.3.1		Procedural	710	C	Assembly of equipment
Installation of the equipment	R	R	5.87.3.1.3.2	Chapter PM	Procedural	720	A	Install procedure
Special application installation instructions	R	R	5.87.3.1.3.3		Procedural	720	B	Special application installation instructions
Van and shelter procedure	R	R	5.87.3.1.3.4		Procedural	123	C	Van and shelter procedure
Preliminary servicing of equipment	AR	AR	5.87.3.1.4		Procedural	200	F	Preliminary servicing
Preliminary checks and adjustment of equipment	AR	AR	5.87.3.1.5		Procedural	271	B	Preliminary checks and adjustment of equipment
Preliminary calibration of equipment	AR	AR	5.87.3.1.6		Procedural	273	D	Preliminary calibration of equipment
Circuit alignment	AR	AR	5.87.3.1.7		Procedural	272	B	Circuit alignment
Ammunition markings	AR	AR	5.87.3.1.9		Procedural	067	C	Ammunition marking
Classification of defects	AR	AR	5.87.3.1.10		Procedural	350	C	Classification of defects
Ammunition handling	AR	AR	5.87.3.1.11		Procedural	170	E	Handling ammunition
Procedures to activate ammunition	AR	AR	5.87.3.1.12		Procedural	120	G	Procedures to activate ammunition

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Table A-XII. Field and Sustainment Maintenance Manual (Excluding Conventional and Chemical Ammunition) requirements matrix for _____.

Content Requirement	MM2, M2B Req.	MM4, M4B Req.	Ref.	PM Type	DM Type	Info Code	ICV	Info Name
Additional maintenance task	AR	AR	5.87.3.1.13		Procedural	PD		
Follow-on maintenance	AR	AR	5.87.9		Procedural	PD		
EQUIPMENT / USER FITTING INSTRUCTIONS (PERSONAL USE EQUIPMENT)			5.97.1		Procedural	913	B	Equipment/user fitting instructions
PMCS INTRODUCTION	AR	AR	5.87.5		Descriptive	018	F	PMCS introduction
PMCS, INCLUDING LUBRICATION INSTRUCTIONS	AR	AR	5.87.6		Checklist	200	B	PMCS
MAINTENANCE	R	R	5.87.8					
Inspect	AR	AR	5.87.8.1.4					
Test and inspection	AR	AR	5.87.8.1.4.1		Procedural	300	B	Test and inspection
Inspection of conventional and chemical ammunition or components containing radioactive materials	AR	AR	5.87.8.1.4.2		Procedural	310	A	Visual examinations
Pre-embarkation inspection	AR	AR	5.87.8.1.4.3		Procedural	310	N	Pre-embarkation inspection
Inspection of installed items	AR	AR	5.87.8.1.4.4		Procedural	310	J	Inspection of installed items
Inspection-acceptance and rejection criteria	AR	AR	5.87.8.1.4.5		Procedural	310	D	Inspection – Acceptance and rejection criteria
Test	AR	AR	5.87.8.1.5		Procedural	340	C	Testing
Service	AR	AR	5.87.8.1.6		Procedural	200	A	Servicing
Adjust	AR	AR	5.87.8.1.7		Procedural	271	A	Adjust
Align	AR	AR	5.87.8.1.8		Procedural	272	A	Align
Calibrate	AR	AR	5.87.8.1.9		Procedural	273	A	Calibrate
Remove	AR	AR	5.87.8.1.10		Procedural	520	A	Removal procedure
Install	AR	AR	5.87.8.1.11		Procedural	720	A	Install procedure
Replace	AR	AR	5.87.8.1.12		Procedural	685	C	Replace
Repair	AR	AR	5.87.8.1.13		Procedural	685	A	Repair
Paint	AR	AR	5.87.8.1.14		Procedural	257	B	Painting
Overhaul	AR	AR	5.87.8.1.15		Procedural	664	B	Overhaul procedure

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Table A-XII. Field and Sustainment Maintenance Manual (Excluding Conventional and Chemical Ammunition) requirements matrix for _____.

Content Requirement	MM2, M2B Req.	MM4, M4B Req.	Ref.	PM Type	DM Type	Info Code	ICV	Info Name
Rebuild	AR	AR	5.87.8.1.16		Procedural	664	A	Rebuild
Lubricate	AR	AR	5.87.8.1.17		Procedural	240	A	Lubrication
Mark	AR	AR	5.87.8.1.18		Procedural	067	D	Mark
Pack	AR	AR	5.87.8.1.19		Procedural	713	A	Pack procedure
Unpack	AR	AR	5.87.8.1.20		Procedural	840	B	Unpacking
Preserve	AR	AR	5.87.8.1.21		Procedural	810	A	Preservation procedure
Assemble and prepare for use	AR	AR	5.87.8.1.22		Procedural	710	B	Assembly and preparation for use
Assemble	AR	AR	5.87.8.1.23		Procedural	710	A	Assembly procedure
Disassemble	AR	AR	5.87.8.1.24		Procedural	530	A	Disassembly procedure
Clean	AR	AR	5.87.8.1.25		Procedural	PD		
Non-destructive inspection	AR	AR	5.87.8.1.26		Procedural	350	B	Non-destructive testing inspection
Radio interference suppression	AR	AR	5.87.8.1.27		Procedural	143	A	Radio interference suppression
Place in service	AR	AR	5.87.8.1.28		Procedural	870	P	Placing in service
Ground handling	AR	AR	5.87.8.1.29					
Towing	AR	AR	5.87.8.1.29.1		Procedural	174	A	Towing
Jacking	AR	AR	5.87.8.1.29.2		Procedural	172	A	Jacking
Parking	AR	AR	5.87.8.1.29.3		Procedural	170	J	Parking
Mooring	AR	AR	5.87.8.1.29.4		Procedural	17A	A	Mooring
Covering	AR	AR	5.87.8.1.29.5		Procedural	170	B	Covering
Hoisting	AR	AR	5.87.8.1.29.6		Procedural	171	B	Hoisting
Sling loading	AR	AR	5.87.8.1.29.7		Procedural	178	B	Sling loading
External power	AR	AR	5.87.8.1.29.8		Procedural	170	C	External power
Preparation for storage	R	R	5.87.8.1.31		Procedural	810	C	Preparation for storage or shipment
Preparation for shipment	R	R	5.87.8.1.31A		Procedural	811 830		
Transport	R	R	5.87.8.1.31B		Procedural	831		
Arm	AR	AR	5.87.8.1.32		Procedural	120	G	Procedures to activate ammunition
Load	AR	AR	5.87.8.1.33		Procedural	PD		
Unload	AR	AR	5.87.8.1.34		Procedural	PD		
Install peripheral device	AR	AR	5.87.8.1.35		Procedural	C96		

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Table A-XII. Field and Sustainment Maintenance Manual (Excluding Conventional and Chemical Ammunition) requirements matrix for _____.

Content Requirement	MM2, M2B Req.	MM4, M4B Req.	Ref.	PM Type	DM Type	Info Code	ICV	Info Name
Uninstall peripheral device	AR	AR	5.87.8.1.36		Procedural	C96		
Upgrade/patch	AR	AR	5.87.8.1.37		Procedural	C96		
Configure	AR	AR	5.87.8.1.38		Procedural	C96		
Debug	AR	AR	5.87.8.1.39		Procedural	C96		
Additional maintenance task	AR	AR	5.87.8.2.2		Procedural	PD		
Follow-on maintenance	AR	AR	5.87.9		Procedural	PD		
GENERAL MAINTENANCE			5.87.10		Procedural	PD		
LUBRICATION INSTRUCTIONS			5.87.11		Procedural	240	B	Lubrication instructions
ILLUSTRATED LIST OF MANUFACTURED ITEMS			5.87.17		Descriptive	670	E	Illustrated list of manufactured items
TORQUE LIMITS			5.87.18		Procedural	711	B	Torque limits
WIRING DIAGRAMS			5.92		Descriptive	051	A	Wiring diagrams
CHAPTER X. AUXILIARY EQUIPMENT MAINTENANCE INSTRUCTIONS								
AUXILIARY EQUIPMENT MAINTENANCE			5.97.2	Chapter PM	Procedural	PD		
ILLUSTRATED LIST OF MANUFACTURED ITEMS			5.87.17		Descriptive	670	E	Illustrated list of manufactured items
TORQUE LIMITS			5.87.18		Procedural	711	B	Torque limits
WIRING DIAGRAMS			5.92		Descriptive	051	A	Wiring diagrams
CHAPTER X. AMMUNITION MAINTENANCE INSTRUCTIONS								
AMMUNITION MAINTENANCE			5.87.19	Chapter PM	Procedural	200	K	Ammunition maintenance
AMMUNITION MARKING INFORMATION			5.87.20		Procedural	067	C	Ammunition marking

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Table A-XII. Field and Sustainment Maintenance Manual (Excluding Conventional and Chemical Ammunition) requirements matrix for _____.

Content Requirement	MM2, M2B Req.	MM4, M4B Req.	Ref.	PM Type	DM Type	Info Code	ICV	Info Name
FOREIGN AMMUNITION (NATO)			5.87.21		Procedural	011	B	Foreign Ammunition
CHAPTER X. PARTS INFORMATION w/out parts w/ parts	 P R	 P R	5.93	Chapter PM				
INTRODUCTION	R	R	5.93.4		Descriptive	018	E	Parts introduction
REPAIR PARTS LIST	R	R	5.93.5		IPD	941	A	Repair parts information
REPAIR PARTS FOR SPECIAL TOOLS			5.93.7		IPD	607	B	Repair parts for special tools
KIT PARTS LIST			5.93.8		IPD	607	C	Kit parts list
BULK ITEMS			5.93.9		IPD	603	B	Bulk items
SPECIAL TOOLS LIST			5.93.10		IPD	604	B	Special tools list
NSN INDEX	R	R	5.93.11.1.5		Descriptive	942	F	National Stock Number index
P/N INDEX	R	R	5.93.11.1.6		Descriptive	942	B	Part number index
REFERENCE DESIGNATOR INDEX			5.93.11.1.7		Descriptive	942	C	Reference designator index
DESTRUCTION OF EQUIPMENT TO PREVENT ENEMY USE *NOTE: If a separate destruction of material manual is not developed for this equipment, then the destruction chapter must be included.*			5.101.3	Chapter PM				
Introduction			5.101.3.1.6.2		Descriptive	997	D	Destruction general information
Authorization			5.101.2.1.6.3					
Reporting Destruction			5.101.3.1.6.4					
General Destruction Information			5.101.3.1.6.5					
Degree of Destruction			5.101.3.1.6.6					
Essential Components and Spare Parts			5.101.3.1.6.7					

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Table A-XII. Field and Sustainment Maintenance Manual (Excluding Conventional and Chemical Ammunition) requirements matrix for _____.

Content Requirement	MM2, M2B Req.	MM4, M4B Req.	Ref.	PM Type	DM Type	Info Code	ICV	Info Name
SPECIFIC DESTRUCTION PROCEDURES								
Parts List			5.101.3.1.7		Descriptive	907	B	Parts list
Specific Destruction Procedures			5.101.3.1.8		Procedural	997	B	Destruction procedures
Classified Equipment and Documents			5.101.3.1.9		Procedural	997	C	Destruction procedures - Classified equipment
CHAPTER X. SUPPORTING INFORMATION	R	R	5.106.1					
REFERENCES	R	R	5.106.1.1.2		Descriptive	017	B	References
MAC INTRODUCTION	R	R	5.94.1		Descriptive	018	D	MAC introduction
MAINTENANCE ALLOCATION CHART	R	R	5.94.3		Schedule	916	A	MAC
EXPENDABLE AND DURABLE ITEMS LIST	R	R	5.93.15		Descriptive	070	D	Expendable and durable items list
TOOL IDENTIFICATION LIST	R	R	5.103.1	Chapter PM	Descriptive	062	B	Tool identification List
MANDATORY REPLACEMENT PARTS	R	R	5.93.16		Descriptive	075	D	Mandatory replacement parts
CRITICAL SAFETY ITEMS (CSI)	AR	AR	5.93.17		Descriptive	075	E	Critical Safety Items (CSI)
SUPPORT EQUIPMENT AND TOOLS (SUPPORT ITEMS)			5.106.1.1.3		Descriptive	061	B	Special equipment and tools
ADDITIONAL SUPPORTING INFORMATION			5.106.1.1.4		Descriptive	PD		
REAR MATTER	R	R	5.128.3.1	Rear Matter PM				

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Table A-XIII. Aviation Field Maintenance Manual (Excluding Conventional and Chemical Ammunition) requirements matrix for _____.

Content Requirement	MM2, M2B, MM4 & M4B Req.	Ref.	PM Type	DM Type	Info Code	ICV	Info Name
FRONT MATTER	R	5.128	Front Matter PM				
GENERAL INFORMATION, EQUIPMENT DESCRIPTION AND THEORY OF OPERATION	R	5.86	Chapter PM				
GENERAL DATA	R	5.86.3		Descriptive	010	A	General data
Scope	R	5.86.3.1.2					
Ozone Depleting Substances (ODS)		5.86.3.1.3					
Destruction of Army Materiel to Prevent Enemy Use	R	5.86.3.1.4					
Preparation for Storage or Shipment	R	5.86.3.1.5					
Transportability Guidance	R	5.86.3.1.5A					
Nomenclature Cross-Reference List		5.86.3.1.6					
List of Abbreviations/Acronyms	R	5.86.3.1.7					
Safety, Care, and Handling	AR	5.86.3.1.8					
Calibration		5.86.3.1.9					
Supporting Information for Repair Parts, Special Tools, TMDE, and Support Equipment		5.86.3.1.10					
Copyright Credit Line		5.86.3.1.11					
Item Unique Identification		5.86.3.1.12					
GENERAL INFORMATION	R	5.86.4		Descriptive	010	B	General information
Maintenance Forms, Records, and Reports	R	5.86.4.1.2					
Reporting Equipment Improvement Recommendations (EIR)	R	5.86.4.1.3					
Hand Receipt (HR) Manuals		5.86.4.1.4					
Corrosion Prevention and Control (CPC)	R	5.86.4.1.5					
Warranty Information		5.86.4.1.6					

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Table A-XIII. Aviation Field Maintenance Manual (Excluding Conventional and Chemical Ammunition) requirements matrix for _____.

Content Requirement	MM2, M2B, MM4 & M4B Req.	Ref.	PM Type	DM Type	Info Code	ICV	Info Name
Quality of Material	R	5.86.4.1.7					
Nuclear Hardness		5.86.4.1.8					
Quality Assurance (QA)		5.86.4.1.9					
Critical Safety Items (CSI) (aircraft only)	R	5.86.4.1.10					
EQUIPMENT DESCRIPTION AND DATA	R	5.88.5					
Equipment Characteristics, Capabilities, and Features	R	5.86.5.1.2		Descriptive	000	B	Equipment description and data
Location and Description of Major Components	R	5.86.5.1.3					
Equipment Differences		5.86.5.1.4					
Equipment Data	R	5.86.5.1.5					
Instructions for the Use, Transportation, Handling, Storage, or Disposal		5.86.5.1.6		Procedural	800	L	Instructions for the use, transportation, handling, storage, or disposal
THEORY OF OPERATION	R	5.86.6		Descriptive	042	F	Theory of operation
TROUBLESHOOTING MASTER INDEX			Chapter PM				
TROUBLESHOOTING INDEX	R	5.88.4.1.4		Descriptive	410	D	Master index
TROUBLESHOOTING PROCEDURES *NOTE: The notation (*) indicates that at least one of these content items shall be included.*	R	5.88					
TROUBLESHOOTING INTRODUCTION		5.88.3		Descriptive	018	C	Troubleshooting introduction
TROUBLESHOOTING INDEX		5.88.4	Chapter PM	Descriptive	410	F	Malfunction index
				Descriptive	410	B	Symptom index
				Descriptive	410	C	System/Subsystem index
**OPERATIONAL CHECKOUT*		5.88.7		Descriptive	018	V	Operational checkout introduction
				Procedural	331	B	Pretest setup procedures
				Procedural	320	C	Operational checkout test procedure
				Descriptive	410	H	Fault code reference index
				Descriptive	410	J	Fault reports

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Table A-XIII. Aviation Field Maintenance Manual (Excluding Conventional and Chemical Ammunition) requirements matrix for _____.

Content Requirement	MM2, M2B, MM4 & M4B Req.	Ref.	PM Type	DM Type	Info Code	ICV	Info Name
				Procedural	334	C	Post-operational checkout shutdown procedures
**TROUBLESHOOTING PROCEDURES*		5.88.8		Descriptive	018	C	Troubleshooting introduction
				Procedural	PD		General troubleshooting procedures and precautions
				Procedural	331	B	Pretest setup procedures
				Fault	421	B	Troubleshooting procedure
				Procedural	334	B	Post-troubleshooting shutdown procedures
**DIAGNOSTICS*		5.88.8.1.6.2		Process	429	A	Diagnostics
AIRCRAFT MAINTENANCE INSTRUCTIONS	R		Chapter PM				
SERVICE UPON RECEIPT	R	5.87.3					
Siting	AR	5.85.4.1.3		Procedural	122	A	Siting
Shelter requirements	AR	5.85.4.1.4		Procedural	123	A	Shelter
Service upon receipt of materiel	R	5.87.3.1.2					
Unpacking	R	5.87.3.1.2.1		Procedural	840	B	Unpacking
Checking unpacked equipment	R	5.87.3.1.2.2		Checklist	870	B	Checking unpacked equipment
Processing unpacked equipment	R	5.87.3.1.2.3		Procedural	870	C	Processing unpacked equipment
Installation instructions	AR	5.87.3.1.3					
Assembly of equipment	AR	5.87.3.1.3.1		Procedural	710	C	Assembly of equipment
Installation of the equipment	AR	5.87.3.1.3.2		Procedural	720	A	Install procedure
Special application installation instructions	AR	5.87.3.1.3.3		Procedural	720	B	Special application installation instructions
Van and shelter procedure	AR	5.87.3.1.3.4		Procedural	123	C	Van and shelter procedure
Preliminary servicing of equipment	AR	5.87.3.1.4		Procedural	200	F	Preliminary servicing
Preliminary checks and adjustment of equipment	AR	5.87.3.1.5		Procedural	271	B	Preliminary checks and adjustment of equipment

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Table A-XIII. Aviation Field Maintenance Manual (Excluding Conventional and Chemical Ammunition) requirements matrix for _____.

Content Requirement	MM2, M2B, MM4 & M4B Req.	Ref.	PM Type	DM Type	Info Code	ICV	Info Name
Preliminary calibration of equipment	AR	5.87.3.1.6		Procedural	273	D	Preliminary calibration of equipment
Circuit alignment	AR	5.87.3.1.7		Procedural	272	B	Circuit alignment
Ammunition markings	AR	5.87.3.1.9		Procedural	067	C	Ammunition marking
Classification of defects	AR	5.87.3.1.10		Procedural	350	C	Classification of defects
Ammunition handling	AR	5.87.3.1.11		Procedural	170	E	Handling ammunition
Procedures to activate ammunition	AR	5.87.3.1.12		Procedural	120	G	Procedures to activate ammunition
Additional maintenance task	AR	5.87.3.1.13		Procedural	PD		
Follow-on maintenance	AR	5.87.9		Procedural	PD		
EQUIPMENT / USER FITTING INSTRUCTIONS (PERSONAL USE EQUIPMENT)		5.97.1		Procedural	913	B	Equipment/User fitting instructions
PREVENTIVE MAINTENANCE INPECTION		5.119		Procedural	200	D	Preventive maintenance inspection
MAINTENANCE	R	5.87.8					
Inspect	AR	5.87.8.1.4					
Test and inspection		5.87.8.1.4.1		Procedural	300	B	Test and inspection
Inspection of conventional and chemical ammunition or components containing radioactive materials	P	5.87.8.1.4.2		Procedural	310	A	Visual examinations
Pre-embarkation inspection		5.87.8.1.4.3		Procedural	310	N	Pre-embarkation inspection
Inspection of installed items		5.87.8.1.4.4		Procedural	310	J	Inspection of installed items
Inspection-acceptance and rejection criteria		5.87.8.1.4.5		Procedural	310	D	Inspection – Acceptance and rejection criteria
Test	AR	5.87.8.1.5		Procedural	340	C	Testing
Service	AR	5.87.8.1.6		Procedural	200	A	Servicing
Adjust	AR	5.87.8.1.7		Procedural	271	A	Adjust
Align	AR	5.87.8.1.8		Procedural	272	A	Align
Calibrate	AR	5.87.8.1.9		Procedural	273	A	Calibrate
Remove	AR	5.87.8.1.10		Procedural	520	A	Removal procedure
Install	AR	5.87.8.1.11		Procedural	720	A	Install procedure

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Table A-XIII. Aviation Field Maintenance Manual (Excluding Conventional and Chemical Ammunition) requirements matrix for _____.

Content Requirement	MM2, M2B, MM4 & M4B Req.	Ref.	PM Type	DM Type	Info Code	ICV	Info Name
Replace	AR	5.87.8.1.12		Procedural	685	C	Replace
Repair	AR	5.87.8.1.13		Procedural	685	A	Repair
Paint	AR	5.87.8.1.14		Procedural	257	B	Painting
Overhaul	AR	5.87.8.1.15		Procedural	664	B	Overhaul procedure
Rebuild	AR	5.87.8.1.16		Procedural	664	C	Rebuild
Lubricate	AR	5.87.8.1.17		Procedural	240	A	Lubrication
Mark	AR	5.87.8.1.18		Procedural	067	D	Mark
Pack	AR	5.87.8.1.19		Procedural	713	A	Pack procedure
Unpack	AR	5.87.8.1.20		Procedural	840	B	Unpacking
Preserve	AR	5.87.8.1.21		Procedural	810	A	Preservation procedure
Assemble and prepare for use	AR	5.87.8.1.22		Procedural	710	B	Assembly and preparation for use
Assemble	AR	5.87.8.1.23		Procedural	710	A	Assembly procedure
Disassemble	AR	5.87.8.1.24		Procedural	530	A	Disassembly procedure
Clean	AR	5.87.8.1.25		Procedural	PD		
Non-destructive inspection	AR	5.87.8.1.26		Procedural	350	B	Non-destructive testing inspection
Radio interference suppression	AR	5.87.8.1.27		Procedural	143	A	Radio interference suppression
Place in service	AR	5.87.8.1.28		Procedural	870	P	Placing in service
Ground handling	AR	5.87.8.1.29					
Towing	AR	5.87.8.1.29.1		Procedural	174	A	Towing
Jacking	AR	5.87.8.1.29.2		Procedural	172	A	Jacking
Parking	AR	5.87.8.1.29.3		Procedural	170	J	Parking
Mooring	AR	5.87.8.1.29.4		Procedural	17A	A	Mooring
Covering	AR	5.87.8.1.29.5		Procedural	170	B	Covering
Hoisting	AR	5.87.8.1.29.6		Procedural	171	B	Hoisting
Sling loading	AR	5.87.8.1.29.7		Procedural	178	B	Sling loading
External power	AR	5.87.8.1.29.8		Procedural	170	C	External power
Preparation for storage	R	5.87.8.1.31		Procedural	810	C	Preparation for storage or shipment
Preparation for shipment	R	5.87.8.1.31A		Procedural	811 830		
Transport	R	5.87.8.1.31B		Procedural	831		
Arm	AR	5.87.8.1.32		Procedural	120	G	Procedures to activate ammunition
Load	AR	5.87.8.1.33		Procedural	PD		
Unload	AR	5.87.8.1.34		Procedural	PD		
Install peripheral device	AR	5.87.8.1.35		Procedural	C96		

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Table A-XIII. Aviation Field Maintenance Manual (Excluding Conventional and Chemical Ammunition) requirements matrix for _____.

Content Requirement	MM2, M2B, MM4 & M4B Req.	Ref.	PM Type	DM Type	Info Code	ICV	Info Name
Uninstall peripheral device	AR	5.87.8.1.36		Procedural	C96		
Upgrade/patch	AR	5.87.8.1.37		Procedural	C96		
Configure	AR	5.87.8.1.38		Procedural	C96		
Debug	AR	5.87.8.1.39		Procedural	C96		
Additional maintenance task	AR	5.87.8.2.2		Procedural	PD		
Follow-on maintenance	AR	5.87.9		Procedural	PD		
GENERAL MAINTENANCE		5.87.10		Procedural	PD		
OVERHAUL AND RETIREMENT SCHEDULE (AIRCRAFT ONLY)	R	5.87.13		Procedural	288	A	Overhaul and retirement schedule.
LUBRICATION INSTRUCTIONS		5.87.11		Procedural	240	B	Lubrication instructions
ILLUSTRATED LIST OF MANUFACTURED ITEMS		5.87.17		Descriptive	670	E	Illustrated list of manufactured items
TORQUE LIMITS		5.87.18		Procedural	711	B	Torque limits
AIRCRAFT INVENTORY MASTER GUIDE		5.120		Descriptive	102	B	Aircraft inventory master guide
STORAGE OF AIRCRAFT (AIRCRAFT ONLY)		5.121		Procedural	810	B	Flyable storage of aircraft
				Procedural	810	F	Short storage of aircraft
				Procedural	810	G	Intermediate storage of aircraft
WEIGHING AND LOADING	R	5.95.1		Procedural	160	B	Weighing and loading
WIRING DIAGRAMS		5.92		Descriptive	051	A	Wiring diagrams
AUXILIARY EQUIPMENT MAINTENANCE INSTRUCTIONS							
AUXILIARY EQUIPMENT MAINTENANCE		5.97.2	Chapter PM	Procedural	PD		
ILLUSTRATED LIST OF MANUFACTURED ITEMS		5.87.17		Descriptive	670	E	Illustrated list of manufactured items
TORQUE LIMITS		5.87.18		Procedural	711	B	Torque limits
WIRING DIAGRAMS		5.92		Descriptive	051	A	Wiring diagrams

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Table A-XIII. Aviation Field Maintenance Manual (Excluding Conventional and Chemical Ammunition) requirements matrix for _____.

Content Requirement	MM2, M2B, MM4 & M4B Req.	Ref.	PM Type	DM Type	Info Code	ICV	Info Name
AMMUNITION MAINTENANCE INSTRUCTIONS			Chapter PM				
AMMUNITION MAINTENANCE		5.87.19		Procedural	200	K	Ammunition maintenance
AMMUNITION MARKING INFORMATION		5.87.3.1.9 5.87.8.1.18 5.87.20		Procedural	067	C	Ammunition marking
FOREIGN AMMUNITION (NATO)		5.87.21		Procedural	011	B	Foreign ammunition
PARTS INFORMATION Field and Field Sustainment Field w/Parts and Field Sustainment w/Parts	P R	5.93	Chapter PM				
INTRODUCTION	R	5.93.4		Descriptive	018	E	Parts introduction
REPAIR PARTS LIST	R	5.93.5		IPD	941	A	Repair parts information
REPAIR PARTS FOR SPECIAL TOOLS		5.93.7		IPD	607	B	Repair parts for special tools
KIT PARTS LIST		5.93.8		IPD	607	C	Kit Parts list
BULK ITEMS		5.93.9		IPD	603	B	Bulk items
SPECIAL TOOLS LIST		5.93.10		IPD	604	B	Special tools list
NSN INDEX	R	5.93.11.1.5		Descriptive	942	F	National Stock Number index
P/N INDEX	R	5.93.11.1.6		Descriptive	942	B	Part number index
REFERENCE DESIGNATOR INDEX		5.93.11.1.7		Descriptive	942	C	Reference designator index
DESTRUCTION OF EQUIPMENT TO PREVENT ENEMY USE *NOTE: If a separate destruction of material manual is not developed for this equipment, then the destruction chapter must be included.*		5.101.3	Chapter PM				
Introduction		5.101.3.1.6.2		Descriptive	997	D	Destruction general information
Authorization		5.101.2.1.6.3					
Reporting Destruction		5.101.3.1.6.4					

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Table A-XIII. Aviation Field Maintenance Manual (Excluding Conventional and Chemical Ammunition) requirements matrix for _____.

Content Requirement	MM2, M2B, MM4 & M4B Req.	Ref.	PM Type	DM Type	Info Code	ICV	Info Name
General Destruction Information		5.101.3.1.6.5					
Degree of Destruction		5.101.3.1.6.6					
Essential Components and Spare Parts		5.101.3.1.6.7					
SPECIFIC DESTRUCTION PROCEDURES							
Parts List		5.101.3.1.7		Descriptive	907	B	Parts list
Specific Destruction Procedures		5.101.3.1.8		Procedural	997	B	Destruction procedures
Classified Equipment and Documents		5.101.3.1.9		Procedural	997	C	Destruction procedures - Classified equipment
SUPPORTING INFORMATION	R	5.106.1					
REFERENCES	R	5.106.1.1.2		Descriptive	017	B	References
INTRODUCTION FOR AVIATION MAC	R	5.94.2		Descriptive	018	D	MAC introduction
MAINTENANCE ALLOCATION CHART	R	5.94.3		Schedule	916	B	Aviation MAC
EXPENDABLE AND DURABLE ITEMS LIST	R	5.93.15	Chapter PM	Descriptive	070	D	Expendable and durable items list
TOOL IDENTIFICATION LIST	R	5.103.1		Descriptive	062	B	Tool identification list
MANDATORY REPLACEMENT PARTS	R	5.93.16		Descriptive	075	D	Mandatory replacement parts
CRITICAL SAFETY ITEMS (CSI)	AR	5.93.17		Descriptive	075	E	Critical safety items (CSI)
ADDITIONAL SUPPORTING INFORMATION		5.106.1.1.4		Descriptive	PD		
REAR MATTER	R	5.128.3.1	Rear Matter PM				

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Table A-XIV. Parts and Special Tools List (Excluding Conventional and Chemical Ammunition) requirements matrix for _____.

Content Requirement	M2P M4P M0P Req.	Ref.	PM Type	Type	Info Code	ICV	Info Name
FRONT MATTER	R	5.128	Front Matter PM				
CHAPTER 1. REPAIR PARTS AND SPECIAL TOOLS LIST FOR (ENTER EQUIPMENT NAME)	R	5.93	Chapter PM				
INTRODUCTION	R	5.93.4		Descriptive	018	E	Parts introduction
REPAIR PARTS LIST	R	5.93.5		IPD	941	A	Repair parts information
REPAIR PARTS FOR SPECIAL TOOLS		5.93.7		IPD	607	B	Repair parts for special tools
KIT PARTS LIST		5.93.8		IPD	607	C	Kit parts list
BULK ITEMS		5.93.9		IPD	603	B	Bulk items
SPECIAL TOOLS LIST		5.93.10		IPD	604	B	Special tools list
NSN INDEX	R	5.93.11.1.5		Descriptive	942	F	National Stock Number index
P/N INDEX	R	5.93.11.1.6		Descriptive	942	B	Part number index
REFERENCE DESIGNATOR INDEX	AR	5.93.11.1.7		Descriptive	942	C	Reference designator index
REAR MATTER	R	5.128.3.1	Rear Matter PM				

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Table A-XV. DMWR and NMWR (Excluding Conventional and Chemical Ammunition) requirements matrix for _____.

Content Requirement	DWR & DWP Req.	NWR & NWP Req.	Ref.	PM Type	DM Type	Info Code	IC V	Info Name
FRONT MATTER	R	R	5.128	Front Matter PM				
CHAPTER 1. GENERAL INFORMATION, EQUIPMENT DESCRIPTION AND THEORY OF OPERATION	R	R	5.86	Chapter PM				
GENERAL DATA	R	R	5.86.3		Descriptive	010	A	General Data
Scope	R	R	5.86.3.1.2					
Ozone Depleting Substances (ODS)			5.86.3.1.3					
Destruction of Army Materiel to Prevent Enemy Use	R	R	5.86.3.1.4					
Preparation for Storage or Shipment	R	R	5.86.3.1.5					
Transportability Guidance	R	R	5.86.3.1.5A					
Nomenclature Cross-Reference List			5.86.3.1.6					
List of Abbreviations/Acronyms	R	R	5.86.3.1.7					
Safety, Care, and Handling	AR	AR	5.86.3.1.8					
Calibration			5.86.3.1.9					
Supporting Information for Repair Parts, Special Tools, TMDE, and Support Equipment			5.86.3.1.10					
Copyright Credit Line			5.86.3.1.11					
Item Unique Identification	AR	AR	5.86.3.1.12					
GENERAL INFORMATION	R	R	5.86.4		Descriptive	010	B	General Information
Maintenance Forms, Records, and Reports	R	R	5.86.4.1.2					
Reporting Equipment Improvement Recommendations (EIR)	R	R	5.86.4.1.3					
Corrosion Prevention and Control (CPC)	R	R	5.86.4.1.5					
Warranty Information			5.86.4.1.6					

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Table A-XV. DMWR and NMWR (Excluding Conventional and Chemical Ammunition) requirements matrix for _____.

Content Requirement	DWR & DWP Req.	NWR & NWP Req.	Ref.	PM Type	DM Type	Info Code	IC V	Info Name
Quality of Material	R	R	5.86.4.1.7					
Nuclear Hardness			5.86.4.1.8					
Quality Assurance (QA)			5.86.4.1.9					
Critical Safety Items (CSI)			5.86.4.1.10					
Engineering Change Proposals (ECP)	R	R	5.86.4.1.11					
Modifications			5.86.4.1.12					
Deviations and Exceptions	R	R	5.86.4.1.13					
Mobilization Requirements	R	R	5.86.4.1.14					
Cost Considerations	R	R	5.86.4.1.15					
EQUIPMENT DESCRIPTION AND DATA	R	R	5.86.5					
Equipment Characteristics, Capabilities, and Features	R	R	5.86.5.1.2		Descriptive	000	B	Equipment Description and Data
Location and Description of Major Components	R	R	5.86.5.1.3					
Equipment Differences			5.86.5.1.4					
Equipment Data	R	R	5.86.5.1.5					
Instructions for the Use, Transportation, Handling, Storage, or Disposal			5.86.5.1.6		Procedural	800	L	Instructions for the Use, Transportation, Handling, Storage, or Disposal
THEORY OF OPERATION	AR	AR	5.86.6		Descriptive	042	F	Theory of Operation
CHAPTER X. DMWR/NMWR TROUBLESHOOTING PROCEDURES	R	R	5.88					
TROUBLESHOOTING INTRODUCTION			5.88.3	Chapter PM	Descriptive	018	C	Troubleshooting introduction
TROUBLESHOOTING INDEX			5.88.4		Descriptive	410	F	Malfunction Index
					Descriptive	410	B	Symptom Index
					Descriptive	410	C	System/ Subsystem Index
PRESHOP ANALYSIS	R	R	5.88.5		Procedural	341	C	Preshop Analysis

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Table A-XV. DMWR and NMWR (Excluding Conventional and Chemical Ammunition) requirements matrix for _____.

Content Requirement	DWR & DWP Req.	NWR & NWP Req.	Ref.	PM Type	DM Type	Info Code	IC V	Info Name
COMPONENT CHECKLIST			5.88.6		Descriptive	341	B	Component Checklist
OPERATIONAL CHECKOUT			5.88.7		Descriptive	018	V	Operational checkout introduction
					Procedural	331	B	Pretest Setup Procedures
					Procedural	320	C	Operational Checkout Test Procedure
					Descriptive	410	G	Message index
					Descriptive	410	H	Fault Code Reference Index
					Procedural	334	C	Post-Operational Checkout Shutdown Procedures
TROUBLESHOOTING PROCEDURES			5.88.8		Descriptive	018	C	Troubleshooting Introduction
					Procedural	PD		General troubleshooting procedures and precautions
					Procedural	331	B	Pretest Setup Procedures
					Fault	421	B	Troubleshooting Procedure
					Procedural	334	B	Post-Troubleshooting Shutdown Procedures
					Procedural	334	B	Post-Troubleshooting Shutdown Procedures
CHAPTER X. DEPOT MAINTENANCE INSTRUCTIONS	R	R	5.87	Chapter PM				
MAINTENANCE :	R	R	5.87.8					
Inspect	AR	AR	5.87.8.1.4					
Test and inspection			5.87.8.1.4.1		Procedural	300	B	Test and inspection
Inspection of conventional and chemical ammunition or components containing radioactive materials	P	P	5.87.8.1.4.2		Procedural	310	A	Visual examinations
Pre-embarkation inspection			5.87.8.1.4.3		Procedural	310	N	Pre-embarkation inspection
Inspection of installed items			5.87.8.1.4.4		Procedural	310	J	Inspection of installed items

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Table A-XV. DMWR and NMWR (Excluding Conventional and Chemical Ammunition) requirements matrix for _____.

Content Requirement	DWR & DWP Req.	NWR & NWP Req.	Ref.	PM Type	DM Type	Info Code	IC V	Info Name
Inspection-acceptance and rejection criteria			5.87.8.1.4.5		Procedural	310	D	Inspection – Acceptance and rejection criteria
Test	AR	AR	5.87.8.1.5		Procedural	340	C	Testing
Service	AR	AR	5.87.8.1.6		Procedural	200	A	Servicing
Adjust	AR	AR	5.87.8.1.7		Procedural	271	A	Adjust
Align	AR	AR	5.87.8.1.8		Procedural	272	A	Align
Calibrate	AR	AR	5.87.8.1.9		Procedural	273	A	Calibrate
Remove	AR	AR	5.87.8.1.10		Procedural	520	A	Removal procedure
Install	AR	AR	5.87.8.1.11		Procedural	720	A	Install procedure
Replace	AR	AR	5.87.8.1.12		Procedural	685	C	Replace
Repair	AR	AR	5.87.8.1.13		Procedural	685	A	Repair
Paint	AR	AR	5.87.8.1.14		Procedural	257	B	Painting
Overhaul	AR	AR	5.87.8.1.15		Procedural	664	B	Overhaul procedure
Rebuild	AR	AR	5.87.8.1.16		Procedural	664	C	Rebuild
Lubricate	AR	AR	5.87.8.1.17		Procedural	240	A	Lubrication
Mark	AR	AR	5.87.8.1.18		Procedural	067	D	Mark
Pack	AR	AR	5.87.8.1.19		Procedural	713	A	Pack procedure
Unpack	AR	AR	5.87.8.1.20		Procedural	840	B	Unpacking
Preserve	AR	AR	5.87.8.1.21		Procedural	810	A	Preservation procedure
Assemble and prepare for use	AR	AR	5.87.8.1.22		Procedural	710	B	Assembly and preparation for use
Assemble	AR	AR	5.87.8.1.23		Procedural	710	A	Assembly procedure
Disassemble	AR	AR	5.87.8.1.24		Procedural	530	A	Disassembly procedure
Clean	AR	AR	5.87.8.1.25		Procedural	PD		
Non-destructive inspection	AR	AR	5.87.8.1.26		Procedural	350	B	Non-destructive testing inspection
Radio interference suppression	AR	AR	5.87.8.1.27		Procedural	143	A	Radio interference suppression
Place in service	AR	AR	5.87.8.1.28		Procedural	870	P	Placing in service
Ground handling	AR	AR	5.87.8.1.29					
Towing	AR	AR	5.87.8.1.29.1		Procedural	174	A	Towing
Jacking	AR	AR	5.87.8.1.29.2		Procedural	172	A	Jacking
Parking	AR	AR	5.87.8.1.29.3		Procedural	170	J	Parking
Mooring	AR	AR	5.87.8.1.29.4		Procedural	17A	A	Mooring
Covering	AR	AR	5.87.8.1.29.5		Procedural	170	B	Covering
Hoisting	AR	AR	5.87.8.1.29.6		Procedural	171	B	Hoisting

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Table A-XV. DMWR and NMWR (Excluding Conventional and Chemical Ammunition) requirements matrix for _____.

Content Requirement	DWR & DWP Req.	NWR & NWP Req.	Ref.	PM Type	DM Type	Info Code	IC V	Info Name
Sling loading	AR	AR	5.87.8.1.29.7		Procedural	178	B	Sling loading
External power	AR	AR	5.87.8.1.29.8		Procedural	170	C	External power
Preparation for storage	R	R	5.87.8.1.31		Procedural	810	C	Preparation for storage or shipment
Preparation for shipment	R	R	5.87.8.1.31A		Procedural	811 830		
Transport	R	R	5.87.8.1.31B		Procedural	831		
Arm	AR	AR	5.87.8.1.32		Procedural	120	G	Procedures to activate ammunition
Load	AR	AR	5.87.8.1.33		Procedural	PD		
Unload	AR	AR	5.87.8.1.34		Procedural	PD		
Install peripheral device	AR	AR	5.87.8.1.35		Procedural	C96		
Uninstall peripheral device	AR	AR	5.87.8.1.36		Procedural	C96		
Upgrade/patch	AR	AR	5.87.8.1.37		Procedural	C96		
Configure	AR	AR	5.87.8.1.38		Procedural	C96		
Debug	AR	AR	5.87.8.1.39		Procedural	C96		
Additional maintenance task	AR	AR	5.87.8.2.2		Procedural	PD		
Follow-on maintenance	AR	AR	5.87.9		Procedural	PD		
GENERAL MAINTENANCE			5.87.10		Procedural	PD		
OVERHAUL AND RETIREMENT SCHEDULE (AIRCRAFT ONLY)	R	R	5.87.13		Procedural	288	A	Overhaul and retirement schedule.
LUBRICATION INSTRUCTIONS			5.87.11		Procedural	240	B	Lubrication Instructions
PRESERVATION, PACKAGING, AND MARKING	AR	AR	5.87.11A		Descriptive	810	H	Preservation, packaging, and marking
FACILITIES			5.87.12		Descriptive	915	A	Facilities
OVERHAUL INSPECTION PROCEDURES			5.87.14		Procedural	310	C	Overhaul Inspection Procedures
DEPOT MOBILIZATION REQUIREMENTS			5.87.15		Descriptive	800	K	Depot Mobilization Requirements
QUALITY ASSURANCE REQUIREMENTS	R	R	5.87.16		Descriptive	315	A	Quality Assurance Requirements

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Table A-XV. DMWR and NMWR (Excluding Conventional and Chemical Ammunition) requirements matrix for _____.

Content Requirement	DWR & DWP Req.	NWR & NWP Req.	Ref.	PM Type	DM Type	Info Code	IC V	Info Name
ILLUSTRATED LIST OF MANUFACTURED ITEMS			5.87.17		Descriptive	670	E	Illustrated List of Manufactured Items
TORQUE LIMITS			5.87.18		Procedural	711	B	Torque Limits
AIRCRAFT INVENTORY MASTER GUIDE (AIRCRAFT ONLY)			5.120		Descriptive	102	B	Aircraft Inventory Master Guide
STORAGE OF AIRCRAFT (AIRCRAFT ONLY)			5.121		Procedural	810	B	Flyable Storage of Aircraft
					Procedural	810	F	Short Storage of Aircraft
					Procedural	810	G	Intermediate Storage of Aircraft
WEIGHING AND LOADING (AIRCRAFT ONLY)			5.95.1		Procedural	160	B	Weighing and Loading
WIRING DIAGRAMS			5.92		Descriptive	051	A	Wiring Diagrams
CHAPTER X. AUXILIARY EQUIPMENT MAINTENANCE INSTRUCTIONS								
AUXILIARY EQUIPMENT MAINTENANCE			5.97.2	Chapter PM	Procedural	PD		
ILLUSTRATED LIST OF MANUFACTURED ITEMS			5.87.17		Descriptive	670	E	Illustrated List of Manufactured Items
TORQUE LIMITS			5.87.18		Procedural	711	B	Torque Limits
WIRING DIAGRAMS			5.92		Descriptive	051	A	Wiring Diagrams
CHAPTER X. AMMUNITION MAINTENANCE INSTRUCTIONS								
AMMUNITION MAINTENANCE			5.87.19	Chapter PM	Procedural	200	K	Ammunition Maintenance
AMMUNITION MARKING INFORMATION			5.87.20		Procedural	067	C	Ammunition Marking
FOREIGN AMMUNITION (NATO)			5.87.21		Procedural	011	B	Foreign Ammunition

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Table A-XV. DMWR and NMWR (Excluding Conventional and Chemical Ammunition) requirements matrix for _____.

Content Requirement	DWR & DWP Req.	NWR & NWP Req.	Ref.	PM Type	DM Type	Info Code	IC V	Info Name
CHAPTER X. PARTS INFORMATION								
DMWR, NMWR	P	P	5.93					
DMWR With Parts, NMWR With Parts	R	R						
INTRODUCTION	R	R	5.93.4		Descriptive	018	E	Parts Introduction
REPAIR PARTS LIST	R	R	5.93.5		IPD	941	A	Repair Parts Information
REPAIR PARTS FOR SPECIAL TOOLS			5.93.7	Chapter PM	IPD	607	B	Repair Parts for Special Tools
KIT PARTS LIST			5.93.8		IPD	607	C	Kit Parts List
BULK ITEMS			5.93.9		IPD	603	B	Bulk Items
SPECIAL TOOLS LIST			5.93.10		IPD	604	B	Special Tools List
NSN INDEX	R	R	5.93.11.1.5		Descriptive	942	F	National Stock Number index
P/N INDEX	R	R	5.93.11.1.6		Descriptive	942	B	Part number index
REFERENCE DESIGNATOR INDEX			5.93.11.1.7		Descriptive	942	C	Reference designator index
CHAPTER X. SUPPORTING INFORMATION	R	R	5.106.1					
REFERENCES	R	R	5.106.1.1.2		Descriptive	017	B	References
EXPENDABLE AND DURABLE ITEMS LIST	R	R	5.93.15		Descriptive	070	D	Expendable and Durable Items List
TOOL IDENTIFICATION LIST	R	R	5.103.1		Descriptive	062	B	Tool Identification List
MANDATORY REPLACEMENT PARTS	R	R	5.93.16	Chapter PM	Descriptive	075	D	Mandatory Replacement Parts
CRITICAL SAFETY ITEMS (CSI)	AR	AR	5.93.17		Descriptive	075	E	Critical Safety Items (CSI)
SUPPORT ITEMS	AR	AR	5.106.1.1.3		Descriptive	061	B	Support equipment and tools
ADDITIONAL SUPPORTING INFORMATION			5.106.1.1.4		Descriptive	PD		
REAR MATTER	R	R	5.128.3.1	Rear Matter PM				

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Table A-XVI. DMWR With Overhaul Standards (Excluding Conventional and Chemical Ammunition) requirements matrix for _____.

Content Requirement	DWO Req.	DOR Req.	Ref.	PM Type	DM Type	Info Code	ICV	Info Name
FRONT MATTER	R	R	5.128	Front Matter PM				
CHAPTER 1. GENERAL INFORMATION, EQUIPMENT DESCRIPTION AND THEORY OF OPERATION	R	R	5.86	Chapter PM				
GENERAL DATA	R	R	5.86.3		Descriptive	010	A	General data
Scope	R	R	5.86.3.1.2					
Ozone Depleting Substances (ODS)			5.86.3.1.3					
Destruction of Army Materiel to Prevent Enemy Use	R	R	5.86.3.1.4					
Preparation for Storage or Shipment	R	R	5.86.3.1.5					
Transportability Guidance	R	R	5.86.3.1.5A					
Nomenclature Cross-Reference List			5.86.3.1.6					
List of Abbreviations/Acronyms	R	R	5.86.3.1.7					
Safety, Care, and Handling	AR	AR	5.86.3.1.8					
Calibration			5.86.3.1.9					
Supporting Information for Repair Parts, Special Tools, TMDE, and Support Equipment			5.86.3.1.10					
Copyright Credit Line			5.86.3.1.11					
Item Unique Identification (IUID)	AR	AR	5.86.3.1.12					
GENERAL INFORMATION	R	R	5.86.4		Descriptive	010	B	General information
Maintenance Forms, Records, and Reports	R	R	5.86.4.1.2					
Reporting Equipment Improvement Recommendations (EIR)	R	R	5.86.4.1.3					
Corrosion Prevention and Control (CPC)	R	R	5.86.4.1.5					
Warranty Information			5.86.4.1.6					
Quality of Material	R	R	5.86.4.1.7					

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Table A-XVI. DMWR With Overhaul Standards (Excluding Conventional and Chemical Ammunition) requirements matrix for _____.

Content Requirement	DWO Req.	DOR Req.	Ref.	PM Type	DM Type	Info Code	ICV	Info Name
Nuclear Hardness			5.86.4.1.8					
Quality Assurance (QA)			5.86.4.1.9					
Critical Safety Items (CSI)			5.86.4.1.10					
Engineering Change Proposals (ECP)	R	R	5.86.4.1.11					
Modification list			5.86.4.1.12					
Deviations and Exceptions	R	R	5.86.4.1.13					
Mobilization Requirements	R	R	5.86.4.1.14					
Cost Considerations	R	R	5.86.4.1.15					
EQUIPMENT DESCRIPTION AND DATA	R	R	5.86.5					
Equipment Characteristics, Capabilities, and Features	R	R	5.86.5.1.2		Descriptive	000	B	Equipment description and data
Location and Description of Major Components	R	R	5.86.5.1.3					
Equipment Differences			5.86.5.1.4					
Equipment Data	R	R	5.86.5.1.5					
Instructions for the Use, Transportation, Handling, Storage, or Disposal			5.86.5.1.6		Procedural	800	L	Instructions for the use, transportation, handling, storage, or disposal
THEORY OF OPERATION	AR	AR	5.86.6		Descriptive	042	F	Theory of operation
CHAPTER X. TROUBLESHOOTING PROCEDURES *NOTE: The notation (*) indicates that, if required, at least one of these content items shall be included*			5.88	Chapter PM				
INTRODUCTION			5.88.3		Descriptive	018	C	Troubleshooting introduction
TROUBLESHOOTING INDEX			5.88.4		Descriptive	410	F	Malfunction index
					Descriptive	410	B	Symptom index
					Descriptive	410	C	System/ subsystem index
PRESHOP ANALYSIS	R	R	5.88.5		Procedural	341	C	Preshop analysis

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Table A-XVI. DMWR With Overhaul Standards (Excluding Conventional and Chemical Ammunition) requirements matrix for _____.

Content Requirement	DWO Req.	DOR Req.	Ref.	PM Type	DM Type	Info Code	ICV	Info Name
COMPONENT CHECKLIST			5.88.6		Descriptive	341	B	Component checklist
**OPERATIONAL CHECKOUT*			5.88.7		Descriptive	018	V	Operational checkout introduction
					Procedural	331	B	Pretest setup procedures
					Procedural	320	C	Operational checkout test procedure
					Descriptive	410	G	Message index
					Descriptive	410	H	Fault code reference index
					Procedural	334	C	Post-operational checkout shutdown procedures
**TROUBLESHOOTING PROCEDURES*			5.88.1.18		Descriptive	018	C	Troubleshooting introduction
					Procedural	PD		General troubleshooting procedures and precautions
					Procedural	331	B	Pretest setup procedures
					Fault	421	B	Troubleshooting procedure
					Procedural	334	B	Post-troubleshooting shutdown procedures
CHAPTER X. DEPOT MAINTENANCE INSTRUCTIONS	R	R	5.87	Chapter PM				
MAINTENANCE	R	R	5.87.8					
Inspect	AR	AR	5.87.8.1.4					
Test and inspection			5.87.8.1.4		Procedural	300	B	Test and inspection
Inspection of conventional and chemical ammunition or components containing radioactive materials	P	P	5.87.8.1.4.2		Procedural	310	A	Visual examinations
Pre-embarkation inspection			5.87.8.1.4.3		Procedural	310	N	Pre-embarkation inspection
Inspection of installed items			5.87.8.1.4.4		Procedural	310	J	Inspection of installed items
Inspection-acceptance and rejection criteria			5.87.8.1.4.5		Procedural	310	D	Inspection – Acceptance and rejection criteria

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Table A-XVI. DMWR With Overhaul Standards (Excluding Conventional and Chemical Ammunition) requirements matrix for _____.

Content Requirement	DWO Req.	DOR Req.	Ref.	PM Type	DM Type	Info Code	ICV	Info Name
Test	AR	AR	5.87.8.1.5		Procedural	340	C	Testing
Service	AR	AR	5.87.8.1.6		Procedural	200	A	Servicing
Adjust	AR	AR	5.87.8.1.7		Procedural	271	A	Adjust
Align	AR	AR	5.87.8.1.8		Procedural	272	A	Align
Calibrate	AR	AR	5.87.8.1.9		Procedural	273	A	Calibrate
Remove	AR	AR	5.87.8.1.10		Procedural	520	A	Removal procedure
Install	AR	AR	5.87.8.1.11		Procedural	720	A	Install procedure
Replace	AR	AR	5.87.8.1.12		Procedural	685	C	Replace
Repair	AR	AR	5.87.8.1.13		Procedural	685	A	Repair
Paint	AR	AR	5.87.8.1.14		Procedural	257	B	Painting
Overhaul	AR	AR	5.87.8.1.15		Procedural	664	B	Overhaul procedure
Rebuild	AR	AR	5.87.8.1.16		Procedural	664	C	Rebuild
Lubricate	AR	AR	5.87.8.1.17		Procedural	240	A	Lubrication
Mark	AR	AR	5.87.8.1.18		Procedural	067	D	Mark
Pack	AR	AR	5.87.8.1.19		Procedural	713	A	Pack procedure
Unpack	AR	AR	5.87.8.1.20		Procedural	840	B	Unpacking
Preserve	AR	AR	5.87.8.1.21		Procedural	810	A	Preservation procedure
Assemble and prepare for use	AR	AR	5.87.8.1.22		Procedural	710	B	Assembly and preparation for use
Assemble	AR	AR	5.87.8.1.23		Procedural	710	A	Assembly procedure
Disassemble	AR	AR	5.87.8.1.24		Procedural	530	A	Disassembly procedure
Clean	AR	AR	5.87.8.1.25		Procedural	PD		
Non-destructive inspection	AR	AR	5.87.8.1.26		Procedural	350	B	Non-destructive testing inspection
Radio interference suppression	AR	AR	5.87.8.1.27		Procedural	143	A	Radio interference suppression
Place in service	AR	AR	5.87.8.1.28		Procedural	870	P	Placing in service
Ground handling	AR	AR	5.87.8.1.29					
Towing	AR	AR	5.87.8.1.29.1		Procedural	174	A	Towing
Jacking	AR	AR	5.87.8.1.29.2		Procedural	172	A	Jacking
Parking	AR	AR	5.87.8.1.29.3		Procedural	175	A	Parking
Mooring	AR	AR	5.87.8.1.29.4		Procedural	17A	A	Mooring
Covering	AR	AR	5.87.8.1.29.5		Procedural	170	B	Covering
Hoisting	AR	AR	5.87.8.1.29.6		Procedural	171	B	Hoisting
Sling loading	AR	AR	5.87.8.1.29.7		Procedural	178	B	Sling loading
External power	AR	AR	5.87.8.1.29.8		Procedural	170	C	External power
Preparation for storage	R	R	5.87.8.1.31		Procedural	810	C	Preparation for storage or shipment

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Table A-XVI. DMWR With Overhaul Standards (Excluding Conventional and Chemical Ammunition) requirements matrix for _____.

Content Requirement	DWO Req.	DOR Req.	Ref.	PM Type	DM Type	Info Code	ICV	Info Name
Preparation for shipment	R	R	5.87.8.1.31A		Procedural	811 830		
Transport			5.87.8.1.31B		Procedural	831		
Arm	AR	AR	5.87.8.1.32		Procedural	120	G	Procedures to activate ammunition
Load	AR	AR	5.87.8.1.33		Procedural	PD		
Unload	AR	AR	5.87.8.1.34		Procedural	PD		
Install peripheral device	AR	AR	5.87.8.1.35		Procedural	C96		
Uninstall peripheral device	AR	AR	5.87.8.1.36		Procedural	C96		
Upgrade/patch	AR	AR	5.87.8.1.37		Procedural	C96		
Configure	AR	AR	5.87.8.1.38		Procedural	C96		
Debug	AR	AR	5.87.8.1.39		Procedural	C96		
Additional maintenance task	AR	AR	5.87.8.2		Procedural	PD		
Follow-on maintenance	AR	AR	5.87.9		Procedural	PD		
GENERAL MAINTENANCE			5.87.10		Procedural	PD		
LUBRICATION INSTRUCTIONS			5.87.11		Procedural	240	B	Lubrication instructions
OVERHAUL AND RETIREMENT SCHEDULE (AIRCRAFT ONLY)	R	R	5.87.13		Procedural	288	A	Overhaul and retirement schedule.
PRESERVATION, PACKAGING, AND MARKING	AR	AR	5.87.11A		Descriptive	810	H	Preservation, packaging, and marking
FACILITIES			5.87.12		Descriptive	915	A	Facilities
OVERHAUL INSPECTION PROCEDURES			5.87.14		Procedural	310	C	Overhaul inspection procedures
DEPOT MOBILIZATION REQUIREMENTS	R	R	5.87.15		Descriptive	800	K	Depot mobilization requirements
QUALITY ASSURANCE REQUIREMENTS	R	R	5.87.16		Descriptive	315	A	Quality assurance requirements
ILLUSTRATED LIST OF MANUFACTURED ITEMS			5.87.17		Descriptive	670	E	Illustrated list of manufactured items
TORQUE LIMITS			5.87.18		Procedural	711	B	Torque limits
AIRCRAFT INVENTORY MASTER GUIDE (AIRCRAFT ONLY)			5.120		Descriptive	102	B	Aircraft inventory master guide

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Table A-XVI. DMWR With Overhaul Standards (Excluding Conventional and Chemical Ammunition) requirements matrix for _____.

Content Requirement	DWO Req.	DOR Req.	Ref.	PM Type	DM Type	Info Code	ICV	Info Name
STORAGE OF AIRCRAFT (AIRCRAFT ONLY)			5.121		Procedural	810	B	Flyable storage of aircraft
					Procedural	810	F	Short storage of Aircraft
					Procedural	810	G	Intermediate storage of aircraft
WIRING DIAGRAMS			5.92		Descriptive	051	A	Wiring diagrams
CHAPTER X. AUXILIARY EQUIPMENT MAINTENANCE INSTRUCTIONS				Chapter PM				
AUXILIARY EQUIPMENT MAINTENANCE			5.97.2		Procedural	PD		
ILLUSTRATED LIST OF MANUFACTURED ITEMS			5.87.17		Descriptive	670	E	Illustrated list of manufactured items
TORQUE LIMITS			5.87.18		Procedural	711	B	Torque limits
WIRING DIAGRAMS			5.92		Descriptive	051	A	Wiring diagrams
CHAPTER X. AMMUNITION MAINTENANCE INSTRUCTIONS				Chapter PM				
AMMUNITION MAINTENANCE			5.87.19		Procedural	200	K	Ammunition maintenance
AMMUNITION MARKING INFORMATION			5.87.20		Procedural	067	C	Ammunition marking
FOREIGN AMMUNITION (NATO)			5.87.21		Procedural	011	B	Foreign ammunition
CHAPTER X. PARTS INFORMATION				Chapter PM				
DMWR With Overhaul Standards	P	P	5.93					
DMWR With Overhaul Standards With Parts	R	R						
INTRODUCTION	R	R	5.93.4		Descriptive	018	E	Parts introduction
REPAIR PARTS LIST	R	R	5.93.5		IPD	941	A	Repair parts information
REPAIR PARTS FOR SPECIAL TOOLS			5.93.7		IPD	607	B	Repair parts for special tools

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Table A-XVI. DMWR With Overhaul Standards (Excluding Conventional and Chemical Ammunition) requirements matrix for _____.

Content Requirement	DWO Req.	DOR Req.	Ref.	PM Type	DM Type	Info Code	ICV	Info Name
KIT PARTS LIST			5.93.8		IPD	607	C	Kit parts list
BULK ITEMS			5.93.9		IPD	603	B	Bulk items
SPECIAL TOOLS LIST			5.93.10		IPD	604	B	Special tools list
NSN INDEX	R	R	5.93.11.1.5		Descriptive	942	F	National Stock Number index
P/N INDEX	R	R	5.93.11.1.6		Descriptive	942	B	Part number index
REFERENCE DESIGNATOR INDEX			5.93.11.1.7		Descriptive	942	C	Reference designator index
CHAPTER X. SUPPORTING INFORMATION	R	R	5.106.1					
REFERENCES	R	R	5.106.1.1.2		Descriptive	017	B	References
EXPENDABLE AND DURABLE ITEMS LIST	R	R	5.93.15		Descriptive	070	D	Expendable and durable items list
TOOL IDENTIFICATION LIST	R	R	5.103.1	Chapter PM	Descriptive	062	B	Tool identification list
MANDATORY REPLACEMENT PARTS	R	R	5.93.16		Descriptive	075	D	Mandatory replacement parts
CRITICAL SAFETY ITEMS (CSI)	AR	AR	5.93.17		Descriptive	075	E	Critical Safety Items (CSI)
SUPPORT ITEMS	AR	AR	5.106.1.1.3		Descriptive	0161	B	
ADDITIONAL SUPPORTING INFORMATION			5.106.1.1.4		Descriptive	PD		
REAR MATTER	R	R	5.128.3.1	Rear Matter PM				

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Table A-XVII. Aviation Field Troubleshooting (Excluding Conventional and Chemical Ammunition) requirements matrix for _____.

Content Requirement	TTM Req.	Ref.	PM Type	DM Type	Info Code	ICV	Info Name
FRONT MATTER	R	5.128	Front Matter PM				
CHAPTER X. AVIATION TROUBLESHOOTING PROCEDURES *NOTE: The notation (*) indicates that at least one of these content items shall be included.*	R	5.88	Chapter PM				
INTRODUCTION	R	5.88.3		Descriptive	018	C	Troubleshooting introduction
TECHNICAL DESCRIPTION		5.116		Descriptive	011	C	Technical description
Equipment Description and Data		5.116.1.2					
Controls and Indicators		5.116.1.3					
Theory of Operation		5.116.1.4					
TROUBLESHOOTING INDEX		5.88.4		Descriptive	410	F	Malfunction index
				Descriptive	410	B	Symptom index
				Descriptive	410	C	System/Subsystem index
**OPERATIONAL CHECKOUT*		5.88.7		Descriptive	018	V	Operational checkout introduction
				Procedural	331	B	Pretest Setup procedures
				Procedural	320	C	Operational Checkout test procedure
				Descriptive	410	G	Message index
				Descriptive	410	H	Fault code reference index
				Procedural	334	C	Post-operational checkout shutdown procedures
**TROUBLESHOOTING PROCEDURES*		5.88.8		Descriptive	018	C	Troubleshooting introduction
				Procedural	PD		General troubleshooting procedures and precautions
				Procedural	331	B	Pretest setup procedures
				Fault	421	B	Troubleshooting procedure
				Procedural	334	B	Post-troubleshooting shutdown procedures
**DIAGNOSTICS*		5.88.8.1.6.2		Process	429	A	Diagnostics
REAR MATTER	R	5.128.3.1	Rear Matter PM				

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Table A-XVIII. Aircraft Preventive Maintenance (Excluding Conventional and Chemical Ammunition) requirements matrix for _____.

Content Requirement	PMD/ MSM Req.	Ref.	PM Type	DM Type	Info Code	ICV	Info Name
FRONT MATTER	R	5.128	Front Matter PM				
CHAPTER 1. GENERAL INFORMATION, EQUIPMENT DESCRIPTION AND THEORY OF OPERATION	R		Chapter PM				
GENERAL INFORMATION	R	5.86.7		Descriptive	010	D	General Information
Maintenance Activities	R	5.86.7.1.2					
General Information	R	5.86.7.1.3					
CHAPTER X. PMS/PMD INFORMATION	R	5.117	Chapter PM				
PMS/PMD INSPECTION		5.117		Checklist	310	E	PMS inspection
				Checklist	310	P	PMD inspection
REAR MATTER	R	5.128.3.1	Rear Matter PM				

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Table A-XIX. Aircraft Phased Maintenance Inspection Checklist (Excluding Conventional and Chemical Ammunition) requirements matrix for _____.

Content Requirement	PMI Req.	Ref.	PM Type	DM Type	Info Code	ICV	Info Name
FRONT MATTER	R	5.128	Front Matter PM				
CHAPTER 1. GENERAL INFORMATION, EQUIPMENT DESCRIPTION, AND THEORY OF OPERATION	R		Chapter PM				
GENERAL INFORMATION	R	5.86.8		Descriptive	010	E	General information
CHAPTER X. PHASED MAINTENANCE INSPECTION MAINTENANCE INFORMATION	R		Chapter PM				
PM INSPECTION	R	5.118		Checklist	310	F	PM inspection
REAR MATTER	R	5.128.3.1	Rear Matter PM				

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Table A-XX. Conventional and Chemical Ammunition Operator's Manual requirements matrix for _____.

Content Requirement	OPI Req.	MM3 & M3B Req.	MM1 & M1B Req.	Ref.	PM Type	DM Type	Info Code	ICV	Info Name
FRONT MATTER	R	R	R	5.128	Front Matter PM				
CHAPTER 1. GENERAL INFORMATION, EQUIPMENT DESCRIPTION AND THEORY OF OPERATION	R	R	R	5.86	Chapter PM				
GENERAL DATA	R	R	R	5.86.3		Descriptive	010	A	General Data
Scope	R	R	R	5.86.3.1.2					
Ozone Depleting Substances (ODS)				5.86.3.1.3					
Destruction of Army Materiel to Prevent Enemy Use	R	R	R	5.86.3.1.4					
Preparation for Storage or Shipment	R	R	R	5.86.3.1.5					
Transportability Guidance	R	R	R	5.86.3.1.5A					
Nomenclature Cross-Reference List				5.86.3.1.6					
List of Abbreviations/ Acronyms		R	R	5.86.3.1.7					
Safety, Care, and Handling	AR	AR	AR	5.86.3.1.8					
Calibration				5.86.3.1.9					
Supporting Information for Repair Parts, Special Tools, TMDE, and Support Equipment	P			5.86.3.1.10					
Copyright Credit Line				5.86.3.1.11					
Item Unique Identification (IUID)	AR	AR	AR	5.86.3.1.12					

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Table A-XX. Conventional and Chemical Ammunition Operator's Manual requirements matrix for _____.

Content Requirement	OPI Req.	MM3 & M3B Req.	MM1 & M1B Req.	Ref.	PM Type	DM Type	Info Code	ICV	Info Name
GENERAL INFORMATION	R	R	R	5.86.4					
Maintenance Forms, Records, and Reports	R	R	R	5.86.4.1.2		Descriptive	010	B	General Information
Reporting Equipment Improvement Recommendations (EIR)	R	R	R	5.86.4.1.3					
Hand Receipt (HR) Manuals				5.86.4.1.4					
Corrosion Prevention and Control (CPC)	R	R	R	5.86.4.1.5					
Warranty Information				5.86.4.1.6					
Quality of Material	P	AR	AR	5.86.4.1.7					
Nuclear Hardness				5.86.4.1.8					
EQUIPMENT DESCRIPTION AND DATA	R	R	R	5.86.5		Descriptive	**000**	B	Equipment Description and Data
Equipment Characteristics, Capabilities, and Features	R	R	R	5.86.5.1.2					
Location and Description of Major Components				5.86.5.1.3					
Equipment Differences				5.86.5.1.4					
Equipment Data	R	R	R	5.86.5.1.5					
Instructions for the Use, Transportation, Handling, Storage, or Disposal				5.86.5.1.6		Procedural	800	L	Instructions for the Use, Transportation, Handling, Storage, or Disposal
THEORY OF OPERAITON				5.86.6		Descriptive	042	F	Theory of operation

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Table A-XX. Conventional and Chemical Ammunition Operator's Manual requirements matrix for _____.

Content Requirement	OPI Req.	MM3 & M3B Req.	MM1 & M1B Req.	Ref.	PM Type	DM Type	Info Code	ICV	Info Name
CHAPTER X. OPERATOR INSTRUCTIONS	R	R	R	5.85.1.3	Chapter PM				
DESCRIPTION AND USE OF OPERATOR CONTROLS AND INDICATORS	R	R	R	5.85.3		Descriptive	111	A	Controls and Indicators
OPERATION UNDER USUAL CONDITIONS	R	R	R	5.85.4					
Security Measures for Electronic Data	AR	AR	AR	5.85.4.1.2		Descriptive	990	D	Security Measures for Electronic Data
Siting	AR	AR	AR	5.85.4.1.3		Procedural	122	A	Siting
Shelter	AR	AR	AR	5.85.4.1.4		Procedural	123	A	Shelter
Assembly and Preparation for Use	AR	AR	AR	5.85.4.1.5		Procedural	710	B	Assembly and Preparation for Use
Initial Adjustments, Before Use and Self-Test	AR	AR	AR	5.85.4.1.6		Procedural	121	B	Initial Adjustments, Before Use and Self-Test
Operating Procedures	R	R	R	5.85.4.1.7		Procedural	131	A	Normal Operation Procedures
Operating Auxiliary Equipment	AR	AR	AR	5.85.4.1.9		Procedural	131	A	Normal Operation Procedures
Preparation for Movement	AR	AR	AR	5.85.4.1.10		Procedural	131	S	Preparation for Movement
Decals and Instruction Plates	AR	AR	AR	5.85.4.1.11		Descriptive	067	A	Decals and Instruction Plates
OPERATION UNDER UNUSUAL CONDITIONS	R	R	R	5.85.5					
Security Measures for Electronic Data	AR	AR	AR	5.85.5.1.1		Descriptive	990	C	Security Measures for Electronic Data (Unusual Conditions)
Unusual Environment / Weather	R	R	R	5.85.5.1.2		Procedural	142	B	Unusual Environment / Weather

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Table A-XX. Conventional and Chemical Ammunition Operator's Manual requirements matrix for _____.

Content Requirement	OPI Req.	MM3 & M3B Req.	MM1 & M1B Req.	Ref.	PM Type	DM Type	Info Code	ICV	Info Name
Fording and Swimming	AR	AR	AR	5.85.5.1.3		Procedural	131	R	Fording and Swimming
Interim Chemical, Biological, Radiological, Nuclear, and Explosives (CBRNE) Decontamination Procedures	AR	AR	AR	5.85.5.1.4		Procedural	139	B	Interim Chemical, Biological, Radiological, Nuclear, and Explosives (CBRNE) Decontamination Procedures
Jamming and Electronic Countermeasures (ECM) Procedures	AR	AR	AR	5.85.5.1.5		Procedural	144	A	Jamming and Electronic Countermeasures (ECM) Procedures
Degraded Operation Procedures	AR	AR	AR	5.85.5.1.6		Procedural	142	C	Degraded Operation Procedures
Decals and Instruction Plates	AR	AR	AR	5.85.4.1.11		Descriptive	067	A	Decals and Instruction Plates
EMERGENCY				5.85.6		Procedural	140	B	Operation Under Emergency Conditions
CHAPTER X. MAINTENANCE INSTRUCTIONS	R	R	R	5.87					
SERVICE UPON RECEIPT	P	R	R	5.87.3					
Siting	P	AR	AR	5.85.4.1.3		Procedural	122	A	Siting
Shelter requirements	P	AR	AR	5.85.4.1.4		Procedural	123	A	Shelter
Service upon receipt of materiel	P	R	R	5.87.3.1.2	Chapter PM				
Unpacking	P	R	R	5.87.3.1.2.1		Procedural	840	B	Unpacking
Checking unpacked equipment	P	R	R	5.87.3.1.2.2		Checklist	870	B	Checking Unpacked Equipment
Processing unpacked equipment	P	R	R	5.87.3.1.2.3		Procedural	870	C	Processing Unpacked Equipment
Installation instructions	P	R	R	5.87.3.1.3					

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Table A-XX. Conventional and Chemical Ammunition Operator's Manual requirements matrix for _____.

Content Requirement	OPI Req.	MM3 & M3B Req.	MM1 & M1B Req.	Ref.	PM Type	DM Type	Info Code	ICV	Info Name
Assembly of equipment	P	R	R	5.87.3.1.3.1		Procedural	710	C	Assembly of equipment
Installation of the equipment		AR	AR	5.87.3.1.3.2		Procedural	710	A	Assembly procedure
Special application installation instructions		AR	AR	5.87.3.1.3.3		Procedural	720	B	Special application installation instructions
Van and shelter procedure	P	AR	AR	5.87.3.1.3.4		Procedural	123	C	Van and shelter procedure
Preliminary servicing of equipment	P	AR	AR	5.87.3.1.4		Procedural	200	F	Preliminary servicing
Preliminary checks and adjustment of equipment	P	AR	AR	5.87.3.1.5		Procedural	271	B	Preliminary checks and adjustment of equipment
Preliminary calibration of equipment	P	AR	AR	5.87.3.1.6		Procedural	273	D	Preliminary calibration of equipment
Circuit alignment	P	AR	AR	5.87.3.1.7		Procedural	272	B	Circuit alignment
Ammunition markings	P	AR	AR	5.87.3.1.9		Procedural	067	C	Ammunition marking
Classification of defects	P	AR	AR	5.87.3.1.10		Procedural	350	C	Classificatio n of defects
Ammunition handling	P	AR	AR	5.87.3.1.11		Procedural	170	E	Handling ammunition
Procedures to activate ammunition	P	AR	AR	5.87.3.1.12		Procedural	120	G	Procedure to activate ammunition
Additional maintenance task	P	AR	AR	5.87.3.1.13		Procedural	PD		
Follow-on maintenance	P	AR	AR	5.87.9		Procedural	PD		
MAINTENANCE	R	R	R	5.87.8					
Inspect				5.87.8.1.4					
Test and inspection				5.87.8.1.4.1		Procedural	300	B	Test and inspection

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Table A-XX. Conventional and Chemical Ammunition Operator's Manual requirements matrix for _____.

Content Requirement	OPI Req.	MM3 & M3B Req.	MM1 & M1B Req.	Ref.	PM Type	DM Type	Info Code	ICV	Info Name
Inspection of conventional and chemical ammunition or components containing radioactive materials				5.87.8.1.4.2		Procedural	310	A	Visual examinations
Pre-embarkation inspection				5.87.8.1.4.3		Procedural	310	N	Pre-embarkation inspection
Inspection of installed items				5.87.8.1.4.4		Procedural	310	J	Inspection of installed items
Inspection-acceptance and rejection criteria				5.87.8.1.4.5		Procedural	310	D	Inspection – Acceptance and rejection criteria
Test	AR	AR	AR	5.87.8.1.5		Procedural	340	C	Testing
Service	AR	AR	AR	5.87.8.1.6		Procedural	200	A	Servicing
Adjust	AR	AR	AR	5.87.8.1.7		Procedural	271	A	Adjust
Align	AR	AR	AR	5.87.8.1.8		Procedural	272	A	Align
Calibrate	AR	AR	AR	5.87.8.1.9		Procedural	273	A	Calibrate
Remove	AR	AR	AR	5.87.8.1.10		Procedural	520	A	Removal procedure
Install	AR	AR	AR	5.87.8.1.11		Procedural	720	A	Install procedure
Replace	AR	AR	AR	5.87.8.1.12		Procedural	685	C	Replace
Repair	AR	AR	AR	5.87.8.1.13		Procedural	685	A	Repair
Paint	AR	AR	AR	5.87.8.1.14		Procedural	257	B	Painting
Overhaul	AR	AR	AR	5.87.8.1.15		Procedural	664	B	Overhaul procedure
Rebuild	AR	AR	AR	5.87.8.1.16		Procedural	664	C	Rebuild
Lubricate	AR	AR	AR	5.87.8.1.17		Procedural	240	A	Lubrication
Mark	AR	AR	AR	5.87.8.1.18		Procedural	067	D	Mark
Pack	AR	AR	AR	5.87.8.1.19		Procedural	713	A	Pack procedure
Unpack	AR	AR	AR	5.87.8.1.20		Procedural	840	B	Unpacking
Preserve	AR	AR	AR	5.87.8.1.21		Procedural	810	A	Preservation procedure
Assemble and prepare for use	AR	AR	AR	5.87.8.1.22		Procedural	710	B	Assembly and preparation for use
Assemble	AR	AR	AR	5.87.8.1.23		Procedural	710	A	Assembly procedure

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Table A-XX. Conventional and Chemical Ammunition Operator's Manual requirements matrix for _____.

Content Requirement	OPI Req.	MM3 & M3B Req.	MM1 & M1B Req.	Ref.	PM Type	DM Type	Info Code	ICV	Info Name
Disassemble	AR	AR	AR	5.87.8.1.24		Procedural	530	A	Disassembly procedure
Clean	AR	AR	AR	5.87.8.1.25		Procedural	PD		
Non-destructive inspection	AR	AR	AR	5.87.8.1.26		Procedural	350	B	Non-destructive testing inspection
Radio interference suppression	AR	AR	AR	5.87.8.1.27		Procedural	143	A	Radio interference suppression
Place in service	AR	AR	AR	5.87.8.1.28		Procedural	870	P	Placing in service
Preparation for storage	R	R	R	5.87.8.1.31		Procedural	810	C	Preparation for storage or shipment
Preparation for shipment	R	R	R	5.87.8.1.31A		Procedural	811 830		
Transport	R	R	R	5.87.8.1.31B		Procedural	831		
Arm	AR	AR	AR	5.87.8.1.32		Procedural	120	G	Procedures to activate ammunition
Load	AR	AR	AR	5.87.8.1.33		Procedural	PD		
Unload	AR	AR	AR	5.87.8.1.34		Procedural	PD		
Additional maintenance task	AR	AR	AR	5.87.8.2.2		Procedural	PD		
Follow-on maintenance	AR	AR	AR	5.87.9		Procedural	PD		
GENERAL MAINTENANCE				5.87.10		Procedural	PD		
LUBRICATION INSTRUCTIONS				5.87.11		Procedural	240	B	Lubrication Instructions
ILLUSTRATED LIST OF MANUFACTURED ITEMS				5.87.17		Descriptive	670	E	Illustrated List of Manufactured Items
TORQUE LIMITS	P			5.87.18		Procedural	711	B	Torque Limits
WIRING DIAGRAMS	P			5.92		Descriptive	051	A	Wiring Diagrams
CHAPTER X. TEST AND INSPECTION MAINTENANCE INSTRUCTIONS	R	R	R		Chapter PM				
Test and Inspection	P	R	R	5.87.8.1.4.1		Procedural	300	B	Test and Inspection

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Table A-XX. Conventional and Chemical Ammunition Operator's Manual requirements matrix for _____.

Content Requirement	OPI Req.	MM3 & M3B Req.	MM1 & M1B Req.	Ref.	PM Type	DM Type	Info Code	ICV	Info Name
CHAPTER X. SHIPMENT/MOVEMENT AND STORAGE MAINTENANCE INSTRUCTIONS	P	R	R		Chapter PM				
Preparation for Storage	P	R	R	5.87.8.1.31		Procedural	810	C	Preparation for Storage or Shipment
Preparation for shipment	R	R	R	5.87.8.1.31A		Procedural	811 830		
Transport	R	R	R	5.87.8.1.31B		Procedural	831		
CHAPTER X. AMMUNITION MARKING MAINTENANCE INSTRUCTIONS		R	R		Chapter PM				
Ammunition Marking Information		R	R	5.87.20		Procedural	067	C	Ammunition Marking
CHAPTER X. PARTS INFORMATION Operator, Field and Sustainment Manuals Operator, Field and Sustainment Manuals With Parts	 P P	 P R	 P R	5.93	Chapter PM				
INTRODUCTION	P	R	R	5.93.4		Descriptive	018	E	Parts Introduction
REPAIR PARTS LIST	P	R	R	5.93.5		IPD	941	A	Repair Parts Information
REPAIR PARTS FOR SPECIAL TOOLS	P			5.93.7		IPD	607	B	Repair Parts for Special Tools
KIT PARTS LIST	P			5.93.8		IPD	607	C	Kit Parts List
BULK ITEM	P			5.93.9		IPD	603	B	Bulk Items
SPECIAL TOOLS LIST	P			5.93.10		IPD	604	B	Special Tools List
NSN INDEX	P	R	R	5.93.11.1.5		Descriptive	942	F	National Stock Number Index

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Table A-XX. Conventional and Chemical Ammunition Operator's Manual requirements matrix for _____.

Content Requirement	OPI Req.	MM3 & M3B Req.	MM1 & M1B Req.	Ref.	PM Type	DM Type	Info Code	ICV	Info Name
P/N INDEX	P	R	R	5.93.11.1.6		Descriptive	942	B	Part number index
REFERENCE DESIGNATOR INDEX	P			5.93.11.1.7		Descriptive	942	C	Reference designator index
CHAPTER X. DESTRUCTION OF EQUIPMENT TO PREVENT ENEMY USE				5.101.3	Chapter PM				
Introduction				5.101.3.1.6.2		Descriptive	997	D	Destruction General Information
Authorization				5.101.3.1.6.3					
Reporting Destruction				5.101.3.1.6.4					
General Destruction Information				5.101.3.1.6.5					
Degree of Damage				5.101.3.1.6.6					
Essential Components and Spare Parts				5.101.3.1.6.7					
SPECIFIC DESTRUCTION PROCEDURES									
Parts List				5.101.3.1.7		Descriptive	907	B	Parts list
Specific Destruction Procedures				5.101.3.1.8		Procedural	997	B	Destruction procedures
Classified Equipment and Documents				5.101.3.1.9		Procedural	997	C	Destruction Procedures - Classified Equipment
CHAPTER X. SUPPORTING INFORMATION	R	R	R	5.106.1	Chapter PM				
REFERENCES	R	R	R	5.106.1.1.2		Descriptive	017	B	References
INTRODUCTION FOR STANDARD MAC	P	R	R	5.94.1		Descriptive	018	D	MAC Introduction
MAINTENANCE ALLOCATION CHART	P	R	R	5.94.3		Schedule	916	A	MAC

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Table A-XX. Conventional and Chemical Ammunition Operator's Manual requirements matrix for _____.

Content Requirement	OPI Req.	MM3 & M3B Req.	MM1 & M1B Req.	Ref.	PM Type	DM Type	Info Code	ICV	Info Name
COMPONENTS OF END ITEM (COEI) AND BASIC ISSUE ITEMS (BII) LISTS	R	R	R	5.93.12 5.93.13		Descriptive	105	D	Components of End Item (COEI) List
						Descriptive	105	C	Basic Issue Items (BII) List
ADDITIONAL AUTHORIZATION LIST (AAL)				5.93.14		Descriptive	104	C	Additional Authorizatio n List (AAL)
EXPENDABLE AND DURABLE ITEMS LIST	R	R	R	5.93.15		Descriptive	070	D	Expendable and Durable Items List
TOOL IDENTIFICATION LIST	R	R	R	5.103.1		Descriptive	062	B	Tool Identification List
ADDITIONAL SUPPORTING INFORMATION				5.106.1.1.4		Descriptive	PD		
REAR MATTER	R	R	R	5.128.3.1	Rear Matter PM				

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Table A-XXI. Conventional and Chemical Ammunition Sustainment Maintenance Manual requirements matrix for _____.

Content Requirement	MM0 & M0B Req.	Ref.	PM Type	DM Type	Info Code	ICV	Info Name
FRONT MATTER	R	5.128	Front Matter PM				
CHAPTER 1. GENERAL INFORMATION, EQUIPMENT DESCRIPTION AND THEORY OF OPERATION	R	5.86	Chapter PM				
GENERAL DATA	R	5.86.3		Descriptive	010	A	General data
Scope	R	5.86.3.1.2					
Ozone Depleting Substances (ODS)	AR	5.86.3.1.3					
Destruction of Army Materiel to Prevent Enemy Use	R	5.86.3.1.4					
Preparation for Storage or Shipment	R	5.86.3.1.5					
Transportability Guidance	R	5.86.3.1.5A					
Nomenclature Cross-Reference List		5.86.3.1.6					
List of Abbreviations	R	5.86.3.1.7					
Safety, Care, and Handling	R	5.86.3.1.8					
Calibration		5.86.3.1.9					
Supporting Information for Repair Parts, Special Tools, TMDE, and Support Equipment		5.86.3.1.10					
Copyright Credit Line	AR	5.86.3.1.11					
Item Unique Identification	AR	5.86.3.1.12					
GENERAL INFORMATION	R	5.86.4		Descriptive	010	B	General information
Maintenance Forms, Records, and Reports	R	5.86.4.1.2					

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Table A-XXI. Conventional and Chemical Ammunition Sustainment Maintenance Manual requirements matrix for _____.

Content Requirement	MM0 & M0B Req.	Ref.	PM Type	DM Type	Info Code	ICV	Info Name
Reporting Equipment Improvement Recommendations (EIR)	R	5.86.4.1.3					
Hand Receipt (HR) Manuals		5.86.4.1.4					
Corrosion Prevention and Control (CPC)	R	5.86.4.1.5					
Warranty Information		5.86.4.1.6					
Quality of Material	R	5.86.4.1.7					
Nuclear Hardness		5.86.4.1.8					
EQUIPMENT DESCRIPTION AND DATA	R	5.86.5					
Equipment Characteristics, Capabilities, and Features	R	5.86.5.1.2		Descriptive	000	B	Equipment description and data
Location and Description of Major Components	R	5.86.5.1.3					
Equipment Differences		5.86.5.1.4					
Equipment Data	R	5.86.5.1.5					
Instructions for the Use, Transportation, Handling, Storage, or Disposal		5.86.5.1.6		Procedural	800	L	Instructions for the use, transportation, handling, storage, or disposal
THEORY OF OPERATION		5.86.6		Descriptive	042	F	Theory of operation
CHAPTER X. MAINTENANCE INSTRUCTIONS	R	5.87					
SERVICE UPON RECEIPT	P	5.87.3					
MAINTENANCE	R	5.87					
Inspect	AR	5.87.8.1.4					
Test and inspection	AR	5.87.8.1.4.1		Procedural	300	B	Test and inspection

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Table A-XXI. Conventional and Chemical Ammunition Sustainment Maintenance Manual requirements matrix for _____.

Content Requirement	MM0 & M0B Req.	Ref.	PM Type	DM Type	Info Code	ICV	Info Name
Inspection of conventional and chemical ammunition or components containing radioactive materials	AR	5.87.8.1.4.2		Procedural	310	A	Visual examinations
Pre-embarkation inspection	AR	5.87.8.1.4.3		Procedural	310	N	Pre-embarkation inspection
Inspection of installed items	AR	5.87.8.1.4.4		Procedural	310	J	Inspection of installed items
Inspection-acceptance and rejection criteria	AR	5.87.8.1.4.5		Procedural	310	D	Inspection – Acceptance and rejection criteria
Test	AR	5.87.8.1.5		Procedural	340	C	Testing
Service	AR	5.87.8.1.6		Procedural	200	A	Servicing
Adjust	AR	5.87.8.1.7		Procedural	271	A	Adjust
Align	AR	5.87.8.1.8		Procedural	272	A	Align
Calibrate	AR	5.87.8.1.9		Procedural	273	A	Calibrate
Remove	AR	5.87.8.1.10		Procedural	520	A	Removal procedure
Install	AR	5.87.8.1.11		Procedural	720	A	Install procedure
Replace	AR	5.87.8.1.12		Procedural	685	C	Replace
Repair	AR	5.87.8.1.13		Procedural	685	A	Repair
Paint	AR	5.87.8.1.14		Procedural	257	B	Painting
Overhaul	AR	5.87.8.1.15		Procedural	664	B	Overhaul procedure
Rebuild	AR	5.87.8.1.16		Procedural	664	C	Rebuild
Lubricate	AR	5.87.8.1.17		Procedural	240	A	Lubrication
Mark	AR	5.87.8.1.18		Procedural	067	D	Mark
Pack	AR	5.87.8.1.19		Procedural	713	A	Pack procedure
Unpack	AR	5.87.8.1.20		Procedural	840	B	Unpacking
Preserve	AR	5.87.8.1.21		Procedural	810	A	Preservation procedure
Assemble and prepare for use	AR	5.87.8.1.22		Procedural	710	B	Assembly and preparation for use
Assemble	AR	5.87.8.1.23		Procedural	710	A	Assembly procedure
Disassemble	AR	5.87.8.1.24		Procedural	530	A	Disassembly procedure
Clean	AR	5.87.8.1.25		Procedural	PD		
Non-destructive inspection	AR	5.87.8.1.26		Procedural	350	B	Non-destructive testing inspection
Place in service	AR	5.87.8.1.28		Procedural	870	P	Placing in service

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Table A-XXI. Conventional and Chemical Ammunition Sustainment Maintenance Manual requirements matrix for _____.

Content Requirement	MM0 & M0B Req.	Ref.	PM Type	DM Type	Info Code	ICV	Info Name
Preparation for storage	R	5.87.8.1.31		Procedural	810	C	Preparation for storage or shipment
Preparation for shipment	R	5.87.8.1.31A		Procedural	811 830		
Transport	R	5.87.8.1.31B		Procedural	831		
Arm	AR	5.87.8.1.32		Procedural	120	G	Procedures to activate ammunition
Load	AR	5.87.8.1.33		Procedural	PD		
Unload	AR	5.87.8.1.34		Procedural	PD		
Additional maintenance task	AR	5.87.8.2.2		Procedural	PD		
Follow-on maintenance	AR	5.87.9		Procedural	PD		
GENERAL MAINTENANCE		5.87.10		Procedural	PD		
LUBRICATION INSTRUCTIONS		5.87.11		Procedural	240	B	Lubrication instructions
ILLUSTRATED LIST OF MANUFACTURED ITEMS		5.87.17		Descriptive	670	E	Illustrated list of manufactured items
TORQUE LIMITS		5.87.18		Procedural	711	B	Torque limits
WIRING DIAGRAMS		5.92		Descriptive	051	A	Wiring diagrams
CHAPTER X. TEST AND INSPECTION MAINTENANCE INSTRUCTIONS			Chapter PM				
Test and Inspection		5.87.8.1.4.1		Procedural	300	B	Test and inspection
CHAPTER X. SHIPMENT/ MOVEMENT AND STORAGE MAINTENANCE INSTRUCTIONS	P		Chapter PM				
Preparation for Storage	P	5.87.8.1.31		Procedural	810	C	Preparation for storage or shipment
Preparation for shipment	R	5.87.8.1.31A		Procedural	811 830		
Transport	R	5.87.8.1.31B		Procedural	831		

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Table A-XXI. Conventional and Chemical Ammunition Sustainment Maintenance Manual requirements matrix for _____.

Content Requirement	MM0 & M0B Req.	Ref.	PM Type	DM Type	Info Code	ICV	Info Name
CHAPTER X. AMMUNITION MARKING MAINTENANCE INSTRUCTIONS	R		Chapter PM				
Ammunition Marking Information	R	5.87.20		Procedural	067	C	Ammunition marking
CHAPTER X. PARTS INFORMATION Operator, Field, & Sustainment Operator, Field, & Sustainment with parts	P R	5.93	Chapter PM				
INTRODUCTION	R	5.93.4		Descriptive	018	E	Parts introduction
REPAIR PARTS LIST	R	5.93.5		IPD	941	A	Repair parts information
REPAIR PARTS FOR SPECIAL TOOLS		5.93.7		IPD	607	B	Repair parts for special tools
KIT PARTS LIST		5.93.8		IPD	607	C	Kit parts list
BULK ITEM		5.93.9		IPD	603	B	Bulk items
SPECIAL TOOLS LIST		5.93.10		IPD	604	B	Special tools list
NSN INDEX	R	5.93.11.1.5		Descriptive	942	F	National Stock Number index
P/N INDEX	R	5.93.11.1.6		Descriptive	942	B	Part number index
REFERENCE DESIGNATOR INDEX		5.93.11.1.7		Descriptive	942	C	Reference designator index

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Table A-XXI. Conventional and Chemical Ammunition Sustainment Maintenance Manual requirements matrix for _____.

Content Requirement	MM0 & M0B Req.	Ref.	PM Type	DM Type	Info Code	ICV	Info Name
CHAPTER X. DESTRUCTION OF EQUIPMENT TO PREVENT ENEMY USE *NOTE: If a separate destruction of material manual is not developed for this equipment then the destruction chapter must be included.*		5.101.3					
Introduction		5.101.3.1.6.2		Descriptive	997	D	Destruction general information
Authorization		5.101.3.1.6.3					
Reporting Destruction		5.101.3.1.6.4					
General Destruction Information		5.101.3.1.6.5					
Degree of Destruction		5.101.3.1.6.6					
Essential Components and Spare Parts		5.101.3.1.6.7					
SPECIFIC DESTRUCTION PROCEDURES							
Parts List		5.101.3.1.7		Descriptive	907	B	Parts list
Specific Destruction Procedures		5.101.3.1.8		Procedural	997	B	Destruction procedures
Classified Equipment and Documents		5.101.3.1.9		Procedural	997	C	Destruction procedures - classified equipment
CHAPTER X. SUPPORTING INFORMATION	R	5.106.1	Chapter PM				
REFERENCES	R	5.106.1.1.2		Descriptive	017	B	References
EXPENDABLE AND DURABLE ITEMS	R	5.93.15		Descriptive	070	D	Expendable and durable items list
TOOL IDENTIFICATION LIST	R	5.103.1		Descriptive	062	B	Tool identification list

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Table A-XXI. Conventional and Chemical Ammunition Sustainment Maintenance Manual requirements matrix for _____.

Content Requirement	MM0 & M0B Req.	Ref.	PM Type	DM Type	Info Code	ICV	Info Name
ADDITIONAL SUPPORTING INFORMATION		5.106.1.1.4		Descriptive	PD		
REAR MATTER	R	5.128.3.1	Rear Matter PM				

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Table A-XXII. Conventional and Chemical Ammunition Field & Sustainment Maintenance Manual requirements matrix for _____.

Content Requirement	MM2 & M2B Req.	MM4, & M4B Req.	Ref.	PM Type	DM Type	Info Code	ICV	Info Name
FRONT MATTER	R	R	5.128	Front Matter PM				
CHAPTER 1. GENERAL INFORMATION, EQUIPMENT DESCRIPTION AND THEORY OF OPERATION	R	R	5.86	Chapter PM				
GENERAL DATA	R	R	5.86.3		Descriptive	010	A	General data
Scope	R	R	5.86.3.1.2					
Ozone Depleting Substances (ODS)			5.86.3.1.3					
Destruction of Army Materiel to Prevent Enemy Use	R	R	5.86.3.1.4					
Preparation for Storage or Shipment	R	R	5.86.3.1.5					
Transportability Guidance	R	R	5.86.3.1.5A					
Nomenclature Cross-Reference List			5.86.3.1.6					
List of Abbreviations/ Acronyms	R	R	5.86.3.1.7					
Safety, Care, and Handling	R	R	5.86.3.1.8					
Calibration			5.86.3.1.9					
Supporting Information for Repair Parts, Special Tools, TMDE, and Support Equipment			5.86.3.1.10					
Copyright Credit Line	AR	AR	5.86.3.1.11					
Item Unique Identification (IUID)	AR	AR	5.86.3.1.12					

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Table A-XXII. Conventional and Chemical Ammunition Field & Sustainment Maintenance Manual requirements matrix for _____.

Content Requirement	MM2 & M2B Req.	MM4, & M4B Req.	Ref.	PM Type	DM Type	Info Code	ICV	Info Name
GENERAL INFORMATION	R	R	5.86.4		Descriptive	010	B	General information
Maintenance Forms, Records, and Reports	R	R	5.86.4.1.2					
Reporting Equipment Improvement Recommendations (EIR)	R	R	5.86.4.1.3					
Hand Receipt (HR) Information			5.86.4.1.4					
Corrosion Prevention and Control (CPC)	R	R	5.86.4.1.5					
Warranty Information			5.86.4.1.6					
Quality of Material			5.86.4.1.7					
Nuclear Hardness			5.86.4.1.8					
EQUIPMENT DESCRIPTION AND DATA	R	R	5.86.5		Descriptive	000	B	Equipment description and data
Equipment Characteristics, Capabilities, and Features	R	R	5.86.5.1.2					
Location and Description of Major Components			5.86.5.1.3					
Equipment Differences			5.86.5.1.4					
Equipment Data	R	R	5.86.5.1.5					
Instructions for the Use, Transportation, Handling, Storage, or Disposal	R	R	5.86.5.1.6		Procedural	800	L	Instructions for the use, transportation, handling, storage, or disposal
THEORY OF OPERATION			5.86.6		Descriptive	042	F	Theory of operation

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Table A-XXII. Conventional and Chemical Ammunition Field & Sustainment Maintenance Manual requirements matrix for _____.

Content Requirement	MM2 & M2B Req.	MM4, & M4B Req.	Ref.	PM Type	DM Type	Info Code	ICV	Info Name
CHAPTER X. MAINTENANCE INSTRUCTIONS	R	R	5.87	Chapter PM				
SERVICE UPON RECEIPT	R	R	5.87.3					
Siting	AR	AR	5.85.4.1.3		Procedural	122	A	Siting
Shelter requirements	AR	AR	5.85.4.1.4		Procedural	123	A	Shelter
Service upon receipt of materiel	R	R	5.87.3.1.2					
Unpacking	R	R	5.87.3.1.2.1		Procedural	840	B	Unpacking
Checking unpacked equipment	R	R	5.87.3.1.2.2		Checklist	870	B	Checking unpacked equipment
Processing unpacked equipment	R	R	5.87.3.1.2.3		Procedural	870	C	Processing unpacked equipment
Installation instructions	R	R	5.87.3.1.3					
Assembly of equipment	R	R	5.87.3.1.3.1		Procedural	710	C	Assembly of equipment
Installation of the equipment	R	R	5.87.3.1.3.2		Procedural	720	A	Install procedure
Special application installation instructions	R	R	5.87.3.1.3.3		Procedural	720	B	Special application installation instructions
Van and shelter procedure	R	R	5.87.3.1.3.4		Procedural	123	C	Van and shelter procedure
Preliminary servicing of equipment	AR	AR	5.87.3.1.4		Procedural	200	F	Preliminary servicing
Preliminary checks and adjustment of equipment	AR	AR	5.87.3.1.5		Procedural	271	B	Preliminary checks and adjustment of equipment
Preliminary calibration of equipment	AR	AR	5.87.3.1.6		Procedural	273	D	Preliminary calibration of equipment
Circuit alignment	AR	AR	5.87.3.1.7		Procedural	272	B	Circuit alignment
Ammunition markings	R	R	5.87.3.1.9		Procedural	067	C	Ammunition marking

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Table A-XXII. Conventional and Chemical Ammunition Field & Sustainment Maintenance Manual requirements matrix for _____.

Content Requirement	MM2 & M2B Req.	MM4, & M4B Req.	Ref.	PM Type	DM Type	Info Code	ICV	Info Name
Classification of defects	R	R	5.87.3.1.10		Procedural	350	C	Classification of defects
Ammunition handling	R	R	5.87.3.1.11		Procedural	170	E	Handling ammunition
Procedures to activate ammunition	R	R	5.87.3.1.12		Procedural	120	G	Procedures to activate ammunition
Additional maintenance task	AR	AR	5.87.3.1.13		Procedural	PD		
Follow-on maintenance	AR	AR	5.87.9		Procedural	PD		
MAINTENANCE	R	R	5.87					
Inspect	AR	AR	5.87.8.1.4					
Test and inspection	AR	AR	5.87.8.1.4.1		Procedural	300	B	Test and inspection
Inspection of conventional and chemical ammunition or components containing radioactive materials	AR	AR	5.87.8.1.4.2		Procedural	310	A	Visual examinations
Pre-embarkation inspection	AR	AR	5.87.8.1.4.3		Procedural	310	N	Pre-embarkation inspection
Inspection of installed items	AR	AR	5.87.8.1.4.4		Procedural	310	J	Inspection of installed items
Inspection-acceptance and rejection criteria	AR	AR	5.87.8.1.4.5		Procedural	310	D	Inspection – Acceptance and rejection criteria
Test	AR	AR	5.87.8.1.5		Procedural	340	C	Testing
Service	AR	AR	5.87.8.1.6		Procedural	200	A	Servicing
Adjust	AR	AR	5.87.8.1.7		Procedural	271	A	Adjust
Align	AR	AR	5.87.8.1.8		Procedural	272	A	Align
Calibrate	AR	AR	5.87.8.1.9		Procedural	273	A	Calibrate
Remove	AR	AR	5.87.8.1.10		Procedural	520	A	Removal procedure
Install	AR	AR	5.87.8.1.11		Procedural	720	A	Install procedure
Replace	AR	AR	5.87.8.1.12		Procedural	685	C	Replace
Repair	AR	AR	5.87.8.1.13		Procedural	685	A	Repair
Paint	AR	AR	5.87.8.1.14		Procedural	257	B	Painting

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Table A-XXII. Conventional and Chemical Ammunition Field & Sustainment Maintenance Manual requirements matrix for _____.

Content Requirement	MM2 & M2B Req.	MM4, & M4B Req.	Ref.	PM Type	DM Type	Info Code	ICV	Info Name
Overhaul	AR	AR	5.87.8.1.15		Procedural	664	B	Overhaul procedure
Rebuild	AR	AR	5.87.8.1.16		Procedural	664	C	Rebuild
Lubricate	AR	AR	5.87.8.1.17		Procedural	240	A	Lubrication
Mark	AR	AR	5.87.8.1.18		Procedural	067	D	Mark
Pack	AR	AR	5.87.8.1.19		Procedural	713	A	Pack procedure
Unpack	AR	AR	5.87.8.1.20		Procedural	840	B	Unpacking
Preserve	AR	AR	5.87.8.1.21		Procedural	810	A	Preservation procedure
Assemble and prepare for use	AR	AR	5.87.8.1.22		Procedural	710	B	Assembly and preparation for use
Assemble	AR	AR	5.87.8.1.23		Procedural	710	A	Assembly procedure
Disassemble	AR	AR	5.87.8.1.24		Procedural	530	A	Disassembly procedure
Clean	AR	AR	5.87.8.1.25		Procedural	PD		
Non-destructive inspection	AR	AR	5.87.8.1.26		Procedural	350	B	Non-destructive testing inspection
Place in service	AR	AR	5.87.8.1.28		Procedural	870	P	Placing in service
Preparation for storage	R	R	5.87.8.1.31		Procedural	810	C	Preparation for storage or shipment
Preparation for shipment	R	R	5.87.8.1.31A		Procedural	811 830		
Transport	R	R	5.87.8.1.31B		Procedural	831		
Arm	AR	AR	5.87.8.1.32		Procedural	120	G	Procedures to activate ammunition
Load	AR	AR	5.87.8.1.33		Procedural	PD		
Unload	AR	AR	5.87.8.1.34		Procedural	PD		
Additional maintenance task	AR	AR	5.87.8.2.2		Procedural	PD		
Follow-on maintenance	AR	AR	5.87.9		Procedural	PD		
GENERAL MAINTENANCE			5.87.10		Procedural	PD		
LUBRICATION INSTRUCTIONS			5.87.11		Procedural	240	B	Lubrication instructions
ILLUSTRATED LIST OF MANUFACTURED ITEMS			5.87.17		Descriptive	670	E	Illustrated list of manufactured items
TORQUE LIMITS			5.87.18		Procedural	711	B	Torque limits

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Table A-XXII. Conventional and Chemical Ammunition Field & Sustainment Maintenance Manual requirements matrix for _____.

Content Requirement	MM2 & M2B Req.	MM4, & M4B Req.	Ref.	PM Type	DM Type	Info Code	ICV	Info Name
WIRING DIAGRAMS			5.92		Descriptive	051	A	Wiring diagrams
CHAPTER X. TEST AND INSPECTION MAINTENANCE INSTRUCTIONS				Chapter PM				
Test and Inspection	R	R	5.87.8.1.4.1		Procedural	300	B	Test and inspection
CHAPTER X. SHIPMENT/ MOVEMENT AND STORAGE MAINTENANCE INSTRUCTIONS				Chapter PM				
Preparation for Storage or Shipment	R	R	5.87.8.1.31		Procedural	810	C	Preparation for storage or shipment
Preparation for shipment	R	R	5.87.8.1.31A		Procedural	811 830		
Transport	R	R	5.87.8.1.31B		Procedural	831		
CHAPTER X. AMMUNITION MARKING MAINTENANCE INSTRUCTIONS				Chapter PM				
Ammunition Marking Information			5.87.20		Procedural	067	C	Ammunition marking
CHAPTER X. PARTS INFORMATION Operator, Field, & Sustainment Operator, Field, & Sustainment with parts	 P R		5.93	Chapter PM				
INTRODUCTION	R	R	5.93.4		Descriptive	018	E	Parts introduction
REPAIR PARTS LIST	R	R	5.93.5		IPD	941	A	Repair parts information
REPAIR PARTS FOR SPECIAL TOOLS			5.93.7		IPD	607	B	Repair parts for special tools

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Table A-XXII. Conventional and Chemical Ammunition Field & Sustainment Maintenance Manual requirements matrix for _____.

Content Requirement	MM2 & M2B Req.	MM4, & M4B Req.	Ref.	PM Type	DM Type	Info Code	ICV	Info Name
KIT PARTS LIST			5.93.8		IPD	607	C	Kit parts list
BULK ITEM			5.93.9		IPD	603	B	Bulk items
SPECIAL TOOLS LIST			5.93.10		IPD	604	B	Special tools list
NSN INDEX	R	R	5.93.11.1.5		Descriptive	942	F	National Stock Number index
P/N INDEX	R	R	5.93.11.1.6		Descriptive	942	B	Part number index
REFERENCE DESIGNATOR INDEX			5.93.11.1.7		Descriptive	942	C	Reference designator index
CHAPTER X. DESTRUCTION OF EQUIPMENT TO PREVENT ENEMY USE *NOTE If a separate destruction of material manual is not developed for this equipment, then the destruction chapter must be included.*			5.101.3					
Introduction			5.101.3.1.6.2					
Authorization			5.101.3.1.6.3					
Reporting Destruction			5.101.3.1.6.4	Chapter PM				
General Destruction Information			5.101.3.1.6.5		Descriptive	997	D	Destruction general information
Degree of Destruction			5.101.3.1.6.6					
Essential Components and Spare Parts			5.101.3.1.6.7					
SPECIFIC DESTRUCTION PROCEDURES								
Parts List			5.101.3.1.7		Descriptive	907	B	Parts list
Specific Destruction Procedures			5.101.3.1.8		Procedural	997	B	Destruction procedures

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Table A-XXII. Conventional and Chemical Ammunition Field & Sustainment Maintenance Manual requirements matrix for _____.

Content Requirement	MM2 & M2B Req.	MM4, & M4B Req.	Ref.	PM Type	DM Type	Info Code	ICV	Info Name
Classified Equipment and Documents			5.101.3.1.9		Procedural	997	C	Destruction procedures - classified equipment
CHAPTER X. SUPPORTING INFORMATION	R	R	5.106.1	Chapter PM				
REFERENCES	R	R	5.106.1.1.2		Descriptive	017	B	References
INTRODUCTION FOR NON-AVIATION MAC	R	R	5.94.1		Descriptive	018	D	MAC introduction
MAINTENANCE ALLOCATION CHART	R	R	5.94.3		Schedule	916	A	MAC
EXPENDABLE AND DURABLE ITEMS	R	R	5.93.15		Descriptive	070	D	Expendable and durable items list
TOOL IDENTIFICATION LIST	R	R	5.103.1		Descriptive	062	B	Tool identification list
ADDITIONAL SUPPORTING INFORMATION			5.106.1.1.4		Descriptive	PD		
REAR MATTER	R	R	5.128.3.1	Rear Matter PM				

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Table A-XXIII. Hand Receipt Technical Manual requirements matrix for _____.

Content Requirement	HDR Req.	Ref.	PM Type	DM Type	Info Code	ICV	Info Name
FRONT MATTER	R	5.128	Front Matter PM				
SECTION I - INTRODUCTION	R	5.93.18.1.2	Section PM	Descriptive	018	A	Introduction
SECTION II - HAND RECEIPT			Section PM				
Hand receipt	R	5.93.18.1.3		Descriptive	105	D	Components of End Item (COEI) list
				Descriptive	105	C	Basic Issue Items (BII) list
				Descriptive	104	C	Additional Authorization List (AAL)

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Table A-XXIV. Supplemental Information for Commercial Off-the-Shelf (COTS) Manual requirements matrix for _____.

Content Requirement	Req.	Ref.	PM Type	DM Type	Info Code	ICV	Info Name
FRONT MATTER		5.128	Front Matter PM				
Destruction of Military Materiel to Prevent Enemy Use	R	5.101.3.1.6.1	Chapter PM	Descriptive	997	D	Destruction general information
Lubrication Instructions	R	5.97.3.1.4.3		Procedural	240	B	Lubrication instructions
Preventive Maintenance Checks and Services (PMCS)	AR	5.87.4		Checklist	200	B	PMCS
Maintenance Allocation Chart (MAC)	R	5.94.3	Chapter PM	Maintenance Planning	916	A	MAC
Components of End Item (COEI) and Basic Issue Items (BII) List	R	5.93.12 5.93.13		Descriptive	105	D	Components of End Item (COEI) list
				Descriptive	105	C	Basic Issue Items (BII) list
Additional Authorization List (AAL)	R	5.93.14		Descriptive	104	C	Additional Authorization List (AAL)
Expendable Supplies and Materials List	R	5.93.15		Descriptive	070	D	Expendable and durable items list
Repair Parts List	R	5.97.3.1.4.10		IPD	641	A	Repair parts information
Warranty Information		5.97.3.1.4.12		Descriptive	023	E	Warranty information
Copyright		5.97.3.1.4.13		Descriptive	021	A	Copyright
REAR MATTER		5.128.3.1	Rear Matter PM				

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Table A-XXV. Preventive Maintenance Checklist requirements matrix for _____.

Content Requirement	PMC Req.	Ref.	PM Type	DM Type	Info Code	ICV	Info Name
FRONT COVER	R	5.128.1.1.3	Generated from PM metadata		N/A	N/A	Front Cover
PMCS INTRODUCTION	R	5.87.5		Descriptive	018	F	
PMCS	R	5.87.6		Checklist	200	B	PMCS
REAR MATTER	R	5.128.3.1	Rear Matter PM				

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Table A-XXVI. Modification Work Order (MWO) requirements matrix for _____.

Content Requirement	MWO Req.	Ref	PM Type	DM Type	Info Code	ICV	Info Name
FRONT MATTER		5.128	Front Matter PM				
Text		5.101.1.1.2	Chapter PM				
Paragraph 1 – Purpose	R	5.101.1.1.3.1		Descriptive	018	A	Introduction
Paragraph 2 – Priority	R	5.101.1.1.3.2					
Paragraph 3 - End Item(s) or System(s) to Be Modified	R	5.101.1.1.4.1		Descriptive	616	A	Modified Items List
Paragraph 4 - Module(s) (Components, Assemblies, Subassemblies. Boards. and Cards) to Be Modified	R	5.101.1.1.4.2					
Paragraph 5 - Part(s) to Be Modified	R	5.101.1.1.4.3					
Paragraph 6 – Application	R	5.101.1.1.5		Descriptive	670	D	Modification Application
Paragraph 7 - Technical Publications Affected/Changed	R	5.101.1.1.6		Descriptive	017	N	Technical Publications Affected/Changed
Paragraph 8 - MWO Kit(s)/Part(s) and Their Disposition.	R	5.101.1.1.7		Descriptive	607	C	Kit Parts List
Paragraph 9 - Special Tools; Tool Kits: Jigs: TMDE: and Fixtures Required	R	5.101.1.1.8		Descriptive	304	B	Special Support Equipment and Tools
Paragraph 10 - Modification Procedures	R	5.101.1.1.9		Procedural	670	B	Modification Procedures
Paragraph 11 - Calibration Requirements	R	5.101.1.1.10		Descriptive	017	E	Calibration Requirements
Paragraph 12 - Weight and Balance Data	R	5.101.1.1.11		Descriptive	169	F	Weight and Balance Data
Paragraph 13 - Quality Assurance Requirements	R	5.101.1.1.12		Descriptive	315	A	Quality Assurance Requirements
Paragraph 14 - Recording and Reporting of the Modification	R	5.101.1.1.13.1		Descriptive	670	C	Recording and Reporting of the Modification
Paragraph 15 - Materiel Change (MC) Number	R	5.101.1.1.13.2					
Paragraph 16 - Modification Identification	R	5.101.1.1.13.3					

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Table A-XXVII. Battle Damage Assessment and Repair (BDAR) requirements matrix for _____.

Content Requirement	BDR Req.	Ref.	PM Type	DM Type	Info Code	ICV	Info Name
FRONT MATTER	R	5.128	Front Matter PM				
General Information	R	5.102.1.4	Chapter PM	Descriptive	018	G	BDAR Introduction
Assessing Battlefield Damage - General Fault Assessment Tables	R	5.102.1.5		Descriptive	410	E	General Fault Assessment Tables
General Repair - Repair Procedure	R	5.102.1.6.1		Procedural	PD		
Major Functional Groups - Repair Procedure	R	5.102.1.6.3		Procedural	PD		
Auxiliary Equipment - Repair Procedure	R	5.102.1.6.4		Procedural	PD		
References	R	5.102.1.7	Chapter PM	Descriptive	017	B	References
Special or Fabricated Tools	R	5.102.1.8	Chapter PM	Descriptive	605	B	Support Equipment and Tools
Expendable and Durable Supplies and Materials	R	5.102.1.9	Chapter PM	Descriptive	070	D	Expendable and Durable Items List
Substitute Materials/Parts	R	5.102.1.10	Chapter PM	Descriptive	607	D	Substitute Materials/Parts
REAR MATTER	R	5.128.3.1	Rear Matter PM	Descriptive			

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Table A-XXVIII. Preparation for Shipment of Army Aircraft Manual requirements matrix for _____.

Content Requirement	CLG Req.	Ref	PM Type	DM Type	Info Code	ICV	Info Name
FRONT MATTER		5.128	Front Matter PM				
CHAPTER 1. INTRODUCTION	R	5.122.1.4	Chapter PM				
SECTION I - PURPOSE AND SCOPE	R	5.122.1.4.1		Descriptive	018	A	Introduction
SECTION II - GENERAL	R	5.122.1.4.2		Descriptive	018	B	How to Use This Manual
Description and Use of This Manual	R	5.122.1.4.2					
Classified Materials	R	5.122.1.4.2.3					
Warnings, Cautions, and Notes	R	5.122.1.4.2.4					
Deviations	R	5.122.1.4.2.5					
SECTION III- AIRCRAFT DESCRIPTION	R	5.122.1.4.3		Descriptive	040	A	Description
SECTION IV - SHIPPING CHARACTERISTICS	R	5.122.1.4.4		Descriptive	800	B	Shipping Characteristics
SECTION V - GROUND HANDLING	R	5.122.1.4.5		Descriptive/ Procedural	170	F	Ground Handling
SECTION VI – SAFETY	R	5.122.1.4.6		Descriptive	012	J	Safety Summary
SECTION VII - PRESERVATION/ DEPRESERVATION CHECK SHEETS	R	5.122.1.4.7		Descriptive	810	E	Preservation/Depreservation Check Sheets
CHAPTER 2. SHIPMENT BY CARGO AIRCRAFT		5.122.1.5	Chapter PM				
SECTION I - GENERAL	R	5.122.1.5.1		Descriptive	812	B	Shipment of Aircraft - General
Types of Shipment	R	5.122.1.5.1.1					
Functions of Cargo Aircraft Crew/Operator	R	5.122.1.5.1.2					
Functions of the Army Loading Team	R	5.122.1.5.1.3					
Facility Requirements	R	5.122.1.5.1.4					
Weight and Balance	R	5.122.1.5.1.5					
Safety	R	5.122.1.5.1.7					
Security	R	5.122.1.5.1.6					

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Table A-XXVIII. Preparation for Shipment of Army Aircraft Manual requirements matrix for _____.

Content Requirement	CLG Req.	Ref	PM Type	DM Type	Info Code	ICV	Info Name
SECTION II – SHIPMENT BY C-5 AIRCRAFT	R	5.122.1.5.2					
Characteristics	R	5.122.1.5.2.1		Descriptive	800	C	Shipping Characteristics – C-5
Preparing the Aircraft	R	5.122.1.5.2.2					
Loading	R	5.122.1.5.2.3		Procedural	831	B	Loading – C-5
Tiedown	R	5.122.1.5.2.4		Procedural	811	G	Tiedown – C-5
Unloading	R	5.122.1.5.2.5		Procedural	841	B	Unloading – C-5
Depreservation and Reassembly	R	5.122.1.5.2.6		Procedural	870	F	Depreservation and Reassembly – C-5
SECTION III - SHIPMENT BY C-17 AIRCRAFT	R	5.122.1.5.2					
Characteristics	R	5.122.1.5.2.1		Descriptive	800	D	Shipping Characteristics – C-17
Preparing the Aircraft	R	5.122.1.5.2.2					
Loading	R	5.122.1.5.2.3		Procedural	831	C	Loading – C-17
Tiedown	R	5.122.1.5.2.4		Procedural	811	H	Tiedown – C-17
Unloading	R	5.122.1.5.2.5		Procedural	841	C	Unloading – C-17
Depreservation and Reassembly	R	5.122.1.5.2.6		Procedural	870	G	Depreservation and Reassembly – C-17
SECTION IV - SHIPMENT BY C-130 AIRCRAFT	R	5.122.1.5.2					
Characteristics	R	5.122.1.5.2.1		Descriptive	800	F	Shipping Characteristics – C-130
Preparing the Aircraft	R	5.122.1.5.2.2		Procedural	800	R	Preparing the aircraft
Loading	R	5.122.1.5.2.3		Procedural	831	E	Loading – C-130
Tiedown	R	5.122.1.5.2.4		Procedural	811	K	Tiedown – C-130
Unloading	R	5.122.1.5.2.5		Procedural	841	E	Unloading – C-130
Depreservation and Reassembly	R	5.122.1.5.2.6		Procedural	870	J	Depreservation and Reassembly – C-130
CHAPTER 3. SHIPMENT BY VESSEL		5.122.1.6					
SECTION I - GENERAL	R	5.122.1.6.1.1	Chapter PM				
Types of Shipment	R	5.122.1.6.1.2					
Responsibilities of Surface Deployment and Distribution Command (SDDC)	R	5.122.1.6.1.3		Descriptive	812	B	Shipment of Aircraft - General

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Table A-XXVIII. Preparation for Shipment of Army Aircraft Manual requirements matrix for _____.

Content Requirement	CLG Req.	Ref	PM Type	DM Type	Info Code	ICV	Info Name
Functions of Marine Terminal Personnel	R	5.122.1.6.1.4					
Functions of the Army Loading Team	R	5.122.1.6.1.5					
Equipment Requirements	R	5.122.1.6.1.6					
Material Requirements	R	5.122.1.6.1.7					
Manpower Requirements	R	5.122.1.6.1.8					
Facility Requirements	R	5.122.1.6.1.9					
Aircraft Security	R	5.122.1.6.1.10					
Safety	R	5.122.1.6.1.11					
Characteristics	R	5.122.1.6.1.12					
SECTION II - TACTICAL SHIPMENT	R	5.122.1.6.2					
Preparing the Aircraft	R	5.122.1.6.2.1		Descriptive	800	S	Preparing the Aircraft – Vessel, Tactical
Loading	R	5.122.1.6.2.2		Procedural	831	F	Loading – Vessel, Tactical
Tiedown	R	5.122.1.6.2.3		Procedural	811	L	Tiedown – Vessel, Tactical
Unloading	R	5.122.1.6.2.4		Procedural	841	F	Unloading – Vessel, Tactical
Depreservation and Reassembly	R	5.122.1.6.2.5		Procedural	870	K	Depreservation and Reassembly – Vessel, Tactical
SECTION III - LOGISTICAL SHIPMENT	R	5.122.1.6.3					
Preparing the Aircraft	R	5.122.1.6.3.1		Descriptive	800	T	Preparing the Aircraft – Vessel, Logistical
Loading	R	5.122.1.6.3.2		Procedural	831	G	Loading – Vessel, Logistical
Tiedown	R	5.122.1.6.3.3		Procedural	811	M	Tiedown – Vessel, Logistical
Unloading	R	5.122.1.6.3.4		Procedural	841	G	Unloading – Vessel, Logistical
Depreservation and Reassembly	R	5.122.1.6.3.5		Procedural	870	L	Depreservation and Reassembly – Vessel, Logistical
SECTION IV - SHIPMENT BY US NAVY AIR CAPABLE SHIPS	R	5.122.1.6.4					

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Table A-XXVIII. Preparation for Shipment of Army Aircraft Manual requirements matrix for _____.

Content Requirement	CLG Req.	Ref	PM Type	DM Type	Info Code	ICV	Info Name
Preparing the Aircraft	R	5.122.1.6.4.1		Descriptive	800	U	Preparing the Aircraft – Vessel, US Navy Capable
Loading	R	5.122.1.6.4.2		Procedural	831	H	Loading – Vessel, US Navy Capable
Tiedown	R	5.122.1.6.4.3		Procedural	811	N	Tiedown – Vessel, US Navy Capable
Unloading	R	5.122.1.6.4.4		Procedural	841	H	Unloading – Vessel, US Navy Capable
Depreservation and Reassembly	R	5.122.1.6.4.5		Procedural	870	M	Depreservation and Reassembly – Vessel, US Navy Capable
CHAPTER 4. SHIPMENT BY TRUCK	R	5.122.1.7					
SECTION I - GENERAL	R	5.122.1.7		Descriptive	812	B	Shipment of Aircraft - General
Types of Truck Shipments	R	5.122.1.7.1.2					
Responsibilities of the Shipper	R	5.122.1.7.1.3					
Equipment Requirements	R	5.122.1.7.1.4					
Material Requirements	R	5.122.1.7.1.5					
Manpower Requirements	R	5.122.1.7.1.6					
Facility Requirements	R	5.122.1.7.1.7					
Safety Requirements	R	5.122.1.7.1.8	Chapter PM				
SECTION II - AIRCRAFT RECOVERY AND TACTICAL TRANSPORT	R	5.122.1.7.2					
Drawings	R	5.122.1.7.2.1		Descriptive	800	G	Shipping Characteristics – Aircraft Recovery
Dimensions	R	5.122.1.7.2.1.2					
Capabilities	R	5.122.1.7.2.1.3					
Limitations	R	5.122.1.7.2.1.4					
Load Characteristics	R	5.122.1.7.2.1.5					
Highway Permits	R	5.122.1.7.2.1.6					
Preparing the Aircraft	R	5.122.1.7.2.2		Procedural	800	X	Preparing the Aircraft – Aircraft Recovery and Tactical Transport

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Table A-XXVIII. Preparation for Shipment of Army Aircraft Manual requirements matrix for _____.

Content Requirement	CLG Req.	Ref	PM Type	DM Type	Info Code	ICV	Info Name
SECTION III - LOGISTICAL (LONG HAUL) TRANSPORT BY TRUCK	R	5.122.1.7.3		Descriptive	812	E	Shipment of Aircraft - Truck (Long Haul)
CHAPTER 5. CRATED AND INTERMODAL CONTAINER SHIPMENT	R	5.122.1.8	Chapter PM				
SECTION I - CRATED SHIPMENT	R	5.122.1.8.1		Descriptive	812	B	Shipping Characteristics - Crated
Characteristics	R	5.122.1.8.1.2					
Handling Methods	R	5.122.1.8.1.3					
Security Requirements	R	5.122.1.8.1.4					
Facility Requirements	R	5.122.1.8.1.5					
Equipment	R	5.122.1.8.1.6					
Consumable Materials	R	5.122.1.8.1.7					
Manpower Requirements	R	5.122.1.8.1.8					
Aircraft Preparation	R	5.122.1.8.1.9		Procedural	800	C	Preparing the Aircraft - Crated
Crating		5.122.1.8.1.9.1		Procedural	830	B	Crating
Unpacking and Reassembly	R	5.122.1.8.1.10		Procedural	870	D	Unpacking and Reassembly
SECTION II - INTERMODAL CONTAINER SHIPMENT	R	5.122.1.8.2					
Characteristics	R	5.122.1.8.2.2		Descriptive	812	B	Shipping Characteristics – Intermodal Container
Drawings	R	5.122.1.8.2.3					
Security Requirements	R	5.122.1.8.2.4					
Facility Requirements		5.122.1.8.2.5					
Safety Requirements	R	5.122.1.8.2.6					
Equipment Requirements	R	5.122.1.8.2.7					
Consumable Materials	R	5.122.1.8.2.8					
Manpower Requirements	R	5.122.1.8.2.9					
Aircraft Preparation	R	5.122.1.8.2.10		Procedural	800	W	Preparing the Aircraft – Intermodal Container
Loading	R	5.122.1.8.2.11		Procedural	831	J	Loading – Intermodal Container

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Table A-XXVIII. Preparation for Shipment of Army Aircraft Manual requirements matrix for _____.

Content Requirement	CLG Req.	Ref	PM Type	DM Type	Info Code	ICV	Info Name
Tiedown	R	5.122.1.8.2.12		Procedural	811	P	Tiedown – Intermodal Container
Unloading	R	5.122.1.8.2.13		Procedural	841	J	Unloading – Intermodal Container
Depreservation and Reassembly	R	5.122.1.8.2.14		Procedural	870	N	Depreservation and Reassembly – Intermodal Container
CHAPTER 6. PRESERVATION AND PACKAGING	R	5.122.1.9	Chapter PM				
SECTION I - GENERAL	R	5.122.1.9.1		Descriptive	810	H	Preservation, Packaging, and Marking
SECTION II - AIRCRAFT CLEANING	R	5.122.1.9.2		Procedural	811	E	Aircraft Cleaning
General	R	5.122.1.9.2					
Equipment Requirements	R	5.122.1.9.2a					
Materials	R	5.122.1.9.2b					
Manpower	R	5.122.1.9.2c					
Procedures	R	5.122.1.9.2d					
SECTION III - PRESERVATION OF AIRCRAFT	R	5.122.1.9.3		Procedural	811	B	Preservation of Aircraft
General	R	5.122.1.9.3					
Equipment	R	5.122.1.9.3b					
Materials	R	5.122.1.9.3c					
Manpower	R	5.122.1.9.3d					
Preservation	R	5.122.1.9.3e					
SECTION IV - PRESERVATION AND PACKAGING OF COMPONENTS	R	5.122.1.9.4					
Manpower	R	5.122.1.9.4a					
Materials	R	5.122.1.9.4b					
Packaging	R	5.122.1.9.4c					
SECTION V - MARKING OF AIRCRAFT/ PREPARATION OF SHIPPING DOCUMENTS	R	5.122.1.9.5					
Identification	R	5.122.1.9.5a		Descriptive	811	D	Marking of

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Table A-XXVIII. Preparation for Shipment of Army Aircraft Manual requirements matrix for _____.

Content Requirement	CLG Req.	Ref	PM Type	DM Type	Info Code	ICV	Info Name
Color Coding	R	5.122.1.9.5b					Aircraft/Preparation of Shipping Documents
Preservation Information	R	5.122.1.9.5c					
SECTION VI - DEPRESERVATION AND ASSEMBLY	R	5.122.1.9.6		Procedural	870	E	Depreservation and Reassembly - General
CHAPTER 7. TRANSPORTABILITY EQUIPMENT FABRICATED AT UNIT LEVEL	R	5.122.1.10	Chapter PM		PD		
CHAPTER 8. OPERATOR AND MAINTENANCE INSTRUCTIONS FOR TRANSPORTABILITY EQUIPMENT INCLUDING REPAIR PARTS LIST	R	5.122.1.11					
SECTION I - OPERATOR INSTRUCTIONS	R	5.122.1.11.1	Chapter PM	Procedural	131	A	Normal Operation Procedures
SECTION II - REPAIR/OVERHAUL PROCEDURES	R	5.122.1.11.2		Procedural	664	B	Repair/Overhaul Procedures
SECTION III - REPAIR PARTS LIST	R	5.122.1.11.3		IPD	607	E	Repair Parts Information
CHAPTER 9. EXTERNAL TRANSPORT BY HELICOPTER (AERIAL RECOVERY)	R	5.122.1.12					
SECTION I - GENERAL	R	5.122.1.12.1	Chapter PM	Descriptive	812	F	Aerial Recovery - General
Types of Transport	R	5.122.1.12.1.1					
Functions of Aircraft Recovery Team	R	5.122.1.12.1.2					
Safety	R	5.122.1.12.1.3					
Structurally Damaged Aircraft	R	5.122.1.12.1.4					
Drag	R	5.122.1.12.1.5					
SECTION II - SINGLE CARGO HOOK ROTOR HEAD LIFT	R	5.122.1.12.2					

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Table A-XXVIII. Preparation for Shipment of Army Aircraft Manual requirements matrix for _____.

Content Requirement	CLG Req.	Ref	PM Type	DM Type	Info Code	ICV	Info Name
Lift Factors	R	5.122.1.12.2.1		Descriptive	812	G	Aerial Recovery - Lift Factors
Preparing the Aircraft	R	5.122.1.12.2.2		Procedural	800	X	Preparing the Aircraft – Aircraft Recovery, Single Cargo Hook Rotor Head Lift
Reassembly	R	5.122.1.12.2.3		Procedural	710	D	Reassembly
SECTION III - SINGLE CARGO HOOK HARD POINT LIFT	R	5.122.1.12.3		Procedural	812	H	Aerial Recovery - Single Cargo Hook Hard Point Lift
SECTION IV - DUAL CARGO HOOK ROTOR HEAD LIFT	R	5.122.1.12.4		Procedural	812	K	Aerial Recovery - Dual Cargo Hook Rotor Head Lift
SECTION V - DUAL CARGO HOOK HARD POINT LIFT	R	5.122.1.12.5		Procedural	812	J	Aerial Recovery - Dual Cargo Hook Hard Point Lift
SECTION VI - SINGLE CARGO HOOK BELLY BAND LIFT	R	5.122.1.12.6		Procedural	812	M	Aerial Recovery - Single Cargo Hook Belly Band Lift
APPENDIX A.			Appendix PM				
REFERENCES	R	5.122.1.13		Descriptive	017	B	References
APPENDIX B.	R		Appendix PM				
PRESERVATION/ DEPRESERVATION CHECK SHEETS	R	5.122.1.14		Descriptive	810	E	Preservation/ Depreservation Check Sheets
APPENDIX C.			Appendix PM				
WEIGHT AND BALANCE INFORMATION FOR TRANSPORTABILITY	R	5.122.1.15		Descriptive	169	A	Weight and Balance
APPENDIX D.			Appendix PM				
CONSUMABLE MATERIALS LIST	R	5.122.1.16		IPD	070	B	Consumable Materials list
APPENDIX E.			Appendix PM				
SPECIAL TOOLS AND EQUIPMENT LIST	R	5.122.1.17		IPD	061	B	Support Equipment and Tools
APPENDIX F.			Appendix PM				
QUARANTINE INSPECTION/CUSTOMS CLEARANCE	R	5.122.1.18		Procedural	812	L	Quarantine Inspection/Customs Clearance

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Table A-XXVIII. Preparation for Shipment of Army Aircraft Manual requirements matrix for _____.

Content Requirement	CLG Req.	Ref	PM Type	DM Type	Info Code	ICV	Info Name
APPENDIX G.			Appendix PM				
AIRCRAFT PROTECTIVE COVERING	R	5.122.1.19		Procedural	812	Q	Preparation of Aircraft - Protective Covering
General	R	5.122.1.19.1					
Application of Film	R	5.122.1.19.1.2					
Fuel and Battery Vents	R	5.122.1.19.1.3					
Installation of Ventilators	R	5.122.1.19.1.4					
Hoisting	R	5.122.1.19.2		Procedural	812	R	Hoisting
Tiedown	R	5.122.1.19.3		Procedural	811	F	Tiedown - General
Enroute Maintenance	R	5.122.1.19.4		Procedural	664	B	Repair/Overhaul Procedures
Removal of Shrink Film	R	5.122.1.19.5		Procedural	812	S	Shipment of Aircraft - Protective Covering, Removal
TOOLS AND EQUIPMENT	R	5.122.1.19.6		Descriptive	802	A	List of Materials Associated With Storage
Consumable Materials	R	5.122.1.19.6.2					
Manpower		5.122.1.19.6.3					
SAFETY CHECK SHEET	R	5.122.1.19.7		Descriptive	012	C	Safety Check Sheet
REAR MATTER		5.128.3.1	Rear Matter PM				

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Table A-XXIX. DMWRs for Maintenance/Demilitarization of Conventional and Chemical Ammunition requirements matrix for _____.

Content Requirement	DWR Req.	Ref.	PM Type	DM Type	Info Code	ICV	Info Name
FRONT MATTER		5.128	Front Matter PM				
CHAPTER 1. INTRODUCTION		5.87.22.1.3	Chapter PM	Descriptive	018	A	Introduction
Scope	R	5.87.22.1.3.1					
Forms, Records, and Reports	R	5.87.22.1.3.2					
Deviations, Waivers, and Exceptions	R	5.87.22.1.3.3					
Corrosion Prevention and Control (CPC)	R	5.87.22.1.3.4					
Work Planning	R	5.87.22.1.3.5					
Disposition	R	5.87.22.1.3.6					
Equipment	R	5.87.22.1.3.6A					
Safety Requirements	R	5.87.22.1.3.7					
Protection Against Pentachlorophenol (Penta)-Treated Materials	R	5.87.22.1.3.8					
Protection Against Specific Hazards	R	5.87.22.1.3.9					
Hazard Analysis	R	5.87.22.1.3.9A					
Environmental Regulation Compliance	R	5.87.22.1.3.10					
Resource Conservation and Recovery Regulations	R	5.87.22.1.3.11					
Reporting Requirements	R	5.87.22.1.3.11 A					
Tabulated Data	R	5.87.22.1.3.12					
Flowchart	R	5.87.22.1.3.12 A					
CHAPTER 2. OPERATIONAL REQUIREMENTS	R	5.87.22.1.4	Chapter PM	Procedural	130	E	Operational Requirements
CHAPTER 3. QUALITY ACCEPTANCE REQUIREMENTS	R	5.87.22.1.5	Chapter PM	Descriptive	315	A	Quality Assurance Requirements
Definitions	R	5.87.22.1.6		Descriptive	006	A	List of Terms

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Table A-XXIX. DMWRs for Maintenance/Demilitarization of Conventional and Chemical Ammunition requirements matrix for _____.

Content Requirement	DWR Req.	Ref.	PM Type	DM Type	Info Code	ICV	Info Name
CHAPTER 4. SUPPORTING INFORMATION							
REFERENCES	R	5.87.22.1.7.1		Descriptive	017	B	References
CONSUMABLE MATERIALS	R	5.87.22.1.7.2		Descriptive	101	B	Consumable Materials
EQUIPMENT AND SPECIAL FACILITIES	R	5.87.22.1.7.3		Descriptive	105	B	Equipment and Special Facilities
TABULATED DATA, MILITARY SPECIFICATIONS, AND DRAWINGS	R	5.87.22.1.7.4		Descriptive	00V	A	Tabulated Data, Military Specifications, and Drawings
APPROVED INTRAPLANT TRANSFER EQUIPMENT	R	5.87.22.1.7.5		Descriptive	104	B	Approved Intraplant Transfer Equipment
PENTACHLOROPHENOL (PENTA)-TREATED PACKING MATERIALS		5.87.22.1.7.6		Descriptive	820	B	Pentachlorophenol (Penta)-Treated Packing Materials
ENVIRONMENTAL REQUIREMENTS	R	5.87.22.1.7.7		Descriptive	030	B	Environmental Requirements
HAZARD ANALYSIS	R	5.87.22.1.7.8		Descriptive	012	B	Hazard Analysis
OTHER DATA MODULES	R	5.87.22.1.7.9	Appendix PM	Descriptive	PD		
REAR MATTER		5.128.3.1	Rear Matter PM				

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Table A-XXX. Munition Equipment and Ammunition Data Sheet Manual requirements matrix for _____.

Content Requirement	Req.	Ref.	PM Type	DM Type	Info Code	ICV	Info Name
FRONT MATTER	R	5.128	Front Matter PM				
DATA SHEETS			Chapter PM				
Photograph or Line Drawing of the Munitions Equipment or Ammunition Item	R	5.105.1.4.1		Descriptive	030	D	Munition Equipment and Ammunition Data Sheets
Type Classification	R	5.105.1.4.2					
Use	R	5.105.1.4.3					
Description	R	5.105.1.4.4					
Functioning	R	5.105.1.4.5					
Differences Between Models	R	5.105.1.4.6					
Tabulated Data	R	5.105.1.4.7					
Performance	R	5.105.1.4.8					
Temperature Limits	R	5.105.1.4.9					
Drawings	R	5.105.1.4.10					
Unit of Issue	R	5.105.1.4.11					
Packing Data	R	5.105.1.4.12					
Shipping and Storage Data	R	5.105.1.4.13					
Limitations	R	5.105.1.4.14					
References	R	5.105.1.4.15					
Remarks	R	5.105.1.4.16					
Associated Equipment	R	5.105.1.4.17					
Kits	R	5.105.1.4.18					
APPENDICES	R	5.105.1.5	Appendix PM				
APPENDIX A.							
DELETED ITEMS	R	5.105.1.5.1		Descriptive	003	D	Deleted Items
APPENDIX B.							
OPERATIONAL INDEX	R	5.105.1.5.2		Descriptive	942	E	Operational Index
APPENDIX C.							
PREPARATION AND HANDLING OF AMMUNITION PECULIAR EQUIPMENT FOR SHIPMENT AND STORAGE	R	5.105.1.5.3		Descriptive	810	D	Preparation and Handling of Ammunition Peculiar Equipment for Shipment and Storage
REAR MATTER		5.128.3.1	Rear Matter PM				

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Table A-XXXI. Aircraft Operator Manual requirements matrix for _____.

Content Requirement	OPI Req.	Ref.	PM Type	PM Type	DM Type	Info Code	ICV	Info Name
FRONT MATTER	R	5.128	Front Matter PM					
CHAPTER 1. INTRODUCTION	R	5.115.1.8	Chapter PM					
General	R	5.115.1.8			Crew	018	A	Introduction
Explanation of Warnings, Cautions, and Notes	R	5.115.1.8.1			Crew	012	H	Explanation of Warnings, Cautions, and Notes
Description	R	5.115.1.8.2			Crew	042	F	Theory of Operation
References	R	5.115.1.8.3			Crew	017	B	References
How to use this manual	R	5.115.1.8.4			Crew	018	B	How to Use This Manual
Designator Symbols	R	5.115.1.8.4.1						
Explanation of the Use of Shall, Should, and May	R	5.115.1.8.4.2						
Additional Introductory Information	R	5.115.1.8.4.3						
CHAPTER 2. AIRCRAFT AND SYSTEMS DESCRIPTION AND OPERATION	R	5.115.1.9	Chapter PM					
SECTION I – AIRCRAFT	R	5.115.1.9.2		Section PM	Crew	043	J	Description
General	R	5.115.1.9.2.1						
Illustrations and Tables	R	5.115.1.9.2.2						
Landing Gear System	R	5.115.1.9.2.4						
Instruments, Panels and Consoles	R	5.115.1.9.2.5						
Canopies	AR	5.115.1.9.2.6						
Doors	AR	5.115.1.9.2.7						
Seats	AR	5.115.1.9.2.8						
SECTION II - EMERGENCY EQUIPMENT	R	5.115.1.9.3		Section PM	Crew	043	J	Description
SECTION III - ENGINES AND RELATED SYSTEMS	R	5.115.1.9.4		Section PM				
Engines	R	5.115.1.9.4.1			Crew	043	J	Description
SECTION IV - FUEL SYSTEM	R	5.115.1.9.5		Section PM				
Controls and Indicators	R	5.115.1.9.5.2			Crew	043	J	Description
Fuel System Management	R	5.115.1.9.5.3						
SECTION V - FLIGHT CONTROL SYSTEM	R	5.115.1.9.6		Section PM				

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Table A-XXXI. Aircraft Operator Manual requirements matrix for _____.

Content Requirement	OPI Req.	Ref.	PM Type	PM Type	DM Type	Info Code	ICV	Info Name
Automatic Flight Control System	R	5.115.1.9.6.2			Crew	043	J	Description
SECTION VI - HYDRAULIC AND PNEUMATIC SYSTEMS	AR	5.115.1.9.7		Section PM	Crew	043	J	Description
SECTION VII - POWERTRAIN SYSTEM	R	5.115.1.9.8		Section PM	Crew	043	J	Description
SECTION VIII - ROTORS OR PROPELLERS	R	5.115.1.9.9		Section PM	Crew	043	J	Description
SECTION IX - UTILITY SYSTEMS	R	5.115.1.9.10		Section PM	Crew	043	J	Description
SECTION X – HEATING, VENTILATION, COOLING, AND ENVIRONMENTAL CONTROL SYSTEMS	AR	5.115.1.9.11		Section PM	Crew	043	J	Description
SECTION XI - ELECTRICAL POWER SUPPLY AND DISTRIBUTION SYSTEMS	R	5.115.1.9.12		Section PM	Crew	043	J	Description
DC Power Supply System	R	5.115.1.9.12.1						
AC Power Supply System	R	5.115.1.9.12.2						
Breakers	R	5.115.1.9.12.3						
SECTION XII - AUXILIARY POWER UNIT	R	5.115.1.9.13		Section PM	Crew	043	J	Description
SECTION XIII – LIGHTING	R	5.115.1.9.14		Section PM	Crew	043	J	Description
SECTION XIV - FLIGHT INSTRUMENTS	R	5.115.1.9.15		Section PM	Crew	043	J	Description
SECTION XV - SERVICING, PARKING, AND MOORING	R	5.115.1.9.16		Section PM	Crew	043	J	Description
Servicing Diagram	R	5.115.1.9.16.2						
Servicing Information	R	5.115.1.9.16.3						
Approved Fuels	R	5.115.1.9.16.4						
Additional Servicing Instructions	R	5.115.1.9.16.5						
Ground Handling	R	5.115.1.9.16.6						
Parking and Mooring	R	5.115.1.9.16.7						
CHAPTER 3. AVIONICS	R	5.115.1.10	Chapter PM					
SECTION I – GENERAL	R	5.115.1.10.1		Section PM	Crew	018	A	Introduction

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Table A-XXXI. Aircraft Operator Manual requirements matrix for _____.

Content Requirement	OPI Req.	Ref.	PM Type	PM Type	DM Type	Info Code	ICV	Info Name
SECTION II – COMMUNICATIONS	R	5.115.1.10.3		Section PM	Crew	043	J	Description
Description	R	5.115.1.10.2.1						
Controls and Functions	R	5.115.1.10.2.2						
Operation	R	5.115.1.10.2.3						
Emergency Operation (If Applicable)	R	5.115.1.10.2.4						
Power Source (If Applicable)	R	5.115.1.10.2.5						
SECTION III – NAVIGATION	R	5.115.1.10.4		Section PM	Crew	043	J	Description
Description	R	5.115.1.10.2.1						
Controls and Functions	R	5.115.1.10.2.2						
Operation	R	5.115.1.10.2.3						
Emergency Operation (If Applicable)	R	5.115.1.10.2.4						
Power Source (If Applicable)	R	5.115.1.10.2.5						
SECTION IV - TRANSPONDER AND RADAR	R	5.115.1.10.5		Section PM	Crew	043	J	Description
Description	R	5.115.1.10.2.1						
Controls and Functions	R	5.115.1.10.2.2						
Operation	R	5.115.1.10.2.3						
Emergency Operation (If Applicable	R	5.115.1.10.2.4						
Power Source (If Applicable)	R	5.115.1.10.2.5						
CHAPTER 4. MISSION EQUIPMENT	R	5.115.1.11	Chapter PM					
SECTION I - MISSION AVIONICS	R	5.115.1.11.2		Section PM	Crew	043	J	Description
SECTION II - ARMAMENT	AR	5.115.1.11.3		Section PM	Crew	043	J	Description
Armament Control System	AR	5.115.1.11.3.2						
Gunnery Equipment	AR	5.115.1.11.3.3						
Rocket Equipment	AR	5.115.1.11.3.4						
Missiles	AR	5.115.1.11.3.5						
Laser control system	AR	5.115.1.11.3.6						
SECTION III - CARGO HANDLING	AR	5.115.1.11.4		Section PM	Crew	160	F	Cargo Handling

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Table A-XXXI. Aircraft Operator Manual requirements matrix for _____.

Content Requirement	OPI Req.	Ref.	PM Type	PM Type	DM Type	Info Code	ICV	Info Name
SECTION IV - PASSIVE DEFENSE	R	5.115.1.11.5		Section PM	Crew	043	J	Description
SECTION V - ADDITIONAL SYSTEM COVERAGE	AR	5.115.1.11.5.1		Section PM	Crew	043	J	Description
CHAPTER 5. OPERATING LIMITS AND RESTRICTIONS	R	5.115.1.12	Chapter PM					
SECTION I – GENERAL	R	5.115.1.12.2		Section PM	Crew	043	B	Operating Limits - General
SECTION II - SYSTEM LIMITS	R	5.115.1.12.3		Section PM	Crew	043	H	Operating Limits - System
Instrument, Interactive Display, or Display Operating Ranges and Markings	R	5.115.1.12.3.1						
Propeller Limitations	R	5.115.1.12.3.2						
Rotor Limitations	R	5.115.1.12.3.3						
Additional Limitations	R	5.115.1.12.3.4						
SECTION III - POWER LIMITS	R	5.115.1.12.4		Section PM	Crew	043	C	Operating Limits - Power
SECTION IV - LOADING LIMITS	R	5.115.1.12.5		Section PM	Crew	043	D	Operating Limits - Loading
Center-of-Gravity Limitations	R	5.115.1.12.5.2						
Weight Limitations	R	5.115.1.12.5.3						
Turbulence	R	5.115.1.12.5.4						
Other Limitations	R	5.115.1.12.5.5						
SECTION V - MAXIMUM AND MINIMUM AIRSPEED LIMITS	R	5.115.1.12.6		Section PM				
Airspeed Operating Limits Chart	R	5.115.1.12.6.2			Crew	043	E	Operating Limits - Airspeed
SECTION VI - MANEUVERING LIMITS	R	5.115.1.12.7		Section PM				
Flight Envelope Chart	R	5.115.1.12.7.2			Crew	043	F	Operating Limits - Maneuvering
SECTION VII - ENVIRONMENTAL RESTRICTIONS	R	5.115.1.12.8		Section PM				
Flight Under Instrument Meteorological Conditions (IMC)	R	5.115.1.12.8.2			Crew	043	G	Operating Limits - Environment
Additional Sections	R	5.115.1.12.8.3		Section PM	Crew	043	B	Operating Limits - General

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Table A-XXXI. Aircraft Operator Manual requirements matrix for _____.

Content Requirement	OPI Req.	Ref.	PM Type	PM Type	DM Type	Info Code	ICV	Info Name
CHAPTER 6. WEIGHT/BALANCE AND LOADING	R	5.115.1.13	Chapter PM					
SECTION I – GENERAL	R	5.115.1.13.1		Section PM				
Aircraft Compartment and Station Diagram	R	5.115.1.13.1.2			Crew	169	A	Weight and Balance
SECTION II - WEIGHT AND BALANCE	R	5.115.1.13.2		Section PM	Crew	169	F	Weight and Balance Data
SECTION III - FUEL/OIL	R	5.115.1.13.3		Section PM				
Oil Data	R	5.115.1.13.3.2			Crew	169	B	Weight and Balance - Fluids
SECTION IV – PERSONNEL	AR	5.115.1.13.4		Section PM	Crew	169	C	Weight and Balance - Personnel
Personnel Compartment and Entrances	AR	5.115.1.13.4.2						
Personnel Loading and Unloading	AR	5.115.1.13.4.3						
Personnel Weight	AR	5.115.1.13.4.4						
Personnel Moments	AR	5.115.1.13.4.5						
SECTION V - MISSION EQUIPMENT	R	5.115.1.13.5		Section PM	Crew	169	D	Weight and Balance – Mission Equipment
SECTION VI - CARGO LOADING	AR	5.115.1.13.6		Section PM	Crew	160	D	Cargo Loading
Description and Illustrations	AR	5.115.1.13.6.2						
Equipment Loading and Unloading	AR	5.115.1.13.6.3						
Preparation of General Cargo	AR	5.115.1.13.6.4						
Loading, Securing, and Unloading Cargo	AR	5.115.1.13.6.5						
Cargo Center-of-Gravity	AR	5.115.1.13.6.6						
Loading Procedure	AR	5.115.1.13.6.7						
Securing Loads	AR	5.115.1.13.6.8						
Unloading Procedures	AR	5.115.1.13.6.9						
SECTION VII - CENTER-OF-GRAVITY	R	5.115.1.13.7		Section PM	Crew	169	E	Center-of-Gravity
CHAPTER 7 . PERFORMANCE DATA	R	5.115.1.14	Chapter PM					
SECTION I – INTRODUCTION	R	5.115.1.14.13		Section PM	Crew	018	A	Introduction
SECTION II - CHARTS	R	5.115.1.14.14		Section PM	Crew	030	E	Performance Data

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Table A-XXXI. Aircraft Operator Manual requirements matrix for _____.

Content Requirement	OPI Req.	Ref.	PM Type	PM Type	DM Type	Info Code	ICV	Info Name
CHAPTER 8. NORMAL PROCEDURES	R	5.115.1.15	Chapter PM					
SECTION I - CREW/OPERATOR DUTIES	R	5.115.1.15.2		Section PM	Crew	130	E	Operational Requirements
SECTION II - OPERATING PROCEDURES AND MANEUVERS	R	5.115.1.15.3		Section PM				
Normal Operations	R	5.115.1.15.3.2			Crew	131	A	Normal Operation Procedures
Amplified Checklist	R	5.115.1.15.3.3			Crew	130	B	Amplified Checklist
Preflight Check	R	5.115.1.15.3.4			Crew	131	M	Normal operation check - Preflight
Before Exterior Check		5.115.1.15.3.5			Crew	131	M	Normal operation check - Preflight
Exterior Check	R	5.115.1.15.3.6			Crew	131	M	Normal operation check - Preflight
Interior Check	R	5.115.1.15.3.7			Crew	131	M	Normal operation check - Preflight
Crew/Operator/Passenger Briefing Check	R	5.115.1.15.3.8			Crew	131	M	Normal Operation Check - Preflight
Before Starting Engine(s)	R	5.115.1.15.3.9.1a			Crew	131	B	Normal Operation - Preflight
Starting Engine(s)	R	5.115.1.15.3.9.1b						
Engine Ground Operations		5.115.1.15.3.9.1c						
Before Taxiing	R	5.115.1.15.3.9.1d						
Taxiing	R	5.115.1.15.3.9.1e						
Engine Run up	R	5.115.1.15.3.9.1f						
Before Takeoff	R	5.115.1.15.3.9.1g						
Lineup Check	R	5.115.1.15.3.9.2			Crew	130	C	Lineup Check
Takeoff	R	5.115.1.15.3.10a			Crew	131	C	Normal Operation - Flight
After Takeoff	R	5.115.1.15.3.10b						
Climb	R	5.115.1.15.3.10c						
Cruise	R	5.115.1.15.3.10d						
Descent-Arrival	R	5.115.1.15.3.10e						
Before Landing	R	5.115.1.15.3.10f						
Landing	R	5.115.1.15.3.10g						
Touch and Go Landings/Go-Around	R	5.115.1.15.3.10h						

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Table A-XXXI. Aircraft Operator Manual requirements matrix for _____.

Content Requirement	OPI Req.	Ref.	PM Type	PM Type	DM Type	Info Code	ICV	Info Name
After Landing	R	5.115.1.15.3.11a			Crew	131	D	Normal Operation - Post Flight
Engine Shutdown	R	5.115.1.15.3.11b						
Before Leaving the Aircraft	AR	5.115.1.15.3.11c						
SECTION III - INSTRUMENT FLIGHT	R	5.115.1.15.4		Section PM	Crew	131	G	Normal Operation - Instrument Flight
SECTION IV - FLIGHT CHARACTERISTICS	R	5.115.1.15.5		Section PM	Crew	131	E	Normal Operation - Flight Characteristics
Stalls	R	5.115.1.15.5.1						
Stall Chart (Fixed Wing Only)		5.115.1.15.5.2						
Spins (Fixed Wing Only)		5.115.1.15.5.3						
Diving	R	5.115.1.15.5.4						
Maneuvering Flight	R	5.115.1.15.5.5						
Flight Controls	R	5.115.1.15.5.6						
Level Flight	R	5.115.1.15.5.7						
External Loads	R	5.115.1.15.5.8						
Asymmetrical Loads	R	5.115.1.15.5.9						
SECTION V - ADVERSE ENVIRONMENTAL CONDITIONS	R	5.115.1.15.6		Section PM	Crew	131	F	Normal Operation - Weather
Cold Weather Operations	R	5.115.1.15.6.1						
Desert and Hot Weather Operations	R	5.115.1.15.6.2						
Turbulence and Thunderstorm Operations	R	5.115.1.15.6.3						
Rain	R	5.115.1.15.6.4						
CHAPTER 9 - EMERGENCY PROCEDURES	R	5.115.1.16	Chapter PM					
SECTION I - AIRCRAFT SYSTEMS	R	5.115.1.16.2		Section PM	Crew	141	B	Aircraft Systems
Emergency Equipment and Exits	AR	5.115.1.16.2.1						
Engine	R	5.115.1.16.2.2						
Propeller/ Rotor, Transmissions, and Drive Systems	R	5.115.1.16.2.3						
Other emergencies	R	5.115.1.16.2.4						
Fire	R	5.115.1.16.2.5						
Fuel System	R	5.115.1.16.2.6						
Electrical System	R	5.115.1.16.2.7						

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Table A-XXXI. Aircraft Operator Manual requirements matrix for _____.

Content Requirement	OPI Req.	Ref.	PM Type	PM Type	DM Type	Info Code	ICV	Info Name
Hydraulic System	R	5.115.1.16.2.8						
Landing and Ditching	R	5.115.1.16.2.9						
Flight Controls	R	5.115.1.16.2.10						
Bailout/Eject	AR	5.115.1.16.2.11						
SECTION II - MISSION EQUIPMENT	AR	5.115.1.16.3		Section PM	Crew	141	C	Mission Equipment
Emergency Jettisoning	AR	5.115.1.16.3.1						
Ground Control Malfunctions	AR	5.115.1.16.3.2						
Ground Control Station Malfunctions	AR	5.115.1.16.3.3						
Data Link Malfunctions	AR	5.115.1.16.3.4						
Ground Control Support equipment Malfunctions	AR	5.115.1.16.3.5						
REAR MATTER	R	5.128.3.1	Rear Matter PM					

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Table A-XXXII. Aircraft Operator Checklist requirements matrix for _____.

Content Requirement	CCL Req.	Ref.	PM Type	PM Type	DM Type	Info Code	ICV	Info Name
FRONT MATTER		5.128						
CHECKLIST		5.115.3.1.2.1	Chapter PM					
General Information and Scope	R	5.115.3.1.4.3			Crew	018	A	Introduction
Normal Procedures	R	5.115.3.1.4.4			Crew	130	D	Normal Procedures
Through-flight Checklist		5.115.3.1.4.5			Crew	131	T	Through-Flight Checklist
Emergency Procedures	R	5.115.3.1.4.6			Crew	141	A	Emergency Operations Procedures
Performance Data	R	5.115.3.1.4.7			Crew	131	N	Normal Operation Checklist - Performance Data
REAR MATTER		5.128.3.1	Rear Matter PM					

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Table A-XXXIII. Maintenance Test Flight Manual requirements matrix for _____.

Content Requirement	FMM Req.	Ref.	PM Type	PM Type	DM Type	Info Code	ICV	Info Name
FRONT MATTER		5.128						
SECTION I – INTRODUCTION	R	5.115.4.1.4	Chapter PM	Section PM	Crew	018	A	Introduction
General	R	5.122.4.1.4.1						
Purpose	R	5.115.4.1.4.2						
Definitions	R	5.115.4.1.4.3						
General Information	R	5.115.4.1.4.4						
Special Instructions	R	5.115.4.1.4.5						
SECTION 2 - MTF CHECKLIST.	R	5.115.4.1.5		Section PM	Crew	135	B	MTF Checklist
SECTION 3 - TROUBLESHOOTING GUIDES	R	5.115.4.1.6		Section PM	Crew	018	C	Troubleshooting Introduction
SECTION 4 - SPECIAL/DETAILED PROCEDURES	R	5.115.4.1.7		Section PM	Crew	PD		
SECTION 5 - CHARTS AND FORMS	R	5.115.4.1.8		Section PM	Crew	00Y	B	Charts and Forms
REAR MATTER		5.128.3.1	Rear Matter PM					

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Table A-XXXIV. Demilitarization of Surplus Military Items Manual requirements matrix for _____.

Content Requirement	Req.	Ref.	PM Type	DM Type	Info Code	ICV	Info Name
FRONT MATTER	R	5.128	Front Matter PM				
CHAPTER 1. INTRODUCTION	R	5.101.2.1.6	Chapter PM	Descriptive	018	A	Introduction
Scope	R	5.101.2.1.6.1					
Authorization	R	5.101.2.1.6.2					
Certification	R	5.101.2.1.6.3					
Reporting Demilitarization	R	5.101.2.1.6.4					
Special Information	R	5.101.2.1.6.5					
CHAPTER 2. METHODS OF DEMILITARIZATION	R	5.101.2.1.7	Chapter PM	Descriptive	997	F	Methods of Demilitarization
CHAPTER 3. DETAILED INSTRUCTIONS FOR DEMILITARIZATION	R	5.101.2.1.8	Chapter PM	Descriptive	997	G	Detailed Instructions for Demilitarization
APPENDIX A.			Appendix PM				
REFERENCES	R	5.101.2.1.9		Descriptive	017	B	References
REAR MATTER		5.128.3.1	Rear Matter PM				

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Table A-XXXV. Warranty Technical Bulletin (WTB) requirements matrix for _____.

Content Requirement	WTB Req.	Ref.	PM Type	DM Type	Info Code	ICV	Info Name
FRONT MATTER		5.128	Front Matter PM				
PARAGRAPH 1, GENERAL	R	5.106.2.1.6.1		Descriptive	028	A	Warranty Information
PARAGRAPH 2, EXPLANATION OF TERMS	R	5.106.2.1.6.2					
PARAGRAPH 3, COVERAGE – SPECIFIC	R	5.106.2.1.6.3					
Contractor Responsibilities	R	5.106.2.1.6.4					
Government Responsibilities/Identification	R	5.106.2.1.6.5					
Design/Performance Specifications	R	5.106.2.1.6.6					
Nullification	R	5.106.2.1.6.7					
Abuse determination	R	5.106.2.1.6.8					
Claim Procedures	R	5.106.2.1.6.9					
Storage/Shipment/Handling	R	5.106.2.1.6.10					
APPENDIXES		5.106.2.1.7	Appendix PM	Descriptive	023	F	Warranty Tables
REAR MATTER		5.128.3.1	Rear Matter PM				

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Table A-XXXVI. Destruction of Equipment to Prevent Enemy Use Manual requirements matrix for _____.

Content Requirement	DTM Req.	Ref.	PM Type	DM Type	Info Code	ICV	Info Name
DESTRUCTION OF EQUPIPMENT TO PREVENT ENEMY USE. *NOTE: If a separate destruction of material manual is not developed for this equipment, then a destruction chapter must be included.*							
FRONT MATTER	R	5.128	Front Matter PM				
CHAPTER 1 . GENERAL INFORMATION	R		Chapter PM				
Introduction	R	5.101.3.1.6.2		Descriptive	997	D	Destruction General Information
Authorization	R	5.101.3.1.6.3					
Reporting Destruction	R	5.101.3.1.6.4					
General Destruction Information	R	5.101.3.1.6.5					
Degree of Damage	R	5.101.3.1.6.6					
Essential Components and Spare Parts	R	5.101.3.1.6.7					
CHAPTER X. DESTRUCTION OF EQUIPMENT TO PREVENT ENEMY USE	R		Chapter PM				
Parts List	R	5.101.3.1.7		Descriptive	907	B	Parts List
Specific Destruction Procedures	R	5.101.3.1.8		Procedural	997	B	Destruction Procedures
Classified Equipment and Documents	R	5.101.3.1.9		Procedural	997	C	Destruction Procedures - Classified Equipment
CHAPTER X - SUPPORTING INFORMATION		5.106.1	Chapter PM				
REFERENCES	R	5.106.1.1.2		Descriptive	017	B	References
REAR MATTER		5.128.3.1	Rear Matter PM				

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Table A-XXXVII. Test, Measurement and Diagnostic Equipment Manual requirements matrix for _____.

Content Requirement	DWR Req.	Ref.	PM Type	PM Type	DM Type	Info Code	ICV	Info Name
FRONT MATTER	R	5.128	Front Matter PM					
CHAPTER 1. INTRODUCTION	R		Chapter PM					
SECTION I - SCOPE	R	5.97.5.1.5.1		Section PM	Descriptive	018	H	TMDE Introduction
SECTION II - DESCRIPTION AND DATA	R	5.97.5.1.5.2		Section PM	Descriptive	040	A	Description
Description	R	5.97.5.1.5.2.1			Descriptive	040	A	Description
Performance data	R	5.97.5.1.5.2.2			Descriptive	040	A	Description
Configuration data	R	5.97.5.1.5.2.3			Descriptive	040	A	Description
Equipment & Accessories	R	5.97.5.1.5.2.4			Descriptive	061	B	Special Support Equipment and Tools
Publications Required	R	5.97.5.1.5.2.4			Descriptive	017	L	List of Publications Required
Consumable/expendable items	R	5.97.5.1.5.2.4			Descriptive	070	D	Expendable and Durable Items
CHAPTER 2. FUNCTIONAL ANALYSIS	R	5.97.5.1.6	Chapter PM		Descriptive	042	B	Functional Analysis
CHAPTER 3. OPERATING PROCEDURES	R	5.97.5.1.7	Chapter PM					
SECTION I - SETUP PROCEDURES	R	5.97.5.1.7.1		Section PM	Procedural	125	B	Setup Procedures
SECTION II - CONTROLS AND INDICATORS	R	5.97.5.1.7.2		Section PM	Descriptive	111	A	Controls and Indicators
SECTION III - TURN-ON AND TURN-OFF PROCEDURES	R	5.97.5.1.7.3		Section PM	Procedural	131	H	Turn-On and Turn-Off Procedures
CHAPTER 4. MAINTENANCE REQUIREMENTS	R	5.97.5.1.8	Chapter PM					
SECTION I – FACILITIES, EQUIPMENT, AND MATERIAL STANDARDS	R	5.97.5.1.8.1		Section PM				
Facilities	R	5.97.5.1.8.1.1			Descriptive	202	B	Facilities,

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Table A-XXXVII. Test, Measurement and Diagnostic Equipment Manual requirements matrix for _____.

Content Requirement	DWR Req.	Ref.	PM Type	PM Type	DM Type	Info Code	ICV	Info Name
Material Standards	R	5.97.5.1.8.1.2						Equipment, and Material Standards
Special Tools and Equipment	R	5.97.5.1.8.1.3			IPD	304	B	Special Support Equipment and Tools
SECTION II - PREVENTIVE MAINTENANCE	R	5.97.5.1.8.2		Section PM	Descriptive	200	E	Preventive Maintenance
SECTION III - PRE-OPERATIONAL SPECIFICATIONS AND SELF-TEST PROCEDURE	R	5.97.5.1.8.3		Section PM	Procedural	330	C	Pre-Operational Specifications and Self-Test Procedure
SECTION IV – TROUBLESHOOTIN G	R	5.97.5.1.8.4		Section PM	Fault	421	B	Troubleshooting procedure
SECTION V – MAINTENANCE	R	5.97.5.1.8.5		Section PM				
Disassembly	R	5.97.5.1.8.5.1			Procedural	530	A	Disassembly Procedure
Replace	R	5.97.5.1.8.5.1.1			Procedural	685	B	Replacement
Repair		5.97.5.1.8.5.1.2			Procedural	685	C	Repair
Assembly	R	5.97.5.1.8.5.2			Procedural	710	A	Assemble Procedure
CHAPTER 5. CALIBRATION	R	5.97.5.1.9	Chapter PM		Procedural	273	A	Calibrate
APPENDIX A			Appendix PM					
REFERENCES	R	5.97.5.1.10			Descriptive	017	B	References
APPENDIX B			Appendix PM					
LIST OF PARTS	R	5.97.5.1.11			IPD	307	A	List of Parts
APPENDIX C			Appendix PM					
UNIT UNDER TEST (UUT) PROCEDURES AND TEST SETUP DIAGRAMS	R	5.97.5.1.12			Procedural	320	B	UUT Procedures
OTHER APPENDIXES		5.97.5.1.13	Appendix PM		Descriptive	PD		
REAR MATTER	R	5.97.5.1.14	Rear Matter PM					

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APPENDIX B ARMY INFORMATION CODES

B.1 SCOPE.

This appendix provides the information codes available for use for Army programs when developing data modules for technical content. Details about the use of these information codes is provided in B.4.1 through B.4.4. This appendix is a mandatory part of this standard. The information contained herein is intended for compliance. These requirements are applicable for all maintenance levels through overhaul (depot), including DMWRs/NMWRs.

B.2 APPLICABLE DOCUMENTS.

This section is not applicable to this appendix.

B.3 DEFINITIONS.

This section is not applicable to this appendix.

B.4 GENERAL REQUIREMENTS.

B.4.1 Information codes.

Information codes are used to describe the functional activity related to the product in each respective data module.

B.4.2 Information names.

Each information code has a long definition and a short definition (provided in S1000D Chapter 8.4). The short definitions are used to populate the element **`<infoName>`**. Column four ("Army information name (if different)") provides an alternate information name that shall be used for the respective information code for Army data modules. Use of information names, other than those listed shall be coordinated with LOGSA.

B.4.3 Additional information codes.

S1000D provides a mechanism for identifying and establishing new standard information codes from among those codes not already pre-assigned. These codes are identified as "Available for projects" in S1000D Chapter 8.4. Prior to defining or requesting the reassignment of a "Available for projects" information code or assigning an information code variant, projects shall coordinate with LOGSA.

B.4.4 Additional information variants.

Projects shall coordinate all new information code variants with LOGSA. Efforts will be made to consistently use information code variants across Army projects. For truly project-unique variants, the digits 1 through 9 are reserved for project use.

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B.5 DETAILED REQUIREMENTS.

TABLE B-I. Function, data for plans and description information codes.

Info Code	Variant	Original information name	Alternate information name	Remarks/Notes
000	A	Function, data for plans and description		
000	B	Function, data for plans and description	Equipment description and data	
001	A	Title page	Title page (Paged-based) Identification information (IETP)	
001	B	Title page	Front cover	
001	C	Title page	Back cover	
001	D	Title page	Title block page with warning data	
001	E	Title page	Abbreviated title page.	
001	F	Title page	Abbreviated title page/Table of contents.	
001	G	Title page	Back cover with metric conversion charts	
001	H	Title page	Card deck title block	
001	J	Title page	Checklist title block	
002	A	List of pages or data modules	(prohibited for Army use)	
002	E	List of pages or data modules	List of functional descriptive data modules	
002	F	List of pages or data modules	List of cable/wiring diagrams data modules	
002	M	List of pages or data modules	List of operating procedures data modules	
002	R	List of pages or data modules	List of troubleshooting data modules	
002	S	List of pages or data modules	List of remove/replace data modules	
003	A	Change records and highlights		

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TABLE B-I. Function, data for plans and description information codes.

Info Code	Variant	Original information name	Alternate information name	Remarks/Notes
003	B	Change records and highlights	Deleted items	
003	C	Change records and highlights	Revision summary	
004	A	Access illustration		
005	A	List of abbreviations		
005	B	List of abbreviations	List of acronyms	
005	C	List of abbreviations	List of acronyms and abbreviations	
006	A	List of terms		
007	A	List of symbols		
008	A	Technical standard records		
008	B	Technical standard records	Technical directives	
009	A	Table of contents		
010	A	General data	General data	
010	B	General data	General information	
010	C	General data	General information (Maintenance requirement)	
010	D	General data	General information (Preventive maintenance)	
010	E	General data	General information (Phased maintenance inspection)	
011	A	Function		
011	B	Function	Foreign ammunition	
011	C	Function	Technical description	
012	A	General warnings and cautions and related safety data		
012	B	General warnings and cautions and related safety data	Hazard analysis	
012	C	General warnings and cautions and related safety data	Safety check sheet	

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TABLE B-I. Function, data for plans and description information codes.

Info Code	Variant	Original information name	Alternate information name	Remarks/Notes
012	D	General warnings and cautions and related safety data	Maintenance safety summary	
012	E	General warnings and cautions and related safety data	System hazards and precautions	
012	F	General warnings and cautions and related safety data	Operational safety summary	
012	G	General warnings and cautions and related safety data	Battery safety	
012	H	General warnings and cautions and related safety data	Explanation of warnings, cautions, and notes	
012	J	General warnings and cautions and related safety data	Safety summary	
012	K	General warnings and cautions and related safety data	Operational checkout safety summary	
012	L	General warnings and cautions and related safety data	Troubleshooting safety summary	
012	M	General warnings and cautions and related safety data	Danger areas and precautionary measures	
012	N	General warnings and cautions and related safety data	Safety information	
012	P	General warnings and cautions and related safety data	Testing safety summary	
012	Q	General warnings and cautions and related safety data	Hazardous materials warnings	
012	R	General warnings and cautions and related safety data	ESD hazards and precautions	
013	A	Numeric index		
014	A	Alphabetic and alphanumeric index		

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TABLE B-I. Function, data for plans and description information codes.

Info Code	Variant	Original information name	Alternate information name	Remarks/Notes
014	B	Alphabetic and alphanumeric index	Alphabetical index	
015	A	List of special materials		
016	A	List of dangerous materials		
017	A	List of related data		
017	B	List of related data	References	
017	C	List of related data	References - Preparation for storage or shipment	
017	D	List of related data	References - Nomenclature cross-reference list	
017	E	List of related data	Calibration requirements	
017	F	List of related data	Publication index	
017	G	List of related data	Deleted publication index	
017	H	List of related data	Required reading	
017	J	List of related data	Manufacturer's manuals	
017	K	List of related data	Table of armament switches	
017	L	List of related data	Equipment and publications required but not supplied	
017	M	List of related data	Equipment and publications required and supplied	
017	N	List of related data	Technical publications affected/changed	
018	A	Introduction	Introduction	
018	B	Introduction	How to use this manual	
018	C	Introduction	Troubleshooting introduction	
018	D	Introduction	MAC introduction	

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TABLE B-I. Function, data for plans and description information codes.

Info Code	Variant	Original information name	Alternate information name	Remarks/Notes
018	E	Introduction	Parts introduction	
018	F	Introduction	PMCS introduction	
018	G	Introduction	BDAR introduction	
018	H	Introduction	TMDE introduction	
018	J	Introduction	IETP installation data	
018	K	Introduction	Maintenance introduction	
018	L	Introduction	Conventions	
018	M	Introduction	Notes	
018	N	Introduction	Foreword	
018	P	Introduction	Safety introduction	
018	Q	Introduction	Operation introduction	
018	R	Introduction	Description introduction	
018	S	Introduction	Installation introduction	
018	T	Introduction	Systems administration introduction	
018	U	Introduction	Test procedure introduction	
018	V	Introduction	Operational checkout introduction	
018	W	Introduction	Functional introduction	
018	X	Introduction	Loading introduction	
018	Y	Introduction	Repair introduction	
018	Z	Introduction	Scope	
019	A	Supplier list		
019	B	Supplier list	List of manufacturers	
020	A	Configuration		
020	B	Configuration	Modes of operation	
021	A	Copyright		
022	A	Business rules (BREX)		
023	A	Administrative forms and data		

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TABLE B-I. Function, data for plans and description information codes.

Info Code	Variant	Original information name	Alternate information name	Remarks/Notes
023	B	Administrative forms and data	Reporting errors and recommending improvements	
023	C	Administrative forms and data	Army: Authentication page Navy: Certification sheet	This is a formal signed acceptance form/receipt of goods delivered and received
023	D	Administrative forms and data	Product quality deficiency report	
023	E	Administrative forms and data	Warranty information	
023	F	Administrative forms and data	Warranty tables	
023	G	Administrative forms and data	Personal qualification standards	
023	H	Administrative forms and data	Help desk data and procedure	
023	J	Administrative forms and data	List of contact information	
023	K	Administrative forms and data	Asset inventory data and processes	
023	L	Administrative forms and data	Maintenance data	
023	M	Administrative forms and data	Promulgation letter	
024	A	Business rules		
028	A	General		
029	A	Data structure		
030	A	Technical data		
030	B	Technical data	Environmental requirements	
030	C	Technical data	Conventions	
030	D	Technical data	Munition equipment and ammunition data sheets	
030	E	Technical data	Performance data	
030	F	Technical data	Dimensions	
031	A	Electrical standard parts data		

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TABLE B-I. Function, data for plans and description information codes.

Info Code	Variant	Original information name	Alternate information name	Remarks/Notes
033	A	Technical data (functional breakdown)		
033	B	Technical data (functional breakdown)	Input requirements	
033	C	Technical data (functional breakdown)	Software description	
034	A	Technical data (physical breakdown)		
034	B	Technical data (physical breakdown)	System architecture description	
034	C	Technical data (physical breakdown)	System security description	
034	D	Technical data (physical breakdown)	Utilities list	
034	E	Technical data (physical breakdown)	System description	
040	A	Description		
041	A	Description of how it is made		
042	A	Description of function		
042	B	Description of function	Functional analysis	
042	C	Description of function	System function	
042	D	Description of function	Capabilities	
042	E	Description of function	System specifications	
042	F	Description of function	Theory of operation	
042	G	Description of function	General aircraft structural information	
042	H	Description of function	Description of function - mode flow	
043	A	Description of function attributed to crew (functional breakdown)		
043	B	Description of function attributed to crew (functional breakdown)	Operating limits - General	
043	C	Description of function attributed to crew (functional breakdown)	Operating limits - Power	

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TABLE B-I. Function, data for plans and description information codes.

Info Code	Variant	Original information name	Alternate information name	Remarks/Notes
043	D	Description of function attributed to crew (functional breakdown)	Operating limits - Loading	
043	E	Description of function attributed to crew (functional breakdown)	Operating limits - Airspeed	
043	F	Description of function attributed to crew (functional breakdown)	Operating limits - Maneuvering	
043	G	Description of function attributed to crew (functional breakdown)	Operating limits - Environment	
043	H	Description of function attributed to crew (functional breakdown)	Operating limits - System	
043	J	Description of function attributed to crew (functional breakdown)	Description	
044	A	Description of function (physical breakdown)		
044	B	Description of function (physical breakdown)	Physical arrangement	
044	C	Description of function (physical breakdown)	System equipment	
044	D	Description of function (physical breakdown)	Monitored devices	
044	E	Description of function (physical breakdown)	List of major components	
044	F	Description of function (physical breakdown)	Symbology	
045	A	Designated use		
046	A	Dependence on peripheral/systems equipment		
050	A	Diagram/list		
050	B	Diagram/list	Referenced drawings	
051	A	Wiring diagram		
051	B	Wiring diagram	Cable running sheets	
052	A	Routing diagram		
053	A	Connection list		

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TABLE B-I. Function, data for plans and description information codes.

Info Code	Variant	Original information name	Alternate information name	Remarks/Notes
054	A	Schematic diagram		
054	B	Schematic diagram	Architecture drawings	
055	A	Location diagram		
055	B	Location diagram	Aircraft stations	
055	C	Location diagram	Access and inspection panels	
055	D	Location diagram	External power source connections	
055	E	Location diagram	Work area	
055	F	Location diagram	Zone description	
055	G	Location diagram	Aircraft structure visual index	
055	H	Location diagram	Inspection zone description	
056	A	Equipment list		
056	B	Equipment list	System equipment	
057	A	Wire list		
057	B	Wire list	Wire run lists	
057	C	Wire list	Wiring system diagram identification and information	
057	D	Wire list	Wiring reference designation list	
057	E	Wire list	Wire and connector component identification and location list	
057	F	Wire list	Wire type list	
058	A	Harness list		
058	B	Harness list	Wiring system bundle assembly identification and information	
058	C	Harness list	Wire bundle assembly routings	
059	A	Maintenance envelope diagrams		

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TABLE B-I. Function, data for plans and description information codes.

Info Code	Variant	Original information name	Alternate information name	Remarks/Notes
060	A	Product support equipment, tools and software		
060	B	Product support equipment, tools and software	Software environment	
061	A	Special support equipment and tools		
061	B	Special support equipment and tools	Support equipment and tools	
062	A	Standard support equipment and tools		
062	B	Standard support equipment and tools	Tool identification list	
063	A	Government supplied support equipment and tools		
064	A	Locally made support equipment and tools		
065	A	Software		
066	A	Support equipment and tools data		
066	B	Support equipment and tools data	System administration utilities	
067	A	Decals and instruction plates		
067	B	Decals and instruction plates	Stowage and decal/data plate guide	
067	C	Decals and instruction plates	Ammunition marking	
067	D	Decals and instruction plates	Mark	
070	A	Consumables, material and expendables		
070	B	Consumables, material and expendables	Consumable materials list	
070	C	Consumables, material and expendables	Expendable supplies and materials list.	

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TABLE B-I. Function, data for plans and description information codes.

Info Code	Variant	Original information name	Alternate information name	Remarks/Notes
070	D	Consumables, material and expendables	Expendable and durable items list	
071	A	Consumables		
072	A	Materials		
073	A	Expendables		
074	A	Data sheets for dangerous consumables and materials		
074	B	Data sheets for dangerous consumables and materials	Electromagnetic hazards	
074	C	Data sheets for dangerous consumables and materials	Hazardous components	
075	A	Parts list		
075	B	Parts list	Parts illustrations	
075	C	Parts list	Allowance parts list	
075	D	Parts list	Mandatory replacement parts	
075	E	Parts list	Critical Safety Items (CSI)	
076	A	Fluid		
077	A	Data sheets for consumables and materials		
078	A	Fasteners		
080	A	Mixture and solution		
081	A	Chemical solution		
082	A	Chemical mixture		
090	A	Software documentation		
090	B	Software documentation	User interface guide	
096	A	Safety items and parts		
00A	A	List of illustrations (normally used in front matter)		

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TABLE B-I. Function, data for plans and description information codes.

Info Code	Variant	Original information name	Alternate information name	Remarks/Notes
00A	B	List of illustrations (normally used in front matter)	List of figures	
00B	A	List of support equipment (normally used in front matter)		
00B	B	List of support equipment (normally used in front matter)	Hardware interfaces	
00B	C	List of support equipment (normally used in front matter)	Software interfaces	
00B	D	List of support equipment (normally used in front matter)	Associated systems	
00C	A	List of supplies (normally used in front matter)		
00D	A	List of spares (normally used in front matter)		
00E	A	Functional items numbers common information repository		
00F	A	Circuit breakers common information repository		
00G	A	Parts common information repository		
00H	A	Zones common information repository		
00J	A	Access panels and doors common information repository		
00K	A	Organizations common information repository		
00L	A	Supplies - List of products common information repository		
00M	A	Supplies - List of requirements common information repository		

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TABLE B-I. Function, data for plans and description information codes.

Info Code	Variant	Original information name	Alternate information name	Remarks/Notes
00N	A	Support equipment common information repository		
00P	A	Product Cross-reference Table (PCT)		
00Q	A	Conditions cross-reference table		
00R	A	List of effective pages	(Prohibited for Army use)	
00R	B	List of effective pages	List of applicable checks	
00R	C	List of effective pages	List of effective cards	
00S	A	List of effective data modules		
00T	A	Change record		
00T	B	Product Cross-reference Table (PCT)	List of TPDRs incorporated	TDPR = Technical Publications Deficiency Reports Refer to code 003
00U	A	Highlights		
00V	A	List of applicable specifications and documentation		
00V	B	List of applicable specifications and documentation	Tabulated data, military specifications, and drawings	
00W	A	Applicability cross-reference table		
00X	A	Controls and indicators technical information repository		
00Y	A	List of charts and forms		
00Y	B	List of charts and forms	Charts and forms	
00Y	C	List of charts and forms	List of charts	
00Y	D	List of charts and forms	Charts and conversion tables	

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TABLE B-I. Function, data for plans and description information codes.

Info Code	Variant	Original information name	Alternate information name	Remarks/Notes
00Z	A	List of tables		
0A1	A	Functional and/or physical areas repository	(Prohibited for Army use)	
0A2	A	Applicability repository		
0A3	A	Applicability cross-reference table catalog		
0B0	A	Maintenance planning information		
0B1	A	Time limits		
0B2	A	System maintenance/Inspection tasks list		
0B3	A	Structure maintenance/inspection tasks lists		
0B4	A	Zonal maintenance/inspection tasks list		
0B5	A	Unscheduled check		

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TABLE B-II. Operation information codes.

Info Code	Variant	Original information name	Alternate information name	Remarks/Notes
100	A	Operation		
101	A	List of consumables associated with operation		
101	B	List of consumables associated with operation	Consumable materials	
102	A	List of materials associated with operation		
102	B	List of materials associated with operation	Aircraft inventory master guide	
103	A	List of expendables associated with operation		
104	A	List of special support equipment and tools associated with operation		
104	B	List of special support equipment and tools associated with operation	Approved intraplant transfer equipment	
104	C	List of special support equipment and tools associated with operation	Additional Authorization List (AAL)	
105	A	List of support equipment and tools associated with operation		
105	B	List of support equipment and tools associated with operation	Equipment and special facilities	
105	C	List of support equipment and tools associated with operation	Basic Issue Items (BII) list	
105	D	List of support equipment and tools associated with operation	Components Of End Item (COEI) list	

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TABLE B-II. Operation information codes.

Info Code	Variant	Original information name	Alternate information name	Remarks/Notes
106	A	List of software associated with operation		
107	A	Parts list associated with operation		
110	A	Controls and indicators		
111	A	Controls and indicators		This code is used for crew
112	A	Modes of operation (crew)		
115	A	Displays and alerts		
120	A	Pre-operation		
120	B	Pre-operation	Access software/system	
120	C	Pre-operation	Power on procedure	
120	D	Pre-operation	Initiating a session	
120	E	Pre-operation	Connect to system or computer	
120	F	Pre-operation	Reboot	
120	G	Pre-operation	Procedure to activate ammunition	
120	H	Pre-operation	Arming prior to launch	
121	A	Pre-operation procedure		This code is used for crew
121	B	Pre-operation procedure	Initial adjustments, before use and self-test	
122	A	Siting		
123	A	Shelter		
123	C	Shelter	Van and shelter procedure	
125	A	Pre-operation procedure checklist		This code is used for crew
125	B	Pre-operation procedure checklist	Setup procedure	This code is used for crew
126	A	Conditions of readiness	Conditions of readiness	
126	B	Conditions of readiness	Environmental conditioning	
127	A	Establish operating position		
130	A	Normal operation		
130	B	Normal operation	Amplified checklist	
130	C	Normal operation	Lineup check	
130	D	Normal operation	Normal procedure	

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TABLE B-II. Operation information codes.

Info Code	Variant	Original information name	Alternate information name	Remarks/Notes
130	E	Normal operation	Operational requirements	
131	A	Normal operation procedure	Normal operation procedures	
131	B	Normal operation procedure	Normal operation - Preflight	
131	C	Normal operation procedure	Normal operation - Flight	
131	D	Normal operation procedure	Normal operation - Post flight	
131	E	Normal operation procedure	Normal operation - Flight characteristics	
131	F	Normal operation procedure	Normal operation - Weather	
131	G	Normal operation procedure	Normal operation - Instrument flight	
131	H	Normal operation procedure	Turn-on and turn-off procedure	
131	M	Normal operation procedure	Normal operation check - Preflight	
131	N	Normal operation procedure	Normal operation checklist - Performance data	
131	P	Normal operation procedure	Normal operation procedure checklist (crew)	
131	R	Normal operation procedure	Fording and swimming	
131	S	Normal operation procedure	Preparation for movement	
131	T	Normal operation procedure	Through-flight checklist	
132	A	Starting procedure (maintenance)		
133	A	Shutdown procedure (maintenance)		
134	A	Aviation checklist		
134	B	Aviation checklist	Error recovery	
135	A	Normal operation procedure checklist		This code is used for crew
135	B	Normal operation procedure checklist	MTF checklist	MTF = Maintenance Test Flight

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TABLE B-II. Operation information codes.

Info Code	Variant	Original information name	Alternate information name	Remarks/Notes
135	C	Normal operation procedure checklist	FCF checklist	FCF = Functional Check Flight
136	A	Ground running check		
138	A	Ground running performance adjustment		
139	A	Nuclear, biological, amd chemical procedure		
139	B	Nuclear, biological, amd chemical procedure	Interim Chemical, Biological, Radiological, and Nuclear (CBRN) decontamination procedure	
140	A	Emergency procedure		
140	B	Emergency procedure	Operation under emergency conditions	
141	A	Emergency operation procedure		This code is for crew
142	A	Operation under unusual conditions		
142	B	Operation under unusual conditions	Unusual environment/weather	
142	C	Operation under unusual conditions	Degraded operation procedure	
142	D	Operation under unusual conditions	Over-temperature operation	
142	E	Operation under unusual conditions	Abnormal operation	
142	F	Operation under unusual conditions	Abnormal operation checklist	
142	G	Operation under unusual conditions	Electromagnetic interference operation	
143	A	Radio interference suppression		
144	A	Jamming and Electronic Countermeasures (ECM) procedures		
145	A	Emergency operation procedure checklist		This code is used for crew

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TABLE B-II. Operation information codes.

Info Code	Variant	Original information name	Alternate information name	Remarks/Notes
146	A	Emergency shutdown operation procedure (Checklist)		
150	A	Post-operation		
151	A	Post-operation procedure		This code is used for crew
151	B	Post-operation procedure	Power off procedure	
151	C	Post-operation procedure	Stopping and suspending work	
151	D	Post-operation procedure	Post-operation shut down procedure	
151	E	Post-operation procedure	Emergency shutdown procedure	
151	F	Post-operation procedure	Disarming after landing	
155	A	Post-operation procedure checklist		This code is for crew
157	A	Establish maintenance position		
160	A	Loading/Unloading procedure		
160	B	Loading/Unloading procedure	Weighing and loading	
160	C	Loading/Unloading procedure	On-vehicle equipment loading plan	
160	D	Loading/Unloading procedure	Cargo loading	
160	E	Loading/Unloading procedure	Preparation for loading	
160	F	Loading/Unloading procedure	Cargo handling	
160	G	Loading/Unloading procedure	Cargo unloading	
160	H	Loading/Unloading procedure	Release and control system checks	
160	J	Loading/Unloading procedure	Equipment used for loading	
160	K	Loading/Unloading procedure	Loading configuration	

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TABLE B-II. Operation information codes.

Info Code	Variant	Original information name	Alternate information name	Remarks/Notes
160	L	Loading/Unloading procedure	Weapon loading	
160	M	Loading/Unloading procedure	Weapon unloading	
160	N	Loading/Unloading procedure	After launch checks	
160	P	Loading/Unloading procedure	Turnaround procedure	
161	A	Special operation		
162	A	Non-tactical operation		
169	A	Weight and balance		
169	B	Mass & balance	Weight and balance - Fluids	
169	C	Mass & balance	Weight and balance - Personnel	
169	D	Mass & balance	Weight and balance - Mission equipment	
169	E	Mass & balance	Center-of-gravity	
169	F	Mass & balance	Weight and balance data	
169	G	Mass & balance	Control surface balancing	
170	A	Handling		
170	B	Handling	Covering	
170	C	Handling	External power	
170	D	Handling	Special handling procedure	
170	E	Handling	Handling ammunition	
170	F	Handling	Ground handling	
170	G	Handling	Folding and unfolding wings	
170	H	Handling	Cockpit entry and safety check	
170	J	Handling	Parking	
170	K	Handling	Leveling	
170	L	Handling	Ground safety locks and pins	
170	M	Handling	Carrier deck handling	
170	N	Handling	Preparation for catapulting	
170	P	Handling	Arrested landing operation	
170	Q	Handling	Armament handling	
170	R	Handling	Classified component handling	

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TABLE B-II. Operation information codes.

Info Code	Variant	Original information name	Alternate information name	Remarks/Notes
170	S	Handling	Hazardous material handling procedures	
171	A	Lifting		
171	B	Lifting	Hoisting	
172	A	Jacking		
173	A	Shoring		
174	A	Towing		
175	A	Taxiing		
176	A	Lowering		
177	A	Stabilizing		
178	A	Tethering		
178	B	Tethering	Sling loading	
179	A	Debogging		
17A	A	Mooring		
180	A	Dispatch deviation		
181	A	Deactivate for dispatch deviation		

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TABLE B-III. Servicing information codes.

Info Code	Variant	Original information name	Alternate information name	Remarks/Notes
200	A	Servicing	Servicing	
200	B	Servicing	PMCS	
200	C	Servicing	Removal/Replacement schedule	
200	D	Servicing	Preventive maintenance inspection	
200	E	Servicing	Preventive maintenance	
200	F	Servicing	Preliminary servicing	
200	G	Servicing	Service upon receipt	
200	H	Servicing	Operator's maintenance instructions	
200	J	Servicing	Preventive maintenance checklist	
200	K	Servicing	Ammunition maintenance	
200	L	Servicing	Corrosion control general information	
201	A	List of consumables associated with servicing		
202	A	List of materials associated with servicing		
202	B	List of materials associated with servicing	Facilities, equipment, and material standards	
203	A	List of expendables associated with servicing		
204	A	List of special support equipment and tools associated with servicing		
205	A	List of support equipment and tools associated with servicing		
206	A	List of software associated with servicing		
207	A	Parts list associated with servicing		
210	A	Fill		
211	A	Refuel		

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TABLE B-III. Servicing information codes.

Info Code	Variant	Original information name	Alternate information name	Remarks/Notes
212	A	Fill with oil		
213	A	Fill with oxygen		
214	A	Fill with nitrogen		
215	A	Fill with air		
216	A	Fill with water		
217	A	Fill with hydrogen		
218	A	Fill with other liquids		
219	A	Fill with other gases		
220	A	Drain liquid and release pressure		
221	A	Defuel and drain fuel		
222	A	Drain oil		
223	A	Release oxygen pressure		
224	A	Release nitrogen pressure		
225	A	Release air pressure		
226	A	Drain water		
227	A	Release liquid pressure		
228	A	Drain other liquids		
229	A	Release other gas pressure		
230	A	Bleed and prime		
231	A	Bleed		
232	A	Prime		
233	A	Dry		
234	A	Facility requirements associated with servicing		
236	A	Fill with inert gas/Inert liquid		
237	A	Evacuate		
240	A	Lubrication		
240	B	Lubrication	Lubrication instructions	
241	A	Oil		
242	A	Grease		
243	A	Dry film		
250	A	Clean and apply surface protection		
251	A	Clean with chemical agents		

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TABLE B-III. Servicing information codes.

Info Code	Variant	Original information name	Alternate information name	Remarks/Notes
252	A	Clean by abrasive blast		
253	A	Clean by ultrasonics		
254	A	Clean mechanically		
255	A	Purge		
256	A	Polish and apply wax		
257	A	Paint and apply markings		
257	B	Paint and apply markings	Painting	
258	A	Other procedure to clean		
259	A	Other procedure to protect surfaces		
260	A	Remove and prevent ice and remove contamination		
261	A	Remove ice		
262	A	Prevent ice		
263	A	Use disinfectant/Sanitize		
264	A	Remove contamination		
270	A	Adjust, align and calibrate		
271	A	Adjust		
271	B	Adjust	Preliminary checks and adjustment of equipment	
271	C	Adjust	Configure software	
271	D	Adjust	Adjust system settings	
271	E	Adjust	Configure communications	
271	F	Adjust	Configure system	
271	G	Adjust	Software setup	
271	H	Adjust	Configure	
271	J	Adjust	Misconfiguration	
272	A	Align		
272	B	Align	Circuit alignment	
273	A	Calibrate		
273	D	Calibrate	Preliminary calibration of equipment	
274	A	Harmonize		

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TABLE B-III. Servicing information codes.

Info Code	Variant	Original information name	Alternate information name	Remarks/Notes
275	A	Grooming		
276	A	Rigging		
277	A	Compensate		
278	A	Easily and quickly adjust after a battle damage repair		
279	A	Easily and quickly align after a battle damage repair		
280	A	Inspection		
280	B	Inspection	List of inspections	
280	C	Inspection	Postloading inspection	
280	D	Inspection	Inspection preparation	
280	E	Inspection	Postcheck procedure	
281	A	Scheduled inspection		
282	A	Unscheduled inspection		
283	A	Special regular inspection		
284	A	Special irregular inspection		
285	A	Structure inspections for allowable damage limits		
286	A	Structure inspections for repair		
288	A	Overhaul and retirement schedule		
289	A	Check filling quantity		
290	A	Change of liquid/gas		
292	A	Change of oil		
293	A	Change of oxygen		
294	A	Change of nitrogen		
295	A	Change of air		
296	A	Change of water		
297	A	Change hydrogen		
298	A	Change of other liquid		Code 228 + code 218
299	A	Change of other gas		Code 229 + code 219

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TABLE B-IV. Examinations, tests, and checks information codes.

Info Code	Variant	Original information name	Alternate information name	Remarks/Notes
300	A	Examinations, tests & checks		
300	B	Examinations, tests & checks	Test and inspection	
301	A	List of consumables associated with examinations, tests and checks		
302	A	List of materials associated with examinations, tests and checks		
303	A	List of expendables associated with examinations, tests and checks		
304	A	List of special support equipment and tools associated with examinations, tests and checks		
304	B	List of special support equipment and tools associated with examinations, tests and checks	Special support equipment and tools	
305	A	List of support equipment and tools associated with examinations, tests and checks		
305	B	List of support equipment and tools associated with examinations, tests and checks	Equipment requirements	
306	A	List of software associated with examinations, tests and checks		
307	A	Parts list associated with examinations, tests and checks	List of parts	
310	A	Visual examination		
310	B	Visual examination	Inspecting and servicing the equipment	
310	C	Visual examination	Overhaul inspection procedure	
310	D	Visual examination	Inspection - Acceptance and rejection criteria	
310	E	Visual examination	PMS inspection	PMS = Preventive Maintenance Services

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TABLE B-IV. Examinations, tests, and checks information codes.

Info Code	Variant	Original information name	Alternate information name	Remarks/Notes
310	F	Visual examination	PM inspection	PM = Phased Maintenance
310	G	Visual examination	System cable checks	
310	H	Visual examination	Installation checkout	
310	J	Visual examination	Inspection of installed items	
310	K	Visual examination	Phase sequence control	
310	L	Visual examination	Inspection for corrosion	
310	M	Visual examination	Inspect during assembly	
310	N	Visual examination	Pre-embarkation inspection	
310	P	Visual examination	PMD inspection	PMD = Preventive Maintenance Daily
311	A	Visual examination without special equipment		
312	A	Examination with a borescope		
315	A	Quality assurance requirements		
320	A	Operation test		
320	B	Operation test	UUT procedure	UUT = Unit Under Test
320	C	Operation test	Operational checkout test procedure	
321	A	Unit break-in		
322	A	Test and inspection		
322	B	Test and inspection	Active system test	
322	C	Test and inspection	Preoperational checklist	
322	D	Test and inspection	Test requirements	
322	E	Test and inspection	Reprogramming checks	
330	A	Test preparation		
330	B	Test preparation	Preliminary operations - Test	
330	C	Test preparation	Pre-operational specifications and self-test procedure	
331	A	Connection of test equipment		
331	B	Connection of test equipment	Pretest setup procedure	

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TABLE B-IV. Examinations, tests, and checks information codes.

Info Code	Variant	Original information name	Alternate information name	Remarks/Notes
332	A	Removal of test equipment		
333	A	Installation of the unit before the test		
334	A	Removal of the unit after the test		
334	B	Removal of the unit after the test	Post-troubleshooting shutdown procedure	
334	C	Removal of the unit after the test	Post-operational checkout shutdown procedure	
335	A	Final measures		
340	A	Function test		
340	B	Function test	Test procedure	
340	C	Function test	Testing	
340	D	Function test	Test after repairs	
341	A	Manual test		
341	B	Manual test	Component checklist	
341	C	Manual test	Preshop analysis	
342	A	Automatic test		
343	A	BITE test		
343	B	Function test	Built-in test procedure	
344	A	Compatibility test		
345	A	System test		
346	A	Other check		
347	A	Start-up procedure for test		
348	A	Final acceptance test (FAT)		
350	A	Structure test		
350	B	Structure test	Non-destructive testing inspection	
350	C	Structure test	Classification of defects	
350	D	Structure test	Non-destructive testing index	
350	E	Structure test	Non-destructive testing inspection general information	
351	A	Tests for surface cracks with dye penetrant		

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TABLE B-IV. Examinations, tests, and checks information codes.

Info Code	Variant	Original information name	Alternate information name	Remarks/Notes
352	A	Tests for surface cracks with magnetic particles		
353	A	Test for cracks and other defects with eddy current		
354	A	Tests for cracks and other defects with x-rays		
355	A	Test for cracks and other defects with ultrasonics		
356	A	Hardness test		
357	A	Gamma-ray test		
358	A	Resonance frequency test		
359	A	Thermographic test		
360	A	Design data/Tolerances check		
361	A	Dimensions check		
362	A	Pressure check		
363	A	Flow check		
364	A	Leak check		
365	A	Continuity check		
366	A	Resistance check		
367	A	Electrical power check		
367	B	Electrical power check	Stray voltage check	
368	A	Signal strength check		
369	A	Other check		
370	A	Monitor the condition		
370	B	Monitor the condition	Performance monitoring	
370	C	Monitor the condition	Tracking	
371	A	Oil analysis		
372	A	Vibration analysis		
373	A	Tracking check		

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TABLE B-IV. Examinations, tests, and checks information codes.

Info Code	Variant	Original information name	Alternate information name	Remarks/Notes
374	A	Fuel analysis		
375	A	Shooting accidental discharge analysis		
376	A	Check post application of adhesive		
377	A	Contamination analysis		
390	A	Sample test		
396	A	Flight control surface movement		
397	A	Landing gear movement		
398	A	Product configuration		

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TABLE B-V. Fault reports and isolation procedures information codes.

Info Code	Variant	Original information name	Alternate information name	Remarks/Notes
400	A	Fault reports & isolation procedure		
401	A	List of consumables associated with fault diagnosis		
402	A	List of materials associated with fault diagnosis		
403	A	List of expendables associated with fault diagnosis		
404	A	List of special support equipment and tools associated with fault diagnosis		
405	A	List of support equipment and tools associated with fault diagnosis		
406	A	List of software associated with fault diagnosis		
407	A	Parts list associated with fault diagnosis		
410	A	General fault description		
410	B	General fault description	Symptom index	
410	C	General fault description	System/Subsystem index	
410	D	General fault description	Master index	
410	E	General fault description	General fault assessment tables	
410	F	General fault description	Malfunction index	
410	G	General fault description	Message index	
410	H	General fault description	Fault code reference index	
410	J	General fault description	Fault reports	
410	K	General fault description	Observed faults	

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TABLE B-V. Fault reports and isolation procedures information codes.

Info Code	Variant	Original information name	Alternate information name	Remarks/Notes
411	A	Isolated fault		
412	A	Detected fault		
413	A	Observed fault		
414	A	Correlated fault		
415	A	Impact of fault		
420	A	General fault isolation procedure		
421	A	Fault isolation procedure		
421	B	Fault isolation procedure	Troubleshooting procedure	
422	A	Fault isolation procedure		
422	B	Fault isolation procedure	Troubleshooting procedure	
423	A	Fault isolation procedure		
423	B	Fault isolation procedure	Troubleshooting procedure	
424	A	Fault isolation procedure		
424	B	Fault isolation procedure	Troubleshooting procedure	
425	A	Fault isolation procedure		
425	B	Fault isolation procedure	Troubleshooting procedure	
426	A	Fault isolation procedure		
426	B	Fault isolation procedure	Troubleshooting procedure	
427	A	Fault isolation procedure		
427	B	Fault isolation procedure	Troubleshooting procedure	
428	A	Fault isolation procedure		
428	B	Fault isolation procedure	Troubleshooting procedure	
429	A	Diagnostics		

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TABLE B-V. Fault reports and isolation procedures information codes.

Info Code	Variant	Original information name	Alternate information name	Remarks/Notes
430	A	Fault isolation task supporting data		
440	A	Index		
441	A	Fault code index		
441	B	Fault isolation task supporting data	Relay, coil, switch and lamp indices	
441	C	Fault code index	Protective device index	
441	D	Fault code index	Redundant pluggable electronic components	
441	E	Fault code index	Maintenance assistance modules	
442	A	Maintenance message index		
443	A	Post-troubleshooting shutdown procedure		

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TABLE B-VI. Disconnect, remove, and disassemble procedures information codes.

Info Code	Variant	Original information name	Alternate information name	Remarks/Notes
500	A	Disconnect, remove and disassemble procedure		
501	A	List of consumables associated with removal		
502	A	List of materials associated with removal		
503	A	List of expendables associated with removal		
504	A	List of special support equipment and tools associated with removal		
505	A	List of support equipment and tools associated with removal		
506	A	List of software associated with removal		
507	A	Parts list associated with removal		
510	A	Disconnect procedure		
520	A	Remove procedure		
521	A	Return to basic configuration		Undressing
522	A	Remove support equipment/remove from support equipment		
523	A	Preparation before removal		
524	A	Follow-on maintenance		
525	A	Ammunition unloading		
526	A	Deactivate launching devices		
530	A	Disassemble procedure		
531	A	Disassemble on operation site		
540	A	Open for access procedure		
550	A	Unload software procedure		

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TABLE B-VI. Disconnect, remove, and disassemble procedures information codes.

Info Code	Variant	Original information name	Alternate information name	Remarks/Notes
551	A	Fault monitoring storage readout (downloading)		
552	A	Data erasing		
553	A	Display, copy and print of data		
560	A	Deactivation procedure		
561	A	De-Energize electrical network		
562	A	Depressurize hydraulics		
563	A	Deactivate maintenance practice		

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TABLE B-VII. Repairs and locally make procedures and data information codes.

Info Code	Variant	Original information name	Alternate information name	Remarks/Notes
600	A	Repairs & locally make procedures & data		
601	A	List of consumables associated with repairs		
602	A	List of materials associated with repairs		
603	A	List of expendables associated with repairs		
603	B	List of expendables associated with repairs	Bulk items	
604	A	List of special support equipment and tools associated with repairs		
604	B	List of special support equipment and tools associated with repairs	Special tools list	
604	C	List of support equipment and tools associated with repairs	Wiring system component repair tool list	
605	A	List of support equipment and tools associated with repairs		
605	B	List of support equipment and tools associated with repairs	Support equipment and tools	
606	A	List of software associated with repairs		
607	A	Parts list associated with repairs		
607	B	Parts list associated with repairs	Repair parts for special tools	
607	C	Parts list associated with repairs	Kit parts list	

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TABLE B-VII. Repairs and locally make procedures and data information codes.

Info Code	Variant	Original information name	Alternate information name	Remarks/Notes
607	D	Parts list associated with repairs	Substitute materials/parts	
607	E	Parts list associated with repairs	Repair parts information	
610	A	Add material		
611	A	Insulation		
612	A	Metalize		
613	A	Pot		
614	A	Remetal		
615	A	Retread		
620	A	Attach material		
621	A	Bond		
622	A	Crimp		
623	A	Braze		
624	A	Rivet		
625	A	Solder		
626	A	Splice		
627	A	Weld		
630	A	Change the mechanical strength/Structure of materials		
631	A	Anneal		
632	A	Case harden		
633	A	Cure		
634	A	Normalize		
635	A	Shot-peen		
636	A	Temper		
638	A	Other treatment		
638	B	Other treatment	Sealing	
638	D	Other treatment	Corrosion control sealants	
639	A	Other process to change the mechanical strength/structure of material		
640	A	Change the surface finish of material		
641	A	Anodize		
642	A	Buff		
643	A	Burnish		
644	A	Chromate		
645	A	Hone		

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TABLE B-VII. Repairs and locally make procedures and data information codes.

Info Code	Variant	Original information name	Alternate information name	Remarks/Notes
646	A	Lap		
647	A	Plate		
648	A	Polish		
649	A	Clean-up of dents, cracks and scratches		
650	A	Remove material		
650	B	Remove material	Remove paint	
651	A	Abrasive blast		
652	A	Bore/Drill/Ream		
653	A	Electrical/Electro-chemical/Chemical etch		
654	A	Broach		
655	A	Grind		
656	A	Mill		
657	A	Thread/Tap		
658	A	Turn		
659	A	Other process to remove material		
660	A	Structure repair procedure and data		
660	B	Structure repair procedure and data	Transparent panel repair	
660	C	Structure repair procedure and data	Honeycomb structure repair	
660	D	Structure repair procedure and data	Extrusion repair	
660	E	Structure repair procedure and data	Sealed area repair	
660	F	Structure repair procedure and data	Formed structure repair	
660	G	Structure repair procedure and data	Plastic repair	
660	H	Structure repair procedures and data	New/peculiar structure repair	
660	J	Structure repair procedure and data	Skin patch repair	
661	A	Allowable damage		
662	A	Temporary repair procedure		

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TABLE B-VII. Repairs and locally make procedures and data information codes.

Info Code	Variant	Original information name	Alternate information name	Remarks/Notes
663	A	Standard repair procedure		
663	B	Standard repair procedure	Refurbishment	
664	A	Special repair procedure		
664	B	Special repair procedure	Overhaul procedure	
664	C	Special repair procedure	Rebuild	
665	A	Fly-in repair procedure		
666	A	Material classification		
667	A	Structure classification		
668	A	Allowable damage of composite structures		
669	A	Allowable damage of mixed structures		
670	A	Locally make procedure and data		
670	B	Locally make procedures and data	Modification procedure	
670	C	Locally make procedure and data	Recording and reporting of the modification	
670	D	Locally make procedure and data	Modification application	
670	E	Locally make procedure and data	Illustrated list of manufactured items	
670	F	Locally make procedure and data	Fabrication	
671	A	Making of parts		
680	A	Battle-damage repair procedure and data		
681	A	Damage repair symbol marking		
682	A	Identification of damaged hardware		
683	A	Damage assessment		

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TABLE B-VII. Repairs and locally make procedures and data information codes.

Info Code	Variant	Original information name	Alternate information name	Remarks/Notes
684	A	Utilization degradation		
685	A	Repair procedure		
685	B	Repair procedure	Repair or replace	
685	C	Repair procedure	Replace	
686	A	Isolation procedure		
687	A	Function test after battle damage repair		
688	A	Battle damage repair kit		
689	A	Damage repair		
690	A	Miscellaneous		
691	A	Marking		
692	A	Connector repair		
693	A	Varnish		

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TABLE B-VIII. Assemble, install, and connect procedures information codes.

Info Code	Variant	Original information name	Alternate information name	Remarks/Notes
700	A	Assemble, install & connect procedure		
700	B	Assemble, install & connect procedure	Bracket installation	
700	C	Assemble, install & connect procedure	External components	
700	D	Assemble, install & connect procedure	External tubing, cabling and clamping installation	
700	E	Assemble, install & connect procedure	Critical clearances	
701	A	List of consumables associated with installation		
702	A	List of materials associated with installation		
702	B	List of materials associated with installation	Installation control drawings	
702	C	List of materials associated with installation	Installation data	
703	A	List of expendables associated with installation		
704	A	List of special support equipment and tools associated with installation		
705	A	List of support equipment and tools associated with installation		
706	A	List of software associated with installation		
707	A	Parts list associated with installation		
707	B	Parts list associated with installation	External tube & cable parts list	
707	C	Parts list associated with installation	Assembly parts list	
710	A	Assemble procedure		
710	B	Assemble procedure	Assemble and prepare for use	

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TABLE B-VIII. Assemble, install, and connect procedures information codes.

Info Code	Variant	Original information name	Alternate information name	Remarks/Notes
710	C	Assemble procedure	Assembly of equipment	
710	D	Assemble procedure	Reassembly	
711	A	Tighten procedure		
711	B	Tighten procedure	Torque limits	
712	A	Lock procedure		
713	A	Pack procedure		
714	A	Assemble on operation site		
720	A	Install procedure		
720	B	Install procedure	Special application installation instructions	
720	C	Install procedure	Installation specifications	
720	D	Install procedure	Add device	
720	E	Install procedure	Install and configure	
720	F	Install procedure	Software upgrade	
720	G	Install procedure	Install, adjust and calibrate	
721	A	Build up to usable configuration		Dressing
722	A	Install support equipment/install on support equipment		
723	A	Preparation before installation		
724	A	Follow-on maintenance		
725	A	Ammunition loading		
726	A	Activate launching device		
727	A	Site location plans		
728	A	Foundation preparation		
730	A	Connect procedure		
740	A	Close after access procedure		
750	A	Load software procedure		
752	A	Data loading		
760	A	Reactivation procedure		

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TABLE B-VIII. Assemble, install, and connect procedures information codes.

Info Code	Variant	Original information name	Alternate information name	Remarks/Notes
761	A	Energize electrical network		
762	A	Pressurize Hydraulics		

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TABLE B-IX. Storage procedures and data information codes.

Info Code	Variant	Original information name	Alternate information name	Remarks/notes
800	A	Package, handling, storage and transportation		
800	B	Package, handling, storage and transportation	Shipping characteristics	
800	C	Package, handling, storage and transportation	Shipping characteristics – C-5	
800	D	Package, handling, storage and transportation	Shipping characteristics – C-17	
800	F	Package, handling, storage and transportation	Shipping characteristics – C-130	
800	G	Package, handling, storage and transportation	Shipping characteristics – Aircraft recovery	
800	H	Package, handling, storage and transportation	Shipping characteristics – Crated	
800	J	Package, handling, storage and transportation	Shipping characteristics – Intermodal container	
800	K	Package, handling, storage and transportation	Depot mobilization requirements	
800	L	Package, handling, storage and transportation	Instructions for the use, transportation, handling, storage, or disposal	
800	R	Package, handling, storage and transportation	Preparing the aircraft	
800	S	Package, handling, storage and transportation	Preparing the aircraft – Vessel, tactical	
800	T	Package, handling, storage and transportation	Preparing the aircraft – Vessel, logistical	
800	U	Package, handling, storage and transportation	Preparing the aircraft – Vessel, US Navy capable	

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TABLE B-IX. Storage procedures and data information codes.

Info Code	Variant	Original information name	Alternate information name	Remarks/notes
800	W	Package, handling, storage and transportation	Preparing the aircraft – Intermodal container	
800	X	Package, handling, storage and transportation	Preparing the aircraft – Aircraft recovery and tactical transport	
800	Y	Package, handling, storage and transportation	Preparing the aircraft – Aircraft recovery, single cargo hook rotor head lift	
801	A	List of consumables associated with storage		
802	A	List of materials associated with storage		
803	A	List of expendables associated with storage		
804	A	List of special support equipment and tools associated with storage		
805	A	List of support equipment and tools associated with storage		
806	A	List of software associated with storage		
807	A	Parts list associated with storage		
810	A	Preservation procedure		
810	B	Preservation procedure	Flyable storage of aircraft	
810	C	Preservation procedure	Preparation for storage or shipment	
810	D	Preservation procedure	Preparation and handling of ammunition peculiar equipment for shipment and storage	
810	E	Preservation procedure	Preservation/Depreservation check sheets	
810	F	Preservation procedure	Short storage of aircraft	

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TABLE B-IX. Storage procedures and data information codes.

Info Code	Variant	Original information name	Alternate information name	Remarks/notes
810	G	Preservation procedure	Intermediate storage of aircraft	
810	H	Preservation procedure	Preservation, packaging, and marking	
810	J	Preservation procedure	Stowage	
811	A	Preparation for vehicle transportation		
811	C	Preparation for vehicle transportation	Preservation and packaging of components	
811	D	Preparation for vehicle transportation	Marking of aircraft/Preparation of shipping documents	
811	E	Preparation for vehicle transportation	Aircraft cleaning	
811	F	Preparation for vehicle transportation	Tiedown – General	
811	G	Preparation for vehicle transportation	Tiedown – C-5	
811	H	Preparation for vehicle transportation	Tiedown – C-17	
811	K	Preparation for vehicle transportation	Tiedown – C-130	
811	L	Preparation for vehicle transportation	Tiedown – Vessel, tactical	
811	M	Preparation for vehicle transportation	Tiedown – Vessel, logistical	
811	N	Preparation for vehicle transportation	Tiedown – Vessel, US Navy capable	
811	P	Preparation for vehicle transportation	Tiedown – Truck, tactical	
812	A	Shipping and storage - General		
812	B	Shipping and storage - General	Shipment of aircraft - General	
812	E	Shipping and storage - General	Shipment of aircraft - Truck (long haul)	
812	F	Shipping and storage - General	Aerial recovery - General	
812	G	Shipping and storage - General	Aerial recovery - Lift factors	

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TABLE B-IX. Storage procedures and data information codes.

Info Code	Variant	Original information name	Alternate information name	Remarks/notes
812	H	Shipping and storage - General	Aerial recovery - Single cargo hook hard point lift	
812	J	Shipping and storage - General	Aerial recovery - Dual cargo hook hard point lift	
812	K	Shipping and storage - General	Aerial recovery - Dual cargo hook rotor head lift	
812	L	Shipping and storage - General	Quarantine inspection/Customs clearance	
812	M	Shipping and storage - General	Aerial recovery - Single cargo hook belly band lift	
812	Q	Shipping and storage - General	Preparation of aircraft – Protective covering	
820	A	Procedure to remove preservation material		
820	B	Procedure to remove preservation material	Pentachlorophenol (PENTA)-treated packing materials	
830	A	Procedure to put items in containers		
830	B	Procedure to put items in containers	Crating	
831	A	Vehicle loading		
831	B	Vehicle loading	Loading – C-5	
831	C	Vehicle loading	Loading – C-17	
831	E	Vehicle loading	Loading – C-130	
831	F	Vehicle loading	Loading – Vessel, tactical	
831	G	Vehicle loading	Loading – Vessel, logistical	
831	H	Vehicle loading	Loading – Vessel, US Navy capable	
831	J	Vehicle loading	Loading – Intermodal container	
831	K	Vehicle loading	Loading – General	
832	A	Procedure to pack items		
840	A	Procedure to remove items from containers		
840	B	Procedure to remove items from containers	Unpacking	

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TABLE B-IX. Storage procedures and data information codes.

Info Code	Variant	Original information name	Alternate information name	Remarks/notes
841	A	Vehicle unloading		
841	B	Vehicle unloading	Unloading – C-5	
841	C	Vehicle unloading	Unloading – C-17	
841	E	Vehicle unloading	Unloading – C-130	
841	F	Vehicle unloading	Unloading – Vessel, tactical	
841	G	Vehicle unloading	Unloading – Vessel, logistical	
841	H	Vehicle unloading	Unloading – Vessel, US Navy capable	
841	J	Vehicle unloading	Unloading – Intermodal container	
841	K	Vehicle unloading	Unloading – General	
842	A	Procedure to unpack items		
850	A	Procedure to keep item serviceable when in storage		
860	A	Procedure to move item when in storage		
870	A	Procedure to prepare item for use after storage		
870	B	Procedure to prepare item for use after storage	Checking unpacked equipment	
870	C	Procedure to prepare item for use after storage	Processing unpacked equipment	
870	D	Procedure to prepare item for use after storage	Unpacking and reassembly	
870	E	Procedure to prepare item for use after storage	Depreservation and reassembly – General	
870	F	Procedure to prepare item for use after storage	Depreservation and reassembly – C-5	
870	G	Procedure to prepare item for use after storage	Depreservation and reassembly – C-17	

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TABLE B-IX. Storage procedures and data information codes.

Info Code	Variant	Original information name	Alternate information name	Remarks/notes
870	J	Procedure to prepare item for use after storage	Depreservation and reassembly – C-130	
870	K	Procedure to prepare item for use after storage	Depreservation and reassembly – Vessel, tactical	
870	L	Procedure to prepare item for use after storage	Depreservation and reassembly – Vessel, logistical	
870	M	Procedure to prepare item for use after storage	Depreservation and reassembly – Vessel, US Navy capable	
870	N	Procedure to prepare item for use after storage	Depreservation and reassembly – Intermodal container	
870	P	Procedure to prepare item for use after storage	Placing in service	
871	A	Set on condition		
880	A	Procedure when item got out of storage		
890	A	Life data of item when in storage		

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TABLE B-X. Miscellaneous information codes.

Info Code	Variant	Original information name	Alternate information name	Remarks/Notes
900	A	Miscellaneous		
901	A	Miscellaneous list of consumables		
902	A	Miscellaneous list of materials		
903	A	Miscellaneous list of expendables		
904	A	Miscellaneous list of special support equipment and tools		
905	A	Miscellaneous list of support equipment and tools		
906	A	Miscellaneous list of software		
907	A	Miscellaneous parts list		
907	B	Miscellaneous parts list	Parts list	
910	A	Miscellaneous		
911	A	Illustration		
911	B	Illustration	Lubrication illustrations	
911	C	Illustration	Arming illustrations	
913	A	General maintenance procedure		
913	B	General maintenance procedure	Equipment/user fitting instructions	
913	C	General maintenance procedure	Safety grounds	
914	A	Container data module		
915	A	Facilities		
916	A	MAC	MAC	
916	B	MAC	Aviation MAC	
917	A	Non-S1000D publication		
920	A	Change - Remove and install		
920	B	Change - Remove and install	Quick change	

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TABLE B-X. Miscellaneous information codes.

Info Code	Variant	Original information name	Alternate information name	Remarks/Notes
920	C	Change - Remove and install	Quick change sequence information	
921	A	Change - Remove and install a new item		
922	A	Change - Remove and install the removed item		
923	A	Change - Disconnect and connect an item		
930	A	Service bulletin		
931	A	Service bulletin data		
932	A	Planning information		
933	A	Accomplishment procedure - Task set		
934	A	Material information		
940	A	Provisioning data		
941	A	Illustrated parts data - IPD		
942	A	Numerical index		IPD
942	B	Numerical index	Part number index	
942	C	Numerical index	Reference designator index	
942	D	Numerical index	Cross reference index	
942	E	Numerical index	Operational index	
942	F	Numerical index	National stock number index	
950	A	Composite information		
951	A	Generic process		
952	A	Generic learning content		
961	A	Calculation worksheets		
970	A	Approved vendor process		
980	A	Environmental protection, fire-fighting and rescue		
981	A	Air cleaning		
982	A	Sewage treatment		

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TABLE B-X. Miscellaneous information codes.

Info Code	Variant	Original information name	Alternate information name	Remarks/Notes
989	A	Fire-fighting and rescue		
990	A	Neutralization and disposal		
990	B	Neutralization and disposal	Declassification	
990	C	Neutralization and disposal	Security measures for electronic data (Unusual conditions)	
990	D	Neutralization and disposal	Security measures for electronic data	
991	A	Neutralization of ordnance		
992	A	Neutralization of substance		
996	A	Disposal of ordnance		
997	A	Disposal of product		
997	B	Neutralization of substance	Destruction procedure	
997	C	Neutralization of substance	Destruction procedure - Classified equipment	
997	D	Disposal of product	Destruction general information	
997	F	Disposal of product	Methods of demilitarization	
997	G	Disposal of product	Detailed instructions for demilitarization	
998	A	Disposal of substance		

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TABLE B-XI. Computer systems information codes.

Info Code	Variant	Original information name	Alternate information name	Remarks/Notes
C00	A	Computer systems, software and data		
C01	A	Miscellaneous list of consumables associated with computer systems, software and data		
C02	A	Miscellaneous list of materials associated with computer systems, software and data		
C03	A	Miscellaneous list of expendables associated with computer systems, software and data		
C04	A	Miscellaneous list of special support equipment and tools associated with computer systems, software and data		
C05	A	Miscellaneous list of software associated with computer systems, software and data		
C06	A	Miscellaneous list of special support equipment and tools associated with computer systems, software and data		
C07	A	Miscellaneous parts list associated with computer systems, software and data		
C13	A	Notes		
C14	A	Problem handling		
C15	A	Summary of content		

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TABLE B-XI. Computer systems information codes.

Info Code	Variant	Original information name	Alternate information name	Remarks/Notes
C20	A	System administration		
C20	B	System administration	Account administration	
C20	C	System administration	Data base administration	
C20	D	System administration	Manage hardware	
C20	E	System administration	Monitor	
C20	F	System administration	Network administration	
C20	G	System administration	Organization administration	
C20	H	System administration	System administration	
C20	J	System administration	Workstation administration	
C21	A	System monitoring		
C21	B	System monitoring	Counter logs	
C21	C	System monitoring	Trace logs	
C21	D	System monitoring	Event logs	
C21	E	System monitoring	Alert management	
C22	A	Description of command		
C23	A	Connect hardware		
C23	B	Connect hardware	Connect to maintenance tool (Laptop)	
C25	A	System recovery		
C26	A	Backup and restore	Backup and restore	
C27	A	Verify reboot		
C30	A	Coordinate		
C31	A	Defragmentation		
C32	A	Input/Output media		
C33	A	Disk mirroring		
C34	A	Clear interference	Clear interference	
C35	A	Time check	Time check	
C36	A	Compatibility check	Compatibility check	
C50	A	Manage data		
C50	B	Manage data	Analyze alerts	
C50	C	Manage data	Analyze data	
C50	D	Manage data	Analyze history	
C50	E	Manage data	Associate to track	
C50	F	Manage data	Calculate	

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TABLE B-XI. Computer systems information codes.

Info Code	Variant	Original information name	Alternate information name	Remarks/Notes
C50	G	Manage data	Develop plans/data	
C50	H	Manage data	Plan	
C50	J	Manage data	Query	
C50	K	Manage data	Range/Bearing	
C50	L	Manage data	Search data	
C50	M	Manage data	Track management	
C50	N	Manage data	Edit	
C50	P	Manage data	Administer error log	
C51	A	Move data		
C51	B	Move data	Delete data	
C51	C	Move data	Import data	
C51	D	Move data	Print/Publish	
C51	E	Move data	Save data	
C51	F	Move data	Send/Submit data	
C51	G	Move data	Load	
C51	H	Move data	Release	
C51	J	Move data	Transmit	
C51	K	Move data	Download	
C51	L	Move data	Transfer/Copy	
C52	A	Manipulate/use data		
C52	B	Manipulate/use data	Manipulate/Use multimedia	
C53	A	Description of data storage		
C60	A	Programming information		
C60	B	Programming information	Programming techniques	
C60	C	Programming information	Description of instructions	
C60	D	Programming information	Description of input/output	
C60	E	Programming information	Source code	
C60	F	Programming information	Examples	
C61	A	Program flow chart		
C62	A	Processing reference guide		
C70	A	Security and privacy		
C72	A	Security information		

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TABLE B-XI. Computer systems information codes.

Info Code	Variant	Original information name	Alternate information name	Remarks/Notes
C73	A	Security procedure		
C74	A	List of security/classification codes		
C75	A	Access control		
C90	A	Miscellaneous		
C91	A	Quality assurance		
C92	A	Vendor information		
C95	A	Naming conventions		
C96	A	Technical requirements		
C96	B	Technical requirements	Software requirements	
C96	C	Technical requirements	Operating system requirements	
C96	D	Technical requirements	Hardware requirements	

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APPENDIX C PROJECT DECISIONS TABLE

C.1 SCOPE.

This appendix contains a complete list of all project decision points available for tailoring. Refer to 4.3 for information on tailoring of business rules. This appendix is a mandatory part of this standard. The information contained herein is intended for compliance. These requirements are applicable for all maintenance levels through overhaul (depot), including DMWRs/NMWRs.

C.2 APPLICABLE DOCUMENTS.

This section is not applicable to this appendix.

C.3 DEFINITIONS.

This section is not applicable to this appendix.

C.4 GENERAL REQUIREMENTS.

C.4.1 General.

Projects shall document business rules that answer each decision point in this appendix. Depending on the contracting environment, projects may complete their project business rules matrices with the coordination of their technical data vendor.

C.4.2 Use of the project decision tables.

Completed versions of the tables in this appendix shall be the official record of project business rules. Some business rules will require more of an explanation than is practical in a spreadsheet cell. In these cases, additional explanation shall be provided separately. Documented business rules are mandatory; they shall be combined with and be an extension to the Army business rules identified in this specification. The tables in this appendix are available in Excel at https://www.logsa.army.mil/mil40051/S1000D.cfm.

C.4.3 Intended use.

The tables in this appendix contain the following columns:

a. Column 1 (Army BR paragraph number) – This column identifies the paragraph number in this document describing the project decision.
b. Column 2 (Army BR paragraph title) – This column provides the title of the paragraph in this document describing the project decision.
c. Column 3 (S1000D chapter context) – This column identifies the S1000D chapter that pertains to the project decision.
d. Column 4 (Text of project decision point) – This column repeats the text of the project decision point found at the paragraph number indicated in column 1.

The Excel versions of these tables (refer to https://www.logsa.army.mil/mil40051/S1000D.cfm) contain the following additional columns:

a. Column 5 (Guidance) – Where appropriate, guidance is provided in this column to assist the project with determining their business rules.
b. Column 6 (BREX) - This column indicates whether the business rule can be codifed in the project BREX file or not.

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c. Column 6 (Project Decision) – This column is where the project will document their business rules which are answers to the decision points described in column 4. If a project business rule is lengthy, the details of the project business rule may be in a separate document.

C.4.4 Business Rules EXchange (BREX).
The project business rules identified in the completed tables shall be reflected in the project BREX to the greatest extent possible.

C.5 DETAILED REQUIREMENTS.

C.5.1 General.
The tables in this appendix contain a list of all project decision points available for tailoring. Each decision point identified in S1000D is represented either by an Army rule in this document or a project decision point in this appendix. Be aware that all projects are unique and there will likely be the need for additional project business rules to tailor for specific needs.

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TABLE C-I. Project business rule decision points - Information generation.

MIL-STD-3031 paragraph reference	MIL-STD-3031 paragraph title	S1000D chapter context	Text of project decision point
5.6.2.1	Definitions of information sets.	S1000D Chapter 3.3 – Information generation – Information sets.	The project shall decide which information sets are used and the definition of their content.
5.6.2.2	Project specific information sets.	S1000D Chapter 3.3 – Information generation – Information sets.	The project shall define all project specific information sets.
5.6.2.3	Content selection matrices.	S1000D Chapter 3.3 – Information generation – Information sets.	The project shall complete the content selection matrices by indicating which conditional and optional content is required by the project.
5.7.2.1	Use of zoning and access.	S1000D Chapter 3.4 – Information generation – Zoning and access.	The project shall decide whether to use the zoning rules or not.
5.7.2.2	Methods for zoning air systems.	S1000D Chapter 3.4 – Information generation – Zoning and access.	The project shall decide which method of zoning to use.
5.7.2.3	General identification of access points.	S1000D Chapter 3.4 – Information generation – Zoning and access.	The project shall determine the identification system for those access points that do not have identifiers.
5.7.2.3.1	Identifying access points for air systems.	S1000D Chapter 3.4 – Information generation – Zoning and access.	The project shall decide which method of zoning access to use, if needed.
5.7.2.3.2	Identifying access points for surface ships and submarine systems.	S1000D Chapter 3.4 – Information generation – Zoning and access.	The project shall decide which method of zoning access to use, if needed.
5.8.2.1	Frequency of updates.	S1000D Chapter 3.5 – Information generation – Updating data modules.	The project shall decide on the frequency of updates.
5.8.2.2	Deleted data modules.	S1000D Chapter 3.5 – Information generation – Updating data modules.	The project shall determine the method for handling and notification of deleted data modules.
5.9.2.1	For official use only.	S1000D Chapter 3.6 – Information generation – Security and data restrictions.	The project shall determine the use of the protective marking "FOR OFFICIAL USE ONLY (FOUO)" for non-COMSEC publications.
5.9.2.2	Caveats.	S1000D Chapter 3.6 – Information generation – Security and data restrictions.	Security code words applied to security classifications shall be defined within the project.
5.10.2.1	Degree of the application of Quality Assurance (QA).	S1000D Chapter 3.7 – Information generation – Quality assurance.	The project shall decide the degree of the application of QA.

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TABLE C-I. Project business rule decision points - Information generation.

MIL-STD-3031 paragraph reference	MIL-STD-3031 paragraph title	S1000D chapter context	Text of project decision point
5.10.2.2	Decide on which type of first verification to use.	S1000D Chapter 3.7 – Information generation – Quality assurance.	The project shall decide which of the types of first verification are applied to data modules/technical publications.
5.10.2.3	Decide on the appropriate review cycle process.	S1000D Chapter 3.7 – Information generation – Quality assurance.	The project shall decide on the most appropriate review cycle processes and procedures.
5.10.2.4	In process review.	S1000D Chapter 3.7 – Information generation – Quality assurance.	The project shall determine the use of an in process review.
5.10.2.5	Applicability.	S1000D Chapter 3.7 – Information generation – Quality assurance.	The project shall decide if it is permitted to differentiate QA information depending on product configuration.
5.10.2.6	Draft delivery of unverified data modules.	S1000D Chapter 3.7 – Information generation – Quality assurance.	For other than final delivery, the project shall decide on whether unverified data modules can be delivered to the customer.

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TABLE C-II. Project business rule decision points - Authoring.

MIL-STD-3031 paragraph reference	MIL-STD-3031 paragraph title	S1000D chapter context	Text of project decision point
5.11.2.1	Simplified Technical English.	S1000D Chapter 3.9.1 – Authoring – General writing rules.	The project shall decide whether to require the use of Simplified Technical English or not.
5.11.2.2	Measurements.	S1000D Chapter 3.9.1 – Authoring – General writing rules.	The project shall determine the primary and secondary units of measure for the technical publicatons including lubricaiotn orders for their system/equipment.
5.12.2.1	Scope of printable data.	S1000D Chapter 3.9.2 – Authoring – Illustration rules and multimedia.	The project shall determine which parts of the documentation need to be printable.
5.12.2.2	Multimedia technologies and environment.	S1000D Chapter 3.9.2 – Authoring – Illustration rules and multimedia.	The project shall agree to the multimedia technologies used and the expected environment in which they will operate.
5.13.2.1	Portrait.	S1000D Chapter 3.9.2.1 – Illustration rules and multimedia – Illustrations, General.	For ease of reading and cross-reference, the preferred layout is portrait (IPD illustrations shall always be in portrait layout). Fold-outs or landscape shall only be allowed as exceptions, as defined in the project business rules.
5.13.2.2	Case.	S1000D Chapter 3.9.2.1 – Illustration rules and multimedia – Illustrations, General.	The project shall decide on the use of sentence case or uppercase for text annotation.
5.13.2.3	Schematics.	S1000D Chapter 3.9.2.1 – Illustration rules and multimedia – Illustrations, General.	The project shall decide if schematics derived from engineering drawings shall include the original drawing number and revision status within the illustration area.
5.15.2.1	Color.	S1000D Chapter 3.9.2.3 – Illustration rules and multimedia – Use of color and photographs.	Unless specified otherwise by the acquiring activity, black and shades of black (one color) shall be used for paper publications. Prior approval for color will be obtained by the acquiring activity from the Logistics Support activity (LOGSA). The acquiring activity will provide written approval, designating color(s) to be used. The use of some colors may not be appropriate for certain environmental conditions.
5.15.2.2	Photographs.	S1000D Chapter 3.9.2.3 – Illustration rules and multimedia – Use of color and photographs.	Photographic illustrations may be used only when prior approval has been obtained from the acquiring activity.

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TABLE C-II. Project business rule decision points - Authoring.

MIL-STD-3031 paragraph reference	MIL-STD-3031 paragraph title	S1000D chapter context	Text of project decision point
5.16.2.1	General.	S1000D Chapter 3.9.2.4 – Illustration rules and multimedia – Multimedia, General.	Audio, video clips and animations are not played automatically. The multimedia player is activated through a hotspot, inline with the narrative, or resident in a separate pane. Audio, video clips and animations are manually started by pressing "PLAY" on a multimedia player or plug-in control panel. Developers need to ensure that the technician can use the multimedia format being delivered.
5.16.2.2	Use of three-dimensional (3-D) illustrations.	S1000D Chapter 3.9.2.4 – Illustration rules and multimedia – Multimedia, General.	The project shall decide if 3-D illustrations may be used, and if so for what purposes.
DELETED			
5.18.2.1	Use of the extended highlight data module.	S1000D Chapter 3.9.4 – Authoring – Front matter.	The project shall decide whether to use an extended highlight data module or not.

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TABLE C-III. Project business rule decision points - Identifiaction and status.

MIL-STD-3031 paragraph reference	MIL-STD-3031 paragraph title	S1000D chapter context	Text of project decision point
5.19.2.1	Exchange of draft data modules within the project.	S1000D Chapter 3.9.5.1 – Data modules – Identification and status section.	The project shall decide whether to allow the exchange of draft data modules or not.
5.19.2.2	Issue date.	S1000D Chapter 3.9.5.1 – Data modules – Identification and status section.	The definition of the issue date for data modules is to be determined by the project in its business rules. This can be, for example, the input date (i.e., the release to Common Source Database (CSDB) date), or the cut-off date for the information.
5.19.2.3	Data module code extension.	S1000D Chapter 3.9.5.1 – Data modules – Identification and status section.	The project shall decide if the extended data module identification scheme has to be applied to achieve unique data module instance identities.
5.19.2.4	Define a list of Commercial and Government Entity (CAGE) codes.	S1000D Chapter 3.9.5.1 – Data modules – Identification and status section.	If the data module code extension is used, the project shall define a list of allowed CAGECs that can be used to populate the attribute **`extensionProducer`**.
5.19.2.5	Deleted data module retention.	S1000D Chapter 3.9.5.1 – Data modules – Identification and status section.	The project shall decide on the length of time that they retain changed and deleted data modules.
5.19.2.6	Responsible Partner Company (RPC) Commercial and Government Entity (CAGE) values.	S1000D Chapter 3.9.5.1 – Data modules – Identification and status section.	Projects shall define a list of acceptable RPC CAGE values. Values shall also be included in the RPC list. RPC CAGE and RPC name shall be typed exactly as in the RPC list given in the business rules.
5.19.2.7	Originator Commercial and Government Entity (CAGE) values.	S1000D Chapter 3.9.5.1 – Data modules – Identification and status section.	The project shall define a list of acceptable originator CAGE values. If the attribute **`enterpriseCode`** is used, values shall also be included in the list. Refer to 5.69.1.5.
5.19.2.8	Originator name.	S1000D Chapter 3.9.5.1 – Data modules – Identification and status section.	The project shall decide the use of the element **`<enterpriseName>`** within the element **`<originator>`**. If used, then its use shall be consistent and made mandatory for the whole project. Refer to 5.69.1.5. **Error! Reference source not found.**

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TABLE C-III. Project business rule decision points - Identifiaction and status.

MIL-STD-3031 paragraph reference	MIL-STD-3031 paragraph title	S1000D chapter context	Text of project decision point
5.19.2.9	Applicability.	S1000D Chapter 3.9.5.1 – Data modules – Identification and status section.	The project shall decide on how applicability is to be used. The project shall decide on the population of the elements and attributes of applicability and shall then enforce its consistency.
5.19.2.10	Technical standard.	S1000D Chapter 3.9.5.1 – Data modules – Identification and status section.	Project shall decide the use of the element **`<techStandard>`**. If used, it shall be used consistently throughout the entire project.
5.19.2.10.1	Technical standard, details.	S1000D Chapter 3.9.5.1 – Data modules – Identification and status section.	If used, the project shall decide the use of publications base line and authority exceptions within the element **`<techStandard>`**. The project shall decide the use of case, space, and punctuation with regard to <techStandard>.
5.19.2.11	Authority information values.	S1000D Chapter 3.9.5.1 – Data modules – Identification and status section.	The project shall define the authority information values and their use shall be consistent for the whole project.
5.19.2.12	The element **`<authorityNotes>`**.	S1000D Chapter 3.9.5.1 – Data modules – Identification and status section.	If used, the project shall decide on suitable entries for the element **`<authorityNotes>`**. Refer to 5.19.1.9.
5.19.2.13	Use of applicability information.	S1000D Chapter 3.9.5.1 – Data modules – Identification and status section.	The project shall decide whether to use applicability on QA information.
5.19.2.14	System breakdown or functional breakdown codes.	S1000D Chapter 3.9.5.1 – Data modules – Identification and status section.	The project shall decide on whether or not to use one of the elements **`<systemBreakdownCode>`**, **`<functionalItemCode>`**, and **`<functionalItemRef>`**. When deciding the use of these elements, projects shall establish consistent population.
5.19.2.15	Use of the attribute **`functionalItemNumber`** within the element **`<functionalItemRef>`**.	S1000D Chapter 3.9.5.1 – Data modules – Identification and status section.	The project shall decide how attribute **`functionalItemNumber`** is to be populated when the element **`<functionalItemRef>`** is used.

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TABLE C-III. Project business rule decision points - Identifiaction and status.

MIL-STD-3031 paragraph reference	MIL-STD-3031 paragraph title	S1000D chapter context	Text of project decision point
5.19.2.16	Use of manufacturer code within the element **`<functionalItemRef>`**.	S1000D Chapter 3.9.5.1 – Data modules – Identification and status section.	The project shall decide if attribute **`manufacturerCodeValue`** is used and the required contexts, when using the element **`<functionalItemRef>`**.
5.19.2.17	Standard reasons for update.	S1000D Chapter 3.9.5.1 – Data modules – Identification and status section.	The project shall define standard reason for update sentences to be used.
5.19.2.18	Reason for update and the production process.	S1000D Chapter 3.9.5.1 – Data modules – Identification and status section.	The project shall decide on whether the element **`<reasonForUpdate>`** is to be used during the production process.
5.19.2.19	Use of applicability information.	S1000D Chapter 3.9.5.1 – Data modules – Identification and status section.	The project shall decide if it is permitted to differentiate reasons for update depending on Product configuration.
5.19.2.20	Definition of safety label attributes.	S1000D Chapter 3.9.5.1 – Data modules – Identification and status section.	The project shall decide what safety label attributes to use and what their definitions are.
5.19.2.21	Use of applicability information.	S1000D Chapter 3.9.5.1 – Data modules – Identification and status section.	The project shall decide if it is permitted to differentiate general remarks depending on Product configuration.

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TABLE C-IV. Project business rule decision points - Common constructs.

MIL-STD-3031 paragraph reference	MIL-STD-3031 paragraph title	S1000D chapter context	Text of project decision point
5.20.2.1	Use of the cross-reference method for the reason for update.	S1000D Chapter 3.9.5.2.1.1 – Common constructs – Change marking.	The project shall decide whether or not to use the cross-reference method for linking changes to reasons for update. The method used shall be applied consistently in the project.
5.20.2.2	Types of changes to mark up.	S1000D Chapter 3.9.5.2.1.1 – Common constructs – Change marking.	The project shall decide if the update reason types (attribute **updateReasonType**) "**urt01**" (Editorial change), "**urt03**" (Markup change), and "**urt04**" (Applicability change) are to be used. Irrespective of the decision made, all projects shall follow the rules that change markers should only be included if the change is a technical change ("**urt02**"), and editorial changes shall not be marked. Further, no change markers shall appear if the issue type is not changed.
5.20.2.3	Definition of project specific change types.	S1000D Chapter 3.9.5.2.1.1 – Common constructs – Change marking.	The project shall decide if any of the project configurable attributes (values "**urt56**" to "**urt99**") are to be used on the element **<reasonForUpdate>**. The project shall apply meanings for them to ensure they are consistently used in the project.
5.20.2.4	Format of reason for update identifiers.	S1000D Chapter 3.9.5.2.1.1 – Common constructs – Change marking.	The project shall define and document a format for reason for update identifiers (for example: "**rfu-001**").
5.20.2.5	Standard statements for reason for update.	S1000D Chapter 3.9.5.2.1.1 – Common constructs – Change marking.	The project shall decide whether to use "standard reason for update" statements or not.
5.20.2.6	Use of reason for update.	S1000D Chapter 3.9.5.2.1.1 – Common constructs – Change marking.	The project shall decide on the use of reason for update which can be used to automatically generate the highlights data module.
5.20.2.7	Use of reason for update in conjunction with the production process.	S1000D Chapter 3.9.5.2.1.1 – Common constructs – Change marking.	The project shall decide if the element **<reasonForUpdate>** is to be used during the production process.
5.20.2.8	Use of applicability information.	S1000D Chapter 3.9.5.2.1.1 – Common constructs – Change marking.	The project shall decide if it is permitted to differentiate reasons for update depending on product configuration.

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TABLE C-IV. Project business rule decision points - Common constructs.

MIL-STD-3031 paragraph reference	MIL-STD-3031 paragraph title	S1000D chapter context	Text of project decision point
5.20.2.9	Use of the attribute **id** on the element **<changeInline>** .	S1000D Chapter 3.9.5.2.1.1 – Common constructs – Change marking.	The project shall decide if the attribute **id** is allowed to be used on the element **<changeInline>**. The purpose of the attribute shall be defined and it is considered good practice to define a format of the identifier.
5.20.2.10	Modify and add change markers.	S1000D Chapter 3.9.5.2.1.1 – Common constructs – Change marking.	The project shall decide the use of "modify" and "add" change markers.
5.20.2.11	Use of the value "modify."	S1000D Chapter 3.9.5.2.1.1 – Common constructs – Change marking.	Use of the value "**modify**" and the value "**add**" in change markers shall be consistent across the project. The rules for use shall be specified in the Project or the Organization's business rules documentation.
5.20.2.12	Display of change markings in tables.	S1000D Chapter 3.9.5.2.1.1 – Common constructs – Change marking.	The project shall decide if change markings are to be displayed for parts of a table; for page-oriented output, the change is displayed next to the row that contains the change.
5.20.2.13	Relationship between the element **<reasonForAmendment>** and the element **<reasonForUpdate>**.	S1000D Chapter 3.9.5.2.1.1 – Common constructs – Change marking.	The project shall decide if the reason for amendment details for a figure (or the individual illustration sheets of a multi-sheet figure) are also reflected in the data module status element **<reasonForUpdate>** and subsequently used in the generation of the highlights data module.
5.20.2.14	Recording reason for amendment.	S1000D Chapter 3.9.5.2.1.1 – Common constructs – Change marking.	The project shall decide if the reason for amendment is to be recorded in addition to the reason for update. The use of "standard reason for amendment" statements should be considered.
5.20.2.15	Change attributes on individual sheets of a multi-sheet figure.	S1000D Chapter 3.9.5.2.1.1 – Common constructs – Change marking.	The project shall decide if change attributes are allowed on individual sheets of a multi-sheet figure.
5.21.2.1	Use and format of the attribute **referredFragment** of element **<dmRef>**.	S1000D Chapter 3.9.5.2.1.2 – Common constructs – Referencing.	The project shall decide on the use of the attribute **referredFragment**. The project shall state in the business rules when referredFragment will be used and shall list the precautions if it is used.

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TABLE C-IV. Project business rule decision points - Common constructs.

MIL-STD-3031 paragraph reference	MIL-STD-3031 paragraph title	S1000D chapter context	Text of project decision point
5.21.2.2	Referenced technical publications.	S1000D Chapter 3.9.5.2.1.2 – Common constructs – Referencing.	The project shall decide the format of the referenced technical publications. For example, reference technical publications should be listed by their number, then a dash followed by the title. The project shall create business rules for this and shall define the use of punctuation.
5.21.2.3	Element **`<internalRef>`** target when addressing graphical objects.	S1000D Chapter 3.9.5.2.1.2 – Common constructs – Referencing.	The project shall decide the use of the optional attribute **`referredFragment`** of element **`<internalRef>`**.
5.21.2.6	Use of the element **`<externalPubIssueInfo>`**.	S1000D Chapter 3.9.5.2.1.2 – Common constructs – Referencing.	The project shall decide the use of the element **`<externalPubIssueInfo>`** and its child element **`<externalPubIssue>`**.
5.21.2.7	Use of the element **`<externalPubRefAddressItems>`**.	S1000D Chapter 3.9.5.2.1.2 – Common constructs – Referencing.	The project shall decide the use of the element **`<externalPubRefAddressItems>`**.
5.21.2.8	Use of the element **`<shortExternalPubTitle>`**.	S1000D Chapter 3.9.5.2.1.2 – Common constructs – Referencing.	The project shall decide the use of the element **`<shortExternalPubTitle>`**.
5.22.2.1	Simple or unordered lists.	S1000D Chapter 3.9.5.2.1.3 – Common constructs – Lists.	For random lists, the project shall define the use of simple and unordered lists.

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TABLE C-IV. Project business rule decision points - Common constructs.

MIL-STD-3031 paragraph reference	MIL-STD-3031 paragraph title	S1000D chapter context	Text of project decision point
5.23.2.1	Caption attributes.	S1000D Chapter 3.9.5.2.1.4 – Common constructs – Caption Groups.	Captions are used to describe the appearance of actual controls and indicators and present them within the technical data. If the element **`<caption>`** is used, the project shall decide applicable values for the following presentation attributes. How to encode the attribute **`systemIdentCode`** if used. Whether the attribute **`tableOfContentType`** is required. If in-line captions affect the text line spacing. If element **`<captionLine>`** text color should be adjusted depending on the caption color. The presentation in the publication/IETP should match the equipment appearance/presentation as closely as possible.
5.24.2.1	Use of titles	S1000D Chapter 3.9.5.2.1.6 – Common constructs – Tables.	The project shall decide on use of titles for elements other than **`<figure>`**, **`<multimedia>`**, and **`<levelledPara>`** (e.g., attentionSequentialList, checkListInfo, checkListProcedure, commonInfo, commonInfoDescrPara, crewDrill, crewRefCard, definitionList, dialog, dialogGroup, maintAllocation, message, randomList, remarksList, sbTopic, sequentialList, subCrewDrill, table, toolsList.)
5.25.2.1	Table foldouts.	S1000D Chapter 3.9.5.2.1.6 – Common constructs – Tables.	The project shall decide the use of the element **`<foldout>`** for tables.
5.25.2.2	Use of applicability information.	S1000D Chapter 3.9.5.2.1.6 – Common constructs – Tables.	The project shall decide if the indication of applicability information is permitted on various table sub-elements depending on the Product configuration. If permitted, then the project shall also decide on the use of the attribute **`applicRefId`** for this purpose.
5.26.2.1	Use of applicability.	S1000D Chapter 3.9.5.2.1.7 – Common constructs – Figures and foldouts.	The project shall decide whether and how to use the attribute **`applicRefId`** for complete figures and illustration sheets.

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TABLE C-IV. Project business rule decision points - Common constructs.

MIL-STD-3031 paragraph reference	MIL-STD-3031 paragraph title	S1000D chapter context	Text of project decision point
5.26.2.2	Decide on the format of the entries in the legend.	S1000D Chapter 3.9.5.2.1.7 – Common constructs – Figures and foldouts.	The project shall define: whether the text in the legend is in sentence case, upper case, or mixed case. whether or not the element **`<listItemTerm>`** is to contain a leading zero when using callout/item numbers. how hotspots are to be used.
5.26.2.3	Use of foldout.	S1000D Chapter 3.9.5.2.1.7 – Common constructs – Figures and foldouts.	The project shall decide whether the element **`<foldout>`** is used for IETP.
5.27.2.1	Use of hotspots.	S1000D Chapter 3.9.5.2.1.8 – Common constructs – Hotspots.	The project shall decide whether or not to use hotspots.
5.28.2.1	Production management data.	S1000D Chapter 3.9.5.2.1.9 – Common constructs – Preliminary requirements and requirements after job completion.	The project shall decide whether or not to use the element **`<productionMaintData>`**.
5.28.2.2	Use of the element **`<thresholdInterval>`**.	S1000D Chapter 3.9.5.2.1.9 – Common constructs – Preliminary requirements and requirements after job completion.	The project shall decide whether or not to use element **`<thresholdInterval>`**.
5.28.2.3	Use of the element **`<zoneRef>`**.	S1000D Chapter 3.9.5.2.1.9 – Common constructs – Preliminary requirements and requirements after job completion.	The project shall decide whether or not to use the element **`<zoneRef>`** and how to use it.
5.28.2.4	Use of the element **`<accessPointRef>`**.	S1000D Chapter 3.9.5.2.1.9 – Common constructs – Preliminary requirements and requirements after job completion.	The project shall decide whether or not to use the element **`<accessPointRef>`** and how to use it.
5.28.2.5	Use of the attribute **`lsarData`**.	S1000D Chapter 3.9.5.2.1.9 – Common constructs – Preliminary requirements and requirements after job completion.	The project shall decide whether or not to use the attribute **`lsarData`**.
5.28.2.6	Use of the element **`<workArea>`**.	S1000D Chapter 3.9.5.2.1.9 – Common constructs – Preliminary requirements and requirements after job completion.	The project shall decide whether or not to use the element **`<workArea>`** and how to use it. If used, projects shall decide which data module types will use it.

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TABLE C-IV. Project business rule decision points - Common constructs.

MIL-STD-3031 paragraph reference	MIL-STD-3031 paragraph title	S1000D chapter context	Text of project decision point
5.28.2.7	Use of the attributes startupDuration and closeupDuration.	S1000D Chapter 3.9.5.2.1.9 – Common constructs – Preliminary requirements and requirements after job completion.	The project shall decide if and how the attributes startupDuration and closeupDuration shall be used.
5.28.2.8	Use of the attribute **`reqCondCategory`**.	S1000D Chapter 3.9.5.2.1.9 – Common constructs – Preliminary requirements and requirements after job completion.	The project shall decide the use of the attribute **`reqCondCategory`** (refer to 5.48.1.25).
5.28.2.9	Use of list of the element **`<reqCondCircuitBreaker>`**.	S1000D Chapter 3.9.5.2.1.9 – Common constructs – Preliminary requirements and requirements after job completion.	The project shall decide if a circuit breaker list is to be considered as part of preliminary conditions and thus the use of the element or if the circuit breaker settings are part of the steps.
5.28.2.10	Values for the attribute **`personCategoryCode`**.	S1000D Chapter 3.9.5.2.1.9 – Common constructs – Preliminary requirements and requirements after job completion.	The project shall define a list of categories (e.g., Electrician, Propulsion Engineer, Maintainer).
5.28.2.11	Trade codes.	S1000D Chapter 3.9.5.2.1.9 – Common constructs – Preliminary requirements and requirements after job completion.	The project shall define a list of trades/trade codes.
5.28.2.12	Use of the element **`<reqTechInfo>`**.	S1000D Chapter 3.9.5.2.1.9 – Common constructs – Preliminary requirements and requirements after job completion.	The project shall decide whether or not to use the element **`<reqTechInfo>`**.
5.28.2.13	When to use the element **`<reqTechInfo>`**.	S1000D Chapter 3.9.5.2.1.9 – Common constructs – Preliminary requirements and requirements after job completion.	The project shall decide when to use the element **`<reqTechInfo>`**.
5.28.2.14	Listing of common and standard tools.	S1000D Chapter 3.9.5.2.1.9 – Common constructs – Preliminary requirements and requirements after job completion.	The project shall decide what types of common and standard tools or toolkits are to be identified and listed.

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TABLE C-IV. Project business rule decision points - Common constructs.

MIL-STD-3031 paragraph reference	MIL-STD-3031 paragraph title	S1000D chapter context	Text of project decision point
5.28.2.15	Use of the attribute **internalRefId** of element **<internalRef>** and the attribute **id** on element **<supportEquipDescr>**.	S1000D Chapter 3.9.5.2.1.9 – Common constructs – Preliminary requirements and requirements after job completion.	The project shall decide to make use of cross-references from the procedure to the support equipment listed in preliminary requirements. The attribute **internalRefId** on element **<internalRef>** and the attribute **id** on element **<supportEquipDescr>** are used to establish the link between the two and will guarantee consistent identification throughout the procedure. The use of cross-references is encouraged.
5.28.2.16	Use of identification.	S1000D Chapter 3.9.5.2.1.9 – Common constructs – Preliminary requirements and requirements after job completion.	The project shall decide which elements to use for identification and how to populate these elements.
5.28.2.17	Use of the attribute **internalRefId** of element **<internalRef>** and the attribute **id** on element **<supplyDescr>**.	S1000D Chapter 3.9.5.2.1.9 – Common constructs – Preliminary requirements and requirements after job completion.	The project shall decide to make use of cross-references from the Procedure to the supplies listed in preliminary requirements. The attribute **internalRefId** on element **<internalRef>** and the attribute **id** on element **<supplyDescr>** are used to establish the link between the two and will guarantee consistent identification throughout the procedure. The use of cross-references is encouraged.
5.28.2.18	Use of the attribute **internalRefId** of element **<internalRef>** and the attribute **id** on element **<spareDescr>**.	S1000D Chapter 3.9.5.2.1.9 – Common constructs – Preliminary requirements and requirements after job completion.	The project shall decide to make use of cross-references from the procedure to the spares listed in preliminary requirements. The attribute **internalRefId** on element **<internalRef>** and the attribute **id** on element **<spareDescr>** are used to establish the link between the two and will guarantee consistent identification throughout the procedure. The use of cross-references is encouraged.
5.29.2.1	Index.	S1000D Chapter 3.9.5.2.1.10 – Common constructs – Text elements.	The project shall decide whether an index is required and to what level indexing should be made.
5.29.2.2	Subscript.	S1000D Chapter 3.9.5.2.1.10 – Common constructs – Text elements.	The project shall determine the use of the element **<subScript>**.

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TABLE C-IV. Project business rule decision points - Common constructs.

MIL-STD-3031 paragraph reference	MIL-STD-3031 paragraph title	S1000D chapter context	Text of project decision point
5.29.2.3	Superscript.	S1000D Chapter 3.9.5.2.1.10 – Common constructs – Text elements.	The project shall determine the use of the element **`<superScript>`**.
5.29.2.4	Acronym.	S1000D Chapter 3.9.5.2.1.10 – Common constructs – Text elements.	The project shall decide the use of the optional element **`<acronym>`**.
5.29.2.5	Use of attribute **`verbatimStyle`**.	S1000D Chapter 3.9.5.2.1.10 – Common constructs – Text elements.	The project shall decide the use of the available values for the attribute **`verbatimStyle`** (refer to 5.48.1.40) and allocate suitable definitions to them in the project or organization business rules.
5.29.2.6	Types of inline significant data to markup.	S1000D Chapter 3.9.5.2.1.10 – Common constructs – Text elements.	If using paragraph significant data markup, the project shall decide which types of data to mark up and in what contexts. Refer to 5.48.1.30 for values for the attribute **`significantParaDataType`**.
5.29.2.7	Level of implementation.	S1000D Chapter 3.9.5.2.1.10 – Common constructs – Text elements.	The project shall decide whether to use quantity data markup and to what extent it is used.
5.29.2.8	Types of quantity data to markup.	S1000D Chapter 3.9.5.2.1.10 – Common constructs – Text elements.	If using quantity data markup, the project shall decide which types of data to mark up and in what contexts.
5.29.2.9	Use of unit of measure.	S1000D Chapter 3.9.5.2.1.10 – Common constructs – Text elements.	If using the value and tolerance decomposition, the project shall decide at which level of the markup that the unit of measure is to be applied.
5.29.2.10	Types of unit of measure.	S1000D Chapter 3.9.5.2.1.10 – Common constructs – Text elements.	If using the value and tolerance decomposition, the project shall decide which unit of measure types to allow.
5.29.2.11	Circuit breaker.	S1000D Chapter 3.9.5.2.1.10 – Common constructs – Text elements.	The project shall decide if a circuit breaker list is to be considered as part of preliminary conditions and thus the use of the element **`<reqCondCircuitBreaker>`** or if the circuit breaker settings are part of the steps. In the latter , the element **`<circuitBreakerDescrGroup>`** in steps content can be used.

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TABLE C-IV. Project business rule decision points - Common constructs.

MIL-STD-3031 paragraph reference	MIL-STD-3031 paragraph title	S1000D chapter context	Text of project decision point
5.29.2.12	Circuit breaker attributes.	S1000D Chapter 3.9.5.2.1.10 – Common constructs – Text elements.	The project shall decide whether to use the attributes circuitBreakerAction and checkSum. If the attribute **`checkSum`** is used, the project shall decide how it is to be populated. If the attribute **`circuitBreakerAction`** is used, the project shall establish writing rules to ensure that authors will be consistent in paragraph text and the value of the attribute itself.
5.29.2.13	Zones and access points.	S1000D Chapter 3.9.5.2.1.10 – Common constructs – Text elements.	The project shall decide whether or not to use the element **`<zoneRef>`** and the element **`<accessPointRef>`**.
5.29.2.14	Footnote marker type.	S1000D Chapter 3.9.5.2.1.10 – Common constructs – Text elements.	The project shall determine the type of footnote marker to be used.
5.29.2.15	Use of the attribute **`controlIndicatorNumber`**.	S1000D Chapter 3.9.5.2.1.10 – Common constructs – Text elements.	The project shall decide whether or not to use the attribute **`controlIndicatorNumber`**.

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TABLE C-V. Project business rule decision points - Content section, schema specific.

MIL-STD-3031 paragraph reference	MIL-STD-3031 paragraph title	S1000D chapter context	Text of project decision point
5.32.2.1	Single subparagraphs.	S1000D Chapter 3.9.5.2.2 – Content section – Descriptive information.	The schema allows for a single subparagraph under a parent. The project shall decide whether to allow this breakdown in their descriptive data modules or to insist on a minimum of two subparagraphs.
5.33.2.1	Use of the optional element **`<commonInfo>`**.	S1000D Chapter 3.9.5.2.3 – Content section – Procedural information.	The project shall decide whether or not to use the element **`<commonInfo>`**, when to use the element, and give guidance and rules that will ensure it is consistently used.
5.33.2.2	Check.	S1000D Chapter 3.9.5.2.3 – Content section – Procedural information.	The project shall decide whether or not to use the attribute **`independentCheck`** and how to use it.
5.33.2.3	Skill levels.	S1000D Chapter 3.9.5.2.3 – Content section – Procedural information.	The project shall decide whether or not to use the attribute **`skillLevelCode`** and how to use it.
5.33.2.4	Maximum number of step levels.	S1000D Chapter 3.9.5.2.3 – Content section – Procedural information.	The project shall decide on the maximum step levels allowed.
5.33.2.5	Use of single sub-step.	S1000D Chapter 3.9.5.2.3 – Content section – Procedural information.	The schema allows for a single sub-step under a parent. The project shall decide whether to allow this breakdown in their procedural data modules or to insist on a minimum of two sub-steps.
5.34.2.1	Use of correlation.	S1000D Chapter 3.9.5.2.4 – Content section – Fault information.	The project shall decide whether to use the correlated fault concept or not.
5.34.2.2	Correlated fault messages and warnings.	S1000D Chapter 3.9.5.2.4 – Content section – Fault information.	The project shall decide how to populate element **`<warningMalfunction>`**, element **`<assocWarningMalfunction>`**, and element **`<bitMessage>`** when using the correlated fault concept.
5.34.2.3	Population of detection and description information elements.	S1000D Chapter 3.9.5.2.4 – Content section – Fault information.	The project shall decide whether or not the repetition of the detection and description information for the basic fault which has been correlated (element **`<faultDescr>`** and element **`<detectionInfo>`**) is used.

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TABLE C-V. Project business rule decision points - Content section, schema specific.

MIL-STD-3031 paragraph reference	MIL-STD-3031 paragraph title	S1000D chapter context	Text of project decision point
5.34.2.4	Single fault isolation data module.	S1000D Chapter 3.9.5.2.4 – Content section – Fault information.	The project shall decide whether all isolation procedures should be kept in a single data module for an item or fault or whether to refer out to other data modules.
5.34.2.5	Use of attribute **skillLevelCode**.	S1000D Chapter 3.9.5.2.4 – Content section – Fault information.	The project shall decide whether or not to use the attribute **skillLevelCode** in the element **<isolationProcedure>**, the element **<isolationStep>**, and the element **<isolationProcedureEnd>**. Refer to 5.48.1.31.
5.34.2.6	Use of attribute **independentCheck**.	S1000D Chapter 3.9.5.2.4 – Content section – Fault information.	The project shall decide whether or not to use the attribute **independentCheck** in the element **<isolationProcedure>**, the element **<isolationStep>**, and the element **<isolationProcedureEnd>**.
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5.35.2.2	Use of the attribute **skilllLevelCode**.	S1000D Chapter 3.9.5.2.5 – Content section – Maintenance planning information.	The project shall decide whether or not to use the attribute **skillLevelCode**. Refer to 5.48.1.31**Error! Reference source not found.**.
5.35.2.3	Use of the element **<commonInfo>**.	S1000D Chapter 3.9.5.2.5 – Content section – Maintenance planning information.	The project shall decide whether or not to use this element.
5.35.2.4	Use of the element **<typeDesignation>**.	S1000D Chapter 3.9.5.2.5 – Content section – Maintenance planning information.	The project shall decide whether or not the element **<typeDesignation>** shall be used. If used, it shall be used consistently throughout the MAC.
5.36.2.1	Skill level.	S1000D Chapter 3.9.5.2.6 – Content section – Crew/Operator information.	The project shall decide whether or not to use the attribute **skillLevelCode**. Refer to -**Error! Reference source not found.**.
5.36.2.2	Special conditions.	S1000D Chapter 3.9.5.2.6 – Content section – Crew/Operator information.	The project shall decide whether or not to use the attribute **crewStepCondition**.

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TABLE C-V. Project business rule decision points - Content section, schema specific.

MIL-STD-3031 paragraph reference	MIL-STD-3031 paragraph title	S1000D chapter context	Text of project decision point
5.36.2.3	Check.	S1000D Chapter 3.9.5.2.6 – Content section – Crew/Operator information.	The project shall decide whether or not to use the attribute **`independentCheck`**.
5.36.2.4	Use of the attribute **`keepWithNext`**.	S1000D Chapter 3.9.5.2.6 – Content section – Crew/Operator information.	The project shall decide whether and how to use the attribute **`keepWithNext`** or not.
5.36.2.5	Use of crew member types.	S1000D Chapter 3.9.5.2.6 – Content section – Crew/Operator information.	The project shall define needed values for the attribute **`crewMemberType`**. Refer to 5.48.1.9.
5.37.2.1	Item sequence number attributes.	S1000D Chapter 3.9.5.2.7 – Content section – Parts information.	The project shall decide the use of the optional attributes for the element **`<itemSequenceNumber>`**.
5.37.2.2	File identifier.	S1000D Chapter 3.9.5.2.7 – Content section – Parts information.	The project shall decide use of the optional file identifier element **`<fileIdent>`**.
5.37.2.3	Unit of issue.	S1000D Chapter 3.9.5.2.7 – Content section – Parts information.	The project shall decide use of the optional element **`<unitOfIssue>`**.
5.37.2.4	Unit of issue qualification segment.	S1000D Chapter 3.9.5.2.7 – Content section – Parts information.	The project shall decide use of the optional element **`<unitOfIssueQualificationSegment>`**.
5.37.2.5	Use of the element **`<descrForItem>`**	S1000D Chapter 3.9.5.2.7 – Content section – Parts information.	The project shall decide which project-specific values are needed, if any. The values shall be documented in the project business rules and BREX.
5.37.2.6	Unit of measure.	S1000D Chapter 3.9.5.2.7 – Content section – Parts information.	The project shall decide the list of allowable values for the attribute **`unitOfMeasure`**.
5.37.2.7	Select or manufacture from range.	S1000D Chapter 3.9.5.2.7 – Content section – Parts information.	The project shall decide the list of allowable values for the element **`<selectOrManufactureFromIdent>`**.
5.37.2.8	Source, maintenance and recoverability.	S1000D Chapter 3.9.5.2.7 – Content section – Parts information.	The project shall decide whether or not to use the sixth position of the SMR code. If used, the allowable values for the sixth character of the SMR code shall comply with the service option codes defined in AR 700-82..

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TABLE C-V. Project business rule decision points - Content section, schema specific.

MIL-STD-3031 paragraph reference	MIL-STD-3031 paragraph title	S1000D chapter context	Text of project decision point
5.37.2.9	Model version.	S1000D Chapter 3.9.5.2.7 – Content section – Parts information.	The project shall decide the list of allowable values for the element **`<modelVersion>`**.
5.37.2.10	Effectivity.	S1000D Chapter 3.9.5.2.7 – Content section – Parts information.	The project shall decide the list of allowable values for unit/engine numbers.
5.37.2.11	Hotspots mechanism.	S1000D Chapter 3.9.5.2.7 – Content section – Parts information.	The project shall decide if the generic hotspots mechanism is addressed within the IPD data module content.
5.38.2.1	Use of the wiring data module.	S1000D Chapter 3.9.5.2.9 – Content section – Wiring information (and all sub-chapters).	The project may elect to use the wiring data module. If so, the project is required to coordinate efforts, including related business rules, with LOGSA.
5.39.2.1	Use of the process data module.	S1000D Chapter 3.9.5.2.10 – Content section – Process data module.	The project shall decide when to use the process data module.
5.39.2.2	Level of context filtering.	S1000D Chapter 3.9.5.2.10 – Content section – Process data module.	The project shall decide the level at which to apply applicability for context filtering purposes.
5.39.2.3	Model structure or expression.	S1000D Chapter 3.9.5.2.10 – Content section – Process data module.	The project shall decide whether to use the applicability model structure for configuration items and applicability expressions for dynamic variables only or use the applicability expressions for both configuration items and dynamic variables.
5.39.2.4	Check.	S1000D Chapter 3.9.5.2.10 – Content section – Process data module.	The project shall decide on the use of the element **`<dmSeq>`** and the attribute **`checkQualification`** to indicate that the whole sequence shall be checked by a supervisor with a given qualification.
5.39.2.5	Skill level.	S1000D Chapter 3.9.5.2.10 – Content section – Process data module.	The project shall decide when the attribute **`skillLevelCode`** on element **`<dmSeq>`** is to be used.
5.39.2.6	Use of alternatives.	S1000D Chapter 3.9.5.2.10 – Content section – Process data module.	The project shall decide whether to use the alternative nodes construct or not.
5.39.2.7	Use of loops.	S1000D Chapter 3.9.5.2.10 – Content section – Process data module.	The project shall decide where and when to use the loop construct.

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TABLE C-V. Project business rule decision points - Content section, schema specific.

MIL-STD-3031 paragraph reference	MIL-STD-3031 paragraph title	S1000D chapter context	Text of project decision point
5.39.2.8	Dialogs associated with variables.	S1000D Chapter 3.9.5.2.10 – Content section – Process data module.	The project shall decide if they will provide dialogs for variables in the variable declaration markup or author explicit dialogs whenever a variable in an expression might not have a value.
5.39.2.9	Menu vs. **`<userEntry>`** dialogs.	S1000D Chapter 3.9.5.2.10 – Content section – Process data module.	The project shall decide when to use menu vs. fill-in type dialogs.
5.39.2.10	Dialog defaults.	S1000D Chapter 3.9.5.2.10 – Content section – Process data module.	The project shall decide whether or not to use default choices in menus and/or default values in **`<userEntry>`** dialogs.
5.39.2.11	Variable naming and typing.	S1000D Chapter 3.9.5.2.10 – Content section – Process data module.	The project shall determine authoring guidance about variable naming and typing.
5.39.2.12	Results receive method.	S1000D Chapter 3.9.5.2.10 – Content section – Process data module.	The project shall determine a consistent method of tagging variables being passed using element **`<receiveByName>`** and element **`<receiveByPosition>`**.
5.40.2.1	Use of technical information repository.	S1000D Chapter 3.9.5.2.11 Content section – Technical information repository.	The project shall decide whether or not to require the delivery of technical information repository data modules (as additional data).
5.42.2.1	Use of learning data modules.	S1000D Chapter 3.9.5.2.13 – Content section – Learning data modules.	The project shall decide whether or not to use learning data modules.
5.42.2.2	Use of the available branches.	S1000D Chapter 3.9.5.2.13 – Content section – Learning data modules.	If learning data modules are used, the project shall decide which of the five available branches is most appropriate for the intended content.
5.43.2.1	Use of the attribute **`checkListCategory`**.	S1000D Chapter 3.9.5.2.14 – Maintenance Checklists and Inspections.	The project shall decide how to populate the enumerated attribute **`checkListCategory`** (refer to 5.48.1.5**Error! Reference source not found.**).
5.43.2.2	Checklist categories.	S1000D Chapter 3.9.5.2.14 – Maintenance Checklists and Inspections.	The project shall decide if business rules need to be created for which XML elements to use and how to markup checklists for each category type.

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TABLE C-V. Project business rule decision points - Content section, schema specific.

MIL-STD-3031 paragraph reference	MIL-STD-3031 paragraph title	S1000D chapter context	Text of project decision point
5.43.2.3	Use of the element **<commonInfo>**.	S1000D Chapter 3.9.5.2.14 – Maintenance Checklists and Inspections.	The project shall decide if the element **<commonInfo>** is used in the checklist data module.
5.43.2.4	Use of the element **<preliminaryRqmts>**.	S1000D Chapter 3.9.5.2.14 – Maintenance Checklists and Inspections.	The project shall decide if the element **<preliminaryRqmts>** is used in the checklist data module.
5.43.2.5	Use of the element **<title>**.	S1000D Chapter 3.9.5.2.14 – Maintenance Checklists and Inspections.	The project shall decide if the element **<title>** is used in the checklist data module.
5.43.2.6	Use of the element **<checkListIntervals>**.	S1000D Chapter 3.9.5.2.14 – Maintenance Checklists and Inspections.	The project shall decide if the element **<checkListIntervals>** is used in the checklist data module.
5.43.2.7	Use of the element **<zoneRef>**.	S1000D Chapter 3.9.5.2.14 – Maintenance Checklists and Inspections.	The project shall decide if the element **<zoneRef>** is used in the checklist data module and how it should be populated.
5.43.2.8	Use of the element **<workArea>**.	S1000D Chapter 3.9.5.2.14 – Maintenance Checklists and Inspections.	The project shall decide if the element **<workArea>** is used in the checklist data module and how it should be populated.
5.43.2.9	Use of the optional child elements of <checkListItem>.	S1000D Chapter 3.9.5.2.14 – Maintenance Checklists and Inspections.	The project shall decide which elements within **<checkListItem>** are used and how they should be populated.
5.43.2.10	Use of the element **<itemNumbers>**.	S1000D Chapter 3.9.5.2.14 – Maintenance Checklists and Inspections.	The project shall decide if the element **<itemNumbers>** is used in the checklist data module and how it should be populated.
5.43.2.11	Use of the element **<threshold>**.	S1000D Chapter 3.9.5.2.14 – Maintenance Checklists and Inspections.	The project shall decide if the element **<threshold>** is used in the checklist data module and how it should be populated.
5.43.2.12	Use of the element **<equip>**.	S1000D Chapter 3.9.5.2.14 – Maintenance Checklists and Inspections.	The project shall decide if the element **<equip>** is used in the checklist data module and how it should be populated.
5.43.2.13	Use of the element **<name>**.	S1000D Chapter 3.9.5.2.14 – Maintenance Checklists and Inspections.	The project shall decide if the element **<name>** is used in the checklist data module and how it should be populated.

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TABLE C-V. Project business rule decision points - Content section, schema specific.

MIL-STD-3031 paragraph reference	MIL-STD-3031 paragraph title	S1000D chapter context	Text of project decision point
5.43.2.4	Use of the element **`<remarks>`**	S1000D Chapter 3.9.5.2.14 – Maintenance Checklists and Inspections.	The project shall decide if the element **`<remarks>`** is used in the Checklist Data Module and how it should be populated.

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TABLE C-VI. Project business rule decision points - Applicability, attribute valuess, & training.

MIL-STD-3031 paragraph reference	MIL-STD-3031 paragraph title	S1000D chapter context	Text of project decision point
5.44.2.1	Applicability strategy.	S1000D Chapter 3.9.5.3 – Data modules – Applicability.	The project shall determine the use of applicability and describe that approach in the business rules.
5.44.2.2	Population or generation of element **`<displayText>`**.	S1000D Chapter 3.9.5.3 – Data modules – Applicability.	If using the human readable branch of applicability, the project shall decide whether the element **`<displayText>`** is populated by the technical author or generated from the computable branch or some other source.
5.44.2.3	Use of attribute **`applicDisplayClass`**.	S1000D Chapter 3.9.5.3 – Data modules – Applicability.	If using the computable applicability annotation branch, the project shall decide whether to use the attribute **`applicDisplayClass`**. If the attribute **`applicDisplayClass`** is used, the allowable values and desired format for each value shall be documented in the project business rules.
5.44.2.4	Use of textual applicability annotations.	S1000D Chapter 3.9.5.3 – Data modules – Applicability.	If using the computable applicability annotation branch, the project shall decide if textual applicability annotations are allowed in the element **`<assert>`** or if every element **`<assert>`** should reference a declared product attribute or condition.
5.44.2.5	Consistent population.	S1000D Chapter 3.9.5.3 – Data modules – Applicability.	The project shall decide on the population of the elements and attributes of applicability and shall then enforce its consistency.
5.44.2.6	Use of attribute **`applicConfiguration`**.	S1000D Chapter 3.9.5.3 – Data modules – Applicability.	The project shall determine if the optional attribute **`applicConfiguration`** on element **`<applic>`** will be used for IPD data modules to qualify the type of applicability for a given part.
5.45.2.1	Use of pattern, enumeration, and open text.	S1000D Chapter 3.9.5.3.1 – Applicability – Applicability cross-reference table.	Projects defining product attributes shall decide whether to specify the allowable values for a product attribute achieved by using a pattern, enumeration, or both or to allow open text by not using pattern and enumeration.

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TABLE C-VI. Project business rule decision points - Applicability, attribute valuess, & training.

MIL-STD-3031 paragraph reference	MIL-STD-3031 paragraph title	S1000D chapter context	Text of project decision point
5.45.2.2	Method of defining multiple values or ranges.	S1000D Chapter 3.9.5.3.1 – Applicability – Applicability cross-reference table.	If defining product attributes which contain multiple enumeration values or ranges, the project shall decide whether to use a single element **`<enumeration>`** containing the entire set or to use multiple elements **`<enumeration>`** which each contain only one value or range.
5.45.2.3	Use of display text.	S1000D Chapter 3.9.5.3.1 – Applicability – Applicability cross-reference table.	Projects defining product attributes shall decide whether to fill the display text (element **`<displayName>`**).
5.46.2.1	Use of conditions cross-reference table.	S1000D Chapter 3.9.5.3.2 – Applicability – Conditions cross-reference table.	The project shall decide whether to develop and deliver conditions cross reference table(s).
5.46.2.2	Use of multiple tables.	S1000D Chapter 3.9.5.3.2 – Applicability – Conditions cross-reference table.	If used, the project shall decide whether to create one single technical conditions cross-reference table data module or several cross-reference table data modules divided by some logical criteria.
5.46.2.3	Use of attribute **`valuePattern`**.	S1000D Chapter 3.9.5.3.2 – Applicability – Conditions cross-reference table.	A project defining conditions shall decide whether to further specify the allowable values for a condition type using the attribute **`valuePattern`** in addition to the mandatory element **`<enumeration>`**.
5.46.2.4	Method of defining multiple values or ranges.	S1000D Chapter 3.9.5.3.2 – Applicability – Conditions cross-reference table.	A project defining product attributes which contain multiple enumeration values or ranges shall decide whether to use a single element **`<enumeration>`** containing the entire set or to use multiple elements **`<enumeration>`** which each contain only one value or range.
5.46.2.5	Use of display text.	S1000D Chapter 3.9.5.3.2 – Applicability – Conditions cross-reference table.	Projects defining conditions shall decide whether to fill the display text (element **`<displayName>`**).
5.47.2.1	Use of the Product Cross-reference Table (PCT).	S1000D Chapter 3.9.5.3.3 – Applicability – Product cross reference table.	The project shall decide whether to develop and deliver PCT data modules. If used, the project shall decide which product sets are referenced in the PCT.

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TABLE C-VI. Project business rule decision points - Applicability, attribute valuess, & training.

MIL-STD-3031 paragraph reference	MIL-STD-3031 paragraph title	S1000D chapter context	Text of project decision point
5.47.2.2	Product attributes and conditions to include.	S1000D Chapter 3.9.5.3.3 – Applicability – Product cross reference table.	A project using the PCT shall decide which product attributes and conditions to include in the PCT. Conditions that represent operational or environmental properties will usually not be included in the PCT as they are not associated with a product instance.
5.48.2.1	Application of project specific values.	S1000D Chapter 3.9.6.1 – Authoring – Project configurable attributes.	The project shall decide which project specific definitions of attribute values are needed. The project definitions shall be established and documented in the project business rules.
5.49.2.1	Use of project specific values.	S1000D Chapter 3.9.6.2 – Attributes – Fixed Values.	The project shall decide if any project specific additions of attribute values are needed. If needed, the project definitions shall be established and made known to anyone who will need the definitions to be able to interpret the produced information properly.
5.50.2.1	Scope information.	S1000D Chapter 3.9.7 – Authoring – Human performance technology and training.	The project shall decide on the scope of training information provided.
5.50.2.2	Presentation.	S1000D Chapter 3.9.7 – Authoring – Human performance technology and training.	The project shall make decisions concerning issues related to presentation of training information.
5.50.2.3	Scope of preplanning.	S1000D Chapter 3.9.7 – Authoring – Human performance technology and training.	The project shall determine the scope of the preplanning guidance.

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TABLE C-VII. Project business rule decision points - CSDB, DMC, ICN, & DM lists.

MIL-STD-3031 paragraph reference	MIL-STD-3031 paragraph title	S1000D chapter context	Text of project decision point
5.54.2.1	Data module coding strategy.	S1000D Chapter 4.3 – Information management – Data module code.	The project shall document the data module coding strategy which shall consist of all business rules associated with data module coding.
5.55.2.1	Allocation of model identification code.	S1000D Chapter 4.3.1 – Data module code – Model identification code.	The project shall decide on which model identification codes to use for the project.
5.55.2.2	Use of one or several model identification codes.	S1000D Chapter 4.3.1 – Data module code – Model identification code.	The project shall decide whether to allow the use of one or several model identification codes.
5.55.2.3	Model identification code.	S1000D Chapter 4.3.1 – Data module code – Model identification code.	The project shall decide whether to use the end item UOC as part of the model identification code.
5.55.2.4	Model identification structure.	S1000D Chapter 4.3.1 – Data module code – Model identification code.	The project shall decide on, and document, the model identification structure used on a project (e.g., engines, common systems, etc.).
5.56.2.1	System difference code.	S1000D Chapter 4.3.2 – Data module code – System difference code.	The project shall determine how to populate the system difference code and, if using Logistics Product Data (LPD) or a comparable process, define the relationship to LPD.
5.56.2.2	Usable On Code (UOC) as system difference code.	S1000D Chapter 4.3.2 – Data module code – System difference code.	The project shall decide whether or not to use UOC as the system difference code.
5.57.2.1	Material item category code.	S1000D Chapter 4.3.3 – Data module code – Standard numbering system.	The project shall determine the use of the material item category code (to indicate different types of SNS applicable to an individual project).
5.57.2.2	Sub-subsystem Standard Numbering System (SNS) allocations.	S1000D Chapter 4.3.3 – Data module code – Standard numbering system.	The project shall determine the sub-subsystem SNS allocations.
5.57.2.3	Unit or assembly portion of the Data Module Code (DMC).	S1000D Chapter 4.3.3 – Data module code – Standard numbering system.	The allocation of the unit or assembly portion of the DMC shall be clearly defined in that project's business rules.
5.57.2.4	Number of characters in unit or assembly.	S1000D Chapter 4.3.3 – Data module code – Standard numbering system.	The project shall decide if 2 or 4 characters will be used for the unit or assembly portion of the DMC.

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TABLE C-VII. Project business rule decision points - CSDB, DMC, ICN, & DM lists.

MIL-STD-3031 paragraph reference	MIL-STD-3031 paragraph title	S1000D chapter context	Text of project decision point
5.58.2.1	Alternate use of the disassembly code.	S1000D Chapter 4.3.4 – Data module code – Disassembly code.	Projects shall determine if and when the alternate use of disassembly code addressed in **Error! Reference source not found.** is used.
5.58.2.2	Disassembly code linking.	S1000D Chapter 4.3.4 – Data module code – Disassembly code.	The project shall determine if the disassembly code should be linked to figures in IPD.
5.59.2.1	Disassembly Code Variant (DCV).	S1000D Chapter 4.3.5 – Data module code – Disassembly code variant.	The project shall decide whether to use one, two or three characters for the disassembly code variant.
5.62.2.1	Allocation of the item location code "T."	S1000D Chapter 4.3.8 – Data module code – Item location code.	The project shall decide to use the item location code "T" or to use the learn type information.
5.63.2.1	Responsible Partner Company (RPC).	S1000D Chapter 4.4 – Information management – Information Control Number.	The project shall determine how to populate RPC in an ICN for model identification code based ICNs.
5.63.2.2	Commercial and Government Entity Codes (CAGECs) for originator.	S1000D Chapter 4.4 – Information management – Information Control Number.	The project shall define a list of valid CAGECs for originator in ICN.
5.63.2.3	Illustration variant code.	S1000D Chapter 4.4 – Information management – Information Control Number.	The project shall define the use of the illustration variant code.
5.63.2.4	Issue number.	S1000D Chapter 4.4 – Information management – Information Control Number.	The project shall define the use of the issue number.
5.63.2.5	Security classification.	S1000D Chapter 4.4 – Information management – Information Control Number.	The project shall decide whether to use the project security classifications or whether the originator's classifications are allowed to be used.
5.64.2.1	Data Module Requirements List (DMRL) format.	S1000D Chapter 4.5.1 – Data module lists – Data module requirement list.	The project shall decide if the DMRL will be prepared and delivered as recommended using the S1000D DMRL schema or if some alternative, such as a spreadsheet, will be used.

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TABLE C-VII. Project business rule decision points - CSDB, DMC, ICN, & DM lists.

MIL-STD-3031 paragraph reference	MIL-STD-3031 paragraph title	S1000D chapter context	Text of project decision point
5.64.2.2	Commercial and Government Entity (CAGE) codes for Data Module Requirements List (DMRL) senders.	S1000D Chapter 4.5.1 – Data module lists – Data module requirement list.	The project shall define the valid CAGE codes for DMRL senders for a project.
5.64.2.3	Issue date.	S1000D Chapter 4.5.1 – Data module lists – Data module requirement list.	The project shall decide whether the issue date of a DMRL should be the input date (i.e., the release to CSDB date), the cut-off date for the information, the planning date or some other more appropriate date.
5.64.2.4	Use of data restriction.	S1000D Chapter 4.5.1 – Data module lists – Data module requirement list.	The project shall decide whether or not to use the element **`<dataRestriction>`** in the DMRL status section.
5.64.2.5	Use of reference.	S1000D Chapter 4.5.1 – Data module lists – Data module requirement list.	The project shall decide whether or not to use the element **`<dmlRef>`** in the DMRL status section.
5.64.2.6	Use of data module code extension.	S1000D Chapter 4.5.1 – Data module lists – Data module requirement list.	The project shall decide whether or not to use the element **`<identExtension>`** in the DMRL.
5.64.2.7	Use of data module issue number.	S1000D Chapter 4.5.1 – Data module lists – Data module requirement list.	The project shall decide whether or not to use the element **`<issueInfo>`** in the DMRL.
5.64.2.8	Use of data module requirement answer.	S1000D Chapter 4.5.1 – Data module lists – Data module requirement list.	The project shall decide whether or not to use the element **`<answer>`** in the DMRL.
5.64.2.9	Use of data module requirement remarks.	S1000D Chapter 4.5.1 – Data module lists – Data module requirement list.	The project shall decide whether or not to use the element **`<remarks>`** in the DMRL.
5.64.2.10	Deleted Data Modules (DMs).	S1000D Chapter 4.5.1 – Data module lists – Data module requirement list.	The project shall specify whether deleted data modules should appear in the DMRL (value "d" of attribute **`dmEntryType`** in element **`<dmEntry>`**) or if the entries should be deleted from the DMRL entirely.
5.65.2.1	Data module issues.	S1000D Chapter 4.5.2 – Data module lists – CSDB status list.	The project shall specify in the content of the CSL whether to list all issues of data modules or just the latest issues.

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TABLE C-VII. Project business rule decision points - CSDB, DMC, ICN, & DM lists.

MIL-STD-3031 paragraph reference	MIL-STD-3031 paragraph title	S1000D chapter context	Text of project decision point
5.65.2.2	CSDB (Common Source Data Base) Status List (CSL) delivery.	S1000D Chapter 4.5.2 – Data module lists – CSDB status list.	The project shall decide if CSL deliveries are required at intervals in addition to when data is delivered (e.g., weekly, monthly, etc.).

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TABLE C-VIII. Project business rule decision points - Comment, version control, and interchange.

MIL-STD-3031 paragraph reference	MIL-STD-3031 paragraph title	S1000D chapter context	Text of project decision point
5.66.2.1	Use of comment.	S1000D Chapter 4.6 – Information management – Comment.	The project shall specify whether comments should be used.
5.66.2.2	Workflow.	S1000D Chapter 4.6 – Information management – Comment.	The project shall specify workflow for commenting.
5.66.2.3	Model information code.	S1000D Chapter 4.6 – Information management – Comment.	The project shall specify how to populate model identification code in comments.
5.66.2.4	Commercial and Government Entity Codes (CAGECs) for issuing authority.	S1000D Chapter 4.6 – Information management – Comment.	The project shall define the valid CAGECs for the issuing authority of comments.
5.66.2.5	Use of titles.	S1000D Chapter 4.6 – Information management – Comment.	The project shall specify whether comment titles are required or not. If required, the project shall provide rules for establishing titles.
5.66.2.6	Originator.	S1000D Chapter 4.6 – Information management – Comment.	The project shall specify rules for population of **`<originator>`**, accounting for any data protection act issues with respect to content that includes names, phone numbers, etc.
5.66.2.7	Data restrictions.	S1000D Chapter 4.6 – Information management – Comment.	The project shall specify whether **`<dataRestriction>`** is required or not.
5.66.2.8	Priority codes.	S1000D Chapter 4.6 – Information management – Comment.	The project shall define the rules for priority codes.
5.66.2.9	Use of response codes.	S1000D Chapter 4.6 – Information management – Comment.	The project shall specify whether response codes should be used.
5.66.2.10	Rules for response codes.	S1000D Chapter 4.6 – Information management – Comment.	The project shall define the rules for response codes.
5.66.2.11	Remarks.	S1000D Chapter 4.6 – Information management – Comment.	The project shall specify whether remarks should be used.
5.66.2.12	References to attachments.	S1000D Chapter 4.6 – Information management – Comment.	The project shall specify whether reference to attachment should be used.

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TABLE C-VIII. Project business rule decision points - Comment, version control, and interchange.

MIL-STD-3031 paragraph reference	MIL-STD-3031 paragraph title	S1000D chapter context	Text of project decision point
5.66.2.13	Allowed file types.	S1000D Chapter 4.6 – Information management – Comment.	The project shall determine the allowed file types that are supported by the viewing systems.
5.67.2.1	Data module revisions.	S1000D Chapter 4.7 – Information management – Version control of data modules.	The project shall decide when data modules will be revised.
5.67.2.2	Delivery of inwork Data Modules (DMs).	S1000D Chapter 4.7 – Information management – Version control of data modules.	The project shall specify whether inwork data modules should be delivered.
5.68.2.1	File formats.	S1000D Chapter 4.8 – Information management – Interchange of data modules.	The project shall define which packaging file formats may be used to deliver change packages between vendor and customer.
5.68.2.2	Procedures for data exchange.	S1000D Chapter 4.8 – Information management – Interchange of data modules.	The project shall define the procedures for exchange of deliverables (e.g., periodicities, media, etc.).
5.68.2.3	Inclusion of graphics.	S1000D Chapter 4.8 – Information management – Interchange of data modules.	The project shall specify whether all graphics referenced have to be included in the exchange package.
5.68.2.4	Non-sequential numbering.	S1000D Chapter 4.8 – Information management – Interchange of data modules.	The project shall specify whether numerical gaps are allowed in data modules and/or illustration numbering, or if non-sequential numbering is allowed.
5.68.2.5	Mixed data.	S1000D Chapter 4.8 – Information management – Interchange of data modules.	The project shall specify whether the content of exchange packages can include mixed data or if it should be limited to only content-related deliverables. It is conceivable that vendors include other documents (e.g., schedules, invoices, etc.) in exchange packages.
5.68.2.6	Use of photographs.	S1000D Chapter 4.8 – Information management – Interchange of data modules.	The project shall decide for what purposes photographs will be used, if at all.
5.68.2.7	Use of multimedia formats.	S1000D Chapter 4.8 – Information management – Interchange of data modules.	The project shall decide which multimedia formats will be used, if any at all.

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TABLE C-VIII. Project business rule decision points - Comment, version control, and interchange.

MIL-STD-3031 paragraph reference	MIL-STD-3031 paragraph title	S1000D chapter context	Text of project decision point
5.68.2.8	Raster graphic resolution.	S1000D Chapter 4.8 – Information management – Interchange of data modules.	The project shall decide the resolution to use for raster graphics.

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TABLE C-IX. Project business rule decision points - PM, BREX, & information management.

MIL-STD-3031 paragraph reference	MIL-STD-3031 paragraph title	S1000D chapter context	Text of project decision point
5.69.2.1	Volume.	S1000D Chapter 4.9.1 – Publication management – Publication module.	The project shall specify whether (and how) the attribute **volumeNumber** should be used in the element **<pubMedia>** in the publication module status section. A single volume (i.e., 1 CD or 1 DVD) is preferred.
5.69.2.2	Short publication module title.	S1000D Chapter 4.9.1 – Publication management – Publication module.	The project shall determine the use and population of the element **<shortPmTitle>**.
5.70.2.1	Applicability.	S1000D Chapter 4.9.2 – Publication management – Coding of publications.	The project shall specify whether applicability should be used in publication module status.
5.70.2.2	Publication number.	S1000D Chapter 4.9.2 – Publication management – Coding of publications.	The project shall document the method used for populating the attribute **pmNumber** for nested publication modules.
5.70.2.3	Nested publication module volume.	S1000D Chapter 4.9.2 – Publication management – Coding of publications.	The project shall determine the use of the attribute **pmVolume** for nested publication modules.
5.70.2.4	Chapter and sections identification	S1000D Chapter 4.9.2 – Publication management – Coding of publications.	Projects shall decide whether to use nested publications modules, **<pmEntry>**, or a combination to identify chapter and section content in publication modules.
5.71.2.1	Simplified Technical English.	S1000D Chapter 4.10 – Information management – Business rules exchange.	The project shall decide if Simplified Technical English is to be used in the narrative content of the BREX file.
5.72.2.1	Applicable sets of business rules.	S1000D Chapter 4.10.1 – Information Business rules exchange – Coding of BREX data modules.	The project shall decide which set or sets of business rules are allowed within the given project. Accordingly, it shall decide which BREX data module or modules will be used to reflect those business rules.
5.73.2.1	Notations.	S1000D Chapter 4.10.2 – Information Business rules exchange – The BREX data module.	The project may decide to exclude one or several of the notations (element **<notationRule>**) allowable by S1000D. These restrictions are to be included in the BREX data module.

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TABLE C-IX. Project business rule decision points - PM, BREX, & information management.

MIL-STD-3031 paragraph reference	MIL-STD-3031 paragraph title	S1000D chapter context	Text of project decision point
5.73.2.2	System documentation.	S1000D Chapter 4.10.2 – Information Business rules exchange – The BREX data module.	Projects shall document all applicable system (1st level breakdown) codes using the element **<snsSystem>**.
5.73.2.3	Subsystem documentation.	S1000D Chapter 4.10.2 – Information Business rules exchange – The BREX data module.	Projects shall document all applicable subsystem (2nd level breakdown) codes using the element **<snsSubSystem>**.
5.73.2.4	Sub-subsystem documentation.	S1000D Chapter 4.10.2 – Information Business rules exchange – The BREX data module.	Projects shall document all applicable sub-subsystem (3rd level breakdown) codes using the element **<snsSubSubSystem>**.
5.73.2.5	Assembly documentation.	S1000D Chapter 4.10.2 – Information Business rules exchange – The BREX data module.	Projects shall document all applicable assembly (4th level breakdown) codes using the element **<snsAssy>**.
5.74.2.1	Use of the process data module.	S1000D Chapter 4.11 – Information management – Process data module.	The project shall decide whether to use the process data module or not.
5.74.2.2	Variable naming conventions.	S1000D Chapter 4.11 – Information management – Process data module.	The project shall decide on a variable naming convention which will eliminate or lessen confusion surrounding process data module variables as different authors at possibly different sites create process data modules which will work together.
5.76.2.1	General use of paragraph significant data elements.	S1000D Chapter 4.13.1 – Optimizing and reuse – Paragraph significant data and quantity data.	The paragraph significant data elements are optional, and the project shall decide to use all or part of them, or not to use them.
5.77.2.1	Use of technical information repository.	S1000D Chapter 4.13.2 – Optimizing and reuse – Technical information repository data module.	The project shall decide whether or not to require the delivery of technical information repository data modules (as additional data).
5.78.2.1	Use of container data module.	S1000D Chapter 4.13.3– Optimizing and reuse – Container data module.	The project shall decide if container data modules are used.
5.78.2.2	Identification of container data module.	S1000D Chapter 4.13.3– Optimizing and reuse – Container data module.	The project shall choose the container identification method. The chosen method shall be used systematically.

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TABLE C-IX. Project business rule decision points - PM, BREX, & information management.

MIL-STD-3031 paragraph reference	MIL-STD-3031 paragraph title	S1000D chapter context	Text of project decision point
5.78.2.3	Use of applicability within container data module content.	S1000D Chapter 4.13.3– Optimizing and reuse – Container data module.	The project shall decide if applicability annotations are duplicated from the referenced data modules to the container data module or not.
5.79.2.1	Providing the human readable part of applicability.	S1000D Chapter 4.14 – Information management – Applicability.	The project shall decide whether to provide the human readable part of applicability or rely on the viewer to build the human readable part.
5.79.2.2	Level of applicability lifecycle.	S1000D Chapter 4.14 – Information management – Applicability.	The project shall decide to what level to implement the life cycle of applicability.
5.79.2.3	Product attribute, conditions naming and identification scheme.	S1000D Chapter 4.14 – Information management – Applicability.	If using the Applicability Cross-reference Table (ACT) and Conditions Cross-reference Table (CCT) data modules, the project shall define a consistent naming and identification scheme for product attributes and conditions.
5.79.2.4	Method of displaying invalid content.	S1000D Chapter 4.14 – Information management – Applicability.	The project shall specify the method that content is presented which is not valid for the current maintenance context.
5.79.2.5	Number of Applicability Cross-reference Table (ACT), Conditions Cross-reference Table (CCT), and Product Cross-reference Table (PCT) data module instances.	S1000D Chapter 4.14 – Information management – Applicability.	A project shall decide whether to provide one instance of each data module type or to segregate the project into multiple instances of each data module type, and the method for segregation.
5.80.2.1	Use of product attributes versus conditions.	S1000D Chapter 4.14.1 – Information management – Applicability cross-reference table.	The project shall decide what types of properties about the Product become product attributes (in the ACT data module) versus conditions (in the CCT data module).
5.80.2.2	Configuration management of product attributes.	S1000D Chapter 4.14.1 – Information management – Applicability cross-reference table.	The project shall decide to what extent they configuration manage and limit editing access to the product attributes. The modification of an existing product attribute can have a significant affect to existing data.

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TABLE C-IX. Project business rule decision points - PM, BREX, & information management.

MIL-STD-3031 paragraph reference	MIL-STD-3031 paragraph title	S1000D chapter context	Text of project decision point
5.81.2.1	Use of product attributes versus conditions.	S1000D Chapter 4.14.2 – Information management – Conditions cross-reference table.	The project shall decide what types of properties about the Product become product attributes (in the ACT data module) versus conditions (in the CCT data module).
5.81.2.2	Use of the pattern.	S1000D Chapter 4.14.2 – Information management – Conditions cross-reference table.	The project shall decide if enumeration provides enough information specifying the allowable values for a condition or whether the pattern is also needed.
5.81.2.3	Configuration management of the conditions.	S1000D Chapter 4.14.2 – Information management – Conditions cross-reference table.	The project shall decide to what extent they configuration manage and limit editing access to the conditions. The modification of an existing condition may have a very extensive affect to existing data.
5.81.2.4	Use of the incorporation list.	S1000D Chapter 4.14.2 – Information management – Conditions cross-reference table.	The project shall decide whether to use the incorporation status list.
5.82.2.1	Use of a published or a transient data module.	S1000D Chapter 4.14.3 – Information management – Products cross-reference table.	The project shall decide whether to publish a static issue of the data module or use the data module as a transient transfer mechanism between an external system and a viewer.
5.82.2.2	Scope of the product instances.	S1000D Chapter 4.14.3 – Information management – Products cross-reference table.	The project shall decide how many product instances are contained in a data module.
5.82.2.3	Configuration management of the product instances.	S1000D Chapter 4.14.3 – Information management – Products cross-reference table.	The project shall decide how to configuration manage the list of product instances and associated values for product attributes and conditions.

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TABLE C-X. Project business rule decision points - Content.

MIL-STD-3031 paragraph reference	MIL-STD-3031 paragraph title	S1000D chapter context	Text of project decision point
5.85.2.1	Types.	S1000D Chapter 5.2.1.1 – Common information sets – Crew/Operator information.	The project shall determine which optional operator instruction information sets apply.
5.85.3.2.1	Use of the technical information repository.	S1000D Chapter 5.2.1.1 – Common information sets – Crew/Operator information.	The project shall determine whether controls and indicators are prepared with descriptive DMs or technical information repository DMs.
5.85.3.2.2	Use of the tabular format.	S1000D Chapter 5.2.1.1 – Common information sets – Crew/Operator information.	If the descriptive data module method is selected, the project shall determine whether controls and indicators are prepared in a tabular format or in a narrative format (paragraphs and figures).
5.85.3.2.3	Multiple data modules.	S1000D Chapter 5.2.1.1 – Common information sets – Crew/Operator information.	If the technical information repository data module method is selected, the project shall decide whether one single data module or multiple data modules are used depending on the SNS.
5.85.3.2.4	Use of the control indicator number attribute.	S1000D Chapter 5.2.1.1 – Common information sets – Crew/Operator information.	If the technical information repository data module method is selected, the project shall decide whether or not to use the attribute **`controlIndicatorNumber`** when referring to the technical information repository (element **`<controlIndicatorRef>`**).
5.85.4.2.1	Optional siting features.	S1000D Chapter 5.2.1.1 – Common information sets – Crew/Operator information.	The project shall determine optional siting features.
5.85.4.2.2	Optional operating procedures.	S1000D Chapter 5.2.1.1 – Common information sets – Crew/Operator information.	The project shall decide if operating procedures containing the identification, loading, initializing, and downloading of applicable operational and diagnostic software shall be included.
5.85.7.2.1	Preparation instructions and information.	S1000D Chapter 5.2.1.1 – Common information sets – Crew/Operator information.	The project shall determine preparation instructions and information for stowage and decal/data plate guide(s).
5.86.4.2.1	References to Quality Assurance (QA).	S1000D Chapter 5.2.1.2 – Common information sets – Description and Operation.	The project shall determine if a reference shall be made to the pertinent QA or included directly (refer to **Error! Reference source not found.**).

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TABLE C-X. Project business rule decision points - Content.

MIL-STD-3031 paragraph reference	MIL-STD-3031 paragraph title	S1000D chapter context	Text of project decision point
5.86.4.2.2	Separate Hand Receipt.	S1000D Chapter 5.2.1.2 – Common information sets – Description and Operation.	The project shall determine if Hand Receipts will be part of the publications or referenced as a separate document.
5.86.6.2.1	DMWR/NWMR.	S1000D Chapter 5.2.1.2 – Common information sets – Description and Operation.	The project shall decide if DMWR/NMWR will include theory of operation data modules.
5.86.6.2.2	Introductory general information.	S1000D Chapter 5.2.1.2 – Common information sets – Description and Operation.	The project shall decide if introductory general information will precede the theory of operation narrative.
5.87.3.2.1	Other service upon receipt task.	S1000D Chapter 5.2.1.3.1 – Common information sets – Maintenance procedures.	The project shall determine if additional service upon receipt task data modules shall be developed.
5.87.6.2.1	Man-hours required.	S1000D Chapter 5.2.1.3.1 – Common information sets – Maintenance procedures.	The project shall determine if man-hours required to complete all prescribed lubrication services shall be included.
5.87.8.2.1	Cleaning information codes.	S1000D Chapter 5.2.1.3.1 – Common information sets – Maintenance procedures.	The project shall determine the information codes used for cleaning procedure data modules.
5.87.8.2.2	Additional maintenance task.	S1000D Chapter 5.2.1.3.1 – Common information sets – Maintenance procedures.	Additional maintenance task may be developed when the specific type of maintenance tasks are not covered as described. If additional maintenance tasks are used, proponent shall submit to LOGSA the requirements for this maintenance task type for possible incorporation within future revisions to this standard.
5.87.9.2.1	Follow-on maintenance.	S1000D Chapter 5.2.1.3.1 – Common information sets – Maintenance procedures.	The project shall decide what follow-on maintenance instructions will be prepared.
5.87.10.2.1	General maintenance instructions.	S1000D Chapter 5.2.1.3.1 – Common information sets – Maintenance procedures.	The project shall decide what general maintenance instructions will be prepared.
5.87.14.2.1	Overhaul Inspection Procedures (OIP) Data modules.	S1000D Chapter 5.2.1.3.1 – Common information sets – Maintenance procedures.	The project shall determine if and when OIP data modules shall be prepared.

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TABLE C-X. Project business rule decision points - Content.

MIL-STD-3031 paragraph reference	MIL-STD-3031 paragraph title	S1000D chapter context	Text of project decision point
5.87.15.2.1	Mobilization requirements.	S1000D Chapter 5.2.1.3.1 – Common information sets – Maintenance procedures.	The project shall determine if the modifications, deletions, or additions to the preshop analysis or overhaul procedures required during mobilization shall be included in the depot mobilization requirements information set.
5.87.22.2.1	Stand alone.	S1000D Chapter 5.2.1.3.1 – Common information sets – Maintenance procedures.	Maintenance/Demilitarization of Conventional and Chemical Ammunition information sets may be produced as either a stand-alone TM/IETP or as part of a more comprehensive publication. If this content is produced as a stand-alone publication, the chapter/section/paragraph numbering requirements apply. If the content is included in a publication with a larger scope, the content requirements apply but the chapter/section/paragraph numbering requirements do not.
5.87.22.2.2	PENTA-treated packaging.	S1000D Chapter 5.2.1.3.1 – Common information sets – Maintenance procedures.	The project shall determine the use of the PENTA-treated packing materials appendix.
5.87.22.2.3	Additional appendices.	S1000D Chapter 5.2.1.3.1 – Common information sets – Maintenance procedures.	The project shall determine the requirements for other data modules, if they exist.
5.87.22.2.4	Appendix E.	S1000D Chapter 5.2.1.3.1 – Common information sets – Maintenance procedures.	The project shall decide on the need for the Intraplant transfer equipment data module).
5.87.23.2.1	Stand alone.	S1000D Chapter 5.2.1.3.1 – Common information sets – Maintenance procedures.	Daily preventive maintenance checklist information sets may be produced as either a stand-alone TM/IETP or as part of a more comprehensive publication. If this content is produced as a stand-alone publication, the chapter/section/paragraph numbering requirements apply. If the content is included in a publication with a larger scope, the content requirements apply but the chapter/section/paragraph numbering requirements do not.
5.88.4.2.1	Troubleshooting index.	S1000D Chapter 5.2.1.3.2 – Common information sets – Fault isolation.	The project shall decide whether to prepare a malfunction index, a symptom index, or a system/subsystem index.

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TABLE C-X. Project business rule decision points - Content.

MIL-STD-3031 paragraph reference	MIL-STD-3031 paragraph title	S1000D chapter context	Text of project decision point
5.88.5.2.1	Preshop analysis format.	S1000D Chapter 5.2.1.3.2 – Common information sets – Fault isolation.	The project shall determine if the preshop analysis procedures shall be a narrative or be structured as a checklist.
5.88.6.2.1	Introduction.	S1000D Chapter 5.2.1.3.2 – Common information sets – Fault isolation.	The project shall determine when a component checklist introduction is required.
5.88.7.2.1	Introduction.	S1000D Chapter 5.2.1.3.2 – Common information sets – Fault isolation.	The project shall determine if and when an introduction to operational checkout is required.
5.88.7.2.2	Method.	S1000D Chapter 5.2.1.3.2 – Common information sets – Fault isolation.	The project shall determine the method of operational checkout procedures.
5.88.8.2.1	Introduction.	S1000D Chapter 5.2.1.3.2 – Common information sets – Fault isolation.	The project shall determine if and when troubleshooting procedures require an introduction.
5.88.8.2.2	Troubleshooting type.	S1000D Chapter 5.2.1.3.2 – Common information sets – Fault isolation.	The project shall determine which trouble shooting type to use for each troubleshooting procedure required.
5.88.8.2.3	Use of integrated system troubleshooting procedures.	S1000D Chapter 5.2.1.3.2 – Common information sets – Fault isolation.	The project shall determine if and when integrated system operational checkout and troubleshooting procedures shall be developed.
5.92.2.1	Data module size.	S1000D Chapter 5.2.1.4 – Common information sets – Wiring data.	The amount of wiring information that is prepared in a single data module is a project decision dependent on the complexity and quantity of the wiring information needed.
5.92.2.2	Single or multiple data modules.	S1000D Chapter 5.2.1.4 – Common information sets – Wiring data.	The required wiring information for introduction, wire ID, abbreviation, and wiring diagrams may be contained in a single or multiple data modules.
5.92.2.3	Use of the wiring data module.	S1000D Chapter 5.2.1.4 – Common information sets – Wiring data.	The project may elect to use the Wiring Data Module. If so, projects are required to coordinate efforts, including related business rules, with LOGSA.
5.93.3.1	Separate parts manual.	S1000D Chapter 5.2.1.5 – Common information sets – Illustrated parts data.	The project shall decide if they will produce a separate parts manual or include parts data within other publications.

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TABLE C-X. Project business rule decision points - Content.

MIL-STD-3031 paragraph reference	MIL-STD-3031 paragraph title	S1000D chapter context	Text of project decision point
5.93.4.2.1	Parts list illustration.	S1000D Chapter 5.2.1.5 – Common information sets – Illustrated parts data.	When specified by the acquiring activity, an indexed parts list illustration and legend shall be added to the end of the introduction. Complex weapon systems have numerous repair parts lists associated to the equipment and the illustration and legend assists in locating the repair parts information. The indexed parts list illustration shall provide an exploded view of the equipment with index numbers pointing to the major functional groups. The illustration shall have a legend that defines the item number, major functional group figure title and figure number.
5.93.5.2.1	Optional columns.	S1000D Chapter 5.2.1.5 – Common information sets – Illustrated parts data.	The project shall decide on the use of the following repair part list optional columns: Unit of Measure. The unit of measure for the item may be included. Unit of Issue. The unit of issue for the item may be included. Reference Designator. The reference designator for the item may be included. Next Higher Assembly. Information on the next higher assembly may be included. Parts Breakdown Reference. A reference to parts breakdown for the item may be included.
5.93.11.2.1	Cross reference index.	S1000D Chapter 5.2.1.5 – Common information sets – Illustrated parts data.	The project may decide to prepare a single Illustrated Parts Data Publication (IPDP) cross reference table with the IPDP in lieu of separate NSN, part number, and reference designator indices.
5.93.12.2.1	Components of End Item (COEI) method.	S1000D Chapter 5.2.1.5 – Common information sets – Illustrated parts data.	The project shall determine use of Method A or Method B for presenting COEI data.
5.93.13.2.1	Basic Issue Items (BII) method.	S1000D Chapter 5.2.1.5 – Common information sets – Illustrated parts data.	The project shall determine use of Method A or Method B for presenting BII data.
5.93.16.2.1	Mandatory replacement parts format.	S1000D Chapter 5.2.1.5 – Common information sets – Illustrated parts data.	The project shall determine if mandatory replacement parts shall be prepared as tables or if procedural step writing style will indicate the needed information.

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TABLE C-X. Project business rule decision points - Content.

MIL-STD-3031 paragraph reference	MIL-STD-3031 paragraph title	S1000D chapter context	Text of project decision point
5.93.18.2.1	Hand receipt data as part of a larger manual.	S1000D Chapter 5.2.1.5 – Common information sets – Illustrated parts data.	The project may decide to produce hand receipt data as a stand-alone manual or as part of a larger manual or IETP.
5.94.3.2.1	Maintenance Allocation Chart (MAC) nomenclature.	S1000D Chapter 5.2.1.6 – Common information sets – Maintenance planing information.	The project shall decide and document the official nomenclature for MAC functional groups.
5.94.3.2.2	Single Maintenance Allocation Chart (MAC) data module.	S1000D Chapter 5.2.1.6 – Common information sets – Maintenance planing information.	For IETP implementations, the project shall decide if, and how, the MAC is presented in segmented screen views. If the project decided to present segmented views, the MAC shall also be available to users as a single uninterrupted (scrollable) presentation.
5.97.1.2.1	Information codes.	S1000D Chapter 5.2.1.9 – Common information sets – Equipment information.	The project shall decide the appropriate information code(s) to be used with Equipment/user fitting instructions content.
5.97.2.2.1	Data module types and information codes.	S1000D Chapter 5.2.1.9 – Common information sets – Equipment information.	The project shall decide the data module types (typically procedural) and information codes to use when preparing auxiliary equipment maintenance.
5.97.3.2.1	Determination of supplemental data.	S1000D Chapter 5.2.1.9 – Common information sets – Equipment information.	The project shall determine if and what COTS supplemental data is required for COTS manuals.
5.97.3.2.2	Identifying Technical Publication Sheet.	S1000D Chapter 5.2.1.9 – Common information sets – Equipment information.	The project shall determine if the contractor shall prepare an Identifying Technical Publication Sheet.
5.97.3.2.3	Cover contents.	S1000D Chapter 5.2.1.9 – Common information sets – Equipment information.	The project shall determine if the federal item name, NSN, P/N, model number, and applicable contractor number shall be overprinted on the cover or the title page of the manual.
5.97.3.2.4	List of Effective Data Modules (LOEDM).	S1000D Chapter 5.2.1.9 – Common information sets – Equipment information.	The project shall determine if a LOEDM that will include the basic manual and the supplemental data shall be prepared.
5.97.4.2	LO page size	S1000D Chapter 5.2.1.9 – Common information sets – Equipment information.	The project shall decide between logbook or standard size for LO page size.

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TABLE C-X. Project business rule decision points - Content.

MIL-STD-3031 paragraph reference	MIL-STD-3031 paragraph title	S1000D chapter context	Text of project decision point
5.97.5.2.1	Stand alone.	S1000D Chapter 5.2.1.9 – Common information sets – Equipment information.	Army TMDE information sets may be produced as either a stand-alone TM/IETP or as part of a more comprehensive publication. If this content is produced as a stand-alone publication, the chapter/section/paragraph numbering requirements apply. If the content is included in a publication with a larger scope, the content requirements apply but the chapter/section/paragraph numbering requirements do not.
5.101.1.2.1	Abbreviated Modification Work Order (MWO) format.	S1000D Chapter 5.2.1.13 – Common information sets – Role change information.	The project shall determine if the MWO shall be prepared in an abbreviated format.
5.101.2.2.1	Stand alone.	S1000D Chapter 5.2.1.13 – Common information sets – Role change information.	The project shall decide if Demilitarization of Surplus Military Items information sets are to be produced as either a stand-alone TM/IETP or as part of a more comprehensive publication. If this content is produced as a stand-alone publication, the chapter/section/paragraph numbering requirements apply. If the content is included in a publication with a larger scope, the content requirements apply but the chapter/section/paragraph numbering requirements do not.
5.101.2.2.2	Page layout.	S1000D Chapter 5.2.1.13 – Common information sets – Role change information.	The project shall determine the page layout (portrait/landscape) and format for printed manuals.
5.101.3.2.1	Stand alone.	S1000D Chapter 5.2.1.13 – Common information sets – Role change information.	Destruction of equipment to prevent enemy use information sets may be produced as either a stand-alone TM/IETP or as part of a more comprehensive publication.
5.101.3.2.2	Generic destruction manual.	S1000D Chapter 5.2.1.13 – Common information sets – Role change information.	Equipment managers may direct that a generic destruction manual be developed for assets they control that are not covered in a weapons system specific manual.

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TABLE C-X. Project business rule decision points - Content.

MIL-STD-3031 paragraph reference	MIL-STD-3031 paragraph title	S1000D chapter context	Text of project decision point
5.102.2.1	Format of assessment data.	S1000D Chapter 5.2.1.14 – Common information sets – Battle damage assessment and repair information.	The project shall decide if the format of assessment tables will be prepared as either a troubleshooting procedure (with the fault isolation data module type) or a table (with the descriptive data module type).
5.105.2.1	Stand alone.	S1000D Chapter 5.2.1.17 – Common information sets – Material data.	Munition Equipment and Ammunition Data Sheets information sets may be produced as either a stand-alone TM/IETP or as part of a more comprehensive publication. If this content is produced as a stand-alone publication, the chapter/section/paragraph numbering requirements apply. If the content is included in a publication with a larger scope, the content requirements apply but the chapter/section/paragraph numbering requirements do not.
5.105.2.2	Photographs and line drawings.	S1000D Chapter 5.2.1.17 – Common information sets – Material data.	The project shall decide about the inclusion of a photograph or line drawing of the item on the data sheet.
5.107.2.1	Planning scope and depth.	S1000D Chapter 5.2.1.19 – Common information sets – Training.	The project shall determine the planning scope and depth.
5.107.2.2	Training information scope and depth.	S1000D Chapter 5.2.1.19 – Common information sets – Training.	The project shall determine the training information scope and depth.
5.108.2.1	One or several publication list data modules.	S1000D Chapter 5.2.1.20 – Common information sets – List of applicable publications.	The project shall decide whether to deliver the publications and documents listed in one data module or as separate data modules.
5.108.2.2	Include unpublished publications and documents.	S1000D Chapter 5.2.1.20 – Common information sets – List of applicable publications.	The project shall decide whether or not to include publications and documents that are not published.
5.108.2.3	Include the manufacturer's part no. or reference no.	S1000D Chapter 5.2.1.20 – Common information sets – List of applicable publications.	The project shall decide whether or not to include and present the manufacturer's part no. or reference no.
5.108.2.4	Markup of publication entry as a link.	S1000D Chapter 5.2.1.20 – Common information sets – List of applicable publications.	The project shall decide whether or not to markup publication entries as a links.

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TABLE C-X. Project business rule decision points - Content.

MIL-STD-3031 paragraph reference	MIL-STD-3031 paragraph title	S1000D chapter context	Text of project decision point
5.108.2.5	Use of language.	S1000D Chapter 5.2.1.20 – Common information sets – List of applicable publications.	The project shall decide whether or not to include and present the value of the attribute **`language`** on the element **`<pmEntry>`** in the LOAP.
5.115.2.1	Emergency systems.	S1000D Chapter 5.2.2.7 – Air specific information sets – Aircrew information.	Emergency systems may be located in Chapter 9 (refer to 5.115.1.16) at the discretion of the acquiring activity. When this is done, include the following statement in the section "Emergency equipment information is located in Chapter 9."
5.115.3.2.1	Standard or alternate checklist.	S1000D Chapter 5.2.2.7 – Air specific information sets – Aircrew information.	The acquiring activity shall have the option to specify that a one or two page alternate operator's checklist be prepared instead of the standard operator's checklist.
5.115.4.2.1	Aerodynamic report.	S1000D Chapter 5.2.2.7 – Air specific information sets – Aircrew information.	In addition to the draft manual, the acquiring activity may require submission of an aerodynamic report illustrating the derivation of the data entered on the charts included in the manual. The report should include an analysis leading to the establishment of lift and drag values used in the calculations, aircraft efficiency and compressibility correction factors, methods of computing power or thrust required and available, a discussion of duct loss and propeller efficiencies, and adequate references to appropriate wind tunnel or flight test data. Calculation methods need to be fully explained and a sample calculation given. The calculations should be presented in sufficient detail to permit ready review and check of conclusions and to enable additional calculations to be made.

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TABLE C-X. Project business rule decision points - Content.

MIL-STD-3031 paragraph reference	MIL-STD-3031 paragraph title	S1000D chapter context	Text of project decision point
5.122.2.1	Stand alone.	S1000D Chapter 5.2.2.7 – Air specific information sets – Aircrew information.	Shipment of Army Aircraft information sets may be produced as either a stand-alone TM/IETP or as part of a more comprehensive publication. If this content is produced as a stand-alone publication, the chapter/section/paragraph numbering requirements apply. If the content is included in a publication with a larger scope, the content requirements apply but the chapter/section/paragraph numbering requirements do not.
5.128.1.2.1	Use of a descriptive data module to prepare table of contents.	S1000D Chapter 5.3.1.1 – Common requirements – Front matter.	The project shall decide if table of contents shall be prepared using a descriptive data module or some other means.
5.128.1.2.2	Part figures.	S1000D Chapter 5.3.1.1 – Common requirements – Front matter.	When a publication includes the parts information chapter, the listing of part figures in the table of contents is optional.
5.128.1.2.3	Access illustrations.	S1000D Chapter 5.3.1.1 – Common requirements – Front matter.	The project shall decide if access illustrations should be included and what should be contained in Access illustrations.
5.128.1.2.4	List of symbols.	S1000D Chapter 5.3.1.1 – Common requirements – Front matter.	The project shall decide if list of symbols should be included and what should be contained in list of symbols.
5.128.1.2.5	Technical standard record.	S1000D Chapter 5.3.1.1 – Common requirements – Front matter.	The project shall decide if technical standard record should be included and what should be contained in technical standard record.
5.128.1.2.6	List of applicable specifications and documentation.	S1000D Chapter 5.3.1.1 – Common requirements – Front matter.	The project shall decide if List of applicable specifications and documentation should be included and what should be contained in List of applicable specifications and documentation.
5.128.2.2.1	"How To Use This IETP" information.	S1000D Chapter 5.3.1.1 – Common requirements – Front matter.	Project shall decide whether to prepare "How To Use This IETP" information.
5.128.3.1.2.1	Alphabetical index use.	S1000D Chapter 5.3.1.1 – Common requirements – Front matter.	Project shall determine the use of an alphabetical index.

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TABLE C-X. Project business rule decision points - Content.

MIL-STD-3031 paragraph reference	MIL-STD-3031 paragraph title	S1000D chapter context	Text of project decision point
5.128.3.1.2.2	Alphabetical index detail.	S1000D Chapter 5.3.1.1 – Common requirements – Front matter.	The alphabetical index may be an index of data modules only or it may be a detailed index.

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TABLE C-XI. Project business rule decision points - Page-based presentation.

MIL-STD-3031 paragraph reference	MIL-STD-3031 paragraph title	S1000D chapter context	Text of project decision point
5.137.1.2.1	Page sizes.	S1000D Chapter 6.2.1 – Information presentation/use – Page layout, paper publications, headers and footers.	Project shall determine when to use the available page sizes.
5.137.1.2.2	Page orientation.	S1000D Chapter 6.2.1 – Information presentation/use – Page layout, paper publications, headers and footers.	Orientation of pages, either vertical (portrait) or horizontal (landscape) shall be consistent throughout a given manual except where exceptions are allowed elsewhere by these business rules.
5.137.2.1.2.1	Applicability.	S1000D Chapter 6.2.1 – Information presentation/use – Page layout, paper publications, headers and footers.	When applicability is used, the project shall determine the use of either applicability codes, or a human readable expression.
5.137.2.2.2.1	Double sided printing of foldout pages.	S1000D Chapter 6.2.1 – Information presentation/use – Page layout, paper publications, headers and footers.	The project shall decide whether to use double sided printing on foldout pages.
5.137.3.2.1	Use of double column text.	S1000D Chapter 6.2.1 – Information presentation/use – Page layout, paper publications, headers and footers.	The project shall decide whether or not to use double column text and under what circumstances.
5.137.4.2.1	Foldouts.	S1000D Chapter 6.2.1 – Information presentation/use – Page layout, paper publications, headers and footers.	The project shall determine if and when to use foldouts.
DELETED			
5.138.7.2.1	Color.	S1000D Chapter 6.2.2 – Information presentation/use – Typography – Layout elements.	Unless specified otherwise by the acquiring activity, black and shades of black (gray scale) shall be used for figures in page oriented publications.
DELETED			

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TABLE C-XI. Project business rule decision points - Page-based presentation.

MIL-STD-3031 paragraph reference	MIL-STD-3031 paragraph title	S1000D chapter context	Text of project decision point
5.138.9.2.1	Presentation of publication module/non S1000D publication titles in the reference table.	S1000D Chapter 6.2.2 – Information presentation/use – Typography – Layout elements.	The project shall decide whether to present the title (**`<pmTitle>`**/**`<externalPubTitle>`**) or the short title (**`<shortPmTitle>`**/**`<shortExternalPubTitle>`**), or both, in the reference table.
5.138.9.2.2	Inline presentation of non S1000D publication titles.	S1000D Chapter 6.2.2 – Information presentation/use – Typography – Layout elements.	The project shall decide whether to present the external publication code (**`<externalPubCode>`**), the title (**`<externalPubTitle>`**) or the short title (**`<shortExternalPubTitle>`**) as the inline reference.
5.138.9.2.3	Presentation of name of spares, supplies and support equipment.	S1000D Chapter 6.2.2 – Information presentation/use – Typography – Layout elements.	The project shall decide whether to present the name (**`<name>`**) or the abbreviated alternate name (**`<shortName>`**), as the cross-reference in the text.

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TABLE C-XII. Project business rule decision points - IETP presentation.

MIL-STD-3031 paragraph reference	MIL-STD-3031 paragraph title	S1000D chapter context	Text of project decision point
5.140.3.1.2.1	Main menu bar.	S1000D Chapter 6.3.1 – IETP – Output specification.	By project decision, the main menu bar may contain additional project functions appearing to the right of the nine mandatory functions. Additional functions may optionally be added to the additional information bar.
5.140.3.1.2.2	Additional information bar.	S1000D Chapter 6.3.1 – IETP – Output specification.	The project shall decide if the inner shell will contain an additional information bar. The additional information bar can be used if additional functions are required, e.g., ordering of spares. It is presented below the main menu bar and shall include the functionality to be toggled on and off.
5.140.3.3.2.1	Additional TOC items.	S1000D Chapter 6.3.1 – IETP – Output specification.	The project shall decide the use of additional items in the TOC.
5.140.3.4.2.1	General.	S1000D Chapter 6.3.1 – IETP – Output specification.	The reset area may provide the following optional functions: Print screen – prints the entire screen, even content that shall be scrolled to view on screen. Print Data Module – prints the entire data module, which may include more information than the screen. Change to page view – displays a printable view of the data module formatted (to the extent possible) as a MIL-specification compliant printed manual. Open new IETP. Toggle browse mode. Toggle screen panels/bars on and off – this functionality includes individual toggles for each panel or bar that can be minimized. Drill up/drill down. Other custom functions as determined by the acquiring activity.

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TABLE C-XII. Project business rule decision points - IETP presentation.

MIL-STD-3031 paragraph reference	MIL-STD-3031 paragraph title	S1000D chapter context	Text of project decision point
5.140.4.2.1	Icons.	S1000D Chapter 6.3.1 – IETP – Output specification.	The project shall decide if the main menus bar functions are presented as text, graphics, or text and graphics. Graphical presentation of the functions is the preferred method. If graphic icons are implemented, the icons provided at the LOGSA Web site (https://www.logsa.army.mil/mil40051/tmsspecs.cfm) are mandatory and the function text shall be presented on mouseover.
5.140.4.2.2	Printing of classified data.	S1000D Chapter 6.3.1 – IETP – Output specification.	The project shall decide whether or not to allow the printing of classified data. If not allowed, the print function shall be disabled when classified data is presented in the IETP viewer.
5.140.5.2.1	Font size.	S1000D Chapter 6.3.1 – IETP – Output specification.	The minimum recommended font size is 12 pt. Based on intended viewing environment, projects may decide upon an alternate minimum font size.
5.140.6.2.1	Tool tips.	S1000D Chapter 6.3.1 – IETP – Output specification.	Controls can have tool tips. Tool tips display further information about what the purpose of the control. They appear when the user hovers over the control with the mouse pointer.
5.140.6.2.2	Help.	S1000D Chapter 6.3.1 – IETP – Output specification.	The optional help function will provide further information about the dialog box. The project shall determine if help will be provided as a dialog function and the decision shall be documented in the functionality matrix (Context Sensitive Help).
5.140.6.2.3	Display.	S1000D Chapter 6.3.1 – IETP – Output specification.	The project shall specify in their project-specific business rules how the viewer will handle dialogs (pop-up vs. in-line).
5.140.9.2.1	Background.	S1000D Chapter 6.3.1 – IETP – Output specification.	It is preferred that the background be white. Where the table is long, it can be acceptable to change the background colors of alternate rows to aid readability.

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TABLE C-XII. Project business rule decision points - IETP presentation.

MIL-STD-3031 paragraph reference	MIL-STD-3031 paragraph title	S1000D chapter context	Text of project decision point
5.140.9.2.2	Display.	S1000D Chapter 6.3.1 – IETP – Output specification.	Tables may appear in-line or within the inner shell main content area in a pane separate from the text content. Tables may, by exception and project decision, appear in a separate window if necessary for clear and proper display.
5.140.10.2.1	Presentation of references.	S1000D Chapter 6.3.1 – IETP – Output specification.	The project shall decide if the data module codes for referenced data modules will be presented inline as part of the references (e.g., "See Radio XYZ – Safety summary [DMC-RADIOXYZ-001-001-23-4750-01000-012J-A]."), as mouse over tool tips, or not at all.
5.140.11.2.1	Acknowledgement of alerts.	S1000D Chapter 6.3.1 – IETP – Output specification.	The project shall determine if acknowledgement of alerts will be required.
5.140.14.2.1	Pop up windows.	S1000D Chapter 6.3.1 – IETP – Output specification.	The project shall decide on one of two methods for displaying pop ups and use that method consistently throughout the IETP: replacing the current window (i.e., inline), or in a separate window on top of the current window (i.e., pop up).
5.140.14.2.2	Tool tips.	S1000D Chapter 6.3.1 – IETP – Output specification.	The project shall decide on the use of tool tips. If required, hovering over an area of a graphic tool tips can provide some means of descriptive data. Tool tip pop ups shall not interfere with the ability of a user to access any area of the graphic (including access to another tool tip).
5.140.14.2.3	Display.	S1000D Chapter 6.3.1 – IETP – Output specification.	Illustrations may appear in-line or within the inner shell main content area in a pane separate from the text content. Illustrations may, by exception and project decision, appear in a separate window if necessary for clear and proper display.
5.142.8.2.1	Audit trail.	S1000D Chapter 6.3.1 – IETP – Output specification.	The project shall determine which IETP audit trail data is collected for maintenance data collection or other purposes. Maintenance data shall be exported in accordance with MIL-STD-3008.

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TABLE C-XII. Project business rule decision points - IETP presentation.

MIL-STD-3031 paragraph reference	MIL-STD-3031 paragraph title	S1000D chapter context	Text of project decision point
5.143.2.1	Optional functionalities.	S1000D Chapter 6.4.2 – Functionality – Functionality matrices.	The project shall determine which of the remaining optional functionalities will be acquired. The project shall also determine implementation requirements for these functionalities.

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TABLE C-XIII. Projct business rule decision points - Information processing.

MIL-STD-3031 paragraph reference	MIL-STD-3031 paragraph title	S1000D chapter context	Text of project decision point
5.147.2.1	Use of multimedia.	S1000D Chapter 7.3.3 – CSDB Objects – Multimedia.	The project shall determine if multimedia is suitable for the environment in which the project will operate.
5.147.2.2	Media player.	S1000D Chapter 7.3.3 – CSDB Objects – Multimedia.	Multimedia objects shall be developed and produced for the chosen project viewer or display platforms used; i.e., plug-ins and viewers, shall be defined in the project rules for non-textual data
5.147.2.3	Capture rates.	S1000D Chapter 7.3.3 – CSDB Objects – Multimedia.	To ensure consistency of a given type, the project shall determine the capture rates to be used.
5.147.2.4	Multimedia types.	S1000D Chapter 7.3.3 – CSDB Objects – Multimedia.	The project shall determine the multimedia types used.
149.2.1	Population of the element **`<externalPubCode>`**.	S1000D Chapter 7.4.3 – Generation of publications – Inclusion of legacy information.	The project shall decide the preferred syntax applied to identify legacy data by a publication code.
149.2.2	Use of the attribute **`pubCodingScheme`**.	S1000D Chapter 7.4.3 – Generation of publications – Inclusion of legacy information.	The project shall decide if the attribute will be used and, if so, the set of allowed coding schemes and the syntax used to specify those schemes.
149.2.3	Method to include legacy information in an Interactive Electronic Technical Publication (IETP).	S1000D Chapter 7.4.3 – Generation of publications – Inclusion of legacy information.	The project shall decide whether to include legacy information by encapsulating it in data modules or by referencing it as external publications using the publication module.
149.2.4	Interactive Electronic Technical Publication (IETP) reference format.	S1000D Chapter 7.4.3 – Generation of publications – Inclusion of legacy information.	The project shall decide the syntax and semantic of the links established to reference legacy data.
5.150.2.1	Use of file compression techniques.	S1000D Chapter 7.5.1 – Software interchange – File based transfer.	The project shall decide whether to use compression techniques on files being transferred or not.
5.150.2.2	Defined file formats.	S1000D Chapter 7.5.1 – Software interchange – File based transfer.	The project shall decide on the allowable file formats, if any, beyond those given in S1000D Chapter 7.5.1.
5.150.2.3	Use of multimedia.	S1000D Chapter 7.5.1 – Software interchange – File based transfer.	The project shall decide on the use of multimedia.

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TABLE C-XIII. Projct business rule decision points - Information processing.

MIL-STD-3031 paragraph reference	MIL-STD-3031 paragraph title	S1000D chapter context	Text of project decision point
5.150.2.4	Media options.	S1000D Chapter 7.5.1 – Software interchange – File based transfer.	A variety of computer media are available and in widespread use for the interchange of technical information. The most appropriate medium, or combination of media, shall be agreed at the project level. Whichever interchange medium is selected, file naming, file types and file structure shall be implemented as described in S1000D.
5.150.2.5	Training Data Module Code (DMC) extensions.	S1000D Chapter 7.5.1 – Software interchange – File based transfer.	The project shall decide whether to use the learn code and learn event code or not.
5.151.2.1	Inclusion of Resource Description Framework/Dublin Core (RDF/DC) metadata.	S1000D Chapter 7.5.3 – Information interchange – RDF/DC metadata.	The project shall decide whether to include RDF/DC metadata in data dispatch notes, data module lists and comments or not. It is recommended that inclusion is applied consistently across all CSDB objects, including data modules.
5.153.2.1	Generation of display text.	S1000D Chapter 7.8 – Information processing – Applicability.	The project or shall decide whether to populate the element **`<displayText>`** within the applicability annotation or to rely on the publication engine and/or IETP viewer to generate the displayed applicability annotation from the computable applicability annotation.
5.153.2.2	Format of generated display text.	S1000D Chapter 7.8 – Information processing – Applicability.	The project shall determine the format for generating the displayed applicability annotation from the computable applicability annotation that will best fulfill industry and/or customer display requirements.

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TABLE C-XIV. Project business rule decision points - SNS & information codes.

MIL-STD-3031 paragraph reference	MIL-STD-3031 paragraph title	S1000D chapter context	Text of project decision point
5.155.2.1	Use of Standard Numbering System (SNS).	S1000D Chapter 8.1 – SNS, information and learn codes – General.	The project shall decide whether to use the maintained SNS, the example SNS or to write their own.
5.156.2.1	Use of the generic Standard Numbering System (SNS).	S1000D Chapter 8.2.1 – Maintained SNS – Generic.	Within the constraints of 5.156.1.1, the project shall decided if and how to use the generic SNS provided in S1000D Chapter 8.2.1.
5.156.2.2	Definitions.	S1000D Chapter 8.2.1 – Maintained SNS – Generic.	If the Generic SNS is used, the project shall allocate definitions to the SNS that are defined as "Available for projects."
5.157.2.1	Use of the support and training equipment Standard Numbering System (SNS).	S1000D Chapter 8.2.2 – Maintained SNS – Support and training equipment.	The project shall decided if and how to use the support and training equipment SNS provided in S1000D Chapter 8.2.2.
5.157.2.2	Definitions.	S1000D Chapter 8.2.2 – Maintained SNS – Support and training equipment.	If the support and training equipment SNS is used, the project shall allocate definitions to the SNS that are defined as "Available for projects."
5.158.2.1	Use of the ordnance Standard Numbering System (SNS).	S1000D Chapter 8.2.3 – Maintained SNS – Ordnance.	The project shall decided if and how to use the ordnance SNS provided in S1000D Chapter 8.2.3.
5.158.2.2	Definitions.	S1000D Chapter 8.2.3 – Maintained SNS – Ordnance.	If the ordnance SNS is used, the project shall allocate definitions to the SNS that are defined as "Available for projects."
5.159.2.1	Use of the general communications Standard Numbering System (SNS).	S1000D Chapter 8.2.4 – Maintained SNS – General communications.	The project shall decided if and how to use the general communications SNS provided in S1000D Chapter 8.2.4.
5.159.2.2	Definitions.	S1000D Chapter 8.2.4 – Maintained SNS – General communications.	If the general communications SNS is used, the project shall allocate definitions to the SNS that are defined as "Available for projects."
5.160.2.1	Use of the air vehicle Standard Numbering System (SNS).	S1000D Chapter 8.2.5 – Maintained SNS – Air vehicle, engines and equipment.	The project shall decided if and how to use the air vehicle SNS provided in S1000D Chapter 8.2.5.
5.160.2.2	Definitions.	S1000D Chapter 8.2.5 – Maintained SNS – Air vehicle, engines and equipment.	If the air vehicle SNS is used, the project shall allocate definitions to the SNS that are defined as "Available for projects."

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TABLE C-XIV. Project business rule decision points - SNS & information codes.

MIL-STD-3031 paragraph reference	MIL-STD-3031 paragraph title	S1000D chapter context	Text of project decision point
5.161.2.1	Use of the tactical missiles Standard Numbering System (SNS).	S1000D Chapter 8.2.6 – Maintained SNS – Tactical missiles.	The project shall decided if and how to use the tactical missiles SNS provided in S1000D Chapter 8.2.6.
5.161.2.2	Definitions.	S1000D Chapter 8.2.6 – Maintained SNS – Tactical missiles.	If the tactical missiles SNS is used, the project shall allocate definitions to the SNS that are defined as "Available for projects."
5.162.2.1	Use of the surface vehicles Standard Numbering System (SNS).	S1000D Chapter 8.2.7 – Maintained SNS – General surface vehicles.	The project shall decided if and how to use the surface vehicles SNS provided in S1000D Chapter 8.2.7.
5.162.2.2	Definitions.	S1000D Chapter 8.2.7 – Maintained SNS – General surface vehicles.	If the surface vehicles SNS is used, the project shall allocate definitions to the SNS that are defined as "Available for projects."
5.163.2.1	Use of the sea vehicle Standard Numbering System (SNS).	S1000D Chapter 8.2.8 – Maintained SNS – General sea vehicles.	The project shall decided if and how to use the sea vehicle SNS provided in S1000D Chapter 8.2.8.
5.163.2.2	Definitions.	S1000D Chapter 8.2.8 – Maintained SNS – General sea vehicles.	If the sea vehicle SNS is used, the project shall allocate definitions to the SNS that are defined as "Available for projects."
5.164.2.1	Use of the example Standard Numbering System (SNS).	S1000D Chapter 8.3 – SNS, information codes – Example SNS.	The project shall decided if and how to use the example SNS provided at http://www.s1000d.org.

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IETP FUNCTIONALITY MATRIX

D.1 SCOPE.

Information sets and content selection matrices are tools to define a project's content depth and breadth, the functionality matrix is a tool to define the intended use and capabilities of the project's data. The IETP functionality matrix provides a standard format for documenting the functional needs of the project. S1000D Chapter 6.4 also provides standard definitions for each functionality so vendors and customers can clearly communicate their requirements and deliverables. This appendix is a mandatory part of this standard. The information contained herein is intended for compliance. These requirements are applicable for all maintenance levels through overhaul (depot), including DMWRs/NMWRs.

D.2 APPLICABLE DOCUMENTS.

This section is not applicable to this appendix.

D.3 DEFINITIONS.

This section is not applicable to this appendix.

D.4 GENERAL REQUIREMENTS.

D.4.1 General.

Projects shall complete the entire matrix as described in paragraph 2 of S1000D Chapter 6.4.1. The definitions found in Tables 1-10 of Chapter 6.4.1 will aid the decision making process. The completed matrix should reflect final decisions made after coordination with stakeholders. The completed matrix shall be part of the solicitation documentation. Prospective vendors will use the matrix to prepare their response. The selected functionalities and clear definitions in Chapter 6.4.1 will help to ensure that vendor responses closely match the project needs with minimal misunderstanding.

D.4.2 Use of the matrix.

The vertical axis of the matrix lists all the possible functionalities of IETP technical publications. The rows containing required functionalities are pre-populated with an "R" (indicating Required) in the Requirement column. The column titled Functionality Type indicates if the functionality is a function of the viewer (V), the data (D), or of an external process (E). The horizontal axis includes the information sets that can contain the desired functionalities. The matrix provided in this appendix has been tailored so the listed information sets match typical Army information sets. The Functionality Matrix is available in Excel TM at https://www.logsa.army.mil/mil40051/S1000D.cfm. The matrix can be tailored by individual projects to match additional required information sets.

D.4.3 Collaboration.

The matrix should be completed in a collaborative effort with input from representatives of all project stakeholder organizations. The matrix is available in Microsoft Excel format to facilitate collaboration (https://www.logsa.army.mil/mil40051/S1000D.cfm). Projects should provide guidance for completing the matrix to all individuals providing input.

D.4.4 Matrix input.

There are a number of possible ways to document input to the matrix:

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a. Binary. A project may desire input to be in the form of a simple yes or no (or checkmark) relative to the requirement for each functionality.
b. Degree of need. A project may require that input be in a manner similar to: R=Required functionality, N=Nice to have functionality, or P=Prohibited for each functionality.
c. Color coding. A project may develop a color coding scheme (or other code) for input to express additional functionality requirements (e.g., whether or not a specific functionality is need, but only in certain unique uses or implementations).
d. Other. Projects may be creative and provide other guidance for completing the matrix that suits their needs.

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D.5 DETAILED REQUIREMENTS.

TABLE D-I. S1000D Functionality Matrix.

Functionality	Functionality Type	Complexity	Requirement	All data sets	Front Matter	Rear Matter	General Information, Theory of Operation	Operator Instructions	Aircraft Operator	Aircraft Operator Checklist	Aircraft MTF	Troubleshooting	PMCS	Maintenance	Ammunition Maintenance	Parts Information	Supporting Information	Aircraft Maintenance	Depot Maintenance	Depot Troubleshooting	Aviation Troubleshooting	Preventive Maintenance	Phased Maintenance	BDAR	Destruction to Prevent Enemy Use	Auxiliary Equipment Maintenance	Hand Receipt	Supplemental Information for COTS	Preventive Maintenance Checklists	Preparation for Shipment of Aircraft	Standard Generator Set - Operator/Unit	Standard Generator Set - Intermediate & Depot	DMWRs – Conventional and Munition and Ammunition Data	Demilitarization of Surplus Items	WTB	Depot Test Equipment	Lubrication Orders
Functionality Category: Access																																						
Login	V	2		A																																		
Suspend and restart	V	1		A																																		
Exit	V	1	R	A																																		
Functionality Category: Annotation																																						
Action complete indicator (checkbox)	D	1																																				
Local data annotation	V	2		A																																		
Personal annotation	V	1		A																																		
Redlining text	V	3		A																																		
Redlining graphics	V	3		A																																		
Functionality Category: Delivery and Distribution																																						
Printed publication	E	5		A																																		
Physical media	E	1		A																																		
Network distribution	E	2		A																																		
Functionality Category: Diagnostics and Prognostics																																						
Diagnostics - User determined entry to data	D	1																																				
Diagnostics - Software driven entry to data	D	2																																				
Dynamic diagnostics	E	5																																				
Wire/Fluid system tracing	E	4																																				
System simulation	E	4																																				
Prognostics	E	5																																				

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Functionality	Functionality Type	Complexity	Requirement	All data sets	Front Matter	Rear Matter	General Information, Theory of Operation	Operator Instructions	Aircraft Operator	Aircraft Operator Checklist	Aircraft MTF	Troubleshooting	PMCS	Maintenance	Ammunition Maintenance	Parts Information	Supporting Information	Aircraft Maintenance	Depot Maintenance	Depot Troubleshooting	Aviation Troubleshooting	Preventive Maintenance	Phased Maintenance	BDAR	Destruction to Prevent Enemy Use	Auxiliary Equipment Maintenance	Hand Receipt	Supplemental Information for COTS	Preventive Maintenance Checklists	Preparation for Shipment of Aircraft	Standard Generator Set - Operator/Unit	Standard Generator Set - Intermediate & Depot	DMWRs – Conventional and Munition and Ammunition Data	Demilitarization of Surplus Items	WTB	Depot Test Equipment	Lubrication Orders
Functionality Category: External Processes																																						
Transmittal	E	3																																				
Retrieval	E	2																																				
Parts ordering	E	3	R																																			
Deficiency/ Improvement report transmittal	E	3	R	A																																		
Maintenance data collection	E	3																																				
Operator debriefing	E	3																																				
Resource scheduling	E	3																																				
Knowledge management	E	5																																				
Functionality Category: Graphics Functionality																																						
Pan, zoom, expand, magnify	V	1		A																																		
Assembly/ Disassembly	D	2																																				
Locator graphics	D	1																																				
3D modeling	D	4																																				
Functionality Category: Linking																																						
External reference	D	2		A																																		
Internal references	D	1		A																																		
Hot reference	D	2		A																																		
Link to separate parts data	D	2		A																																		
TOC, lists of figures, tables and photos	D	1	R	A																																		
Hot spotting	D	3		A																																		

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Functionality	Functionality Type	Complexity	Requirement	All data sets	Front Matter	Rear Matter	General Information, Theory of Operation	Operator Instructions	Aircraft Operator	Aircraft Operator Checklist	Aircraft MTF	Troubleshooting	PMCS	Maintenance	Ammunition Maintenance	Parts Information	Supporting Information	Aircraft Maintenance	Depot Maintenance	Depot Troubleshooting	Aviation Troubleshooting	Preventive Maintenance	Phased Maintenance	BDAR	Destruction to Prevent Enemy Use	Auxiliary Equipment Maintenance	Hand Receipt	Supplemental Information for COTS	Preventive Maintenance Checklists	Preparation for Shipment of Aircraft	Standard Generator Set - Operator/Unit	Standard Generator Set - Intermediate & Depot	DMWRs – Conventional and Munition and Ammunition Data	Demilitarization of Surplus Items	WTB	Depot Test Equipment	Lubrication Orders
Functionality Category: Navigation and Tracking																																						
Next and previous	V	1	R	A																																		
Return (Chronological)	V	1		A																																		
History of traversed links	V	1	R	A																																		
User creation of bookmarks	V	1		A																																		
System/Subsystem navigation	V	1		A																																		
Restore initial navigation view	V	1	R	A																																		
Audit trail	V	2		A																																		
Graphical navigation	V	2																																				
Dialog-driven interaction	D	3																																				
Voice-Activated commands	V	3		A																																		
Search - Full text	V	1	R	A																																		
Search - User defined Boolean	V	1		A																																		
Search - Across multiple databases/files	V	3		A																																		
Search - Context	V	2		A																																		
Search - Key word	V	2		A																																		
Filter content per applicability	D	1		A																																		
Simultaneous display of multiple content objects	D	2		A																																		
Tear off window	V	2		A																																		
Functionality Category: Printing																																						

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Functionality	Functionality Type	Complexity	Requirement	All data sets	Front Matter	Rear Matter	General Information, Theory of Operation	Operator Instructions	Aircraft Operator	Aircraft Operator Checklist	Aircraft MTF	Troubleshooting	PMCS	Maintenance	Ammunition Maintenance	Parts Information	Supporting Information	Aircraft Maintenance	Depot Maintenance	Depot Troubleshooting	Aviation Troubleshooting	Preventive Maintenance	Phased Maintenance	BDAR	Destruction to Prevent Enemy Use	Auxiliary Equipment Maintenance	Hand Receipt	Supplemental Information for COTS	Preventive Maintenance Checklists	Preparation for Shipment of Aircraft	Standard Generator Set - Operator/Unit	Standard Generator Set - Intermediate & Depot	DMWRs – Conventional and Munition and Ammunition Data	Demilitarization of Surplus Items	WTB	Depot Test Equipment	Lubrication Orders
Print screen	V	1	R	A																																		
Data module specific printing	V	2	R	A																																		
Print linked data	V	2		A																																		
Fully formatted/book version	E	5		A				R[1]	R[1]	R[1]	R[1]																											
Functionality Category: Special Content																																						
Front matter	D	1		A																																		
Supporting technical data	D	2		A																																		
Alerts	D	1		A																																		
Emergency procedures	D	2		A																																		
Photos	D	1																																				
Audio	D	2																																				
Motion video	D	3																																				
Animation	D	4																																				
Content sensitive help (Tech data help)	D	1	R	A																																		
Context sensitive help (Viewer)	V	2	R	A																																		
User training	D	3		A																																		
Functionality Category: Updates																																						
Passive change indications and markings	D	1	R	A																																		
Active change indications and markings	D	2	R	A																																		
Full change	E	1		A																																		
Block cycle and urgent changes	E	2		A																																		

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Functionality	Functionality Type	Complexity	Requirement	All data sets	Front Matter	Rear Matter	General Information, Theory of Operation	Operator Instructions	Aircraft Operator	Aircraft Operator Checklist	Aircraft MTF	Troubleshooting	PMCS	Maintenance	Ammunition Maintenance	Parts Information	Supporting Information	Aircraft Maintenance	Depot Maintenance	Depot Troubleshooting	Aviation Troubleshooting	Preventive Maintenance	Phased Maintenance	BDAR	Destruction to Prevent Enemy Use	Auxiliary Equipment Maintenance	Hand Receipt	Supplemental Information for COTS	Preventive Maintenance Checklists	Preparation for Shipment of Aircraft	Standard Generator Set - Operator/Unit	Standard Generator Set - Intermediate & Depot	DMWRs – Conventional and	Munition and Ammunition Data	Demilitarization of Surplus Items	WTB	Depot Test Equipment	Lubrication Orders
Near real time updates	E	2		A																																		
Functionality Category: User Operation Mode																																						
Web browser viewable	V	3		A																																		
Stand alone mode	V	1	R	A																																		
Network connectivity	E	2		A																																		

[1] Printed operator's manuals are optional with user concurrence per AR 25-30 .

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CONCLUDING MATERIAL

Custodians:	Preparing Activity:
Army - TM	Army - TM
Marine Corps - MC	
Review Activities:	Project Number:
Army - AC, AR, AT, AV, CR,EA, MI, PT	TMSS 2015-001

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