NOT MEASUREMENT SENSITIVE

MIL-STD-961E
w/CHANGE 1
2 April 2008

SUPERSEDING
MIL-STD-961E
1 August 2003

DEPARTMENT OF DEFENSE STANDARD PRACTICE

DEFENSE AND PROGRAM-UNIQUE SPECIFICATIONS FORMAT AND CONTENT

AMSC D7500 **AREA SDMP**

F O R E W O R D

1. This standard is approved for use by all Departments and Agencies of the Department of Defense (DoD).

2. This standard covers the format and content requirements for developing defense specifications, which are used on multiple programs or applications, and program-unique specifications, which are used for a single program or system with little or no potential for use with other programs or systems. The policies governing such procedural matters as authorization for document development, coordination, comment resolution, indexing and distribution, application, and document maintenance can be found in DoD 4120.24-M, "Defense Standardization Program Policies and Procedures."

3. This revision has resulted in many changes to specification format, but the most significant ones are:

a. Replacement of "pen-and-ink" type amendments by amendments integrated into the full specification.

b. Limiting the number of amendments for a specific issuance to a maximum of five before the document must be revised.

c. Introduction of administrative notices to allow for nontechnical changes to be made quickly and without the need for coordination.

d. Additional requirement to provide Internet addresses to contact organizations and obtain referenced documents.

e. Expansion of the maximum number of characters in a Part or Identifying Number (PIN) from 15 to 32 characters.

f. Elimination of the distinction between associated specifications and specification sheets.

g. Allowance of a cover page for specifications under certain conditions.

h. Allowance of a table of contents if a cover page is used.

i. Elimination of the DD Form 1426.

j. Replacement of the DoD Index of Specifications and Standards (DoDISS) with the Acquisition Streamlining and Standardization Information System (ASSIST) database.

k. Integration of program-unique specification requirements previously covered by MIL-STD-490, which is canceled.

4. The overall purpose of a specification is to provide a basis for obtaining a product or service that will satisfy a particular need at an economical cost and to invite maximum reasonable competition. To this end, specifications may not be unduly restrictive. By definition, a specification sets limits and thereby eliminates, or potentially eliminates, items that are outside the boundaries drawn. However, a specification should be written to encourage, not discourage, competition consistent with seeking overall economy for the purpose intended. A good specification should do four things: (1) identify minimum requirements, (2) list reproducible test methods to be used in testing for compliance with specifications, (3) allow for a competitive bid, and (4) provide for an equitable award at the lowest possible cost. Proper preparation and use of defense specifications is a difficult task requiring careful analysis and good judgment. The following points are some helpful reminders for consideration when developing a specification:

a. For commercial products, first consider using or developing a non-Government standard or including DoD requirements in an existing non-Government standard. If that will not meet the need, consider developing or revising a commercial item description.

b. The specification preparing activity should maintain a carefully documented, permanent record of the source and reason behind particular requirements and changes to requirements. Issues and controversial areas during the coordination process should be noted, and it may be desirable to summarize these issues and areas in the “Notes” section of the document and solicit feedback as experience develops. This record should provide a basis for related application guidance and a history useful in future document revisions.

c. Wherever possible, state requirements in terms of performance or form, fit, and function, as opposed to providing details on “how to” achieve the desired result.

d. Avoid unnecessary reference to other documents, which can lead to excessive “tiering” of requirements. If only a small portion of another document is needed, it may be better to extract that portion and include it in the specification rather than reference the document. When referencing another document, try to limit the extent of its application by citing specific grades, types, or classes, or citing specific requirements or tests. Do not cite paragraph numbers in referenced documents since these are likely to change in future updates.

e. Try to make use of commercial products, processes, or practices when setting requirements or tests.

f. Make a distinction between requirements portions and guidance portions of documents. Careful attention to use of the words “should” (guidance language) and “shall” (requirement language) is important.

g. Use Section 6 “Notes” to provide users with guidance information that should be considered for inclusion in the contract, how to apply the document to different contract types and different program phases, lessons learned, relationship to other documents, tailoring guidance, and any other information that is not suitable for inclusion as a requirement or test.

h. If a specification is the source document for data item descriptions, develop, coordinate, and issue the specification and the data item descriptions together.

5. The figures appearing at the back of this standard are fictitious and are used only as examples to illustrate format. If there is any conflict between the text of the document and the figures at the end of this document, the text applies.

6. Comments, suggestions, or questions on this document should be addressed to the Defense Standardization Program Office (DSPO), ATTN: J-307, 8725 John J. Kingman Road, Stop 6233, Fort Belvoir, VA 22060-6233 or emailed to DSPO@dla.mil. Since contact information can change, you may want to verify the currency of this address information using the ASSIST Online database at http://assist.daps.dla.mil.

SUMMARY OF CHANGE 1 MODIFICATIONS

1. Changed the Uniform Resource Locator (URL) for the Acquisition Streamlining and Standardization Information System (ASSIST) database throughout the document.

2. Changed the order of precedence statement in section 2 to include the words "unless otherwise noted herein or in the contract" in the first sentence. Generally, a specification takes precedence over the documents referenced, but there can be occasions, such as a drawing, where the referenced document can take precedence over the specification as long as it is noted within the specification.

3. Added a definition for "supersede" in section 3.

4. Deleted the statement in 4.3 that only the contract can require the delivery of data. There are public laws that also require data independent of a contract.

5. Added a requirement to 5.4.1 for the preparing activity to obtain new document numbers using the Automated Document Number module in ASSIST.

6. Added a requirement in 5.4.2 to include the phrase "DRAFT DATED (DATE OF DRAFT) under the header of each page of a draft specification.

7. Added new 5.4.7.3 to authorize inclusion of reinstatement note on cancelled specifications that are reinstated and updated simultaneously.

8. Added a requirement in 5.7.2.1.5 to cite the specific color chip(s) number in section 2 when referencing FED-STD-595. Note that FED-STD-595 was not included as a reference in section 2 of this standard since it is not a requirement document.

9. Added an additional sentence to the qualification paragraph in section 6 of specifications to inform users that listings of qualified products can be obtained online through ASSIST.

10. Added shelf-life guidance in 5.11.14, which will be included in the section 6 notes of specifications covering items where shelf-life is a consideration.

11. Added a requirement for the amendment number to appear below the document identifier on every page of a specification being amended.

12. Incorporated Defense Standardization Program Policy Memorandum 08-1 as 5.19.3 and figures 15A and 15B to allow cancellation notices to cite either direct replacements or suggested replacements.

13. Incorporated Defense Standardization Program Policy Memorandum 08-3 in 4.5 and 5.19.6 and figure 20 to require unclassified administrative notices for classified specifications.

14. Added a requirement in 5.19.7.6 that project numbers are not required for administrative notices.

15. Added advisory note to figures 10, 11, and 13 through 18.

16. The following modifications were made to this standard:

PARAGRAPH	MODIFICATION
Foreword	Changed
2.2.1	Changed
2.2.2	Changed
2.4	Changed
3.2	Changed
3.24	Changed
3.45.1	Added
4.3	Changed
4.5	Changed
4.12	Changed
5.4.1	Changed
5.4.2	Changed
5.4.7	Changed
5.4.7.3	Added
5.4.9	Changed
5.7.2.1.4	Changed
5.7.2.1.5	Added
5.7.4	Changed
5.8.3	Changed
5.11	Changed
5.11.4	Changed
5.11.6	Changed
5.11.12	Changed
5.11.14	Added
5.12.8	Changed
5.18.3	Changed
5.19.3	Changed
5.19.6	Changed
5.19.7.6	Added
6.3	Changed
6.6	Changed
Figure 3	Changed
Figure 5	Changed
Figure 10	Changed
Figure 11	Changed
Figure 12	Changed
Figure 13	Changed
Figure 14	Changed

PARAGRAPH	MODIFICATION
Figure 15	Deleted
Figure 15A	Added
Figure 15B	Added
Figure 16	Changed
Figure 17	Changed
Figure 18	Changed
Figure 19	Added
Figure 20	Added
Concluding material	Changed

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SCOPE

1.1 Scope. This standard establishes the format and content requirements for the preparation of defense specifications and program-unique specifications prepared either by DoD activities or by contractors for the DoD. It also covers the format and content requirements for specification sheets, supplements, revisions, amendments, and notices.

2. APPLICABLE DOCUMENTS

2.1 General. The documents listed in this section are specified in sections 3, 4, or 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 of documents cited in sections 3, 4, or 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.

DEPARTMENT OF DEFENSE STANDARDS

MIL-STD-963 - Data Item Descriptions (DIDs).

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

2.2.2 Other Government documents, drawings, and publications. The following other Government documents, drawings, and publications 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.

DEFENSE STANDARDIZATION PROGRAM OFFICE

SD-1 - Standardization Directory
SD-10 - Guide for Identification and Development of Metric Standards
SD-15 - Performance Specification Guide

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

DEFENSE LOGISTICS INFORMATION SERVICE CATALOGING HANDBOOKS

H2	-	Federal Supply Classification Groups and Classes
H6	-	Federal Item Name Directory

(Copies of these documents are available online at www.dlis.dla.mil/hardcopy.asp or from DLIS-VSS Customer Service Office, Defense Logistics Information Service, 74 Washington Avenue N, Suite 7, Battle Creek, MI 49017-3084.)

UNITED STATES GOVERNMENT PRINTING OFFICE

United States Government Printing Office (GPO) Style Manual

(Copies of this document are available online at www.access.gpo.gov or from the Superintendent of Documents, U.S. Government Printing Office, North Capitol & "H" Streets, N.W., Washington, DC 20402-0002.)

2.3 Non-Government publications. The following documents 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.

AMERICAN SOCIETY OF MECHANICAL ENGINEERS (ASME)

ASME Y14.5M	-	Dimensioning and Tolerancing
ASME Y14.38	-	Abbreviations and Acronyms

(Copies of these documents are available from www.asme.org or ASME Information Central Orders/Inquiries, P.O. Box 2300, Fairfield, NJ 07007-2300.)

INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS (IEEE)

IEEE 260.1	-	Letter Symbols for Units of Measurement (SI Units, Customary Inch-Pound Units)

(Copies of this document are available from www.ieee.org or IEEE Service Center, 445 Hoes Lane, Piscataway, NJ 08854-1331.)

IEEE/ASTM INTERNATIONAL

IEEE/ASTM SI 10	-	Use of the International System of Units (SI) – The Modern Metric System

(IEEE and ASTM International publish this standard jointly. Copies are available from www.ieee.org or IEEE Service Center, 445 Hoes Lane, Piscataway, NJ 08854-1331 or www.astm.org or ASTM International, 100 Barr Harbor Drive, West Conshohocken, PA 19428-2959.)

2.4 Order of precedence. Unless otherwise noted herein or in the contract, 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.

3. DEFINITIONS

3.1 Acquisition Management Systems Control (AMSC) number. A control number assigned by the cognizant data management approval authority listed in the SD-1, which indicates that a data item description (DID) or a defense specification or standard that cites DIDs has been cleared for use by the DoD.

3.2 Acquisition Streamlining and Standardization Information System (ASSIST). The official database containing information about standardization documents used in the DoD. ASSIST also provides electronic access to government documents included in the database over the Internet. ASSIST can be accessed at http://assist.daps.dla.mil.

3.3 Analysis. An element of verification that uses established technical or mathematical models or simulations, algorithms, charts, graphs, circuit diagrams, or other scientific principles and procedures to provide evidence that stated requirements were met.

3.4 Class. An additional categorization of differences in characteristics, other than that afforded by type classification. It does not constitute a difference in quality or grade, but is for specific, equally important uses, and is usually designated by Arabic numerals, such as, “class 1” or “class 2.”

3.5 Composition. A term used in classifying commodities that are differentiated strictly by their respective chemical composition, which is designated in accordance with accepted trade practice.

3.6 Coordinated specification. A document required by more than one Military Department, Defense Agency, or Civilian Agency, which is coordinated with various activities of the interested departments and agencies.

3.7 Data. Recorded information, regardless of form or method of recording.

3.8 Data Item Description (DID). A standardization document that defines the data content, preparation instructions, format, and intended use of data required of a contractor. DIDs are prepared in accordance with MIL-STD-963.

3.9 Data product specification. A defense specification used to acquire data products such as product definition data, test reports, and other types of data, with the exception of technical manuals. Data product specifications are the source documents for DIDs and are approved and assigned an AMSC number by the cognizant DID Approval Authority listed in the SD-1.

3.10 Defense specification. A specification developed under the consensus procedures of the Defense Standardization Program that is used on multiple programs or applications and is included in the ASSIST database.

3.11 Demonstration. An element of verification that involves the actual operation of an item to provide evidence that the required functions were accomplished under specific scenarios. The items may be instrumented and performance monitored.

3.12 Design activity. The organization that prepares or has prepared for it a program-unique specification.

3.13 Detail specification. A specification that specifies design requirements, such as materials to be used, how a requirement is to be achieved, or how an item is to be fabricated or constructed. A specification that contains both performance and detail requirements is still considered a detail specification. Both defense specifications and program-unique specifications may be designated as a detail specification.

3.14 DoD Single Stock Point. An office under the Defense Logistics Agency's Document Automation and Production Service, which is responsible for the indexing and distribution of defense specifications, standards, and other related documents and the maintenance of the ASSIST database.

3.15 Entity. General term to denote the system, item, software, process, or material that is the subject of a specification.

3.16 Examination. An element of verification that is generally nondestructive and typically includes the use of sight, hearing, smell, touch, and taste; simple physical manipulation; and mechanical and electrical gauging and measurement.

3.17 General specification. A specification prepared in the six-section format, which covers requirements and test procedures that are common to a group of parts, materials, or equipments and is used with specification sheets.

3.18 Grade. A term that implies differences in quality and is usually designated by capital letters, such as, "grade A" or "grade B."

3.19 Inch-pound specification. A specification having measurement requirements given in rounded, rational, inch-pound units. The magnitudes are meaningful and practical (for example, 1 ounce, not 28.3495 grams). Inch-pound specifications are developed for items to interface or operate with other inch-pound items. NOTE: Specifications in which magnitudes expressed in metric units (as a result of mathematical conversion from rounded, rational, inch-pound units) are given first as preferred units with the rounded, rational inch-pound units given in parentheses or in a nonpreferred position are still inch-pound documents.

3.20 Inspection. The examination and testing of supplies and services to determine whether they conform to specified requirements.

3.21 Interchangeable item. An item which possesses such functional and physical characteristics as to be equivalent in performance, reliability, and maintainability, to another item of similar or identical purposes. An interchangeable item is capable of being exchanged for the other item without selection for fit or performance, and without alteration of the items themselves or of adjoining items, except for adjustment.

3.22 Interim amendment. A limited-coordination amendment to a coordinated specification required by a single activity, Military Department, or Defense Agency to meet a need when time does not permit preparation of a coordinated amendment.

3.23 Interim revision. A limited-coordination revision to a coordinated specification required by a single activity, Military Department, or Defense Agency to meet a need when time does not permit preparation of a coordinated revision.

3.24 International standardization agreement. The record of an agreement among several or all of the member nations of a multinational treaty organization to adopt like or similar military equipment, ammunition, supplies, and stores. The North Atlantic Treaty Organization (NATO), American-British-Canadian-Australian Armies (ABCA), and the Air and Space Interoperability Council (ASIC) are examples of multinational treaty organizations that issue international standardization agreements. Do not confuse this term with standards issued by private sector international organizations, such as the International Organization for Standardization (ISO) or the International Electrotechnical Committee (IEC), which are categorized as non-Government standards.

3.25 Item specification. A type of program-unique specification that describes the form, fit, and function and method for acceptance of parts, components, and other items that are elements of a system.

3.26 Limited-coordination specification. A specification that covers items required by a single activity, Military Department, or Defense Agency, and is coordinated only within that activity, Military Department, or Defense Agency.

3.27 Material specification. A type of program-unique specification that describes such raw or processed materials as metals, plastics, chemicals, synthetics, fabrics, and any other material that has not been fabricated into a finished part or item.

3.28 Metric specification. A specification in which requirements are expressed in rounded, rational, metric units. The magnitudes expressed are meaningful and practical (for example, 10 grams, not 0.35273 ounces). Metric specifications are developed for items to interface or operate with other metric items. Documents containing only electrical units that are used in both the metric and inch-pound systems (for example, volts, amps, and ohms) are classified as metric documents. Documents also containing dimensional interfaces must describe these interfaces in metric sizes to be classed as metric documents.

3.29 Metric units. A system of basic measures defined by the International System of Units based on "Le Systeme International d'Unites (SI)," of the International Bureau of Weights and Measures. These units are described in IEEE/ASTM SI 10.

3.30 MS sheet. A term that once meant "military standard sheet" but was changed many years ago to "military specification sheet." Unless otherwise noted, the term specification sheet includes MS sheet. It is a document that specifies requirements and verifications unique to a single style, type, class, grade, or model that falls within a family of products described under a general specification. New MS sheets are no longer being issued except for situations where it is necessary to expand a family of existing MS sheets. Specification sheets (see 3.44) instead of MS sheets are now developed for all new general specifications, and when possible, replace existing MS sheets.

3.31 Non-Government standard. A national or international standardization document developed by a private sector association, organization, or technical society that plans, develops, establishes, or coordinates standards, specifications, handbooks, or related documents. The term does not include standards of individual companies. Non-Government standards adopted by the DoD are listed in the ASSIST database.

3.32 Not measurement sensitive specification. A specification in which application of the requirements does not depend substantially on some measured quantity. This type of specification can be used with either a metric system or an inch-pound system.

3.33 Packaging. The processes and procedures used to protect material from deterioration, damage, or both. It includes cleaning, drying, preserving, packing, marking, and unitization.

3.34 Part or Identifying Number (PIN). An alphanumeric designator that identifies parts, items, or bulk materials that are covered by a specification.

3.35 Performance specification. A specification that states requirements in terms of the required results with criteria for verifying compliance, but without stating the methods for achieving the required results. A performance specification defines the functional requirements for the item, the environment in which it must operate, and interface and interchangeability characteristics. Both defense specifications and program-unique specifications may be designated as a performance specification.

3.36 Process specification. A type of program-unique specification that describes the procedures for fabricating or treating materials and items.

3.37 Program-unique specification. A specification that describes a system, item, software program, process, or material developed and produced (including repetitive production and spares purchases) for use within a specific program, or as a part of a single system and for which there is judged to be little potential for use by other systems.

3.38 Qualification. A process in advance of and independent of an acquisition by which a manufacturer's capabilities, or a manufacturer's or distributor's products are examined, tested, and approved to be in conformance with specification requirements, and subsequent approval for or listing of products on a qualified products list (QPL) or manufacturers on a qualified manufacturers list (QML).

3.39 Recovered material. Waste materials and by-products that have been recovered or diverted from solid waste. It does not include those materials and by-products generated from, and commonly reused within, an original manufacturing process.

3.40 Recycled material. Product or other material recovered from the solid waste stream for use in the form of raw materials in the manufacture of new products other than fuel for producing heat or power by combustion.

3.41 Soft conversion. The process of changing a measurement from inch-pound units to equivalent metric units within acceptable measurement tolerances without changing the physical configuration of the item.

3.42 Software specification. A type of program-unique specification that describes the requirements and verification of requirements for the automatic acquisition, storage, manipulation, management, movement, control, display, switching, interchange, transmission, or reception of data or information.

3.43 Specification. A document prepared to support acquisition that describes essential technical requirements for materiel and the criteria for determining whether those requirements are met.

3.44 Specification sheet. A document that specifies requirements and verifications unique to a single style, type, class, grade, or model that falls within a family of products described under a general specification.

3.45 Style. A term used to denote differences in design or appearance.

3.45.1 Supersedes. A condition where one document replaces another document. The replacement document is technically equivalent or superior to the superseded document and may be used as a replacement.

3.46 Supplement. A listing of specification sheets or MS sheets associated with a general specification.

3.47 System specification. A type of program-unique specification that describes the requirements and verification of the requirements for a combination of elements that must function together to produce the capabilities required to fulfill a mission need, including hardware, equipment, software, or any combination thereof.

3.48 Tailoring. The process by which individual requirements (sections, paragraphs, or sentences) of the selected specifications, standards, and related documents are evaluated to determine the extent to which they are most suitable for a specific system and equipment acquisition, and the modification of these requirements to ensure that each achieves an optimal balance between operational needs and cost.

3.49 Technical manual specification. A specification used to acquire technical manuals for the installation, operation, maintenance, training, and support of weapon systems, weapon systems components, and support equipment. Technical manual specifications do not require the preparation of DIDs, but must be approved and assigned an Acquisition Management Systems Control number by the cognizant DID Approval Authority listed in the SD-1.

3.50 Test. An element of verification in which scientific principles and procedures are applied to determine the properties or functional capabilities of items.

3.51 Type. A term that implies differences in like items or processes as to design model, shape, or other configuration, which is usually designated by Roman numerals, such as “type I” or “type II.”

3.52 Verification. Confirmation through the provision of objective evidence that specified requirements have been fulfilled. Objective evidence may be obtained through observation, measurement, test, or other means.

4. GENERAL REQUIREMENTS

4.1 General. This section covers general aspects of style, format, and requirements that are applicable to all specifications covered by this document.

4.2 Coverage. A specification shall be prepared to describe essential technical requirements for products, materials, or services. Similar items shall be covered in a single specification to the maximum extent practical. Specifications shall describe the item in a manner that encourages maximum competition. To the greatest extent possible, specification requirements shall be written so that commercial products or processes may be used to meet the requirements. Performance specifications shall be developed instead of detail specifications, whenever possible. (See 5.8.1 and 5.8.2 for a discussion on the differences between performance and detail specifications.)

4.2.1 Tailoring of requirements. Specifications shall be written and structured so that referenced documents, requirements, and verification provisions can be readily tailored to suit different applications.

4.3 Data requirements. Specifications shall not contain requirements for the development, preparation, acquisition of rights, submission, delivery, maintenance, updating, approval, or distribution of plans, reports, drawings, manuals, and other data products. DIDs shall not be included in any section of a specification for equipments, assemblies, components, parts, materials, or any other type of commodity. Data product specifications (see 4.3.1) and

technical manual specifications (see 4.3.2) shall be used to specify content for format requirements for data products.

4.3.1 Data product specifications. A data product specification (see 3.9) shall describe the content and format requirements for data products. The specification shall bear an AMSC number assigned by the cognizant DID Approval Authority listed in the SD-1. The information specified in 5.11.4 shall be included in section 6 of the specification to identify the DIDs for inclusion in the contract to acquire the data product defined by the data product specification. DIDs for which the specification is the source document shall be listed in section 6.

4.3.2 Technical manual specifications. A technical manual specification (see 3.49) shall describe the content and format requirements for technical manuals. The specification shall bear an AMSC number assigned by the cognizant DID Approval Authority listed in the SD-1. The information specified in 5.11.5 shall be included in section 6 of the specification to indicate the proper contractual method of acquiring the technical manuals. DIDs shall not be included in any section of a technical manual specification.

4.3.3 Qualification data. Specifications shall not contain data required for qualification or qualification retention. The qualifying activity shall request data associated with qualification or qualification retention from contractors upon application for qualification or qualification retention.

4.3.4 Use of copyright or patent material. Copyright or patent material shall not be included in a specification without the prior consent of the copyright or patent owner. When such consent is obtainable, a credit line, if requested by the copyright or patent owner, shall be placed in the specification close to the material involved.

4.4 Contractual and administrative requirements. A specification shall not include requirements that are properly a part of the contract, such as cost, quantity required, time or place of delivery, methods of payment, liquidated damages, rework, repair, resubmittal, packaging, requirements for preparation, submission, delivery, approval, and distribution of data, and record keeping. In addition, a specification shall not include contract quality requirements, such as responsibility for inspection, establishment of quality or inspection program requirements, warranties, instruction for nonconforming items, and contractor liability for nonconformance. Contractual and administrative provisions considered essential for acquisition may be included in section 6 of the specification for information. The specification also shall not prescribe mandatory requirements or instructions for the Government Contract Administration Office. These include directions relating to quality assurance functions such as inspections, audits, reviews, certifications, and technical approvals.

4.5 Classified material. Specifications are working documents and shall be designed to avoid unnecessary restrictions in their dissemination. Specifications containing classified information shall be appropriately marked and handled in accordance with security regulations. The title of specifications shall not be classified. If only a limited amount of classified information is found in a specification, consider including such information in a classified annex or reference document to keep the main document unclassified. An unclassified administrative

notice shall be prepared for classified specifications to indicate where to submit release requests and to identify information that must be included in the request (see 5.19.6).

4.6 Text. The text shall be written in clear and simple language, free of vague terms or those subject to misinterpretation. All sentences shall be complete and in accordance with the rules of grammar.

4.6.1 Grammar and style. Except when Department of Defense requirements differ, the United States Government Printing Office Style Manual shall be used as a guide for capitalization, spelling, punctuation, syllabification, compounding words, tabular work, and other elements of grammar and style.

4.6.2 Abbreviations. Abbreviations shall be in accordance with ASME Y14.38. Abbreviations not covered by ASME Y14.38 shall be in accordance with the GPO Style Manual. The first time an abbreviation is used in text, it shall be placed in parentheses and shall be preceded by the word or term spelled out in full (for example, circuit (ckt), frequency converter (freq conv), and maximum working pressure (mwp)). The rule does not apply to abbreviations used for the first time in tables and equations. Abbreviations used on figures and in tables, but not referenced in the text or in any other portion of the specification, shall be spelled out in a footnote to the applicable figure or table.

4.6.3 Acronyms. The first time an acronym is used in text, it shall be placed in parentheses and shall be preceded by the word or term spelled out in full (for example, North Atlantic Treaty Organization (NATO)). The rule does not apply to acronyms used for the first time in tables and equations. Acronyms used on figures and in tables, but not referenced in the text or in any other portion of the specification, shall be spelled out in a footnote to the applicable figure or table. A complete list of acronyms may also be included in section 6 of the specification.

4.6.4 Symbols. Symbols shall be in accordance with IEEE 260.1. Symbols not covered by IEEE 260.1 shall be in accordance with the GPO Style Manual.

4.6.5 Proprietary names. Trade names, copyrighted names, proprietary names, manufacturer's part numbers or drawing numbers, or any other designation that would require the use of a product or process of one company shall not be used unless the item or process cannot be adequately described because of technical unknowns. In such instances, one, and if possible, several commercial alternatives shall be included, followed by the words "or equal" and a description of required salient features or particular characteristics to try to ensure wider competition. The use of "brand name or equal" is discouraged but, when determined to be necessary, shall be supported by written justification and retained in the permanent document file.

4.6.6 Commonly used words and phrases. The following rules shall apply for these commonly used words and phrases:

a. Referenced documents shall be cited in the following manner:

(1) “conforming to ...”
(2) “as specified in ...”
(3) “in accordance with ...”

In any case, use the same wording throughout a given document and a series of directly related documents.

b. “Unless otherwise specified” shall be used to indicate an alternative course of action. The phrase shall always come at the beginning of the sentence, and, if possible, at the beginning of the paragraph. This phrase shall be used only when it is possible to clarify its meaning by providing a reference, such as to section 6 of the specification, for further clarification in the contract or reference to another paragraph in the specification.

c. The phrase “as specified herein” may be used when making reference to a requirement in a specification that is rather obvious or not difficult to locate.

d. The phrase “to determine compliance with” or “to determine conformance to” should be used in place of “to determine compliance to.” In any case, use the same wording throughout.

e. In stating limitation, the phrase shall be stated thus: “The diameter shall be not greater than ...” for the upper limit, or “The diameter shall be not less than ...” for the lower limit.

f. The words “drawing” and “bulletin” shall be capitalized only when they are used immediately preceding the document identifier. However, specifications, standards, and handbooks shall be identified in the text only by their document identifier; thus, MIL-E-000 (not: “specification MIL-E-000”).

g. The following prepositional phrases shall be used when referencing figure and table information: “on a figure” or “in a table”.

h. “Shall”, the emphatic form of the verb, shall be used throughout sections 3, 4, and 5 of the specification whenever a requirement is intended to express a provision that is binding. For example, in the requirements section, state that “The gauge shall indicate . . . ” and in the test section, “The indicator shall be turned to zero, and 220 volts of alternating current shall be applied.” For specific test procedures, the imperative form may be used, provided the entire method is preceded by “The following test shall be performed” or similar wording. Thus, “Turn the indicator to zero and apply 220 volts of alternating current.” “Shall” shall not appear in sections 1, 2, or 6 of the specification.

i. “Will” may be used to express a declaration of purpose on the part of the Government. It may be necessary to use “will” in cases when simple futurity is required.

j. Use “should” and “may” to express nonmandatory provisions.

k. “Must” shall not be used to express a mandatory provision. Use the term “shall.”

l. Indefinite terms, such as “and/or,” “suitable,” “adequate,” “first rate,” “best possible,” “and others,” and “the like” shall not be used. Use of “e.g.,” “etc.,” and “i.e.,” should be avoided.

m. The term “flammable” shall be used in lieu of “inflammable,” and “nonflammable” shall be used in lieu of “unflammable” and “noninflammable.”

4.7 Measurements. Decimals shall be used in documents instead of fractions wherever possible. Measurements such as length, time, or weight shall be stated as a limit or with a tolerance.

4.8 Metric practices. Metric practices shall conform to IEEE/ASTM SI 10. Preference shall be given to expressing measurements in metric units, if practicable. The SD-10 provides guidance on when to develop a metric specification or to convert inch-pound specifications to metric.

4.8.1 Metric units. Metric units shall be in accordance with IEEE/ASTM SI 10. Metric sizes should generally be expressed in whole numbers. There shall be no soft conversion of units merely for the sake of conversion.

4.8.2 Dual dimensions. When preference is given to inch-pound units, acceptable metric units may be shown in parentheses. When preference is given to metric units, inch-pound units may be omitted or included in parentheses. The mixed use of both metric and inch-pound as primary measurements should be avoided.

4.9 Paragraph numbering. Each paragraph and subparagraph shall be numbered consecutively within each section of the specification, using a period to separate the number representing each breakdown. Lowercase letters followed by a period shall be used to identify listings within a paragraph or subparagraph. Bullets shall not be used. For clarity of text, paragraph numbering should be limited to three sublevels, unless additional sublevels are unavoidable. Paragraphs in this standard are an example of how to number paragraphs.

4.10 Paragraph identification. Each paragraph and subparagraph shall be given a subject identification. The first letter of the first word in the paragraph and subparagraph identification shall be capitalized. Paragraph and subparagraph identifications shall be underlined, italicized, or bold type.

4.11 Specification identifier. The specification identifier shall be placed on each page, at the upper right corner of the first page and at the upper center of each successive page. Drafts shall be identified by having the word “DRAFT” appear under the document identifier.

4.12 Page number. Except for the first page, which shall not be numbered, pages shall be numbered with consecutive Arabic numerals at the bottom center of each page beginning with page number 2.

4.13 Tables. A table shall be used when information can be presented more clearly than in text. The tables shall be placed immediately following or within the paragraph containing the first reference. If space does not permit, the table may be placed on the following page. If tables are numerous or their location would interfere with correct sequencing of paragraphs and cause difficulty in understanding or interpretation, they may be placed in numerical order at the end of the specification and before any figures, appendix, or index. Information included in tables shall not be repeated in the text.

4.13.1 Table numbering. All tables shall be numbered consecutively throughout the document with Roman numerals in the order of their reference in the text. The word "TABLE" shall be in full capitalization, followed by the Roman numeral and a period, centered above the table.

4.13.2 Table title. All tables shall have a title. The title shall be underlined, italicized, or boldfaced. Only the first letter of the title shall be capitalized. Table titles shall be centered above the table on the same line with the table number. If the title is too long to fit on one line, the second line shall be aligned with the first letter of the title. If a listing or tabulation appears within a paragraph as an integral part of that paragraph, and obviously does not require a title, the listing or tabulation need not be titled.

4.13.3 Table format. Tables shall be boxed in and ruled horizontally and vertically as necessary to ensure clarity of the table contents. If a table is of such width that it would be impractical to place it in a vertical position, it may be rotated counterclockwise 90 degrees. Large tables may be divided and, if possible, printed on facing pages.

4.13.4 Continuation of tables. If a table is continued to additional page(s), a horizontal line shall not be drawn at the end of the page, unless the table is a group or method type that requires a line of separation between the groups. When the table is continued to the next page, the title shall be repeated and a dash followed by the word "Continued" at the end of the title; for example, "TABLE II. Qualification inspection - Continued." The column headings shall be repeated at the top of the page on which the continuation is presented. The table shall be closed with a horizontal line when all information has been entered.

4.14 Figures. Dimensioning practices for outline drawings shall comply with ASME Y14.5M. Figures should not be confused with numbered and dated drawings. Figures should be placed immediately following or within the paragraph containing the first reference to the figure. If figures are numerous or their location would interfere with correct sequencing of paragraphs and cause difficulty in understanding or interpretation, they may be placed in numerical order at the end of the specification following any tables and before any appendix or index. If the figure is of such width that it would be impractical to place it in a vertical position, it may be rotated counterclockwise 90 degrees.

4.14.1 Figure numbering. All figures shall be numbered consecutively throughout the document with Arabic numerals in the order of their reference in the text. The word "FIGURE" shall be in full capitalization, followed by the Arabic numeral and a period, centered below the figure.

4.14.2 Figure title. All figures shall have a title. The title shall be underlined, italicized, or boldfaced. Only the first letter of the title shall be capitalized. Figure titles shall be centered below the figure on the same line with the figure number. If the title is too long to fit on one line, the second line shall be aligned with the first letter of the title.

4.14.3 Continuation of figures. Large figures may be broken and, if possible, printed on facing pages. When a figure is continued on the next page, the number and title shall be repeated below the figure with a dash followed by the word "Continued" at the end of the title; for example, "FIGURE 6. Pump interface dimensions – Continued."

4.15 Footnotes and notes. Footnotes and notes may be used as indicated below.

4.15.1 Footnotes to text. Footnotes may be used to convey additional information that is not properly a part of the text. A footnote to the text shall be placed at the bottom of the page containing the reference to it. Footnotes shall be consecutively numbered throughout the specification with Arabic numerals.

4.15.2 Footnotes to tables. Footnotes shall be numbered separately for each table as they appear in the table. Footnote numbers or symbols shall be placed immediately following a word and preceding a numeric value requiring the footnote. Numbered footnotes shall be listed in order immediately below the table. When numbered footnotes may lead to ambiguity (for example, in connection with a chemical formula), superscript letters, daggers, and other symbols may be used.

4.15.3 Notes to figures. Notes to figures are numbered separately from textual footnotes within the document. Drafting or dimensional notes shall be numbered consecutively and placed below the figure and above the title. The word "NOTES:" shall be placed below the figure at the left margin of the figure followed by the explanatory information in Arabic numeral sequence under "NOTES." For example:

"NOTES:

1. Dimensions are in millimeters.
2. Inch-pound equivalents are given for information only."

4.16 Foldouts. Foldouts should be avoided since their use will require special printing and handling procedures. Whenever possible, lengthy tables should be reformatted as multiple, single-page tables. When foldouts are required, they shall be grouped in one place, preferably at the end of the document (in the same location as figures) and suitable reference to their location shall be included in the text.

4.17 Definitions. Definitions shall be listed in alphabetical order in section 6. A parenthetical phrase referring to the applicable paragraph in section 6 shall follow the terms to indicate the existence of a definition, for example, "(see 6._._)". When a standard definition exists, the definition should be quoted word for word and the source cited.

4.18 Cross-reference. Cross-reference shall be used only to clarify the relationship of requirements within the specification and to avoid inconsistencies and unnecessary repetition. When the cross-reference is to a paragraph or subparagraph within the specification, the cross-reference shall be only to the specific paragraph number. The word "paragraph" shall not appear; for example, "(see 3.1.1)".

4.19 References to other documents. Judicious referencing of other documents in specifications is a valuable tool that eliminates the repetition of requirements and tests adequately set forth elsewhere. However, unnecessary or untailored referencing of other documents can lead to increased costs, excessive tiering, ambiguities, and compliance with unneeded requirements. The following rules shall apply when referencing another document as a requirement in a specification and listing it in section 2 as an applicable document:

a. If the information is less than a page and if it is not a violation of copyright provisions (see 4.3.4), it should be included directly into the specification without referencing another document.

b. Referenced documents shall be current (not canceled or superseded), approved for use (not drafts), and readily available.

c. Inactive-for-new-design documents may be referenced in other inactive-for-new-design documents. For active documents, referencing of inactive-for-new-design documents shall be avoided. For active documents, inactive-for-new-design documents may only be referenced for guidance or for specific item types, grades, or classes, which the specification designates as inactive and will be eventually replaced.

d. Unless the entire referenced document applies, it shall not be cited in total, but shall be tailored by citing the appropriate sections of the document, such as specific types, grades, or classes; test methods; or definitive descriptions (for example, "the painting requirements of MIL-STD-000"). Do not reference specific paragraph, table, or figure numbers from another document since these may change when the document is revised.

e. References to policy-type documents, such as directives, instructions, and regulations should be avoided. Many Government regulatory agencies, such as the Environmental Protection Agency or the Occupational Safety and Health Administration, issue directives and regulations that serve as technical standards. It is acceptable to reference these types of directives and regulations.

f. DIDs may be listed in Section 6 of data specifications as allowed by 4.3 and 5.11.4, but shall not appear as requirements elsewhere in the specification.

g. Documents that define management and manufacturing practices and processes shall not be cited in performance specifications, and should be avoided in all specifications.

h. Specifications, standards, drawings, or other documents that contain proprietary or unique design solutions that would restrict competition or not be readily available should not be referenced.

4.20 Approved document format. The approved and dated document shall have one-inch margins. Approved and dated unclassified documents shall be sent to the DoDSSP in searchable Portable Document Format (PDF) using the Electronic Document Submittal tool in the ASSIST database. Hyperlinks may be inserted into the document to facilitate electronic viewing of the document. Hyperlinks are encouraged for a table of contents and index. Classified documents shall be transmitted to the DoDSSP in accordance with procedures for handling classified materials.

5. DETAILED REQUIREMENTS

5.1 General. This section contains detailed format requirements for preparing the sections of a specification and associated documents, namely - supplement, amendment, notice, and specification sheet. Figure 1 provides a checklist of specification elements.

5.2 Draft note. Drafts of proposed specifications shall carry one of the following notes at the top of the first page, as applicable:

> "NOTE: This draft, dated (date) prepared by (preparing activity), has not been approved and is subject to modification. DO NOT USE PRIOR TO APPROVAL. (Project)"

> "NOTE: This draft, dated (date) prepared by (name of agent), as agent for (preparing activity), has not been approved and is subject to modification. DO NOT USE PRIOR TO APPROVAL. (Project)"

This note shall be removed from the approved document prior to publication.

5.3 Cover page.

5.3.1 Program-unique specifications. Program-unique specifications shall include a cover page as the first page (see figure 2). The cover page shall include the information specified in 5.3.1.1 through 5.3.1.10.

5.3.1.1 Program-unique specification identifier. The original design activity shall generate the program-unique specification identifier. The identifier shall be in the upper right corner of the cover page. The identifier may include any combination of numbers, letters, and dashes, but shall not include any other symbols. The letters "PRF", if it is a performance specification, or "DTL", if it is a detail specification, shall be entered in front of the specification identifier.

5.3.1.2 Commercial and Government Entity (CAGE) code. The CAGE code for the original design activity of a program-unique specification shall be identified in the upper right corner of the cover page beneath the identifier. If a revision of the specification is being prepared, and if the design activity that is currently responsible for the specification is different than the original design activity, the CAGE code of the current change control authority shall be identified beneath the original design activity's CAGE code.

5.3.1.3 Date of specification. The specification approval date shall appear in the upper right corner of the cover page under the CAGE code.

5.3.1.4 Heading. Program-unique specifications shall have one of the following headings centered above the title:

a. “PERFORMANCE SPECIFICATION” as defined in 3.35.

b. “DETAIL SPECIFICATION” as defined in 3.13.

5.3.1.5 Type of program-unique specification. The type of program-unique specification shall be included as a part of the specification title using one of the following phrases:

“SYSTEM SPECIFICATION FOR”

“ITEM SPECIFICATION FOR”

“SOFTWARE SPECIFICATION FOR”

“MATERIAL SPECIFICATION FOR”

“PROCESS SPECIFICATION FOR”

5.3.1.6 Program-unique specification title. The program-unique specification title shall be the name by which the entity (system, item, software, process, or material) will be known. In most cases, it will consist of the approved item name and type designator issued by the activity authorized to assign the nomenclature name. Specification titles shall not be duplicated within a program. References to major assemblies, end items, computer software units, processes, or materials shall be included in a title only to the extent necessary to distinguish between similar systems, items, software, processes, or materials. When an approved item name is not required, the title requirements in 5.4.6 shall be used as applicable.

5.3.1.7 Design activity approval submittal block. A program-unique specification shall include a design activity approval submittal block, which includes the name of the authorized submitter, title, design activity name, and submittal date.

5.3.1.8 “Approved for use” authorization block. The authorized government approval block shall indicate whether the program-unique specification is authorized for use as a functional, allocated, or product baseline. This block shall include the name and title of the

authorized government approving official, the government buying name, and the date of approval.

5.3.1.9 Designation of FSC. The FSC designation for item and material program-unique specifications should be located in the lower right corner of the cover page.

5.3.1.10 Government rights in technical data and software. When applicable, copyright, limited rights, restricted rights, or Government Purpose License Rights claims shall be identified on the cover page of the specification with the appropriate approved legend.

5.3.2 Defense specifications. A defense specification may have a cover page (see figure 3). While there is no restriction on whether a defense specification may have a cover page, it is not recommended for specifications less than 20 pages. If a cover page is used, it shall include all of the elements in 5.4 as shown on figure 3, except as follows:

a. The applicable preamble specified in 5.4.8 shall appear above "SECTION 1. SCOPE" and not on the cover page.

b. The DoD seal shall be in the center of the cover page after the title.

If a cover page is used, the specification may also include a contents page. A contents page shall not be used without a cover page. The contents page shall follow the cover page. The single word "CONTENTS" in capital letters shall head the contents page. The contents page shall include section, paragraph, figure, table, and appendix numbers or letters and titles, as appropriate; and an index, if used, and the page numbers to locate them. See the contents page of this standard for an example.

5.4 First page information for defense specifications without cover page. If a defense specification does not use a cover page, the information in 5.4.1 through 5.4.12 shall be included on the first page of the specification, as applicable.

5.4.1 Defense specification identifiers. The preparing activity shall assign the identifier for new defense specifications using the Automated Document Number module in ASSIST.

5.4.1.1 Coordinated specification identifier. The identifier for coordinated specifications shall be in the upper right corner of the first page. The specification identifier shall consist of the letters "MIL" followed by a hyphen; the letters "PRF" if it is a performance specification or "DTL" if it is a detail specification followed by a hyphen; and an Arabic numeral. For example, "MIL-PRF-123" or "MIL-DTL-123".

5.4.1.2 Limited-coordination specification identifer. The identifier for a limited-coordination specification shall be as specified in 5.4.1.1, except the document identifier shall also include the SD-1 symbol designation of the preparing activity or Military Department or Defense Agency as a parenthetical suffix after the specification identifier. For example, "MIL-PRF-12345(CR)" or "MIL-DTL-16878E(NAVY)."

5.4.1.3 Interim specification identifier. Interim specification identifiers shall be prefixed by two zeros preceding the document number followed by the SD-1 symbol designation of the preparing activity or Military Department or Defense Agency as a parenthetical suffix after the specification identifier. Both the "00" and the parenthetical suffix shall be removed once the document is fully coordinated and approved. For example, “MIL-PRF-00915(SH)” or “MIL-DTL-002345(NGA).”

5.4.2 Date of specification. The date of approval shall appear under the specification identifier on the first page only. Drafts shall not have a date in this location. The space shall include the word “DRAFT” until the document is approved. For draft specifications, the phrase “DRAFT DATED (DATE OF DRAFT)” shall be included below the header of each page and removed when the document is approved.

5.4.3 Measurement system identification. A defense specification shall indicate whether its units of measurement are in metric or inch-pound, or whether the document is not measurement sensitive by placing one of the designations below in a rectangular box above the specification identifier.[1] Documents that include a mixture of metric and inch-pound units shall be identified by “INCH-POUND.”

METRIC	INCH-POUND	NOT MEASUREMENT SENSITIVE
MIL-PRF-123	MIL-PRF-123	MIL-PRF-123

5.4.4 Superseding document indicator. When applicable, a superseding document indicator shall appear in the upper right corner of the first page, below the specification identifier and date, to identify those documents that have been replaced by the issuance. A line shall separate the specification identifier and date of the superseding document from the superseding data. The word “SUPERSEDING” shall be entered below the separation line, followed by the number and date of the superseded document(s).

5.4.4.1 Superseding revisions. When a specification is revised, the superseding information shall indicate that the revision supersedes the prior issuance of the specification, as well as any interim specification, if applicable. Only revisions shall be listed. Amendments and notices, which are included in the superseding revision shall not be listed.

a. Example of revision superseding another revision.

MIL-DTL-12345B
11 August 2002
SUPERSEDING
MIL-DTL-12345A
5 May 1996

[1] At one time, the letters “DOD” were used in the document identifier to designate specifications that could be used in metric design; for example, DOD-A-12345. This policy was changed in 1988, and preparing activities were instructed to change the “DOD” identification back to “MIL” when the specification was next revised.

b. Example of revision superseding another revision and an interim revision.

MIL-PRF-2345B
11 August 2002
SUPERSEDING
MIL-PRF-002345A(AS)
6 June 1996
MIL-C-2345
18 July 1987

5.4.4.2 Superseding other documents. A specification may supersede other documents totally or in part. When this happens, an explanatory note shall be included in section 6 of the specification to clarify cross-referencing information (see 5.11.8), identify applications, state what parts of document are superseded, and provide any other information that contributes to understanding how to apply the superseding document.

a. Example of document superseding a different document.

MIL-PRF-56789
11 August 2002
SUPERSEDING
DRAWING 123456C
5 May 1996
(See 6._)

b. Example of document superseding two documents.

MIL-PRF-890B
11 August 2002
SUPERSEDING
MIL-PRF-890A
6 June 1996
MIL-C-12345
18 July 1987
(See 6._)

c. Example of document superseding a document in part.

MIL-PRF-56789
11 August 2002
SUPERSEDING
MIL-A-123D (IN PART)
5 May 1986
(See 6._)

d. Example of document superseding three or more documents. When superseding three or more documents, place the list of superseded documents in section 6 and include a reference to the paragraph that has the superseding information.

MIL-PRF-890B
11 August 2002
SUPERSEDING
(See 6.)

5.4.4.3 Interim specification. An interim specification is only approved on a temporary basis with the expectation that a fully coordinated specification will be approved, so therefore, interim specifications cannot supersede other documents. Instead, the phrase "USED IN LIEU OF" shall be used in place of the term "SUPERSEDING" as shown below:

MIL-PRF-0012345B(CR)
23 December 2001

USED IN LIEU OF
MIL-PRF-12345A
9 September 1999

5.4.5 Heading. One of the following headings shall be centered above the specification title:

a. "PERFORMANCE SPECIFICATION" as defined in 3.35.

b. "DETAIL SPECIFICATION" as defined in 3.13.

5.4.6 Specification titles. A specification title shall consist of a basic item name and sufficient modifiers to differentiate between similar specifications listed in the ASSIST database. Duplication of specification titles is not permissible.

5.4.6.1 Item names. Item names shall conform to Cataloging Handbook H6. Use of other than an approved item name in Cataloging Handbook H6 shall be on an agreed-upon basis between the cataloging organizations and the specification preparing activity.

5.4.6.2 General rules. The following rules shall apply to specification titles:

a. Specification titles may be in two parts. The first part shall be an item name in accordance with 5.4.6.1. When required, the second part shall consist of those modifiers and Government type designators necessary to complete the item identification (see 5.4.6.4). The first part of the title shall be separated from the second part of the title by a dash. For example:

"SPRING, HELICAL COMPRESSION - RECOIL ADAPTER"
{First part of title} {Second part of title}

b. Abbreviations shall not be used in the first part of the title. Abbreviations may be used in the second part of the title, and shall comply with 4.6.2.

c. Specification titles shall not begin with numbers.

d. Specification titles shall be brief as possible, but constructed in such a way as to distinguish between similar items.

e. For general specifications, the word "GENERAL SPECIFICATION FOR" shall be the closing phrase of the title.

f. Trademark or copyrighted names shall not be used in specification titles, except for trademark names owned by an agency of the U.S. Government.

g. No word(s), symbol(s), or combination thereof that would disclose sensitive or classified information shall be used in specification titles.

5.4.6.3 First part of title. The first part of the title shall be one of the following in the listed order of preference.

a. An approved item name selected from Cataloging Handbook H6.

b. If an approved item name does not exist, a basic name shall be constructed as follows:

(1) The basic name shall be a noun or noun phrase.

(2) This noun or noun phrase shall establish a basic concept of an item. A compound noun or noun phrase shall be used only when a single noun is not adequate to establish a basic concept of an item.

(3) The noun or noun phrase shall describe the part and the usage of the part, and not the material or method of fabrication.

(4) The noun or noun phrase shall be used in the singular form, except as follows:

(a) When the only form of the noun is plural, such as "TONGS."

(b) When the nature of the item requires the plural form, such as "GLOVES."

(c) When more than one product is covered by different classes, grades, types, sizes, or other classifications.

(5) An ambiguous noun, or one that designates several classes of items, shall not be used alone, but shall be used as part of a noun phrase. For example:

Acceptable	Unacceptable
SLIDE RULE	RULE, SLIDE
SOLDERING IRON	IRON, SOLDERING
CIRCUIT CARD ASSEMBLY	ASSEMBLY, CIRCUIT CARD
PRINTED WIRING BOARD	BOARD, PRINTED WIRING
PRINTED CIRCUIT CARD	CARD, PRINTED CIRCUIT

(6) When an item is not a container or material, but its name involves the use of a noun that ordinarily designates a container or material, a noun phrase shall be used as the basic name. For example:

Acceptable	Unacceptable
JUNCTION BOX	BOX, JUNCTION
CABLE DRUM	DRUM, CABLE

(7) The following words shall never be used alone, but may be the last word of a noun phrase:

Apparatus	Equipment	Plant
Assembly	Group	Ship
Assortment	Installation	Subassembly
Attachment	Kit	Tackle
Compound	Machine	Tool
Device	Mechanism	Unit
Element	Outfit	Vehicle

EXCEPTION: In certain instances, some of the listed words may be used as the first word in a basic noun phrase, such as in “MACHINE SHOP” or “TOOL KIT.”

(8) When the noun or noun phrase represents an item for which types, grades, or varieties are applicable, the remainder of the first part of the title shall consist of one or more modifiers.

(a) A modifier may be a single word or qualifying phrase. The first modifier shall serve to narrow the area of concept established by the basic name and succeeding modifiers must continue a narrowing of the item concept by expressing a different type of characteristic. A word directly qualifying a modifying word shall precede the word it qualifies, thereby forming a modifying phrase. For example, “BRACKET, UTILITY LIGHT.” The word “UTILITY” qualifies the word “LIGHT” and precedes it in the modifying phrase.

(b) A modifier shall be separated from the noun or noun phrase by a comma and from any preceding modifier by a comma.

(c) The conjunction “or” and preposition “for” shall not be used.

5.4.6.4 Second part of title. The second part of the title shall consist of such additional modifiers, modifying phrases, or Government type designators as are required. Modifiers indicating what an item is (its shape, structure, or form) or what the item does (its function) are preferable to modifiers indicating the application (what it is used for) or location of the item (where it is used).

5.4.7 Inactivation, reactivation, and reinstatement note.

5.4.7.1 Inactive for new design note. When specifications are made inactive for new design concurrent with a revision or amendment action, the following note shall appear below the title and above the preamble on the first page and be boxed for emphasis. Superseding documents for new design shall be noted in the box, when applicable.

Inactive for new design after (fill in date). For new design, use (identify superseding document).

5.4.7.2 Reactivation note. When inactive for new design specifications are returned to an active status concurrent with a revision or amendment action, the following note shall appear below the title and above the preamble on the first page and be boxed for emphasis.

Reactivated after (fill in date) and may be used for new and existing designs and acquisitions.

5.4.7.3 Reinstatement note. When cancelled specifications are returned to an active status concurrent with a revision or change action, the following note shall appear below the title and above the preamble on the first page and be boxed for emphasis.

Reinstated after (fill in date) and may be used for new and existing designs and acquisitions.

5.4.8 Preambles.

5.4.8.1 Preamble for coordinated specifications. The following preamble shall appear immediately under the title to show promulgation by the Department of Defense for specifications where more than one Military Department or Defense Agency has registered an interest as a custodian or review activity:

> "This specification is approved for use by all Departments and Agencies of the Department of Defense."

5.4.8.2 Preamble for limited-coordination specifications. One of the following preambles shall appear immediately under the title to show promulgation by the Department of Defense for specifications where only a single activity, Military Department, or Defense Agency has registered an interest:

a. For specifications that will be used throughout a Military Department or Defense Agency, use the following preamble:

> "This specification is approved for use by (fill in the appropriate Military Department or Defense Agency) and is available for use by all Departments and Agencies of the Department of Defense."

b. For specifications that will be used by only a single activity in a Military Department or Defense Agency, use the following preamble:

> "This specification is approved for use by the (fill in name of preparing activity) and is available for use by all Departments and Agencies of the Department of Defense."

5.4.8.3 Preamble for interim specifications. For interim specifications, the following preamble shall appear immediately under the title:

> "This specification is approved for interim use by the (preparing activity). Other activities in the Department of Defense may use this interim revision or may continue using (fill in coordinated document identifier)."

5.4.8.4 Preamble for specifications with restricted availability. When the availability of a specification is restricted, the following shall be added at the end of the appropriate preamble: "within the distribution limitations noted at the bottom of the page."

5.4.9 Contact information. Specifications shall include contact information at the bottom center of the first page immediately above the FSC designation. The information shall include a mailing address, an email address, and reference to the ASSIST database. This information may be omitted for specifications with classified or sensitive information if there are security concerns. The note shall be boxed for emphasis.

Comments, suggestions, or questions on this document should be addressed to (fill in mailing address) or emailed to (fill in email address). Since contact information can change, you may want to verify the currency of this address information using the ASSIST Online database at http://assist.daps.dla.mil.

5.4.10 Designation of federal supply class (FSC), group (FSG), or area assignment. The specification shall be assigned a FSC or FSG as defined in the Cataloging Handbook H2 or a standardization area as defined in the SD-1. The applicable FSC, FSG, or area assignment shall appear in the lower right corner of the first page of the specification below the point of contact

box. The symbol "GP" shall follow the FSG number (for example, 59GP) when the FSG number identifies the assignment or project. Specifications covering more than one FSC shall be designated with the applicable FSG or with the appropriate standardization area if more than one FSG is covered. Dual or multiple FSC, FSG, or standardization area designations shall not be used.

5.4.11 AMSC number. Data product and technical manual specifications shall reflect the assigned AMSC number (see 4.3.1 and 4.3.2) at the bottom left of the first page, below the point of contact box. Amendments to these specifications shall show the same AMSC number as shown on the document being amended. All other specifications and notices to specifications (including data product and technical manual specifications) shall be marked "AMSC N/A".

5.4.12 Restriction statements. Any statements that restrict access, availability, or use of specifications shall be placed at the bottom of the first page below any FSC, FSG, or standardization area.

5.5 Sectional arrangement of specifications. Except for graphic or tabular specification sheets (see 5.16), specifications shall contain six numbered sections, titled and numbered as shown below.

1. SCOPE

2. APPLICABLE DOCUMENTS

3. REQUIREMENTS

4. VERIFICATION

5. PACKAGING

6. NOTES

If there is no information pertinent to a section, the words "This section is not applicable to this specification." shall appear below the section heading.

5.6 SECTION 1 – SCOPE.

5.6.1 Scope. The statement of the scope shall repeat the item name and its modifiers and consist of a clear, concise abstract of the coverage of the specification. The scope may include information as to the use of the item other than specific detailed applications covered under "Intended use" (section 6). This brief statement shall be the first paragraph in section 1 of the six-section specification. The scope shall not contain requirements. Figures shall not be included in the scope. See figure 4 for an example of a scope section.

5.6.2 Classification and Part or Identifying Number (PIN).

5.6.2.1 Classification. When applicable, types, grades, classes, or other classifications shall be listed under this heading in section 1 and shall be in accordance with accepted industry practice (see figure 4). The same designation shall be used throughout the specification. When more than one type, grade, class, or other classification is listed, each shall be briefly defined. When only one classification is covered, a statement to this effect shall be included in the scope paragraph, and the classification paragraph omitted. The classification should remain constant from revision to revision of the specification. When the characteristics of an item change enough to affect interchangeability, the original designation shall be deleted and a new classification added. If it becomes necessary to change the designation without changing the characteristics of the item, a cross-reference shall be included in section 6 indicating the relationship between the old and new designations. This cross-reference shall remain in section 6 in all successive revisions identifying designations in all revisions since the original designation change. Since such changes require cataloging and other record changes, they shall be kept to a minimum.

5.6.2.1.1 Other classifications. If the terms type, grade, and class cannot adequately classify differences, other terms such as color, form, weight, size, power supply, temperature rating, condition, unit, enclosure, rating, duty, insulation, kind, and variety may be used.

5.6.2.1.2 Classification for reliability level identification. When a specification contains a multilevel reliability requirement, section l of the specification shall identify the levels covered.

5.6.2.1.3 Use of international standardization agreement code numbers. In designating the classification, North Atlantic Treaty Organization (NATO) or other international standardization agreement code numbers shall be included in section 1, if applicable.

5.6.2.2 PIN. When a specification covers more than one part, item, or material that is subject to assignment of National Stock Numbers and an identification problem in the Federal Supply System may result, a specification-based PIN to identify the parts, items, or materials shall be included under this heading in section 1.

5.6.2.2.1 PIN construction. If a PIN is needed, its construction shall be provided by the DoD activity requiring it. PINs shall be kept short and shall not exceed 32 characters. PINs for which a part numbering system is already in use do not have to comply with the structure given below; however, the adoption of a PIN should be considered upon revision of the specification. When using interim documents, the “00” prefix shall not be included as a part of the PIN.

a. The part numbering system shall be as follows, except as noted in item b. below:

M12345–1A23CB5

Characters following the dash shall consist of numbers, letters, or combinations thereof to designate variable characteristics (for example, different sizes, materials, temperature ratings, finishes, reliability)

Specification number. Do not include revision letter, activity symbols, or any other characters or symbols.

M prefix (Those existing PINs that use a “D” prefix may continue to do so.)

The above example also applies to MS sheet part numbers, except the prefix “MS” would be used instead of “M” and those PINS that use a “DS” prefix may continue to do so.

b. For specification sheets, the PIN shall be as follows:

M12345/9–1A23CB5

Characters following the dash shall consist of numbers, letters, or combinations thereof to designate variable characteristics (for example, different sizes, materials, temperature ratings, finishes, reliability)

The slash followed by a number indicates the specification sheet number. Do not include revision letter, activity symbols, or any other characters or symbols.

General specification number.

M prefix (Those existing PINs that use a “D” prefix may continue to do so.)

5.6.2.2.2 Changes to PIN designations. If a specification is modified so that the items covered by it are not physically and functionally interchangeable with those previously covered by the specification, the new items shall be identified under a revised PIN to indicate new levels. A cross-reference of new PINs that are substitutable for the preceding part numbers shall be

included in section 6 of the specification. Each generation of substitution data will be retained in the specification for traceability.

5.6.3 Additional scope requirements for program-unique specifications only. In addition to the above scope requirements, the scope section for program-unique specifications shall contain information specified in 5.6.3.1 and 5.6.3.2, as applicable.

5.6.3.1 Entity type description. When applicable, this paragraph shall provide a brief description of the entity covered by the specification and identify all immediately subordinate functional elements of the entity, including, as applicable, their names, identifiers, and program-unique identifiers. If the specification covers items or materials, this paragraph shall list the assigned part number(s), and when applicable, the parameters which differentiate them.

5.6.3.2 System software overview. For software, this paragraph shall briefly state the purpose of the system and the software to which the specification applies. It shall describe the general nature of the system and software; summarize the history of system development, operation, and maintenance; identify the project sponsor, acquirer, user, developer, and support agencies; identify current and planned operating sites; and list other relevant documents.

5.7 SECTION 2 – APPLICABLE DOCUMENTS.

5.7.1 Listing of applicable documents. Section 2 shall list only those documents referenced in sections 3, 4, or 5 of the specification that are needed to meet requirements or provide useful information for meeting requirements (see figure 5). If a document is only cited as an example or for background information, it does not have to be listed in section 2. For the types of documents that may be referenced in specifications, see 4.19. The first paragraph in section 2 shall be as follows:

"2.1 General. The documents listed in this section are specified in sections 3, 4, or 5 of this specification. This section does not include documents cited in other sections of this specification 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 of documents cited in sections 3, 4, or 5 of this specification, whether or not they are listed."

5.7.2 Government documents. The second paragraph in section 2 shall be titled as:

"2.2 Government documents."

This paragraph shall identify all types of Government documents required in sections 3, 4, or 5 if applicable. The first subparagraph under this heading shall identify Government specifications, standards, and handbooks, if applicable. The second subparagraph under this heading shall identify other types of Government documents, drawings, and publications, if applicable.

5.7.2.1 Government specifications, standards, and handbooks. Government specifications, standards, and handbooks shall be listed by document identifier and title. Defense

specifications shall exclude from referenced documents the revision letters, suffix (preparing activity symbols), and the "00" designation for interim specifications. Program-unique specifications may include the revision letters. Titles shall be taken from the documents rather than an index. Government specifications, standards, and handbooks shall be listed numerically (except federal specifications, which shall be listed alphanumerically) under the following headings in the order shown, as appropriate:

INTERNATIONAL STANDARDIZATION AGREEMENTS
FEDERAL SPECIFICATIONS
FEDERAL STANDARDS
FEDERAL INFORMATION PROCESSING STANDARDS
COMMERCIAL ITEM DESCRIPTIONS
DEPARTMENT OF DEFENSE SPECIFICATIONS
DEPARTMENT OF DEFENSE STANDARDS
DEPARTMENT OF DEFENSE HANDBOOKS

5.7.2.1.1 Defense specifications shall include the following paragraph as 2.2.1 if specifications, standards, and handbooks are to be listed as applicable 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."

5.7.2.1.2 Program-unique specifications shall include one of the following paragraphs as 2.2.1 if specifications, standards, and handbooks are to be listed as applicable documents:

a. "2.2.1 Specifications, standards, and handbooks. The following specifications, standards, and handbooks of the exact revision listed below form a part of this specification to the extent specified herein."

b. "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."

5.7.2.1.3 If a general specification has five or fewer specification sheets (including MS sheets), these specifications shall be listed by exact title in numerical sequence. For specifications having six or more specification sheets or MS sheets, one of following parenthetical notes shall follow the Department of Defense specification listing:

a. "(See ASSIST database for list of specification sheets.)"

b. "(See supplement 1 for list of specification sheets.)"

5.7.2.1.4 The parenthetical source statement below shall follow the listing of Government specifications, standards, and handbooks. The ASSIST database shall be checked to verify that all of the listed Government specifications, standards, and handbooks are in the ASSIST

database. If they are not, contact the DoD Single Stock Point to determine if the missing documents can be included in ASSIST and what action must be taken. If the documents are not in the ASSIST database and they cannot be included in the database, the source for obtaining these documents shall be included.

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

5.7.2.1.5 When listing FED-STD-595 in section 2, include the specific color chip(s) required by the specification rather than listing the entire federal standard. See figure 5 for example of how to list FED-STD-595. (NOTE: FED-STD-595 is not included in section 2 of this standard since it is not a requirement for this standard.)

5.7.2.2 Other Government documents, drawings, and publications. The following types of documents shall be listed after the paragraph of 2.2.1 above, in appropriate order (numerically or alphanumerically), under the headings of the issuing Government agency. The document(s) shall be listed by identifier and title, if applicable. Titles shall be taken from the document rather than from an index.

a. Other types of DoD publications, which might include technical manuals, design guides, cataloging handbooks, or reports.

b. Drawings. When detailed drawings referred to in a specification are listed in an assembly drawing, it is only necessary to list the assembly drawing. Figures bound integrally with the specification are not considered drawings and shall not be listed in section 2, unless they are reduced-size copies of drawings provided in the specification for information only and use of the full-size drawings is normally required with the specification.

c. Government documents issued by non-DoD agencies, such as the Environmental Protection Agency, National Aeronautics and Space Administration, and the Occupational Safety and Health Administration.

5.7.2.2.1 Defense specifications shall include the following paragraph as 2.2.2 if Government documents, drawings, and publications not listed under 2.2.1 are to be listed as applicable documents:

"2.2.2 Other Government documents, drawings, and publications. The following other Government documents, drawings, and publications 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."

5.7.2.2.2 Program-unique specifications shall include one of the following paragraphs as 2.2.2 if Government documents, drawings, and publications not listed under 2.2.1 are to be listed as applicable documents:

a. "2.2.2 Other Government documents, drawings, and publications. The following other Government documents, drawings, and publications of the exact revision level shown form a part of this document to the extent specified herein."

b. "2.2.2 Other Government documents, drawings, and publications. The following other Government documents, drawings, and publications 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."

5.7.2.2.3 A parenthetical source statement shall follow each individual document or each group of related documents providing the name and address of the source. If possible, an Internet source for viewing or obtaining the documents shall be provided.

5.7.3 Non-Government standards and other publications. Non-Government standards and other publications not normally furnished by the Government shall be listed in appropriate order (numerically or alphanumerically) under the headings of the respective non-Government standards organization. The document(s) shall be listed by identifier and title, if applicable. Titles shall be taken from the document rather than from an index.

5.7.3.1 Defense specifications shall include the following paragraph as 2.3 if non-Government standards are to be listed as applicable documents:

"2.3 Non-Government publications. The following documents 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."

5.7.3.2 Program-unique specifications shall include one of the following paragraphs as 2.3 if non-Government standards are to be listed as applicable documents:

a. "2.3 Non-Government publications. The following documents of the exact revision listed below form a part of this document to the extent specified herein."

b. "2.3 Non-Government publications. The following documents 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."

5.7.3.3 A parenthetical source statement shall follow each respective issuing non-Government standards organization listing of documents, providing the name and address of the source. If possible, an Internet source for viewing or obtaining the documents shall be provided.

5.7.4 Order of precedence. In order to avoid confusion in the possible conflict between the requirements of the specification and the documents referenced therein, the following statement shall be included:

"2.4 Order of precedence. Unless otherwise noted herein or in the contract, in the event of a conflict between the text of this document and the references cited herein (except for related specification sheets), the text of this document takes precedence. Nothing in this document, however, supersedes applicable laws and regulations unless a specific exemption has been obtained."

The parenthetical phrase "(except for related specification sheets)" shall be omitted from the above paragraph for specifications that do not have related specification sheets.

5.8 SECTION 3 – REQUIREMENTS. This section shall define the requirements that the entity must meet to be acceptable. Appendix A provides guidance on some of the requirements that may be considered when developing a specification. The following criteria shall apply for stating requirements:

a. Each requirement shall be stated in such a way that an objective verification can be defined for it.

b. Each requirement should be cross-referenced to the associated verification.

c. Only requirements that are necessary, measurable, achievable, and verifiable shall be included.

d. Requirements shall be worded to provide a definitive basis for acceptance or rejection.

e. Requirements shall be described in a manner to encourage competition.

f. Requirements shall be worded such that each paragraph only addresses one requirement or topic.

5.8.1 Performance specifications. Requirements in performance specifications shall prescribe the item's required performance, operating requirements, operational environment, interfaces, and interoperability requirements. Performance specifications shall not prescribe how a performance requirement is to be achieved by requiring the use of specific materials or parts or detailed requirements for the design or construction of the item beyond those needed to ensure interchangeability with existing items. For a general specification to be designated as a "Performance Specification," the requirements in its specification sheets or MS sheets shall also be stated as performance requirements. A general specification shall not have a mixture of performance and detail specification sheets. The SD-15 provides guidance on writing performance requirements. Figure 6 provides an example of performance requirements.

5.8.2 Detail specifications. Detail specifications may consist of all detail requirements or a blend of performance and detail requirements. To the greatest extent possible, requirements in

detail specifications shall be in terms of performance. Detail specifications shall specify materials, design or construction requirements, or "how to" requirements only to the extent necessary to ensure the adequacy, safety, and interchangeability of the item being acquired. Figure 7 provides an example of detail requirements.

5.8.3 General specifications. General specifications shall be either performance or detail specifications. When preparing a general specification, which has specification sheets (including MS sheets), section 3 shall contain all the requirements that are common to the item being specified. Those requirements and inspections that are unique to a single style, type, class, grade, or model of an item shall be included in the specification sheets associated with the general specification. The following paragraph shall be the first paragraph in section 3 of a general specification:

"3.1 Specification sheets. The individual item requirements shall be as specified herein and in accordance with the applicable specification sheet. In the event of any conflict between the requirements of this specification and the specification sheet, the latter shall govern."

5.8.4 Qualification. When inclusion of a qualification requirement has been properly authorized for a specification, one of the statements below shall be included as one of the first paragraphs in section 3, as appropriate. The parenthetical paragraph reference in these statements shall direct the reader to the qualification tests in section 4 and the guidance on how to apply for qualification approval in section 6.

a. If the specification requires that products be approved for listing on a qualified products list (QPL), include this statement:

"3.X Qualification. (Item) furnished under this specification shall be products that are authorized by the qualifying activity for listing on the applicable qualified products list before contract award (see 4._ and 6._)."

b. If the specification requires that manufacturers be approved for listing on a qualified manufacturers list (QML), include this statement:

"3.X Qualification. (Item) furnished under this specification shall be products that are manufactured by a manufacturer authorized by the qualifying activity for listing on the applicable qualified manufacturers list before contract award (see 4._ and 6._)."

5.8.5 First article. First article includes pre-production models, initial production samples, test samples, first lots, pilot models, and pilot lots. If it may be necessary to test a first article for conformance with specification requirements prior to regular production on a contract, the following statement shall appear as one of the first paragraphs in section 3:

"3.X First article. When specified (see 6.2), a sample shall be subjected to first article inspection in accordance with 4._."

5.8.6 Toxic chemicals, hazardous substances, and ozone-depleting chemicals. The use of toxic chemicals, hazardous substances, or ozone-depleting chemicals shall be avoided, if feasible. The desired performance requirements should be specified rather than the specific chemical or substance. If a toxic chemical, hazardous substance, or ozone-depleting chemical must be specified, it shall be listed as a key word in section 6 (see 5.11.11). The Environmental Protection Agency maintains an online list of toxic chemicals and hazardous substances at www.epa.gov/ebtpages/pollutants.html that should be consulted.

5.8.7 Recycled, recovered, or environmentally preferable materials. Where applicable, specifications shall include the following paragraph in section 3 to encourage the procurement and use of products made from recycled, recovered, or environmentally preferable materials.

"3.X Recycled, recovered, or environmentally preferable materials. Recycled, recovered, or environmentally preferable materials should be used to the maximum extent possible, provided that the material meets or exceeds the operational and maintenance requirements, and promotes economically advantageous life cycle costs."

5.8.8 JAN and J marking. The following paragraph shall be included when JAN marking is required:

"The United States Government has adopted and is exercising legitimate control over the certification marks "JAN" and "J", respectively, to indicate that items so marked or identified are manufactured to, and meet all the requirements of specifications. Accordingly, items acquired to, and meeting all of the criteria specified herein and in applicable specifications shall bear the certification mark "JAN" except that items too small to bear the certification mark "JAN" shall bear the letter "J". The "JAN" or "J" shall be placed immediately before the part number except that if such location would place a hardship on the manufacturer in connection with such marking, the "JAN" or "J" may be located on the first line above or below the part number. Items furnished under contracts or orders which either permit or require deviation from the conditions or requirements specified herein or in applicable specifications shall not bear "JAN" or "J". In the event an item fails to meet the requirements of this specification and the applicable specification sheets, the manufacturer shall remove completely the military part number and the "JAN" or the "J" from the sample tested and also from all items represented by the sample. The "JAN" or "J" certification mark shall not be used on products acquired to contractor drawings or specifications. The United States Government has obtained Certificate of Registration Number 504,860 for the certification mark "JAN" and Registration Number 1,586,261 for the certification mark "J"."

5.8.9 Government-furnished property. All property to be furnished by the Government as part of the specification shall be listed and identified by PIN or stock number. Each item entry shall be numbered in order to provide ready reference. The specifications or drawings covering Government-furnished property need not be listed in section 2. Documents listed in section 2 are not considered Government-furnished property (see 5.11.9).

5.8.10 Government-loaned property. Property that the Government loans to the contractor for testing or any other purpose and which does not lose its identity by becoming part of the commodity shall be listed under this heading (see 5.11.9).

5.9 SECTION 4 – VERIFICATION.

5.9.1 Verification . Section 4 shall include all inspections to be performed to determine that the item to be offered for acceptance conforms to the requirements in section 3 of the specification (see figure 8). Verification may be accomplished by analysis, demonstration, examination, testing, or any combination thereof. This section shall not include quality requirements that belong in the contract, such as responsibility for inspection, establishment of quality or inspection program requirements, warranties, instructions for nonconforming items, and contractor liability for nonconformance.

5.9.2 Classification of inspections. If section 4 of the specification includes more than one type of inspection, a classification of inspections shall be included as the first paragraph of section 4 as illustrated in the following examples:

Example A:

"4.1 Classification of inspections. The inspection requirements specified herein are classified as follows:

a. First article inspection (see 4.X).

b. Conformance inspection (see 4.X)."

Example B:

"4.1 Classification of inspections. The inspection requirements specified herein are classified as follows:

a. Qualification inspection (see 4.X).

b. Conformance inspection (see 4.X)."

5.9.3 Inspection conditions. When applicable, the environmental conditions under which all inspections are performed shall be specified as follows:

"4.X Inspection conditions. Unless otherwise specified, all inspections shall be performed in accordance with the test conditions specified in (applicable test method document or applicable paragraph(s) in the specification)."

5.9.4 Types of inspection.

5.9.4.1 First article inspection. When section 3 specifies a first article inspection, section 4 shall include a description of the inspection procedure, sequence of the inspections, number of units to be inspected, and the criteria for determining conformance to the requirement specified. It is recommended that a table be included that cross-references the requirements with the appropriate first article examinations and tests.

5.9.4.2 Qualification inspection. When section 3 specifies a qualification requirement, section 4 shall include a description of the inspection procedure, sequence of inspections, number of units to be inspected, and the criteria for determining conformance to the qualification requirement. It is recommended that a table be included that cross-references the requirements with the appropriate qualification examinations and tests. In general, a specification that has first article inspection shall not also have qualification inspection, unless it can be shown that the item is so critical that failure would likely result in death or injury.

5.9.4.3 Conformance inspection. Conformance inspection shall ensure that production items meet specification requirements prior to acceptance by the Government. Conformance inspection shall include a description of the inspection procedure, sequence of inspections, number of units to be inspected, and the criteria for determining conformance to the requirement specified. Conformance examinations and tests may be the same as those specified for first article inspection, but they shall not duplicate any long-term or special tests that were used to justify inclusion of qualification in a specification. It is recommended that a table be included that cross-references requirements with the appropriate conformance examinations and tests.

5.9.5 Sampling. Sampling is a valuable tool for verification of compliance with specification requirements. Specifications may include sampling, but shall not include any fixed acceptable quality levels, lot tolerance percent defectives, or other types of fixed levels of defects. Such provisions may be included in the quality assurance section of the contract, but shall not be in the specification.

5.9.5.1 Inspection lot. When inspections are to be based on lots or samples from lots, the definition of what constitutes an inspection lot shall be provided. Restrictions concerning the formation of inspection lots, such as limiting inspection lots to like units of the same part number or manufacturing lot number, should be specified.

5.9.5.2 Classification of defects. When applicable, classification of defects shall be included in section 4. When required for reference purposes in reporting inspection results, the defects in a classification shall be numbered only in accordance with the following:

1 through 99 - critical defects
101 through 199 - major defects
201 through 299 - minor defects

If additional groupings are required, they shall be numbered in the 301, 401, 501, etc., series. If the number of defects in any group exceeds 100, the series should start over with a letter suffix such as, 101a, 102a, 103a.

5.10 SECTION 5 – PACKAGING. The following standard requirement shall be used in all specifications where packaging of an item will be required.

"5. PACKAGING

5.1 Packaging. For acquisition purposes, the packaging requirements shall be as specified in the contract or order (see 6.2). When packaging of materiel is to be performed by DoD or in-house contractor personnel, these personnel need to contact the responsible packaging activity to ascertain packaging requirements. Packaging requirements are maintained by the Inventory Control Point's packaging activities within the Military Service or Defense Agency, or within the military service's system commands. Packaging data retrieval is available from the managing Military Department's or Defense Agency's automated packaging files, CD-ROM products, or by contacting the responsible packaging activity."

5.11 SECTION 6 – NOTES. Section 6 is not contractually binding. No requirements shall be included in section 6. It shall only contain information of a general or explanatory nature (see figure 9). Such information shall assist in determining the applicability of the specification; the selection of appropriate type, grade, or class of the commodity; additional superseding data; changes in product designation such as grades or class; standard sample (if required); and other information deemed appropriate. This section shall include the following in the order listed, as applicable:

a. Parenthetical note (see 5.11.1).

b. Intended use (see 5.11.2).

c. Acquisition requirements (see 5.11.3).

d. Associated DIDs (may only be listed for data product specifications) (see 5.11.4).

e. Technical manual specification information (see 5.11.5).

f. Qualification (see 5.11.6).

g. Supersession data (see 5.11.7).

h. Definitions (see 4.17).

i. Cross-reference of classifications and substitutability data (see 5.11.8).

j. Government-furnished and Government-loaned property (see 5.11.9).

k. Patent notice (see 5.11.10).

l. Shelf-life (see 5.11.14).

m. Subject term (key word) listing (see 5.11.11).

n. International standardization agreement implementation (see 5.11.12).

o. Identification of changes (see 5.11.13).

5.11.1 Parenthetical note. The following parenthetical note shall appear immediately below "6. NOTES":

"(This section contains information of a general or explanatory nature that may be helpful, but is not mandatory.)"

5.11.2 Intended use. Information relative to the use of the item covered by the specification shall be included under this heading as 6.1. The difference among types, grades, and classes in the specification shall be explained herein. If there are any particular applications for which the item or material is not well adapted, this information shall also be included. The intended use shall also indicate what about the product covered by the defense specification causes it to be military unique.

5.11.3 Acquisition requirements. All of the options that the procuring activity must exercise in invitations for bids, contracts, or other purchasing documents shall be listed under acquisition requirements as 6.2. Options shall be listed in the sequence in which they appear in the specification and shall include the following information, as a minimum:

"6.2 Acquisition requirements. Acquisition documents should specify the following:

a. Title, number, and date of this specification."

5.11.4 Associated DIDs. A data product specification shall list in section 6 the DIDs, for which it serves as the source document, using the following paragraph:

"6.X Associated Data Item Descriptions (DIDs). This specification 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

The above DIDs were current as of the date of this specification. The ASSIST database should be researched at http://assist.daps.dla.mil/quicksearch/ to ensure that only current and approved DIDs are cited on the DD Form 1423."

5.11.5 Technical manual specifications. When a specification is prepared to address technical manuals for the installation, operation, maintenance, training, and support of weapon systems, weapon system components, and support equipment, the following shall be inserted in section 6 of that specification:

"6.X Technical manuals. The requirement for technical manuals should be considered when this specification is applied on a contract. If technical manuals are required, specifications and standards that have been authorized and assigned an Acquisition Management Systems Control (AMSC) number must be listed on a separate Contract Data Requirements List (DD Form 1423), which is included as an exhibit to the contract. The technical manuals must be acquired under separate contract line item in the contract."

5.11.6 Qualification. Where qualification of a product (QPL) or a manufacturer's capabilities (QML) is a requirement of the specification, information concerning such qualification shall be stated in this section as follows:

"6.X Qualification. With respect to products requiring qualification, awards will be made only for products which are, at the time of award of contract, qualified for inclusion in Qualified Products List QPL No.___ whether or not such products have actually been so listed by that date. The attention of the contractors is called to these requirements, and manufacturers are urged to arrange to have the products that they propose to offer to the Federal Government tested for qualification in order that they may be eligible to be awarded contracts or orders for the products covered by this specification. Information pertaining to qualification of products may be obtained from (insert name, mailing address, and email of qualifying activity). An online listing of products qualified to this specification may be found in the Qualified Products Database (QPD) at http://assist.daps.dla.mil."

When applicable, substitute the words "Qualified Manufacturers List" for "Qualified Products List" and "manufacturers" for "products" in the paragraph above.

5.11.7 Supersession data. If a specification supersedes three or more documents, those documents shall be listed.

5.11.8 Cross-reference. A cross-reference of old to new military classification or PIN made by specification revision showing substitutability relationship shall be included, if applicable. The extent to which new items may be stocked with or substituted for prior items shall be stated here.

5.11.9 Government-furnished and Government-loaned property. When Government-furnished or Government-loaned property is listed in the specification, the following paragraphs shall be added to section 6:

"6.X Government-furnished property. The contracting officer should arrange to furnish the property listed in 3._._."

"6.X Government-loaned property. The contracting officer should arrange to loan the property listed in 3._._."

5.11.10 Patent notice. When a specification is prepared to cover a patented item, the specification shall list the patents involved and include the following paragraph.

"6.X Patent notice. The Government has a royalty-free license under the following listed patents for the benefit of manufacturers of the item either for the Government or for use in equipment to be delivered to the Government.

U.S. patent number"

If royalty-free licenses are not obtainable, the specification shall list the patents together with their expiration date and the statement that the Government does not have a royalty-free license.

5.11.11 Subject term (key word) listing. Specifications shall contain a listing of subject terms (key words) to enable the document to be identified during retrieval searches. If the specification requires the use of any toxic chemicals, hazardous substances, or ozone-depleting chemicals, these should be included in the key word listing. The subject terms shall not repeat words found in the title of the document. The subject terms are to be listed alphabetically in a single column with the main noun or word first, followed by sequential modifiers separated by commas. Word groups that are considered to be proper or recognized nouns, such as "printed circuit board," should not be separated. The number of subject terms listed shall not exceed 25.

5.11.12 International standardization agreements. If the specification implements an international standardization agreement, the following statement shall be included in section 6:

"6.X International standardization agreement implementation. This specification implements (insert the document number and title of the international standardization agreement(s)). When amendment, revision, or cancellation of this specification is proposed, the preparing activity must coordinate the action with the U.S. National Point of Contact for the international standardization agreement, as identified in the ASSIST database at http://assist.daps.dla.mil."

5.11.13 Identification of changes from previous issue. Revisions of specifications shall include vertical lines, asterisks, or other markings at the margins of the pages to indicate where changes have been made with respect to the previous issue. The note below shall be included as the last paragraph in section 6 of the specification. The words "vertical lines" may be replaced with whatever method is used to denote changes.

"6.X Changes from previous issue. The margins of this specification 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."

If the changes are extensive and too numerous to annotate, the following note shall be included in section 6 of the specification, but every effort should be made to annotate the changes:

"6.X Changes from previous issue. Marginal notations are not used in this revision to identify changes with respect to the previous issue due to the extent of the changes."

5.11.14 Shelf-life. If a specification covers an item where the assignment of a Federal shelf-life code is a consideration, the following paragraph shall be included in section 6:

"6.X Shelf-life. This specification covers items where the assignment of a Federal shelf-life code is a consideration. Specific shelf-life requirements should be specified in the contract or purchase order, and should include, as a minimum, shelf-life code, shelf-life package markings in accordance with MIL-STD-129 or FED-STD-123, preparation of a materiel quality storage standard for type II (extendible) shelf-life items, and a minimum of 85 percent shelf-life remaining at time of receipt by the Government. These and other requirements, if necessary, are in DoD 4140.27-M, *Shelf-life Management Manual*. The shelf-life codes are in the Federal Logistics Information System Total Item Record. Additive information for shelf-life management may be obtained from DoD 4140.27-M, or the designated shelf-life Points of Contact (POC). The POC should be contacted in the following order: (1) the Inventory Control Points that manage the item and (2) the DoD Service and Agency administrators for the DoD Shelf-Life Program. Appropriate POCs for the DoD Shelf-Life Program can be contacted through the DoD Shelf-Life Management website: https://www.shelflife.hq.dla.mil/."

5.12 Concluding material. The concluding material shall be provided at the end of the document following any tables, figures, appendixes, or indexes. The concluding material shall indicate the preparing activity, custodians, review activities, civil agency interest, industry association interest, and project number, as applicable (see 5.12.1 through 5.12.8). The following is an example of the concluding material format:

"Custodians:
Army – AR
Navy – SH
Air Force – 11

Review activities:
Army – AT, GL4, MI
Navy – AS
Air Force – 68
DLA – GS
DISA – DC1, DC3
NGA – MP

Civil agencies:
GSA – FSS
NASA – NA"

Industry associations:
AIA, ASTM, EIA, SAE"

Preparing activity:
Navy – SH
(Project 9110-2008-005)

Agent:
DLA – GS

5.12.1 Preparing activity. Specifications shall identify the preparing activity using the appropriate symbol for that activity from the SD-1.

5.12.2 Custodians. The preparing activity shall list potential custodians during document development from interest as registered in the ASSIST database. The preparing activity shall confirm custodian interest during coordination. Limited coordination specifications shall not indicate custodians. Coordinated specifications shall identify custodians, as determined by coordination. It is not necessary for every Military Department and Defense Agency to have a custodian. The symbols used to identify the custodians shall be in accordance with the SD-1. The listing of custodians shall be in the order of Army, Navy, Air Force, and DLA. If other Defense Agencies identify a custodian, they shall be listed in alphabetical sequence by their agency acronym.

5.12.3 Review activities. The preparing activity shall list potential review activities during document development from interest as registered in the ASSIST database. The preparing activity shall confirm review interest with these activities during coordination. Both coordinated and limited coordination specifications may have review activities listed as determined by coordination. The symbols used to identify review activities shall be in accordance with the SD-1. The listing of review activities shall be ordered by Army, Navy, Air Force, and DLA. If other Defense Agencies identify a review activity, they shall be listed in alphabetical sequence by their agency acronym.

5.12.4 Civil agencies. The preparing activity may list the acronyms of interested civil agencies (and their SD-1 symbols, if available) for coordinated and limited coordination specifications.

5.12.5 Industry associations. The preparing activity may list interested industry associations (including Non-Government Standards Bodies) for coordinated and limited coordination specifications.

5.12.6 Project number. New and revised specifications, as well as amendments and notices shall have a project number assigned by the cognizant Lead Standardization Activity. The only documents covered by this standard that do not require a project number are supplements and administrative notices.

5.12.7 Agent. If the preparing activity authorizes another activity listed in the SD-1 act as its agent and prepare a specification, the agent activity shall be identified by its SD-1 symbol.

5.12.8 Advisory note. The following note shall be placed underneath the concluding material:

"NOTE: The activities listed above were interested in this document as of the date of this document. Since organizations and responsibilities can change, you should verify the currency of the information above using the ASSIST Online database at http://assist.daps.dla.mil."

5.13 Appendix.

5.13.1 General. When required, an appendix shall be included as an integral part of a specification, beginning on the next page following the "NOTES" section and any tables or figures belonging to the basic section of the specification, and before an index or concluding material. Table of contents and cover shall not be used. See Appendix A in this standard as an example.

5.13.2 Identification. The upper center of each page shall be marked with the specification identifier and the word "APPENDIX" followed by the appendix letter (for example, APPENDIX A) directly below the identifier. If more than one appendix is needed, identification shall be alphabetical (A, B, etc.).

5.13.3 Title. The appendix title shall be located two lines below the word "APPENDIX" on the beginning page only.

5.13.4 Section and paragraph numbering. The sections in the appendix shall be designated by a letter corresponding to the appendix letter, followed by a period and an Arabic numeral. For example, the first section in Appendix A would be "A.1" and the second section in Appendix B would be "B.2." Paragraphs and subparagraphs shall be numbered consecutively within each section of the appendix. See Appendix A of this document for example of paragraph numbering.

5.13.5 Table numbering. All tables shall be numbered consecutively throughout an appendix. The word "TABLE" shall be in full capitalization, followed by the applicable appendix letter, the Roman numeral and a period, centered above the table. For example, the second table in Appendix B would be numbered "TABLE B-II."

5.13.6 Figure numbering. All figures shall be numbered consecutively throughout an appendix. The word "FIGURE" shall be in full capitalization, followed by the applicable appendix letter, the Arabic numeral and a period, centered below the figure. For example, the fourth figure in Appendix C would be numbered "FIGURE C-4."

5.13.7 Page numbering. Page numbers shall be numbered consecutively following the last page of the specification.

5.13.8 Scope. An appendix shall have a statement of scope as its first paragraph to indicate the coverage and limitations of the appendix to ensure its proper application and use. The following shall be included: "This Appendix (is or is not) a mandatory part of the specification. The information contained herein is intended for (compliance or guidance only)."

5.13.9 References. References that are required and relate only to the appendix shall be listed in the appendix under the section heading "APPLICABLE DOCUMENTS" and shall not be referenced in section 2 of the specification. The references shall be listed as specified in 5.7. This section shall be omitted from the appendix if not applicable.

5.13.10 Definitions. Definitions that relate only to the appendix shall be listed in the appendix under the section heading "DEFINITIONS." Definitions already appearing in section 6 of the specification shall not be repeated. This section shall be omitted from the appendix if not applicable.

5.14 Index. An alphabetical index may be placed at the end of a specification. Its use shall be limited to lengthy specifications. If used, an index shall follow the basic specification and any appendix. The pages are numbered continuously following the last page of the basic specification or appendix, as applicable. The document identifier shall appear in the upper center of each page.

5.15 Supplement.

5.15.1 General. A separate supplement may be issued with a general specification that has more than five specification sheets or MS sheets. See figure 10 as an example. If a supplement is not used, then the parenthetical statement in 5.7.2.1.3a shall be included in section 2.

5.15.2 Contents. A supplement shall list specification sheets or MS sheets associated with a general specification. It may also include guidance information to assist users with the proper selection or application of the listed documents.

5.15.3 Format. Supplements shall carry the same headings, titles, symbols, specification number, and revision, as the general specifications with which they are associated. The word "SUPPLEMENT" followed by the Arabic numeral "1" and date of issue shall also be included beneath the document identifier. Supplement revisions shall be marked with a capital revision letter in alphabetical sequence to identify successive issues of the supplement. For example, "SUPPLEMENT 1A" would supersede "SUPPLEMENT 1." Each time the basic specification is revised; the supplement is revised and reverts to "Supplement 1".

5.15.4 Preamble. The following preamble shall be on supplements under the title: "This supplement forms a part of (document identifier including revision level), dated _____."

5.15.5 Captions for supplements. Captions such as "SPECIFICATION SHEETS" and "MS SHEETS" shall head each group of documents listed on the supplement.

5.15.6 Concluding material. The concluding material for supplements shall be in accordance with 5.12.

5.15.7 Page number. Except the first page, which shall not be numbered, pages shall be numbered with consecutive Arabic numerals at the bottom center of each page.

5.15.8 Supplement identification. The supplement identifier shall be placed on each page, at the upper right corner of the first page and at the upper center of each successive page. The word "SUPPLEMENT" and number shall be placed below the document identifier (for example, SUPPLEMENT 1, 1A, 1B, etc.).

5.15.9 FSC, FSG, or area designation. The FSC, FSG, or area designation shall be the same as for the basic specification, and shall be shown in the lower right corner of the first page.

5.16 Specification sheets.

5.16.1 Purpose. A specification sheet shall cover the unique requirements and inspections for a single style, type, class, grade, or model of an item (or series of items which vary only with respect to parameters such as value, size, tolerance, material, finish, failure rate).

5.16.2 Limitations. Specification sheets shall only be prepared when it is known that a family of items differing in style, type, class, grade, model, or similar variables will need individual coverage. Any single specification sheet together with its associated general specification form a complete acquisition specification for the item(s) covered. Thus, specification sheets shall supplement the referenced general specification. Requirements in the general specification shall not be duplicated in specification sheets. If a specific requirement in the general specification is not applicable for a specific item, it shall be so indicated in the specification sheet as not applicable. For example, "Shock – N/A."

5.16.3 Format. Specification sheets may be in a six-section specification format or may be in a tabular or graphic form. Whichever type of format is selected, the format shall remain consistent for all of the specification sheets under a general specification. There shall not be a mixture of six-section specifications and tabular or graphic specifications under the same general specification. Except as specified in 5.16.3.1 through 5.16.3.3, the requirements in section 4 and 5.1 through 5.14 shall apply when preparing a six section specification sheet, and the requirement in section 4 and 5.1 through 5.4.12 shall apply when preparing a tabular or graphic form specification sheet (see figure 11).

5.16.3.1 Identifier. A specification sheet shall be identified by the general specification identifier (less revision letter or suffix), followed by a slash and an additional Arabic number. For example, "MIL-DTL-915/8."

5.16.3.2 Heading. Each specification sheet shall have the heading "PERFORMANCE SPECIFICATION SHEET" or "DETAIL SPECIFICATION SHEET" two lines above the title. The criteria given in 5.8.1 and 5.8.2 shall determine whether a specification sheet is a performance specification or detail specification.

5.16.3.3 Title. Where the specification sheets are for similar items with minor differences from one item to another, the specification sheet titles shall be the same as that of the general specification (excluding the words "GENERAL SPECIFICATION FOR") with an identification of the style, type, class, grade, or model covered, as appropriate. If a specification sheet covers components of an assembly that have different basic noun names than the general specification, the specification sheet titles shall reflect the basic noun name of the specific item associated with the general specification.

5.16.3.4 Preamble. The preamble shall be as specified in 5.4.8, except that the additional statement shall be included two lines below the preamble:

"The requirements for acquiring the product described herein shall consist of this specification sheet and (insert general specification number)."

5.16.4 MS specification sheets. Existing MS sheets prepared on DD Form 672, as they are revised, shall be converted to the specification sheet format. DD Form 672 has been discontinued and shall not be used. The existing MS document number and PIN may be retained in the specification sheet format; however, it is preferred that existing MS numbers be converted to specification sheet numbers if this renumbering does not affect existing systems. If MS numbers are converted to specification sheet numbers, then substitution data shall be included to supersede every MS dash number. New specification sheets with the MS prefix shall not be prepared, except for the case where a general specification already exists that has a series of existing MS sheets associated with it.

5.17 Revisions. When a specification or specification sheet is revised, the content and format requirements shall be the same as for a new document.

5.17.1 Notation of revisions. If the revision changes are not too extensive, vertical lines, asterisks, or other markings shall be placed at the margin of the page to indicate where changes (additions, modifications, corrections, deletions) have been made with respect to the previous issue. See 5.11.13 for note to be included in section 6 of the specification explaining the use or absence of the vertical line, asterisk, or other marking. For specification sheets in tabular or graphic form, this note shall appear at the end of the requirements, but before the concluding material.

5.17.2 Revision indicators. Revisions of specifications and specification sheets shall be indicated by a capital letter following the number and preceding any suffix. The first revision shall be marked with the letter "A" and succeeding revisions shall be indicated by the other letters in alphabetical sequence, except that the letters I, O, Q, S, and Z shall not be used. For example, if MIL-A-12345 is revised to a performance specification with the same number, the first revision to MIL-A-12345 would be MIL-PRF-12345A. If an interim revision were then issued, the revision would be numbered MIL-PRF-0012345B(AR). When the interim revision is coordinated and approved, the next revision would be MIL-PRF-12345C. For specification sheets, the revision indicator appears after the slash sheet number. For example, MIL-DTL-1234/8B.

5.18 Amendments.

5.18.1 Purpose. An amendment shall be prepared to make limited modifications to specifications and specification sheets. A specification may be amended a maximum of five times after which, it shall be revised. If the security classification is changed, the document shall be revised.

5.18.2 Format. Amendment modifications shall be incorporated into the specification being amended and not issued as separate documents. When amendments are issued, the entire text of the specification shall be issued with the modifications identified as described in 5.18.4. Amendments are cumulative and supersede each other. (See figure 12.)

5.18.3 Document identifiers for amendments to specifications. The document identifier of the amendment shall be the same as the specification with which it is associated. Since amendments are cumulative and are incorporated into the specification, the current amendment shall be listed on the first page of the specification and shall show appropriate superseding information as shown below. In addition, the amendment number shall be placed below the document identifier on each page following the first page as shown in figure 12.

a. The first amendment to a specification would be shown as follows:

MIL-PRF-12345B
w/AMENDMENT 1
22 July 1999

SUPERSEDING
MIL-PRF-12345B
11 August 1995

b. The second amendment to a specification would be shown as follows:

MIL-PRF-12345B
w/AMENDMENT 2
11 February 2000

SUPERSEDING
MIL-PRF-12345B
w/AMENDMENT 1
22 July 1999

c. An interim amendment to a specification would be shown as follows. Note that the interim amendment does not supersede the coordinated amendment.

MIL-PRF-12345B
w/INT. AMENDMENT 3
15 January 2001

USED IN LIEU OF
MIL-PRF-12345B
w/AMENDMENT 2
11 February 2000

d. The coordinated amendment superseding the interim amendment would be shown as follows. Note that the coordinated amendment supersedes both the interim and the previous coordinated amendment.

MIL-PRF-12345B
w/AMENDMENT 4
21 October 2001

SUPERSEDING
MIL-PRF-12345B
w/INT. AMENDMENT 3
15 January 2001
w/AMENDMENT 2
11 February 2000

5.18.4 Identification of amendment changes. Amendments to specifications shall include vertical lines, asterisks, or other markings at the margins of the pages to indicate where changes have been made. Only modifications made by the current amendment shall be notated. Modifications made by previous amendment shall not be notated. The note below shall be included as the last paragraph in section 6 of the amended specification. The words "vertical lines" may be replaced with whatever method is used to denote changes.

"6.X Amendment notations. The margins of this specification are marked with vertical lines to indicate modifications generated by this amendment. 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."

5.18.5 Identification of deleted paragraphs, tables, and figures. To avoid renumbering of paragraphs, tables, and figures deleted by an amendment, the word "DELETED" shall be placed after the paragraph, table, or figure number and title. For example: "4.4.5 Abrasion test. DELETED." Alternatively, program-unique specifications may strike through deleted text, tables, or figures.

5.18.6 Insertion of paragraphs, figures, and tables. When new paragraphs, figures, or tables are added to the specification, they should be numbered in such a way that renumbering of existing paragraphs, figures, and tables is not necessary. For example:

Existing	Added	Existing
Table II	Table II-1	Table III
Figure 2	Figure 2A	Figure 3
Paragraph 5.11	Paragraph 5.11.1	Paragraph 5.12

5.18.7 Page numbering. Since amendments are an integrated part of the basic or revised document, pages shall be numbered in a natural sequence of whole Arabic numerals as described

in 4.13. As pages are added or eliminated as the result of amendment changes, there should not be any inventive numbering schemes to account for these pages. For example, if an amendment change results in a new page between existing pages 8 and 9, do not number the new page as 8a or 8.1. Instead, let word processing automatically renumber the pages.

5.19 Notices.

5.19.1 Purpose. Notices shall be used to inactivate for new design, cancel, reinstate, reactivate, or to provide or update administrative information. Notices supersede all previous notices.

5.19.2 Inactive for new design notice. An inactive for new design notice shall be prepared to indicate that an item covered by a specification or specification sheet is prohibited from being used in new design and is used only in existing equipment or for future contracts to buy more of existing equipment. Inactive status can also be accomplished in a revision or amendment. The following shall apply if applicable:

a. If superseding documents describe items that can be used for new design, the notice shall reference them. The reference to superseding documents shall include the following note:

"CAUTION: The superseding information is valid as of the date of this notice and may be superseded by subsequent revisions of the superseding document."

b. When a QPL is associated with the "inactive for new design" specification, the following sentence shall be included in the notice (see figure 13):

"The Qualified Products List (QPL) associated with this inactive for new design specification will be maintained until acquisition of the product is no longer required whereupon the specification and QPL will be canceled."

c. If a general specification is made inactive, all of its associated specification sheets shall also be made inactive or canceled. Individual specification sheets may be made inactive even though the general specification remains active.

5.19.3 Cancellation notice. A cancellation notice shall be prepared when a specification or specification sheet is no longer required (see figures 14, 15A, and 15B). If a general specification is canceled, then all of its associated specification sheets shall also be canceled. Individual specification sheets may be canceled even though the general specification remains active. The cancellation notice may recommend a replacement document and classification cross-references. If the replacement document is technically equivalent or superior to the superseded specification, the cancellation notice may directly refer readers to the replacement document (see figure 15A). If a document is a suggested replacement, the cancellation notice shall include a statement that cautions users before applying the replacement document (see figure 15B). If classification cross-reference material is available, the cancellation notice shall indicate the old reference supersession data crossing to the new reference data. Preparing activities should consider issuing an "Inactive-for-New Design" notice rather than a

"Cancellation" notice where a replacement document is only suggested and it is important to maintain configuration lineage for those documents that referenced the specification being replaced.

5.19.4 Reinstatement notice. A reinstatement notice shall be prepared to reinstate a canceled specification as active or inactive for new design. The preparing activity, or with its permission, another activity, may reinstate a canceled specification by a notice of reinstatement (see figure 16). The notice of reinstatement, with a sequentially assigned Arabic numeral, will supersede the previous notice of cancellation. The text for the reinstatement notice shall be as shown on figure 16.

5.19.5 Reactivation notice. A reactivation notice shall be prepared to reactivate an inactive for new design specification. The preparing activity, or with its permission, another activity, may reactivate an inactive for new design specification by a notice of reactivation (see figure 17). Reactivation status can also be accomplished in a revision or amendment. The notice of reactivation, with a sequentially assigned Arabic numeral, will supersede the notice of inactive for new design. The text for the reactivation notice shall be as shown on figure 17.

5.19.6 Administrative notice. An unclassified administrative notice shall be prepared for classified specifications to indicate where to submit release requests and identify information that must be included in the request. Administrative notices may also be issued for active and inactive for new design specifications and specification sheets to change administrative information not affecting the technical content of the specification, such as a change in point of contact, concluding material, federal supply class, or superseding information, or to provide instructions on how to obtain or view documents that are not in the online ASSIST database because of special circumstances, such as restricted distribution, special graphics, or availability limited to a compact disk. If an administrative notice supersedes an inactive for new design notice, it shall reaffirm the inactive status. Administrative notices shall not be issued for specifications or specification sheets that are canceled. Figures 18 and 19 provide examples of administrative notices. Figure 20 provides an example of an administrative notice for a classified document.

5.19.7 Notice format. All notices shall include the format elements specified in 5.19.7.1 through 5.19.7.6.

5.19.7.1 Notice identifier. The document identifier of a notice shall be placed in the upper right corner of the first page. The following elements shall be included with the first letters in alignment (block form):

a. The document identifier of the specification or specification sheet, including the revision letter and the activity code designation of the preparing activity, if applicable.

b. The word "NOTICE" followed by a sequentially assigned Arabic numeral shall be placed below the specification number.

c. The date of approval. Drafts shall not show a date. The space shall include the word "DRAFT" until the notice is approved.

Example of sequential actions:

1. Inactive for new design notice:

MIL-PRF-82143(MC)
NOTICE 1
18 October 1995

2. Cancellation notice:

MIL-PRF-82l43(MC)
NOTICE 2
16 February 1995
SUPERSEDING
NOTICE 1
18 October 1972

3. Reinstatement notice:

MIL-PRF-82143(MC)
NOTICE 3
15 April 1995
SUPERSEDING
NOTICE 2
16 February 1973

5.19.7.2 Heading and title. A notice shall carry the same heading and title as the specification. The notice of cancellation, inactivation, reinstatement, reactivation, or administrative shall be enclosed in a box in the upper left corner of the first page (see figures 13 through 19).

5.19.7.3 Preamble. A preamble is not required.

5.19.7.4 FSC, FSG, or area designation. The FSC, FSG, or area designation shall be the same as for the basic specification and shall be shown in the lower right corner of the first page.

5.19.7.5 Concluding material. The concluding material for all notices shall be in accordance with 5.12.

5.19.7.6 Project number. Project numbers are not required for administrative notices.

6. NOTES

(This section contains information of a general or explanatory nature that may be helpful, but is not mandatory.)

6.1 Intended use. Specifications covered by this standard are intended for use in acquisition to obtain military-unique items. Non-Government standards or commercial item descriptions should be used to describe the requirements for commercially available item.

6.2 Acquisition requirements. Acquisition documents should specify the title, number, and date of this standard.

6.3 Associated Data Item Descriptions (DIDs). This standard has been assigned an Acquisition Management Systems Control 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-SDMP-81465	Performance Specification Documents
DI-SDMP-81464	Detail Specification Documents
DI-SDMP-81493	Program-Unique Specification Documents

The above DIDs were current as of the date of this standard. The ASSIST database should be researched at http://assist.daps.dla.mil/quicksearch/ to ensure that only current and approved DIDs are cited on the DD Form 1423.

6.4 Tailoring guidance. To ensure proper application of this standard, invitation for bids, requests for proposals, and contractual statements of work should tailor the requirements in sections 4 and 5 of this standard to exclude any unnecessary requirements. For example, if the statement of work requires a revision to a stand-alone specification, then all the paragraphs in this standard related to amendments, notices, supplements, and specification sheets should be excluded.

6.5 Subject term (key word) listing.

Administrative notices
Amendments
Cancellation notices
Data item descriptions
Defense specifications
Detail specifications
Inactive for new design notices

MS sheets
Notices
Performance specifications
Program-unique specifications
Reinstatement notices
Revisions
Specification sheets
Standardization
Supplements

6.6 Change notations. The margins of this standard are marked with vertical lines to indicate modifications generated by this change. 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.

The following checklist provides guidance for elements and topics to be considered when developing a specification. It is not all-inclusive, nor must every item listed be included.

1. Security classification
2. Document identifier
3. Initial draft note
4. Heading
5. Title
6. Superseding data
7. Preamble
8. Point of contact statement
9. FSC, FSG, or area
10. AMSC number or AMSC N/A

SECTION 1: SCOPE
1. Scope
2. Classification
3. Part or identifying number

SECTION 2: APPLICABLE DOCUMENTS
1. Required general paragraph
2. Correct document numbers and titles
3. Documents referenced in sections 3, 4, and 5
4. Sources for documents
5. Order of precedence

SECTION 3: REQUIREMENTS
1. For general specifications, paragraph on specification sheets
2. Qualification
3. First article
4. Materials
5. Environmental considerations
6. Recycled, recovered, or environmentally preferable materials
7. Design
8. Construction
9. Hardware
10. Reliability
11. Maintainability
12. Transportability
13. Performance characteristics
14. Energy efficiency
15. Human factors
16. Safety
17. Chemical and physical properties
18. Electromagnetic interference suppression
19. Dimensions
20. Weight
21. Color
22. Finish
23. Identification plate
24. Government-furnished property
25. Government-loaned property
26. Workmanship

SECTION 4: VERIFICATION
1. Classification of inspections
2. Inspection conditions
3. Qualification inspection
4. First article inspection
5. Conformance inspection
6. Examinations and tests for verifying requirements in section 3

SECTION 5: PACKAGING
1. Packaging paragraph

SECTION 6: NOTES
1. Parenthetical note
2. Intended use
3. Acquisition requirements
4. Associated DIDs
5. Technical manuals
6. Qualification note
7. Definitions
8. Supersession information
9. Cross-reference of classification
10. Government-furnished property
11. Government-loaned property
12. Patent notice
13. Subject term (key word) listing
14. International standardization agreements
15. Identification of changes

APPENDIX(ES)

INDEX

CONCLUDING MATERIAL
1. Preparing activity, custodians, review activities, industry associations, civil coordinating activities, and agent
2. Project number

FIGURE 1. Checklist for drafting specifications.

PRF (or DTL) XYZ-11000B
Original Design Activity:
CAGE Code 33333
Current Change Control Authority:
CAGE Code 44444
9 March 1995

PERFORMANCE SPECIFICATION
(Use DETAIL SPECIFICATION, if applicable)

ITEM SPECIFICATION

FOR THE

(FILL IN ITEM NAME)

Prepared for:
(Fill in buying activity name and address)

Prepared by:
(Fill in design activity name and address)

SUBMITTED BY: (Authorizing Signature) DATE: 24 February 1995
Charles H. Smith
(Program Name) Manager
(Design Activity Name)

APPROVED FOR USE AS
XXXXX* BASELINE BY: (Authorizing Signature) DATE: 9 March 1995
Jane K. Jones, Captain, USN
(Program Name) Manager
(Buying Activity Name)

* Use “FUNCTIONAL”, “ALLOCATED”, or “PRODUCT” baseline, as applicable.

AMSC N/A FSC 4820

(THIS IS AN EXAMPLE ONLY. THE REQUIREMENT IS IN 5.3.1.)

FIGURE 2. Example of cover page for program-unique specification.

METRIC

MIL-PRF-12345G
22 December 2000

SUPERSEDING
MIL-E-12345F
29 June 1994

PERFORMANCE SPECIFICATION

ENGINES, VEHICLE

Comments, suggestions, or questions on this document should be addressed to the Commander, U.S. Army Tank-Automotive and Armaments Command, ATTN: ABCDEFG, Warren, MI 48397-5000 or emailed to tacom@army.mil. Since contact information can change, you may want to verify the currency of this address information using the ASSIST Online database at http://assist.daps.dla.mil.

AMSC N/A FSC XXXX

(See 5.3.2 for restrictions on when a cover page may be used for a defense specification.)

FIGURE 3. Example of cover page for defense specification.

1. SCOPE

1.1 Scope. This specification covers spring loaded pressure relief valves for steam service.

1.2 Classification. Pressure relief valves are of the following types and compositions, as specified (see 6.2).

1.2.1 Types. The type of pressure relief valves are as follow:

Type I – Atmospheric outlet

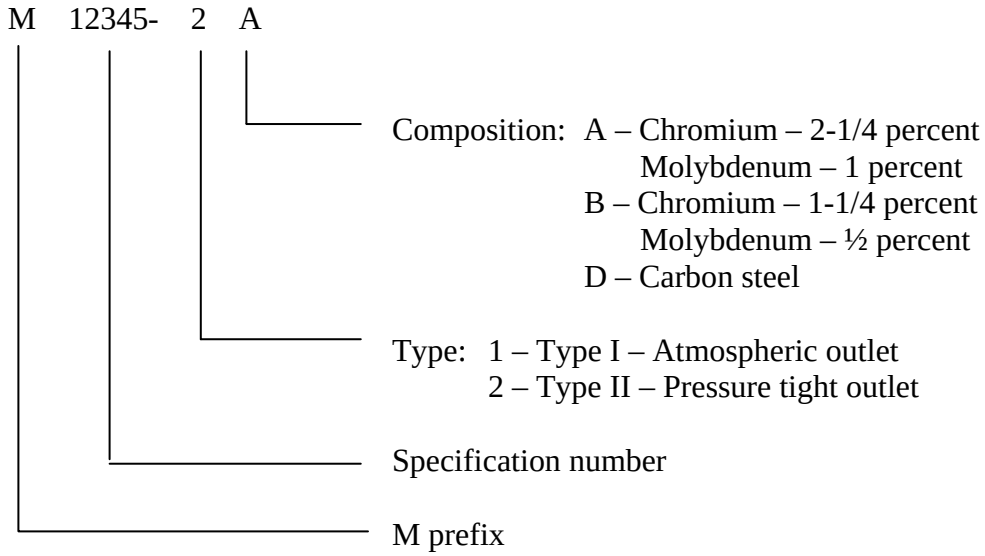
Type II – Pressure tight outlet

1.2.2 Compositions. The compositions for pressure relief valves are as
Composition A: Chromium 2-1/4 percent
Molybdenum – 1 percent

Composition B: Chromium 1-1/4 percent
Molybdenum ½ percent

Composition D: Carbon steel

1.3 Part or Identifying Number (PIN). PINs to be used for spring loaded pressure valves acquired to this specification are created as follows:



(THIS IS AN EXAMPLE ONLY. THE REQUIREMENT IS IN 5.6.)

FIGURE 4. Example of section 1.

2. APPLICABLE DOCUMENTS

2.1 General. The documents listed in this section are specified in sections 3, 4, or 5 of this specification. This section does not include documents cited in other sections of this specification 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 of documents cited in sections 3, 4, or 5 of this specification, 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.

INTERNATIONAL STANDARDIZATION AGREEMENTS

STANAG 1135 - Interchangeability of Fuels, Lubricants and Associated Products Used by the Armed Forces of the North Atlantic Treaty Nations

FEDERAL SPECIFICATIONS

TT-S-735 - Standard Test Fluids; Hydrocarbon
VV-F-800 - Fuel Oil, Diesel

FEDERAL STANDARDS

FED-STD-595/10032 - Brown, Gloss
FED-STD-595/34230 - Green, Flat or Lusterless

FEDERAL INFORMATION PROCESSING STANDARDS

FIPS-PUB-112 - Password Usage

COMMERCIAL ITEM DESCRIPTIONS

A-A-50167 - Wadding, Cotton

(THIS IS AN EXAMPLE ONLY. THE REQUIREMENT IS IN 5.7.)

FIGURE 5. Example of section 2.

DEPARTMENT OF DEFENSE SPECIFICATIONS

MIL-H-5606	-	Hydraulic Fluid, Petroleum Base, Aircraft, Missile, and Ordnance
MIL-PRF-5624	-	Turbine Fuel, Aviation, Grades JP-4 and JP-5
MIL-PRF-7808	-	Lubricating Oil, Aircraft Turbine Engine, Synthetic Base

(See supplement 1 for list of specification sheets)

DEPARTMENT OF DEFENSE STANDARDS

MIL-STD-2073-1	-	DoD Standard Practice for Military Packaging

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

2.2.2 Other Government documents, drawings, and publications. The following other Government documents, drawings, and publications 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.

NAVAL AIR SYSTEMS COMMAND

NAVAIR Drawing 14	-	Jet Engine Design

(Copies of this document are available from the Naval Air Systems Command, Code 4.1.4, Lakehurst, NJ 08733-5100.)

CODE OF FEDERAL REGULATIONS

Title 14, Part 36	-	Noise Standards: Aircraft Type

(Copies of this document are available online at www.access.gpo.gov/nara/cfr or from the Superintendent of Documents, U.S. Government Printing Office, North Capitol & "H" Streets, N.W., Washington, DC 20402-0002.)

FIGURE 5. Example of section 2 – Continued.

2.3 Non-Government publications. The following documents 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.

AMERICAN SOCIETY OF MECHANICAL ENGINEERS (ASME)

ASME Y14.5M	-	Dimensioning and Tolerancing
ASME Y14.38	-	Abbreviations and Acronyms

(Copies of these documents are available from www.asme.org or ASME Information Central Orders/Inquiries, P.O. Box 2300 Fairfield, NJ 07007-2300.)

2.4 Order of precedence. Unless otherwise noted herein or in the contract, 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.

FIGURE 5. Example of section 2 - Continued.

3. REQUIREMENTS

3.1 First article. When specified (see 6.2), a sample shall be subjected to first article inspection in accordance with 4.3.

3.2 Materials. The contractor shall select materials capable of meeting all of the operational and environmental requirements specified herein. The materials specified in MIL-P-11268 are recommended, but are not mandatory.

3.2.1 Recycled, recovered, or environmentally preferable materials. Recycled, recovered, or environmentally preferable materials should be used to the maximum extent possible provided that the material meets or exceeds the operational and maintenance requirements, and promotes economically advantageous life cycle costs.

3.3 Design. The biocular eyepiece shall conform to Drawing DLSM-B-805103 to ensure proper interface with the Tank Mounted Thermal Sight.

3.4 Weight. The total weight of the biocular eyepiece shall not exceed 10 pounds.

3.5 Performance characteristics.

3.5.1 Field of view to the eye. The field of view to the eye shall be not less than 39 degrees.

3.5.2 Magnification. The on-axis magnification shall be not less than 4.5 times.

3.5.3 Field overlap. The biocular eyepiece shall provide at least 50 percent field overlap with field overlap calculated using the diameter and not the area of the overlapping images. These conditions shall be satisfied at the fixed diopter setting.

3.5.4 Biocular focus. The eyepiece shall be focused at minus 2.5 plus or minus 0.3 diopters.

3.5.5 Field flatness. The biocular eyepiece shall have a flat tangential field within plus or minus 1/2 diopter across the outer 50 percent of the 40-mm format and within plus or minus 1/4 diopter across the central 50 percent of the 40-mm format at the fixed diopter setting.

.

FIGURE 6. Example of requirements in performance specification.

3.5.6 Resolution. The visual axial resolution (central 25 percent of the field of view) of the biocular eyepiece shall be not less than 35.9 line pairs per millimeter. The remaining field of view shall resolve 17.9 line pairs per millimeter.

3.5.7 Transmission. The transmission of the biocular eyepiece shall be at least 85 percent over the entire aperture for the region of spectral output of a P-20 phosphor.

3.5.8 Effective focal length. The effective focal length shall be 1.733 plus or minus 0.017 inches

3.5.9 Linear distortion. The linear distortion of the biocular eyepiece measured at the fixed diopter setting shall be 5.3 plus or minus 1 percent barrel distortion at the edge of the 40-mm format.

3.5.10 Back focal distance. The back focal distance shall not exceed 0.10 inch for an object projected 400 mm behind (towards the biocular) for the nominal 60-mm exit pupil.

3.6 Environmental conditions.

3.6.1 Temperature shock. The biocular eyepiece shall operate after exposure to sudden changes (5 minutes or less) in the thermal environment from 21°C to -32°C and from 21°C to 52°C. No chemical deterioration shall result from this exposure.

3.6.2 Shock and vibration. The biocular eyepiece shall meet specified performance after being subjected to shock and vibration levels in Table I.

FIGURE 6. Example of requirements in performance specification - Continued.

TABLE I. Biocular eyepiece shock and vibration environment.

Vertical axis	±6.0 G @ 22.0, 24.4, and 39.1 hertz ±7.0 G @ 39.1 hertz ±6.0 G @ 48.8, 53.7 and 68.4 hertz
Longitudinal axis	±9.0 G @ 68.4 and 70.8 hertz ±13.0 G @ 43.9 hertz
Lateral axis	±4.0 G @ 22.0 and 24.4 hertz ±8.0 G @ 39.1, 43.9, 48.8, 56.1, and 83.0 hertz ±10.5 G @ 39.1, 43.9 and 83.0 hertz

3.6.3 Altitude. The biocular eyepiece shall meet specified performance when operating from –400 meters to +4,570 meters above sea level, and after exposure to a pressure altitude of 12,200 meters.

3.6.4 Humidity. The biocular eyepiece shall meet specified performance during exposures to relative humidity of up to 100 percent. The biocular eyepiece shall operate following exposure to a relative humidity conditions from 19 percent relative humidity at 17°C through 100 percent relative humidity at 27°C for 24 hours.

3.7 Cleanliness. The biocular eyepiece shall not contain foreign matter, such as dust, dirt, fingerprints, or moisture that can be detected by visual examination.

3.8 Color. The color of the biocular eyepiece shall be tank white, Number 17875 of FED-STD-595.

3.9 Nameplate. The eyepiece shall have a nameplate marked with the National Stock Number and the manufacturer's name and part number.

FIGURE 6. Example of requirements in performance specification - Continued.

3. REQUIREMENTS

3.1 First article. When specified (see 6.2), a sample shall be subjected to first article inspection in accordance with 4.3.

3.2 Materials and components. The materials and components shall conform to applicable specifications, standards, and patterns required herein. Unless otherwise specified (see 6.2), nonmetallic materials used in construction of the inflation assembly shall not have been manufactured more than 24 months prior to the date of delivery, except for rubber products which shall have a cure date more than 12 months prior to the delivery date.

3.2.1 Vest. The vest shall be constructed of the following materials:

a. Aramid mesh. The back and sides shall be constructed of aramid raschel knit mesh conforming to MIL-C-43989.

b. Basic material. The base fabric shall be plain weave, aramid cloth conforming to MIL-C-83429, type II, class 1.

c. Tape, woven binding. The cloth binding for the mesh, casing, and pocket covers shall conform to MIL-T-5038, type III.

d. Fastener tapes. The hook and pile fastener tape shall conform to MIL-F-21840, type II, class 1, and shall be attached as shown on the patterns.

e. Straps and side adjustment webbing. Straps and webbing shall be nylon conforming to MIL-T-5038, type IV.

3.2.2 Inflatable bladder. The inflatable bladder shall consist of the following:

a. Coated cloth. The coated cloth shall be heat-sealable polyurethane coated nylon conforming to SAE AMS 3272, except that tear strengths shall be: 3.75 pounds for warp and 2.75 pounds for fill.

b. Bladder laces. The cord used to lace the bladder to the casing shall be nylon conforming to MIL-C-5040, type III.

c. Adhesive. The adhesive for securing the parts to the bladder shall be chloropene, 3M PN 2141PT, or equal.

FIGURE 7. Example of requirements in detail specification.

3.3 Construction.

3.3.1 Cut edges. Cut edges of the uncoated nylon tapes, webbing, and cords shall be seared prior to fabrication of the life preserver to prevent fraying.

3.3.2 Thread. Thread shall be an aramid thread conforming to MIL-T-83193.

3.3.3 Seams and stitching. Sewing shall conform to FED-STD-751. Each row of stitching shall be straight and parallel to the seam edge. The straightness of the stitching in any row shall be maintained within a tolerance of 1/16 inch. The ends of the stitching shall be backstitched by overlapping on itself by a minimum of 1/2 inch. Thread breaks, skips, and run-offs shall be overstitched not less than 1 inch.

3.3.4 Bartacking. The number of stitches per bartack shall be based proportionally on 1/4 inch long bartack containing a minimum of 14 stitches.

3.3.5 Heat sealing. A radio frequency dielectric heat-sealing process shall be used in the construction of the bladder.

3.4 Performance characteristics.

3.4.1 Adhesion. The adhesion, coated surface to coated surface, shall be 45 pounds per inch of width.

3.4.2 Operation. The life preserver shall inflate to design shape within 10 seconds. There shall be no leakage of carbon dioxide or hindrance to the flow of carbon dioxide from the inflation assembly.

3.4.3 Buoyancy. The inflated life preserver shall support a 32 pound solid steel or lead weight without the entire life preserver assembly sinking below the surface of the water.

3.4.4 Pressure. The pressure in the bladder shall be not less than 4.5 pounds per square inch when tested in accordance with 4.7.2.4.

3.5 Workmanship. Life preservers shall be free of all loose thread, lint, and foreign matter. Life preservers shall be uniform in quality and shall be free from irregularities or defects that could adversely affect performance or durability.

FIGURE 7. Example of requirements in detail specification - Continued.

4. VERIFICATION

4.1 Classification of inspections. The inspection requirements specified herein are classified as follows:

a. First article inspection (see 4.2).

b. Conformance inspection (see 4.3).

4.2 First article inspection. First article inspection shall be performed on one complete pumping assembly when a first article sample is required (see 3.1). This inspection shall include the examination of 4.4 and the tests of 4.5.1 through 4.5.6.

4.3 Conformance inspection. Conformance inspection shall include the examination of 4.4 and the tests of 4.5.1 and 4.5.4.

4.4 Examination. Each pumping assembly shall be examined for compliance with the requirements specified in 3.2 through 3.5. Any redesign or modification of the contractor's standard product to comply with specified requirements, or any necessary redesign or modification following failure to meet the specified requirements shall receive particular attention for adequacy and suitability. This element of inspection shall encompass all visual examinations and dimensional measurements. Noncompliance with any specified requirements or presence of one or more defects preventing or lessening maximum efficiency shall constitute cause for rejection.

4.5 Methods of inspection.

4.5.1 Hydrostatic. The pump and fittings shall be subjected to a hydrostatic test gauge pressure of 300 lb/in^2, for a period of 5 minutes to determine conformance to 3.6.2.

4.5.2 Performance.

4.5.2.1 Test conditions. All data shall be corrected to sea level conditions, barometric pressure 29.92 inches of mercury, for JP-5 and Navy special fuels at 60°F at a specific gravity of 0.80 and 0.98 respectively. Water at a temperature of 60 ^{o}F to 80 ^{o}F shall be used as a test fluid.

FIGURE 8. Example of section 4.

4.5.2.2 Pumping. The pump shall be operated as specified herein to determine pump brake horsepower required, pump efficiency, and the net positive suction head required, based on the data obtained. The resultant data shall be used to plot the corrected performance characteristics of the performance chart (see 3.8). The test shall be conducted in accordance with the Hydraulic Institute Standards of the HI, Centrifugal Pump Section. Performance at rates less than those specified in 3.6.1 shall constitute failure of this test.

4.5.3 Operational test. The pumping assembly shall be operated for 24 hours at the rated conditions specified in 3.6.1. The pump shall be examined at the end of each 8 hour interval during the 24 hours. Maintenance and minor adjustments shall be permitted during the examination periods. The pump shall be examined during the operation for leakage through the pump casing or the shaft seals and for malfunction of any component. Any leakage attributes to defects in design, workmanship, materials, or to the malfunction of any component, or inability of the pump to deliver the minimum capacities specified herein shall constitute failure of this test.

4.5.4 Functional test. The pump shall be operated 1 hour at rated capacity under the conditions specified in 3.6.1 and shall be operated as required to verify the functional operation of the controls. The control functions shall be in accordance with the applicable requirements of 3.7.

4.5.5 Tilted position. The pumping assembly shall be operated for not less than 30 minutes while it is positioned 15 degrees from level along the longitudinal centerline of the skid base. Evidence of malfunction or misalignment of components shall constitute failure of this test.

4.5.6 Cold starting. The pumping assembly shall be placed in a cold chamber at 20 ^{o}F for 48 hours or until stabilization temperature is reached. The system shall demonstrate three successive starting cycles without the use of external power. Sufficient time shall be allowed so that components can return to 20 ^{o}F equilibrium.

FIGURE 8. Example of section 4 - Continued.

6. NOTES

(This section contains information of a general or explanatory nature that may be helpful, but is not mandatory.)

6.1 Intended use. The compressors covered by this specification are intended for use in shipboard fire fighting applications. They are not for use with potable water. These compressors are military unique since they must be designed to withstand the high levels of shock and vibration that may be encountered in a battlefield environment.

6.2 Acquisition requirements. Acquisition documents should specify the following:

a. Title, number, and date of this specification.
b. Type and grade (see 1.2).
c. When first article is required (see 3.1).
d. Zinc plating, if required (see 3.2).
e. Whether lot A or B testing is required (see 4.2.1).
f. Packaging requirements (see 5.1).

6.3 Supersession data. This specification supersedes MIL-C-1567A dated 31 March 1969, MIL-C-4585D dated 1 June 1956, and class 3 of MIL-C-9631B dated 23 May 1969.

6.4 Subject term (key word) listing.

Cadmium plating
Compressor
Firefighting
Pump

6.5 Changes from previous issue. Marginal notations are not used in this revision to identify changes with respect to the previous issue due to the extent of the changes.

(THIS IS AN EXAMPLE ONLY. THE REQUIREMENT IS IN 5.11.)

FIGURE 9. Example of section 6.

INCH-POUND

MIL-DTL-63540B
SUPPLEMENT 1
29 June 1995

DETAIL SPECIFICATION
(use the heading "PERFORMANCE SPECIFICATION" if appropriate)

STUD, SELF-LOCKING,
GENERAL SPECIFICATION FOR

This supplement forms a part of MIL-DTL-63540B, dated 29 June 1995.

SPECIFICATION SHEETS

MIL-DTL-63540/1 - Stud, Self-Locking, Flush Head, Ribbed Clinch Type
MIL-DTL-63540/2 - Stud, Self-Locking, Flush and Protruding Head
MIL-DTL-63540/3 - Stud, Self-Locking, Flush Head, Hex Clinch Type
MIL-DTL-63540/4 - Stud, Self-Locking, Concealed Head, Knurled Clinch Type
MIL-DTL-63540/5 - Stud, Self-Locking, Concealed Head, Hex Clinch Type
MIL-DTL-63540/6 - Stud, Self-Locking, Non-Flush, Ribbed Clinch Type
MIL-DTL-63540/7 - Stud, Self-Locking, Broaching Type

Custodians:
Army – AR
Navy – SH

Preparing activity:
Army - AR
Agent:
DLA - IS

Review activity:
DLA – IS

NOTE: The activities listed above were interested in this document as of the date of this document. Since organizations and responsibilities can change, you should verify the currency of the information above using the ASSIST Online database at http://assist.daps.dla.mil.

AMSC N/A FSC 5307

(THIS IS AN EXAMPLE ONLY. THE REQUIREMENT IS IN 5.15.1.)

FIGURE 10. Example of a supplement.

INCH-POUND

MIL-DTL-915/21E
18 June 1995
SUPERSEDING
MIL-C-915/21D
5 April 1973

DETAIL SPECIFICATION SHEET
(use the heading "PERFORMANCE SPECIFICATION SHEET" if applicable)

CABLE, ELECTRICAL, 125 VOLTS, TYPE TRXF

This specification is approved for use by all
Departments and Agencies of the Department of Defense.

The requirements for acquiring the product described herein shall consist of this specification sheet and MIL-DTL-915.

REQUIREMENTS:

Qualification not required.

Construction (nonwatertight)

First - Copper conductor, uncoated, class M stranding
Second - Separator
Fifth - Polychloroprene jacket

EXAMINATION AND TESTS:

		Requirements
	Basic electrical:	
	Voltage withstand - conductor to ground, volts, root mean square, minimum...	1200
*	Insulation resistance 1 - megohms/1000 feet, minimum conductor to water...	350

AMSC N/A FSC 6145

(THIS IS AN EXAMPLE ONLY. THE REQUIREMENT IS IN 5.16.3.)

FIGURE 11. Example of specification sheet.

MIL-DTL-915/21E

EXAMINATION AND TESTS: (continued)

	Requirements
Group A:	
Visual and dimensional.....	No failure
Group B:	
Cold bending, cable - at minus 2°C, two turns around mandrel with diameter twice that of specimen....	No damage
Jacket (cable)	
Elongation - percent, minimum.....	300
Set - inch, maximum.....	3/8
* Group C:	
Flammability - inches, maximum.....	2

UNIT ORDERING LENGTH:
All sizes 1000 feet (nominal)

CHANGES FROM PREVIOUS ISSUE: The margins of this specification are marked with asterisks 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.

Custodians:
Army - MI
Navy - SH
Air Force - 11

Preparing activity:
Navy - SH

(Project 6145-1995-010)

NOTE: The activities listed above were interested in this document as of the date of this document. Since organizations and responsibilities can change, you should verify the currency of the information above using the ASSIST Online database at http://assist.daps.dla.mil.

FIGURE 11. Example of specification sheet – Continued.

MIL-PRF-12345B
w/AMENDMENT 2
12 May 2000

SUPERSEDING
MIL-PRF-12345B
w/AMENDMENT 1
8 October 2000

PERFORMANCE SPECIFICATION

EYEPIECE, BIOCULAR

This specification is approved for use by all Departments and Agencies of the Department of Defense.

1. SCOPE

1.1 Scope. This specification covers biocular eyepieces.

2. APPLICABLE DOCUMENTS

2.1 General. The documents listed in this section are specified in sections 3, 4, and 5 of this specification. This section does not include documents cited in other sections of this specification 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 of documents cited in sections 3, 4, and 5 of this specification, whether or not they are listed.

Comments, suggestions, or questions on this document should be addressed to the Commander, U.S. Army Tank-Automotive and Armaments Command, ATTN: ABCDEFG, Warren, MI 48397-5000 or emailed tacom@army.mil. Since contact information can change, you may want to verify the currency of this address information using the ASSIST Online database at http://assist.daps.dla.mil.

AMSC N/A FSC XXXX

(THIS IS AN EXAMPLE ONLY. THE REQUIREMENT IS IN 5.18.2.)

FIGURE 12. Example of amendment.

MIL-PRF-12345B
w/AMENDMENT 2

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.

DEPARTMENT OF DEFENSE STANDARDS

MIL-STD-2073-1 - DoD Standard Practice for Military Packaging

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

2.3 Non-Government publications. The following document forms a part of this document to the extent specified herein. Unless otherwise specified, the issues of documents are those cited in the solicitation or contract.

ASTM INTERNATIONAL

ASTM D 3951 - Standard Practice for Commercial Packaging

(Copies of this document are available from www.astm.org or ASTM International, 100 Barr Harbor Drive, West Conshohocken, PA 19428-2959.)

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 unless otherwise noted. Nothing in this document, however, supersedes applicable laws and regulations unless a specific exemption has been obtained.

2

FIGURE 12. Example of amendment – Continued.

MIL-PRF-12345B
w/AMENDMENT 2

3. REQUIREMENTS

3.1 First article. When specified (see 6.2), a sample shall be subjected to first article inspection in accordance with 4.3.

3.2 Materials. The contractor shall select the materials, but the materials shall meet all of the operational and environmental requirements specified herein. Recovered materials shall be used to the maximum extent possible.

3.3 Design. Deleted.

3.4 Weight. The total weight of the biocular eyepiece shall not exceed 10 pounds.

3.5 Performance characteristics.

3.5.1 Field of view to the eye. The field of view to the eye shall be not less than 39 degrees.

3.5.2 Magnification. The on-axis magnification shall be not less than 5 times.

(THE EXAMPLE ENDS HERE, BUT THE SAME TYPE OF FORMAT WOULD CONTINUE UNTIL THE END OF THE SPECIFICATION, WITH VERTICAL LINES OR OTHER MARKING DENOTING WHERE CHANGES, DELETIONS, OR ADDITIONS WERE MADE. AS REQUIRED BY 5.18.4, THE FOLLOWING NOTATION WOULD BE INCLUDED AS THE LAST PARAGRAPH IN SECTION 6.)

6.6 Amendment notations. The margins of this specification are marked with vertical lines to indicate where modifications from this amendment 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.

3

FIGURE 12. Example of amendment – Continued.

NOTICE OF INACTIVE
FOR NEW DESIGN

INCH-POUND

MIL-DTL-22684/5A
NOTICE 1
20 May 1995

DETAIL SPECIFICATION SHEET
(use the heading "PERFORMANCE SPECIFICATION SHEET" if applicable)

RESISTORS, FIXED, FILM, INSULATED,
STYLE RL07

MIL-DTL-22684/5A is inactive for new design and is no longer used, except for replacement purposes.

The Qualified Products List (QPL) associated with this inactive for new design specification will be maintained until acquisition of the product is no longer required, whereupon the specification and QPL will be canceled.

Custodians:
Navy – AS
Air Force – 11

Preparing activity:
Air Force – 11
(Project 5905-1995-008)

Review activities:
Air Force – 82
DLA – CC

NOTE: The activities listed above were interested in this document as of the date of this document. Since organizations and responsibilities can change, you should verify the currency of the information above using the ASSIST Online database at http://assist.daps.dla.mil.

AMSC N/A

FSC 5905

(THIS IS AN EXAMPLE ONLY. THE REQUIREMENT IS IN 5.19.2.)

FIGURE 13. Example of inactive for new design notice.

NOTICE OF
CANCELLATION

INCH-POUND

MIL-DTL-13701B
NOTICE 1
12 August 1995

DETAIL SPECIFICATION
(use the heading "PERFORMANCE SPECIFICATION" if applicable)

COMPRESSORS, RECIPROCATING, POWER DRIVEN
(FOR DIESEL ENGINE STARTING)

MIL-DTL-13701B, dated 31 August 1971, is hereby canceled without replacement.

Custodians:
Army - AT
Navy - SH
Air Force - 99

Preparing activity:
Army - AT

(Project 4310-1995-019)

NOTE: The activities listed above were interested in this document as of the date of this document. Since organizations and responsibilities can change, you should verify the currency of the information above using the ASSIST Online database at http://assist.daps.dla.mil.

AMSC N/A

FSC 4310

(THIS IS AN EXAMPLE ONLY. THE REQUIREMENT IS IN 5.19.3.)

FIGURE 14. Example of cancellation notice without replacement.

NOTICE OF CANCELLATION

INCH-POUND

MIL-W-12345/13B
NOTICE 1
12 August 1995

MILITARY SPECIFICATION SHEET

WIRE, ELECTRIC, CROSSLINKED POLYALKENE INSULATED, SILVER-COATED HIGH STRENGTH COPPER ALLOY, LIGHT WEIGHT, 600-VOLT, 150 °C

MIL-W-12345/13B, dated 7 September 1976, is hereby canceled. SAE International Aerospace Standard (AS) 12345/13, "Wire, Electric, Crosslinked Polyalkene Insulated, Silver-Coated High Strength Copper Alloy, Light Weight, 600-Volt, 150 °C" supersedes MIL-W-12345/13B.

CAUTION: The supersession information is valid as of the date of this notice and may be superseded by subsequent revisions of the superseding document.

(Copies of SAE publications are available from www.sae.org or SAE International, 400 Commonwealth Drive, Warrendale, PA 15096-0001.)

Custodians:
Army - CR
Navy - AS
Air Force - 11
DLA - CC

Preparing activity:
Navy - AS

(Project 6145-1995-084)

Review activities:
Army - AR, AT, AV, MI
Navy - EC, MC, OS
DLA - IS

NOTE: The activities listed above were interested in this document as of the date of this document. Since organizations and responsibilities can change, you should verify the currency of the information above using the ASSIST Online database at http://assist.daps.dla.mil.

AMSC N/A

FSC 6145

(THIS IS AN EXAMPLE ONLY. THE REQUIREMENT IS IN 5.19.3.)

FIGURE 15A. Example of cancellation notice with a direct replacement superseding document.

NOTICE OF CANCELLATION

INCH-POUND

MIL-C-46168D(MR)
NOTICE 1
15 August 2005

MILITARY SPECIFICATION

COATING, ALIPHATIC POLYURETHANE, CHEMICAL AGENT RESISTANT

MIL-C-46168D(MR), dated 21 May 1987, is hereby canceled. Future acquisitions for this item may refer to:

MIL-DTL-53039 "Coating, Aliphatic Polyurethane, Single Component, Chemical Agent Resistant"

MIL-DTL-64159 "Coating, Water Dispersible Aliphatic Polyurethane, Chemical Agent Resistant"

Users are cautioned to evaluate these documents for their particulat application before citing them as a replacement document.

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

Preparing activity:
Army – MR
(Project 8010-2005-006)

NOTE: The activities listed above were interested in this document as of the date of this document. Since organizations and responsibilities can change, you should verify the currency of the information above using the ASSIST Online database at http://assist.daps.dla.mil.

AMSC N/A FSC 8010

(THIS IS AN EXAMPLE ONLY. THE REQUIREMENT IS IN 5.19.3)

FIGURE 15B. Example of a cancellation notice with suggested replacement documents.

NOTICE OF
REINSTATEMENT

INCH-POUND

MIL-DTL-28719
NOTICE 2
13 August 1995
SUPERSEDING
NOTICE 1
3 June 1976

DETAIL SPECIFICATION
(use the heading "PERFORMANCE SPECIFICATION" if applicable)

HEADERS, HERMETICALLY SEALED

MIL-DTL-28719, dated 31 March 1970, is hereby reinstated and may be used for acquisition.

Custodians:
Army - CR
Navy - OS
Air Force - 84

Preparing activity:
Navy - OS

(Project 5940-1995-002)

NOTE: The activities listed above were interested in this document as of the date of this document. Since organizations and responsibilities can change, you should verify the currency of the information above using the ASSIST Online database at http://assist.daps.dla.mil.

AMSC N/A

FSC 5940

NOTE: If reinstating a document as inactive for new design, the text would read "MIL-DTL-28719, dated 31 March 1970, is hereby reinstated as inactive for new design and may be used for acquisition."

(THIS IS AN EXAMPLE ONLY. THE REQUIREMENT IS IN 5.19.4.)

FIGURE 16. Example of reinstatement notice.

NOTICE OF
REACTIVATION

INCH-POUND

MIL-DTL-55302/54B
NOTICE 2
29 May 1995
SUPERSEDING
NOTICE 1
17 October 1991

DETAIL SPECIFICATION SHEET
(use the heading "PERFORMANCE SPECIFICATION SHEET" if applicable)

CONNECTORS, PRINTED CIRCUIT SUBASSEMBLY AND ACCESSORIES:
PLUG, STRAIGHT-THRU, HERMAPHRODITIC CONTACT FOR
PRINTED WIRING BOARDS (0.100 SPACING)

MIL-DTL-55302/54B, dated 19 March 1981, is hereby reactivated and may be used for either new or existing design acquisition.

Custodians:
Army - CR
Navy - EC
Air Force - 11
DLA - CC

Preparing activity:
DLA - CC

(Project 5935-1995-022)

NOTE: The activities listed above were interested in this document as of the date of this document. Since organizations and responsibilities can change, you should verify the currency of the information above using the ASSIST Online database at http://assist.daps.dla.mil.

AMSC N/A

FSC 5935

(THIS IS AN EXAMPLE ONLY. THE REQUIREMENT IS IN 5.19.5.)

FIGURE 17. Example of reactivation notice.

ADMINISTRATIVE NOTICE

METRIC

MIL-PRF-123
NOTICE 1
1 May 2001

PERFORMANCE SPECIFICATION

FUZES

MIL-PRF-123 was approved for use by the Department of Defense on 1 May 2001. Due to its length and the need for interactive links, this document is available on CD-ROM only. Requests for a copy of the CD-ROM should be sent to Commander, U.S. Army TACOM-ARDEC, ATTN: AMSTA-AR-QAW-E, Picatinny Arsenal, NJ 07806-5000.

Custodians:
Army – AR
Navy – OS
Air Force – 99

Preparing activity:
Army – AR

NOTE: The activities listed above were interested in this document as of the date of this document. Since organizations and responsibilities can change, you should verify the currency of the information above using the ASSIST Online database at http://assist.daps.dla.mil.

AMSC N/A

FSC 13GP

(THESE ARE EXAMPLES ONLY. THE REQUIREMENT IS IN 5.19.6.)

FIGURE 18. Example of administrative notice.

ADMINISTRATIVE NOTICE

METRIC

MIL-PRF-123
NOTICE 1
1 May 2001

PERFORMANCE SPECIFICATION

FUZES

The point of contact for MIL-PRF-123 has changed. Comments, suggestions, or questions on this document should now be sent to Commander, U.S. Army TACOM-ARDEC, ATTN: AMSTA-ABCDEFG, Picatinny Arsenal, NJ 07806-5000.

Custodians:
Army – AR
Navy – OS
Air Force – 99

Preparing activity:
Army – AR

NOTE: The activities listed above were interested in this document as of the date of this document. Since organizations and responsibilities can change, you should verify the currency of the information above using the ASSIST Online database at http://assist.daps.dla.mil.

AMSC N/A

FSC 13GP

(THESE ARE EXAMPLES ONLY. THE REQUIREMENT IS IN 5.19.6.)

FIGURE 19. Example of administrative notice.

ADMINISTRATIVE NOTICE

INCH-POUND

MIL-DTL-12345B
NOTICE 1
12 July 2007

DETAIL SPECIFICATION

WARHEAD, GUIDED MISSLE (U)

MIL-DTL-12345B, dated 12 July 2007, is a classified document with controlled distribution. Release of this document requires the approval by the Department of Defense approving authority listed below. Written requests supported by a verifiable need-to-know shall be submitted to:

Commander
US Army TACOM-ARDEC
Attn: AMSRD-AAR-AIC-S, Bldg 12
Picatinny, NJ 07806-5000
ardec-stdzn@pica.army.mil

Preparing activity:
Army – AR

NOTE: The activity listed above was interested in this document as of the date of this document. Since organizations and responsibilities can change, you should verify the currency of the information above using the ASSIST Online database at http://assist.daps.dla.mil.

AMSC N/A

FSC 1336

(THIS IS AN EXAMPLE ONLY. THE REQUIREMENT IS IN 5.19.6.)

FIGURE 20. Example of administrative notice for a classified specification.

DESCRIPTION OF SPECIFICATION REQUIREMENTS FOR CONSIDERATION

A.1 SCOPE

A.1.1 Scope. This appendix provides additional guidance to help the specification developer define section 3 requirements. This appendix is not a mandatory part of this standard. The information contained herein is intended for guidance only.

A.1.2 Applicability. While most of the requirements described in this appendix could apply to defense or program-unique specifications, some as noted would only be potentially applicable to program-unique specifications. It is unlikely that all of the requirements described in this appendix would ever apply to a single specification. These descriptions are not intended to be exhaustive, but merely to provide guidance for consideration.

A.2 TOP-LEVEL PROGRAM-UNIQUE PERFORMANCE REQUIREMENTS

A.2.1 General. Top-level performance requirements that may be included in program-unique specifications are described in A.2.2 through A.2.5. Typically, system specifications would begin with these requirements.

A.2.2 Missions. Where applicable, this paragraph should describe the missions of the system to the extent that such missions affect design requirements. This description should include operational information such as tactics, system deployment, operating locations, and facilities. If this information is classified, it may be contained in a separate document and referenced in this paragraph.

A.2.3 Threat. Where applicable, this paragraph should describe the characteristics of potential targets, the characteristics of current and potential enemy weapon capabilities that are relevant to the system, and any additional threat considerations that affect the system design. This information may be contained in a separate document and referenced in this paragraph, especially if it is classified.

A.2.4 Required states and modes. If the entity is required to operate in more than one state or mode having requirements distinct from other states or modes, this paragraph should identify each state and mode. Examples of states and modes include idle, ready, active, post-use analysis, training, degraded, emergency, backup, wartime, and peacetime. If states or modes are required, each requirement or group of requirements in this specification should be correlated to the states and modes. A table or other method may be used to depict this correlation.

A.2.5 Entity capability requirements. Where applicable, this paragraph should, usually in a series of subparagraphs, identify all of the requirements associated with each capability of the entity. A “capability” is defined as a group of related requirements. The word “capability” may be replaced with “function,” “subject,” “object,” or other term useful for presenting the requirements.

A.2.5.1 Entity capability itemized requirements. Each subparagraph should identify a required capability of the entity and should itemize the requirements associated with the capability in measurable terms. The requirements should specify the required behavior of the entity and should include applicable parameters such as response times, sequencing, accuracy, capacities (how much/how many), priorities, continuous operation requirements, and allowable deviations based on operating conditions. If the capability can be more clearly specified by dividing it into constituent capabilities, the requirements for each constituent capability should be provided as one or more sub-subparagraphs. Where applicable, the requirements should also address required behavior under unexpected or "out of bounds" conditions, requirements for error handling, and any provisions to be incorporated into the entity to provide continuity of operations in the event of emergencies.

A.3 DESCRIPTION OF REQUIREMENTS OFTEN FOUND IN SPECIFICATIONS

A.3.1 General. The following is a description of requirements that may be a part of specifications. All of these requirements are on an applicable basis since it is unlikely a specification would use all of these requirements.

A.3.2 Reliability. Where applicable, this paragraph should state the reliability requirements numerically (with confidence levels, if appropriate). As a minimum, a reliability requirement should consist of a specified reliability, time associated with the specified reliability, and a desired confidence level. For example, you could specify that a product should have 90% reliability at 1000 hours of operation with a 95% confidence level. In simpler terms, this means that we want to be 95% confident that 90% of the population will survive at least 1000 hours.

A.3.3 Maintainability. Where applicable, this paragraph should state the numerical maintainability requirements in such terms as Mean-Time-To-Repair or maintenance man-hours per flight or operational hours. Maintainability is a significant design parameter. Its requirements are used to influence design for maintainability and to differentiate between already existing candidates. Maintainability is a measure of the quickness and ease with which a failed system can be restored to operating condition. It is a design consideration that centers around making a system repairable as easily, quickly and inexpensively as practical. Median Time to Repair (MedTTR) and Maximum Time to Repair (MaxTTR) for essential unscheduled maintenance demands are two performance-based measures that are typically specified as requirements for systems. Mean Time To Repair (MTTR) was used widely in the past, but is being replaced by MaxTTR and MedTTR. Maintenance Ratio (MR) is a logistics-oriented measure typically specified as a system requirement. MR is a measure of manpower intensity needed to support a system. MR describes the ratio of maintenance man-hours to system usage. The smaller the MedTTR, MaxTTR and MR, the better the systems maintainability characteristics.

A.3.4 Deployability. Where applicable, this paragraph should state the deployability requirements in terms of numerical limits (for example, two of a specific type of transport aircraft or one of a specific type of merchant vessel). The limits should be related to the

transport of a specific number of items over a specific distance for a specific period of deployment.

A.3.5 Availability. Where applicable, this paragraph should specify the extent to which the entity shall be in an operable state at the start of the mission(s). If quantitative requirements for both reliability and maintainability are specified, this requirement is not applicable.

A.3.6 Environmental conditions. Where applicable, this paragraph should specify environments that the entity is expected to experience in shipment, storage, service, and use. For entities that include software, these requirements would define the environment in which the Computer Software Configuration Item (CSCI) would operate, such as the computer hardware or the operating system on which the CSCI must run. Where applicable, it specifies whether the system will be required to withstand, or be protected against, specified environmental conditions. In addition, it provides a description of the electromagnetic environment in which the system must operate effectively and the external environments in which the item must survive. Where applicable, this paragraph should specify requirements pertaining to nuclear survivability. Where systems must survive the initial nuclear weapons effects phase, it should specify permissible deviations from system performance characteristics after exposure to nuclear detonation environments. It should specify performance requirements for mechanical configurations, optical components, electronic or electrical circuits and electronic components. Subparagraphs should be included as necessary to cover environmental conditions such as climate, shock, vibration, noise, noxious gases, chemical agents, biological agents, and nuclear weapons effects.

A.3.7 Transportability. Where applicable, this paragraph should identify requirements for transportability that are common to all components to permit employment and logistic support. For example, it might specify that the equipment be designed so that, with its packing for transport, each package would be no greater than ____ (volume units) and no more than ____ (length units) high, ____ (length units) wide, and ____ (length units) deep. It should identify all major functional elements of the system or item that, due to operational characteristics, will be unsuitable for normal transportation methods (for example, oversize, hazardous, or delicate items).

A.3.8 Materials and processes. Where applicable, this paragraph should specify requirements for materials and processes to be used in the entity covered by the specification. Requirements of a general nature should be first, followed by specific requirements.

A.3.9 Electromagnetic radiation. Where applicable, this paragraph should specify requirements pertaining to electromagnetic radiation in terms of performance, design (including grounding requirements), and interface considerations.

A.3.10 Nameplates or product markings. Where applicable, this paragraph should specify all requirements pertaining to nameplates or markings, referencing applicable specifications, drawings, or standards. If PIN descriptions are included in the specification, this paragraph should include the requirement that parts be marked with the design CAGE code and

PIN. Where applicable, this paragraph should address the use of special markings (for example, colored letters, lines, or dots) for function or identification coding and the use of stamped or imprinted information (for example, standard alloy designators or scannable bar codes) on the entity.

A.3.11 Producibility. Where applicable, this paragraph should require the selection of fabrication techniques, design parameters, and tolerances that enable the product to be fabricated, assembled, inspected, and tested economically and with repeatable quality. Product and process characteristics having a direct relationship to safety, performance, durability, or supportability should be matched to corresponding manufacturing capabilities. These requirements should be consistent with potential production quantities and rates, and compatible with flexible, automated or semi-automated manufacturing and inspection processes.

A.3.12 Interchangeability. Where applicable, this paragraph should specify the requirements for the level of assembly at which components should be interchangeable or replaceable.

A.3.13 Safety. Where applicable, this paragraph should specify requirements to preclude or limit hazards to the physical environment and to personnel and equipment. To the extent practicable, it should cite established and recognized standards. It should identify those safety characteristics unique to the entity that constrain the design due to hazards in assembly, disassembly, test, transport, storage, operation, maintenance or disposal when they are not addressed by standard industrial or service practices. It should address “fail-safe” and emergency operating restrictions, when applicable. Where applicable, this paragraph should also include health and safety criteria, including physical, mechanical, biological and explosive effects. These criteria should include consideration of the toxicological effect and environmental impact of hazardous materials, waste and by-products; ionizing and non-ionizing radiation; provisions in the software to prevent inadvertent actions or non-actions; gas detection and warning devices; grounding of electrical systems; decontamination; explosion proofing; and mishap mitigating factors such as crash worthiness, escape and fire suppression systems. It should also identify special safety rules such as those required for nuclear weapons, including, as applicable, requirements for component design, prevention of inadvertent detonation, and compliance with nuclear safety rules.

A.3.14 Human factors engineering. Where applicable, this paragraph should specify human factors engineering requirements for the entity, including any special or unique requirements (for example, constraints on allocation of functions to personnel, interactions of communications and of personnel with equipment). Included should be those specified areas, stations, or equipment that require concentrated human engineering attention due to the sensitivity of the operation or criticality of the task, particularly those areas where the effects of human error would be particularly serious. These requirements should include, as applicable, considerations for:

a. Human information processing capabilities and limitations.

b. Foreseeable human errors under both normal and extreme conditions (especially for input, display, control, maintenance and management of critical information and systems).

c. Implications for the total system environment (including training, support, and operational environment).

A.3.15 Security and privacy. Where applicable, this paragraph should specify security and privacy requirements that are basic to the design with respect to the operational environment of the entity. Where applicable, this paragraph should also specify those security requirements necessary to prevent access to the internal operating areas of the hosting system or item and compromise of sensitive information or materials. As applicable, these requirements should address:

a. the security and privacy environment in which the entity will operate,

b. the type and degree of security or privacy to be provided,

c. the security and privacy risks the entity should withstand,

d. the security and privacy policy that should be met,

e. the security and privacy accountability the entity should provide, and

f. the criteria that should be met for security and privacy certification or accreditation.

A.3.16 Computer resource requirements. Where applicable, this paragraph should specify computer resource requirements (such as memory reserve, timing constraints, and capacity) necessary to assure that the entity meets its performance requirements. Depending on the nature of the entity, the computer resources covered in the subparagraphs may constitute the environment of the entity (as for a software entity) or the components of the entity (as for a hardware entity).

A.3.16.1 Computer hardware resource utilization requirements. Where applicable, this paragraph should specify the requirements on the entity's computer hardware resource utilization, such as maximum allowable use of processor capacity, memory capacity, input/output device capacity, auxiliary storage device capacity, and communications/network capacity. The requirements (stated, for example, as percentages of the capacity of each computer hardware resource) should include the conditions under which the resource utilization is to be measured.

A.3.16.2 Design and implementation constraints. Where applicable, this paragraph should specify the requirements that constrain the design and implementation of the entity. For hardware-software entities, this paragraph should include physical requirements imposed on the entity. These requirements may be specified by reference to appropriate commercial or military standards and specifications. Examples include requirements concerning:

a. Use of a particular CSCI architecture or requirements on the architecture, such as required databases or other software units; use of standard, military, or existing components; or use of government-furnished property (equipment, information, software).

b. Use of a particular design or implementation standards; use of particular data standards; use of a particular programming language.

c. Flexibility and expandability that should be provided to support anticipated areas of growth or changes in technology, threat, or mission.

A.3.16.3 Sizing and timing requirements. Where applicable, this paragraph should specify the amount, and if applicable, location of internal and auxiliary memory and the amount of processing time allocated to the CSCI. It should also specify the resources required of both the memory unit and the Central Processing Unit for the CSCI.

A.3.16.4 Database/data bank requirements. Where applicable, this paragraph should specify any requirements imposed on databases/data banks that must be incorporated into the item. A data element dictionary may be referenced.

A.3.16.5 Flexibility and expansion. Where applicable, this paragraph should specify areas of CSCI and computer hardware growth that require planning for system flexibility and expansion. In addition, this paragraph should define specific system or item elements that require spare capacity (for example, memory and timing) to support flexibility and expansion.

A.3.16.6 Software portability. Where applicable, this paragraph should specify requirements for the replication, distribution, and installation of new versions of software for the item. In addition, this paragraph should specify system or item requirements that will permit minimum cost and time impacts in the methods used for replication, deployment, and installation of the new versions of software to fielded systems or items. Logistic support considerations required for fielding new versions of software should be included.

A.3.16.7 Software supportability. Where applicable, this paragraph should identify requirements for software supportability; for integration or use of existing software support capabilities; for the development or delivery of added support resources; for any limitations on the use of any particular support facilities, computer equipment or software; and if a waiver of the use of Ada has been approved, for use of a particular programming language.

A.3.16.8 Adaptation requirements. Where applicable, this paragraph should specify the requirements concerning installation-dependent data that the entity is required to provide (such as site-dependent latitude and longitude or site-dependent state tax codes) and operational parameters that the entity is required to use that may vary according to operational needs (such as parameters indicating operation-dependent targeting constants or data recording).

A.3.16.9 Software quality factors. Where applicable, this paragraph should be divided into subparagraphs, as appropriate, to specify each software quality factor that must be achieved

by this CSCI. These factors may include reusability (the ability to be used in multiple applications), testability (the ability to be easily and thoroughly tested), usability (the ability to be easily learned and used), and other attributes.

A.3.17 Logistics. Where applicable, this paragraph should specify logistic considerations and conditions that will apply to the entity. It should define logistic conditions such as maintenance considerations, software support, modes of transportation, supply system requirements, and impact of existing facilities and equipment.

A.3.17.1 Maintenance. Where applicable, this paragraph should specify requirements relating to:

a. Use of multipurpose test equipment.

b. Repair versus replacement criteria.

c. Levels of maintenance.

d. Maintenance and repair cycles.

e. Accessibility.

A.3.17.2 Supply. Where applicable, this paragraph should specify the limitations of the supply system as a basis for the subassembly and piece part breakout of the entity. It should define supply elements such as centralized supply systems used for certain classes of parts, supply stock locations, and types of items stored at those locations.

A.3.17.3 Facilities and facility equipment. Where applicable, this paragraph should specify the constraints imposed on the system or item by the existing facilities and facility equipment.

A.3.17.4 Personnel and training. Where applicable, this paragraph should specify requirements imposed by, or limited by, personnel or training considerations. It should allocate the numbers and skills of personnel to the operation, maintenance, and control of the system, item, and software. It should also establish constraints on the types and degree of training relating to the use of existing facilities, to equipment, to special or emergency procedures, to hazardous tasks, and to the use of training simulators, as well as the need for additional facilities, equipment, and mission simulators.

A.3.17.4.1 Personnel. Where applicable, this paragraph should specify personnel requirements. Personnel requirements should include:

a. Skills and numbers of personnel that should be allocated to the operation, maintenance, and control of the system or item.

b. Numbers and skills of support personnel for each operational deployment mode and the intended duty cycle, both normal and emergency.

A.3.17.4.2 Training. Where applicable, this paragraph should include the following training requirements, as applicable:

a. Restrictions on the type of training to be used for the system or item (for example, technical training school, local on-the-job training).

b. Constraints specifying the use of available government training facilities and equipment.

c. Required capabilities of training devices to be developed, characteristics of the training devices, and training and skills to be developed through the use of training devices.

d. Limitations on the length of training time and on training locations.

A.3.18 Interface requirements. Where applicable, this paragraph, or a series of subparagraphs, should describe interface requirements between the entity and other entities. Quantitative interface requirements may be defined in separate specifications, standards, or drawings and referenced.

A.3.18.1 Government-Furnished Property (GFP) interfaces. Where applicable, this paragraph should identify the interface characteristics for all items of GFP that have been identified for incorporation into the system, item, or software. It should include a list of all GFP items by their nomenclature, specification number, and PIN. In addition, if software is furnished by the government to a contractor for integration into the system or item, it should be treated as GFP and identified in the specification by its software identifier, specification number, and PIN. If the list of GFP is extensive, it may be included as an appendix to the specification and referenced in this paragraph.

A.3.18.2 External interface requirements. Where applicable, this paragraph should identify the external interfaces of the system, item, or software. An external interface figure(s) may be used to aid in this description. It should identify each external interface by name (and, for software, project-unique identifier); should designate the interfacing entities (such as systems, configuration items, parts, software units) by name, number, version, and documentation reference(s); and should provide a brief description of each interfacing entity. The identification should also state which items already exist (and therefore impose interface requirements on interfacing entities) and which are being developed or modified (thus having interface requirements imposed on them). When applicable, identifying documentation, such as an interface specification, standard, or drawing should be referenced for each interface. When appropriate, the paragraph should be divided into subparagraphs to identify each required external interface and to specify the requirements associated with each interface.

A.3.19 Computer hardware requirements. Where applicable, this paragraph should specify the requirements regarding computer hardware that must be used by, or incorporated into, the entity. The requirements should include, as applicable, number of each type of equipment, type, size, capacity, and other required characteristics of processors, memory, input/output devices, auxiliary storage, communications/network equipment, and other required equipment.

A.3.20 Computer communications requirements. Where applicable, this paragraph should specify the additional requirements concerning the computer communications that must be used by the entity. Examples include geographic locations to be linked; configuration and network topology; transmission techniques; data transfer rates; gateways, required system use times; type and volume of data to be transmitted and received; time boundaries for transmission, reception, and response; peak volumes of data; and diagnostic features.

A.3.21 Computer software requirements. Where applicable, this paragraph should specify the requirements regarding computer software that must be used by, or incorporated into, the CSCI. Examples include operating systems, database management systems, communications and network software, utility software, input and equipment simulators, test software, and manufacturing software. The correct nomenclature, version, and documentation references of each software item should be provided.

A.3.22 CSCI internal interfaces. Where applicable, this paragraph should specify the requirements imposed on interfaces internal to the CSCI.

A.3.23 CSCI internal data requirements. Where applicable, this paragraph should specify the requirements imposed on data internal to the CSCI. It should include requirements on databases and data files to be included in the CSCI.

A.3.24 Design and construction. Where applicable, this paragraph should specify essential requirements that define the exact design of the entity covered by the specification. The subparagraphs should reference the documentation that defines the design and should include appropriate design standards.

A.3.25 Software design.

A.3.25.1 Executable files. Where applicable, this paragraph should provide, by reference to an enclosed or otherwise provided electronic medium, the executable files for the CSCI and any batch files, command files, or other software files needed to install and operate the software on its target computer(s). In order for a body of software to be considered a valid copy of the CSCI's executable files, it must be shown to match these executable files exactly.

A.3.25.2 Source files. Where applicable, this paragraph should provide, by reference to an enclosed or otherwise provided electronic medium, the source files for the CSCI and any batch files, command files, or other software files needed to regenerate the executable files for

the CSCI. In order for a body of software to be considered a valid copy of the CSCI's source files, it must be shown to match these source files exactly.

A.3.25.3 "As built" software design . Where applicable, this paragraph should contain or reference a document that describes the design of the "as built" CSCI.

A.3.25.4 Compilation/build procedures. Where applicable, this paragraph should describe the compilation/build process used to create the executable files from the source files and to prepare the executable files to be loaded into firmware or other distribution media. It should specify the compiler(s)/assembler(s) to be used, including version numbers; other hardware and software needed, including version numbers; any settings, options, or conventions to be used; and procedures for compiling/assembling, linking, and building the CSCI and the software system/subsystem containing the CSCI, including variations for different sites, configurations, versions, and similar.

A.3.25.5 Modification procedures. Where applicable, this paragraph should describe procedures that should be followed to modify the CSCI. It should include or reference information on the following, as applicable:

a. Support facilities, equipment, and software, and procedures for their use

b. Databases/data files used by the CSCI and procedures for using and modifying them

c. Design, coding, or other conventions to be followed

d. Compilation/build procedures if different from those above

e. Integration and testing procedures to be followed

A.3.25.6 Computer hardware resource utilization. Where applicable, this paragraph should describe the "as built" CSCI's measured utilization of computer hardware resources (such as processor capacity, memory capacity, input/output device capacity, auxiliary storage capacity, and communications/network equipment capacity). It should cover all computer hardware resources included in the utilization requirements for the CSCI, in system-level resource allocations affecting the CSCI, or in the software development plan. If all utilization data for a given computer hardware resource is presented in a single location, such as in a single software specification, this paragraph may reference that source. Included for each computer hardware resource should be:

a. The CSCI requirements or system-level resource allocations being satisfied.

b. The assumptions and conditions on which the utilization data are based (for example, typical usage, worst-case usage, assumption of certain events)

c. Any special considerations affecting utilization (such as use of virtual memory, overlays, or multiprocessors or the impacts of operating system overhead, library software, or other implementation overhead)

d. The units of measure used (such as percentage of processor capacity, cycles per second, bytes of memory, kilobytes per second)

e. The level(s) at which the estimates or measures have been made (such as software unit, CSCI, or executable program)

A.3.25.7 Design traceability. This section should provide:

a. Traceability from each CSCI source file to the software unit(s) that it implements, or, if a software unit corresponds to multiple source files, traceability from each source file to the detailed design aspects of those software units that it implements.

b. Traceability from each software unit to the source files that implement it, or if a software unit corresponds to multiple source files, traceability from each detailed design aspect of the software unit to the source files that implement it.

c. Traceability from each computer hardware resource utilization measurement to the CSCI requirements it addresses. (Alternatively, this traceability may be provided in the computer hardware resource utilization section.)

d. Traceability from each CSCI requirement regarding computer hardware resource utilization to the utilization measurements given in the computer hardware resource utilization section.

A.3.26 Workmanship. Where applicable, this paragraph should specify the workmanship requirements and should include the necessary requirements relative to the standard of workmanship desired, freedom from defects, and general appearance of the finished product. The requirements should be so worded as to provide a logical basis for rejection in those cases where workmanship is such that the item is unsuitable for the purpose intended.

A.3.27 Product characteristics. Where applicable, this paragraph should identify specific conditions and properties such as color, protective coating, waviness, surface finish, dimensions, weight, and similar, that are necessary for the material to perform adequately in its intended use.

A.3.28 Chemical, electrical, and mechanical properties. Where applicable, this paragraph should define the requirements for composition, concentration, hardness, tensile strength, elongation, thermal expansion, electrical resistivity, and similar, that are necessary for the material to perform adequately in its intended use.

A.3.29 Stability. Where applicable, this paragraph should define the requirements for shelf-life and aging that are necessary for the material to perform adequately in its intended use and over its intended life.

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CONCLUDING MATERIAL

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Preparing activity:
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Review activities:
Army – AT, AV, CE, CR, EA, GL, IH, MD, MI
MR, MT, PT, SM, TE, TM
Navy – AS, EC, MC, NU, NW, OS, SA, TD, YD
Air Force – 16, 19, 22, 68, 70, 71, 84, 99
DLA – CC, CT, DM, DP, GS, IS, PS, SS
DISA – DC1
DTRA – DS
NGA – MP

Civil agency:
GSA – FSS

NOTE: The activities listed above were interested in this document as of the date of this document. Since organizations and responsibilities can change, you should verify the currency of the information above using the ASSIST Online database at http://assist.daps.dla.mil.