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MILITARY STANDARD

**MILITARY STANDARDS
AND HANDBOOKS,
PREPARATION OF**



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DEPARTMENT OF DEFENSE
Washington, DC 20301

Military Standards and Handbooks, Preparation of

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

2. Beneficial comments (recommendations, additions, deletions) and any pertinent data which may be of use in improving this document should be addressed to: Director, Defense Materiel Specifications and Standards Office, Cameron Station, Alexandria, VA 22304-6183, by using the self-addressed Standardization Document Improvement Proposal (DD Form 1426) appearing at the end of this document or by letter.

FOREWORD

The Department of Defense is committed to increased defense contractor productivity and improved acquisition efficiency. Military standards and handbooks play an important role in this context, and must be prepared with this objective in mind. They provide the framework by which requirements are defined. They must allow for the various contractual circumstances and environments that exist, and must promote an atmosphere in which appropriate cost, benefit, and risk tradeoffs can be made.

Significant changes have been made to this standard as a result of DoD policy to selectively apply and tailor military standardization documents. These changes reflect the DoD belief that the format, tone, and content of standardization documents are important to cost effective use of these documents.

Proper preparation and use of standardization documents is a difficult task requiring careful analysis and good judgment. The following points highlight areas of policy emphasis, intent, or changes. Areas where actual problems have been encountered on specific documents are also included. They are intended as a "check-list" to assist in document preparation.

Documents should be structured and formatted to facilitate tailoring. Requirements that are generally necessary but can occasionally be removed should be written so that they can be tailored out. Requirements that are necessary only in certain instances should be written so that they can be tailored in.

Each program office should be encouraged, within the document, to selectively apply and tailor the document in the acquisition process. Cost-effective use should be the primary concern, not risk aversion.

Detailed application guidance should be provided with each document. The purpose of this guidance is to provide non-contractual information on when and how to use the document. Information such as the following is recommended: (1) how to apply the document to different contract types and different program phases, (2) the source of and flexibility inherent with specific document requirements, (3) guidance on what is required to satisfy document requirements, (4) the extent of government review and approval, and (5) the relationship between the particular document and other related documents in the acquisition process. For additional information on application, refer to 5.2.14.1.3 on application guidance.

A carefully documented, permanent record should be maintained by the preparing activity of the source and reason behind particular requirements and changes to requirements. The rationale (measurement, testing, judgment, etc.) behind a specific numeric level is one example of what the record should contain. Issues and controversial areas during the coordination process should be noted and it may be desirable to summarize these issues and areas in 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.

Format requirements for standardization documents are not necessarily rigid. There is flexibility to make adjustments which make sense to a particular document.

Clear distinction should be made between requirements portions and guidance portions of documents. Careful attention to use of the words "should" (guidance language) and "shall" (requirement language) is important.

Requirements statements should be clear and unambiguous. One test to apply in preparing a document is to ask, "What will a contractor have to do as a result of this requirement " The answer should be apparent to both the government and the contractor.

To the extent possible, requirements should be stated in performance or "what-is-necessary" terms, as opposed to telling a contractor "how to" perform a task.

Care should be taken to avoid unnecessary reference to other standardization documents and document "tiering". Non-product bookform standards should identify references at or below the first subordinate tier as being for guidance only. References should be justified. When a portion of another document needs to be referenced, only that portion should be referenced. Allow for tailoring of document references when this is appropriate.

Strong justification and extreme care is necessary when making reference to management system or program type documents. These documents lose visibility (and possible tailoring efforts done elsewhere are lost) when imposed in this manner. It is usually more effective to specify these documents directly in the contract.

Ways to increase the use of commercial products and nongovernment standards which will satisfy government requirements should be an important consideration during document preparation or revision. Efforts to identify possibilities, encourage their use, or reduce impediments to their use should be reflected in standardization document contents.

Data Item Descriptions should be developed and circulated with standardization documents during the draft coordination stages.

Documents should allow for contractor systems and contractor data when they will satisfy government requirements.

Contractors should be encouraged, within the document, to propose document application and tailoring modifications with supporting rationale for such modifications.

Feedback on the success or difficulties (benefits and costs) encountered in the application of the document on specific contracts should be encouraged. Contractor/industry and government experience should be directed to the preparing activity or other appropriate offices. (Note: Inputs directly to the Director, Standardization and Acquisition Support, Office of the Under Secretary of Defense (Research and Engineering), should be invited if the source feels there is sufficient reason to make inputs at that level.)

Efforts should be made to encourage and obtain inputs and perspectives outside of a documents normal proponent group (such as the quality, reliability, or packaging communities).

Care should be taken to ensure that industry comments are requested during the draft stages of document preparation and that proper government coordination occurs.

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1. SCOPE

1.1 Purpose. The purpose of this standard is to standardize the preparation of military standards and handbooks, to ensure the inclusion of essential requirements, and to aid in the use and analysis of DoD standardization documents in accordance with the basic policy of the Defense Standardization and Specification Program.

1.2 Scope. This standard establishes the formats, contents, and procedures for the preparation of military standards and handbooks.

2. REFERENCED DOCUMENTS

2.1 Government documents.

2.1.1 Specifications, standards, and handbooks. Unless otherwise specified, the following specifications, standards, and handbooks of the issue listed in that issue of the Department of Defense Index of Specifications and Standards (DoDISS) specified in the solicitation form a part of this standard to the extent specified herein.

STANDARDS

FEDERAL

FED-STD-376 - Preferred Metric Units for General Use by the Federal Government.

MILITARY

MIL-STD-12 - Abbreviations for Use on Drawings, Specifications, Standards, and in Technical-Type Publications.
 DOD-STD-100 - Engineering Drawing Practices.

2.1.2 Other Government documents, drawings, and publications. The following other Government documents, drawings, and publications form a part of this standard to the extent specified herein.

Defense Standardization Manual DoD 4120.3-M - Defense Standardization and Specification Program Policies, Procedures and Instructions.
 DoD Thesaurus of Engineering and Scientific Terms (TEST), AD-672 000.
 SD-1 - Standardization Directory.
 DoD 5000.19-L, Volume II - DoD Acquisition Management Systems and Data Requirements Control List. (AMSDL)
 DoDD 4120.21 - Application of Specifications, Standards, and Related Documents in the Acquisition Process.
 DDCH 4185.7 - DDC Retrieval and Indexing Terminology (with supplement, DTIC Posting Terms), AD-A068 500.
 Cataloging Handbook H2-1 - Federal Supply Classification.
 Cataloging Handbook H6 - Federal Item Name Directory for Supply Cataloging.
 U.S. Government Printing Office (GPO) Style Manual.

(Copies of specifications, standards, handbooks, drawings, and publications required by contractors in connection with specific acquisition functions should be obtained from the contracting activity or as directed by the contracting officer.)

2.2 Other publications. The following documents form a part of this standard to the extent specified herein. The issues of the documents which are indicated as DoD adopted shall be the issue listed in the issue of the DoDISS specified in the solicitation. The issues of documents which have not been adopted shall be those in effect on the date of the cited DoDISS.

AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)

ANSI/IEEE 260-78 - IEEE Standard Letter Symbols for Units of Measurement.
 ANSI Y14.5M-1982 - Dimensioning and Tolerancing.
 ANSI Z39.14 - American National Standard for Writing Abstracts.

(Applications for copies should be addressed to the American National Standards Institute, Inc., 1430 Broadway, New York, NY 10018.)

(Nongovernment standards are generally available for reference from libraries. They are also distributed among technical groups and using Federal agencies.)

2.3 Order of precedence. In the event of a conflict between the text of this standard and the references cited herein, the text of this standard shall take precedence.

2.4 Source of documents.

- a. Copies of listed military standards, specifications, and associated documents listed in the Department of Defense Index of Specifications and Standards, are available from the Department of Defense Single Stock Point, Commanding Officer, Naval Publications and Forms Center, 5801 Tabor Avenue, Philadelphia, PA 19120. Copies of industry association documents should be obtained from the sponsoring industry association. Copies of all other listed documents should be obtained from the contracting activity or as directed by the contracting officer.
- b. Copies of the GPO Style Manual are available from the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402.
- c. Copies of the DoD Thesaurus of Engineering and Scientific Terms and the DDC Retrieval and Indexing Terminology may be purchased from the National Technical Information Service, Springfield, VA 22161, or (for DoD activities and DoD contractors) from the Reference Services Branch, Defense Technical Information Center, Cameron Station, Alexandria, VA 22304-6145.

3. DEFINITIONS

3.1 Standard. A document that establishes engineering and technical requirements for items, equipments, processes, procedures, practices, and methods that have been adopted as standard. Standards may also establish requirements for selection, application and design criteria for materiel.

- a. Process document. A document that establishes and defines requirements for management, design processes, procedures, practices, methods, and data applicable to a broad range of products. These documents generally fall within the defined scope of the standardization areas. (See SD-1 for a complete listing and definitions.)
- b. Commodity document. A document that establishes and defines the essential requirements for specific materials, parts, components, subassemblies, assemblies and equipment. These products are generally covered by documents within the defined scope of the federal supply classes (FSCs) and federal supply groups (FSGs). (See SD-1 for a complete listing. The commodity (product) classes and groups are defined in Cataloging Handbook H2-1.)

3.1.1 Equipment standards. Equipment standards generally identify features of equipments (not to be confused with features of components) that make them standard. The standardization of equipment features usually are limited to those which insure interchangeability, operational characteristics, and the use of standard parts. For example, a standard for an internal combustion engine to be used as a prime mover for mechanical and electrical rotating equipment might standardize such overall characteristics as maximum weight, maximum envelope dimensions, horsepower and torque characteristics, height of shaft above the base, type of shaft coupling, etc. A standard engine conforming to characteristics such as those enumerated above would not result in obtaining engines identical in appearance and design. However, engines would be obtained that would fit into allotted space, permit interchangeability of coupled loads, and operate with standard fuels and lubricants, etc. Equipment standards may also be used to identify and list specific end items and subassemblies that have been developed, produced, or acquired by DoD and identified as standard or preferred for selection, application and use in the design of new weapon systems. For example, an equipment standard may identify specific families of equipments such as generator sets, avionics packages, ground support equipment, test and diagnostic equipment and the like that have been adopted as standard. Such standards will be used as a vehicle to provide selection criteria for standard preferred equipment to the design activity. Design, performance, and environmental requirements will be defined in an appropriate specification.

3.1.2 Military standards. Military standards are documents issued within the Department of Defense in accordance with the basic policy of the Defense Standardization and Specification Program. These standards are issued in sheet form (MS) (figures 1, 4, 5, 6, and 7), bookform (MIL-STD) (figures 8-16), and unit page form (MIL-STD) (figure 17).

3.1.2.1 Limited coordination military standards. A limited coordination military standard covers items or services of interest to a single department or those which are prepared by a department or activity to meet an immediate acquisition need where urgency does not permit the standard to be coordinated.

3.1.2.2 MS sheet form standards. The MS sheet form standards cover only those design features and physical items that are intended for use in design of items and equipments. MS standards covering a related series of items e.g., fixed carbon resistors, will have but one MS number. New MS standards shall not be prepared for any new military specifications. MS sheet form standards may be prepared for use with federal specifications where the use of the federal specification in design requires discrete item identification or where the specification covers items subject to assignment of national stock numbers under the federal catalog system. Items requiring deviations or additional requirement information coverage shall be depicted on federal or military specification sheets. Existing MS standards may be revised and supplemented. DD Form 672, coordinated and limited coordination (see figures 5 and 24), shall be used for MS revision.

3.1.2.3 MIL-STD bookform standards. Bookform military standards (MIL-STD) are used for the comprehensive presentation of engineering practices (including test methods), procedures, processes, codes, safety requirements, symbols, abbreviations, nomenclatures, type designations and characteristics for standard equipments or items, either singly or in families. Military standards in bookform are also used to cover overall characteristics of families of end-items or major components. These characteristics include, as applicable, envelope dimensions, performance ratings, primary structural features, and data required for interchangeability of components. Limited coordination bookform standards follow the same procedures and processes for format as specified in this standard for coordinated standards.

3.1.2.4 MIL-STD unit page form standards. MIL-STD unit page form standards are used for the same type of coverage as military bookform standards. However, because of its single page format, the unit page form standard allows coverage to be presented in a more economical manner than the bookform standard. The single page form is particularly suited to charts, standard design layouts, formulae, graphs, and lists of engineering data separately or in combination with test.

3.2 Military handbooks. Military handbooks are guidance documents containing data or guidelines for use in design, engineering, production, acquisition, and supply management operations (see figures 18 and 19). Military handbooks are used for the presentation of general information, procedural and technical use data or design information related to commodities, processes, practices and services. Military handbooks also provide industry with reference material that will serve the standardization program. The use of handbooks as references is optional.

3.3 Data Item Description (DID). A form prepared specifically to describe the essential characteristics of a contractually deliverable data item. The DID defines, using the descriptive (nontasking) method, the format, content and intended use of the data item. DIDs are prepared using DD Form 1664 (see figure 20).

3.4 Selective application and tailoring. Selective application is the process of reviewing and selecting from available specifications, standards, and data item descriptions those which have application to particular materiel acquisitions and contractually invoking them wholly, or in part, at the most advantageous time in the acquisition cycle. Tailoring is the process by which individual requirements (sections, paragraphs, or sentences) of the selected specifications, standards, and data item descriptions 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 insure that each achieves an optimal balance between operational needs and cost. Tailoring of data requirements consists of the selection or exclusion of those sections, paragraphs, or sentences from an approved document's information requirement or data item description and shall in all cases be compatible with the requirements of the standard.

3.5 Metrication. Metrication is the process of changing to the metric system, including the act of developing metric standardization documents or converting current standardization documents to metric units of measurement.

3.5.1 Metric units. Metric units are a system of basic measures which are 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 FED-STD-376.

3.5.2 Soft conversion. A soft conversion is 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.

3.5.3 Hard conversion. A hard conversion is the process of changing a measurement from inch-pound units to non-equivalent metric units which necessitates physical configuration changes of the item outside those permitted by established measurement tolerances.

NOTE: The term "hard conversion" is in general use in the United States, although it is technically incorrect when applied to specific items because no "conversion" takes place. Instead, a new metric item requiring a new part identification is created to eventually replace the customary item. The new item is often referred to as being in "hard metric".

3.5.4 Hybrid metric item. An item designed and produced using both metric and inch-pound units even though it may be described by only one system of units in standardization documents.

3.6 Rationalization. Rationalization is a planned simplification by reducing the number of item configurations and relating such configurations in a rational manner, usually in a preferred number progression.

3.7 Nuclear hardness critical items (HCIs) and processes (HCPs).

3.7.1 HCIs. HCIs are any items at any assembly level which are mission critical and can be designed, repaired, manufactured, installed, or maintained for normal operation and yet degrade system survivability in a nuclear environment if hardness is not considered.

3.7.2 HCPs. HCPs are processes, specifications, and procedures which are hardness critical, and which, if changed, can degrade nuclear hardness. HCPs must be identified on drawings, specifications, etc.

3.8 Acquisition management systems. As used in this standard, acquisition management systems are primarily defined as engineering disciplines that direct or constrain the manner in which contractors achieve the end products of contracts. These engineering disciplines include, but are not limited to, configuration management, reliability, safety, human factors, environmental requirements, related test methods, etc. When prepared as military standards these documents will normally: (a) define objectives and requirements; (b) assign responsibilities; (c) achieve efficient and effective utilization of resources; (d) specify output requirements; (e) periodically measure performance; (f) compare that performance against stated objectives and requirements; (g) provide application guidance; and (h) require appropriate action. These documents generally require the generation, preparation, maintenance, analysis, evaluation display, and dissemination of data. Military standards prepared or revised as management system documents shall not specify any unnecessary procedures or methods of accomplishment. These requirements for data are subject to control and approval provisions defined elsewhere in this standard. New and revised military standards covering acquisition management systems (engineering disciplines) shall be prepared in accordance with this standard.

3.9 Definitions of acronyms used in this standard. The following acronyms listed in this Military Standard are defined as follows:

- a. ABCA - American, British, Canadian, Australian.
- b. AMSC - Acquisition Management Systems Control.
- c. AMSDL - Acquisition Management Systems and Data Requirements Control List.
- d. ASCC - Air Standardization Coordinating Committee.
- e. CDRL - Contract Data Requirements List.
- f. DepSO - Departmental Standardization Office.
- g. DMSSO - Defense Materiel Specifications and Standards Office.
- h. DoD - Department of Defense.
- i. DoDISS - Department of Defense Index of Specifications and Standards.
- j. DoDSSP - Department of Defense Single Stock Point.
- k. FAR - Federal Acquisition Regulation.
- l. GPO - Government Printing Office.
- m. NATO - North Atlantic Treaty Organization.
- n. NEPR - NATO Electronic Parts Recommendation.
- o. QSTAG - Quadripartite Standardization Agreement.
- p. STANAG - Standardization Agreement (NATO).

4. GENERAL REQUIREMENTS

4.1 Purpose of standards. It is intended that standards be up-to-date records of the decisions and recommendations of military and industry experts in each respective field or area. Their primary purpose is to provide designers and users with the data and descriptions essential to the selection and application of items, equipment, material, and processes in the development and production of services and materiel for the military. Standards are intended to establish and define levels of quality and reliability commensurate with the needs of the military. At the same time, standards are intended to identify and limit the selection of items and equipment to those designated as preferred or standard in order to constrain the proliferation of materiel in the inventory. They should be as complete in their description and use information as will usually be required for normal application decisions.

- a. Standards define terms, establish codes and document practices, procedures, and items selected as standard for design, engineering and supply management operations.
- b. Standards are documents created primarily to serve the needs of designers, and to control variety. They may cover materials, items, features of items, engineering practices, processes, codes, symbols, type designations, definitions, nomenclature, test, inspection, preservation methods, packaging materials, definition and classification of defects and standardization of the marking of material and item parts and components of equipment, etc. Standards represent a recommended solution for recurring design and engineering and logistics problems with respect to the items and services needed by the military services.
- c. Standards are used to standardize one or more features of an item, procedure, practice or process such as size, value, detail of configuration, etc. In equipment specifications, they are referenced to standardize design and testing requirements that are essential to interchangeability, compatibility, reliability, and maintainability. They are prepared to provide the designer with the descriptions and the data normally required for selection and application. Standards disclose or describe the technical features of an item in terms of what it is and what it will do. In contrast, the specification for the same item describes it in terms of the requirement for acquisition. References to other documents in standards to complete a description should be resorted to only when it is impracticable to do otherwise.

4.1.1 Data requirements. Data Item Descriptions (DIDs) are prepared on the DD Form 1664 in accordance with the provisions of DODI 5010.12. DIDs are approved and listed in DoD 5000.19-L, Vol. II, AMSDL which is the only authorized source for DIDs for acquisition purposes. DID requirements as they relate to military standards are specified herein.

4.1.1.1 Responsibility for the DID. The preparing activity is responsible for ensuring that the DD Form 1664 is prepared, revised, coordinated, approved, and submitted for printing and distribution concurrently with the governing military standard.

4.1.1.2 Identification of data requirements in the military standard. The tasking paragraph(s) of the standard that require(s) the contractor to generate, prepare, and maintain data shall be expressed in the broadest terms to accommodate the requirements of all DoD components where necessary. Such paragraphs shall not be relatable to specific items of hardware, components thereof, or to a weapon system. However, specific data requirements applicable to only one element of a DoD component, that must differ from the broad DoD requirement and are essential to the mission needs of the element, shall be included in the standard and separately identified, as applying to that element only. The tasking paragraph or series of paragraphs in the standard shall be grouped in a fashion so as to identify all the task elements of a data requirement; e.g., if the contractor is required to prepare a plan or report, these paragraphs shall address all the task element aspects of the plan or report. The corresponding data item description shall be limited to content and format instructions for the data where necessary. At the end of the task paragraph(s) that constitute the total data requirement for a product, e.g., plan,

report, etc., sentences shall be added substantially as follows: "DID DI-R-000, (title), applies to these requirements. Deliverable data identified on the DD Form 1423 shall be prepared in accordance with instructions specified in that DID." Data requirements shall be further listed and cross referenced in section 6 of the standard (see figure 32). An example of a series of tasking paragraphs for a single data requirement (reliability program plan) is shown on figure 29. Figure 30 is an example of an appendix listing of Data Item Descriptions with the associated reliability tasks.

4.1.1.3 Approval of data requirements. The preparing activity is responsible for submitting military standards and associated DIDs to the Defense Materiel Specifications and Standards Office (AMSDL Clearance Office) for review and approval. The AMSDL Clearance Office will assign an AMSC number to the military standard and its DIDs, which denotes approval of the data (information) requirements. The preparing activity is responsible for assuring the assigned AMSC number is affixed to the front cover (lower left hand corner) of the military standard. Upon determination by the AMSDL Clearance Office that the military standard does not contain data (information) requirements, the preparing activity is responsible for assuring the notation "NO DELIVERABLE DATA REQUIRED BY THIS DOCUMENT" is affixed to the front cover (lower left hand corner) of the military standard. When applicable, the AMSDL Clearance Office will assign an appropriate number to the associated DID which denotes approval of the data (information) requirements. The preparing activity is responsible for assuring the assigned number is delineated on the DID. The AMSDL Clearance Office will list all approved military standards and associated DIDs in the AMSDL.

4.1.1.4 Application of data products. Approved data requirements contained in a military standard in combination with the approved data requirements contained in the associated DID(s) form the deliverable data products(s). The requirement for a deliverable data product is contractually imposed when the applicable portion of the military standard which tasks the contractor to generate and prepare the deliverable data product is invoked. The contractual requirement for delivery of a deliverable data product is imposed when the applicable portion of the DID is listed on the Contract Data Requirements List, DD Form 1423 (see figure 21).

4.1.1.5 Rights in data. The acquisition of rights in technical or other data shall not be made through the medium of a standard. See the DoD FAR (currently DoD FAR Supplement, Part 27, Subpart 27.4) for procedures for obtaining such rights through appropriate contract clauses.

4.1.1.6 Use of copyright material. Copyright or patent material shall not be included in a standard 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, must be placed in the standard close to the material involved.

4.1.2 Standards for type designation. In standardizing type designations for use in the DoD, military bookform standards shall be used. Military bookform standards shall also be used to record changes or variations in industrial or commercial systems of type designations which have been otherwise adopted or found acceptable. Such standards shall not be used to promulgate type designations for each specific item of equipment in a category. A single standard shall be used for each category. Type designations for equipment may also be promulgated as part of a military bookform standard for equipment.

4.1.3 Contractual and administrative requirements. A standard shall not include contractual, administrative, or warranty requirements which are properly a part of the contract, such as the provisions covered in Standard Form 32 (General Provisions Supply Contract).

Examples of requirements not to be included in standards are as follows:

- Cost information
- Time or place of delivery
- Method of payment

Delivery or approval actions for data and reports
 Submission and approval requirements for plans, procedures, or methods
 Distribution requirements for data reports, plans, etc.
 Administration of contractor's quality assurance or inspection system

4.2 Content.

4.2.1 General style for MS sheet form, MIL-STD bookform, and MIL-STD unit page form standards, and military handbooks. Each document shall be reduced to its technical essence and minimum form and shall be complete in the stipulation of all standardized characteristics and limitations. Such stipulation may be made either directly or, where covered in approved documents, by reference to such other documents. When referencing other documents, clear distinction shall be made between those referenced documents, or portions thereof, that are mandatory versus those that are for guidance only.

4.2.1.1 Text. The text shall be written in clear and simple language, free of vague terms or those subject to misinterpretation. Unfamiliar words, words having more than one meaning, and unusual technical and trade expressions shall be avoided. Sentences shall be as short and concise as possible. Punctuation should aid in reading and prevent misreading. Well planned word order requires a minimum of punctuation. When extensive punctuation appears necessary for clarity, consideration shall be given to revising the sentence, since misplaced or omitted punctuation marks can sometimes change the meaning of the sentence completely. To avoid this possibility, consideration should be given to converting clauses of a compound sentence into separate sentences. All sentences shall be complete in accordance with the rules of grammar.

4.2.1.2 Commonly used words and phrases. Certain words and phrases are frequently used in a standard. The following rules shall be applied:

a. Referenced documents shall be cited thus:

- (1) "conforming to . . ."
- (2) "as specified in . . ."
- (3) "in accordance with . . ."

In any case, use the same wording throughout 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 standard for further clarification in the contract or reference to another paragraph in the standard.
- c. When making reference to a requirement in the standard and the requirement referenced is rather obvious or not difficult to locate, the simple phrase "as specified herein" is sufficient and should be used.
- 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 maximum limit, or "The diameter shall be not less than . . ." for minimum limit.

- f. Capitalize the words "drawing", "bulletin", etc., only when they are used immediately preceding the number of the document. However, specifications, standards, and handbooks will be identified in the text only by their document identifier; thus, MIL-E-000 (not: "specification MIL-E-000").

4.2.1.3 Use of "shall", "will", "should", and "may". Use "shall" to express a provision that is binding. Use "should" and "may" wherever it is necessary to express nonmandatory provisions. "Will" may be used to express a declaration of purpose on the part of the Government.

4.2.1.4 Use of "and/or". The term "and/or" shall not be used. In a field where definitive precise language is imperative, the phrase "and/or" has no place.

4.2.1.5 Use of "flammable" and "nonflammable". The terms "flammable" and "nonflammable" shall be used in lieu of the terms "inflammable", "uninflammable" and "noninflammable".

4.2.1.6 Capitalization, spelling, etc. Except where DoD requirements differ, the United States Government Printing Office Style Manual shall be used as a guide to capitalization, spelling, punctuation, syllabification, etc. A dictionary will be consulted when the style manual does not provide the guidance needed.

4.2.1.7 Abbreviations. The applicable standard abbreviations listed in military standards shall be used, except that abbreviations in titles of documents shall be in accordance with Cataloging Handbook H6, Federal Item Name Directory for Supply Cataloging. The only other abbreviations employed shall be those in common usage and not subject to misinterpretation. Abbreviations for use in standards and associated documents shall be in accordance with MIL-STD-12, where applicable. 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: e.g., decibel (dB), milliampere (mA), and volts root-mean-square (V rms). The rule does not apply to abbreviations used for the first time in tables and equations. Abbreviations used in figures and tables, but not referenced in the text in any other portion of the standard, shall be spelled out in a footnote to the applicable figure or table.

4.2.1.8 Symbols. The only symbols that may be used in text are degree ($^{\circ}$), the "+", "-", and " \pm " to express ranges or tolerances and metric symbols. Other symbols may be used in equations and tables and shall be in accordance with ANSI/IEEE 260-78. Graphic symbols, when used in figures, shall be in accordance with DoD adopted or accepted standards. Any symbol formed by a single character should be avoided if practicable, since an error destroys the intended meaning. Metric symbols need not be spelled out.

4.2.1.9 Energy efficiency requirements. Standards that contain selection criteria or define product, subassembly, or system requirements that consume energy shall specify acceptable levels of energy consumption as a requirement.

4.2.2 Paragraph identification. Each numbered paragraph shall be given a subject identification. The first letter of the first word in the paragraph and subparagraph identification shall be capitalized. Paragraph identifications in any one section shall not be duplicated. Paragraph identifications shall be underlined.

4.2.2.1 Underlining. Do not underline any portion of a paragraph or capitalize phrases or words for the sake of emphasis with the exceptions noted in 4.2.2. All of the requirements are important in obtaining the desired product or service. Preambles, acquisition notes, implementation paragraphs, etc., shall not be underlined. Table and figure titles shall be underlined (see 4.2.4 and 4.2.5).

4.2.3 Proprietary names. Trade names, copyrighted names, or other proprietary names applying exclusively to the product of one company shall not be used unless the item(s) cannot be adequately described because of the technical involvement, construction, or composition. In such instances, one, and if possible, several commercial products should be included, followed by the words "or equal", to assure full and free competition and also assure that bidding will not be limited to the particular make specified. The same applies to manufacturers' part numbers or drawing numbers for minor parts where it is impracticable to specify the exact requirements. Insofar as practical, the particular characteristics required shall be included to define "or equal".

4.2.4 Tables. A table shall be used when information can thus be presented more clearly than in text. Elaborate or complicated tables shall be avoided. References in the text shall be sufficiently detailed to make the purpose of the table clear. The table shall be restricted to information pertinent to the associated 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 standard and before any figures, appendix or index. Information included in tables should not be repeated in the text.

4.2.4.1 Table numbering and title. All tables shall be numbered consecutively throughout the document with Roman numerals in the order of their reference in the text, even if only one table appears in the document, and shall be titled. The word "TABLE" shall be in full capitalization, followed by the Roman numeral and a period followed by the title. The first letter of the title shall be capitalized. Table titles shall be centered above the table and shall be on the same line with the table number. If title is too long to be typed 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 of tabulation need not be titled.

4.2.4.2 Table format. Tables shall be boxed in and ruled horizontally and vertically as necessary to assure clarity of the table contents. Lines may be typed or drawn. The contents of a table shall be organized and arranged to show clearly the significance and relationship of the information. If a table is of such width that it would be impractical to place it in its normal vertical position, it may be rotated counterclockwise 90°. Large tables may be divided and, if possible, printed on facing pages.

4.2.4.3 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 lengthy group testing is being documented, the group shall not be split and carried to the next page. The entire group shall be completed on one page. 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, e.g., "TABLE II. - Continued." The entire heading 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.

4.2.5 Figures. A figure shall be clearly related to, and consistent with, the text of the associated paragraph. Dimensioning practices for outline drawings shall comply with ANSI Y14.5M. (Figures should not be confused with numbered and dated drawings which shall not be an integral part of the standard but shall be incorporated by reference and listed in section 2 of the standard.) The figures shall 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 standard following any tables and before any appendix or index. If the figure is of such width that it would be impracticable to place it in its normal vertical position, it may be rotated counterclockwise 90°.

4.2.5.1 Figure numbering and title. Figures shall be numbered consecutively throughout the document with Arabic numerals in the order of their reference in the text, even if only one figure is referenced in the document, and shall be titled. Figures added after the highest numbered figure are assigned the next higher Arabic numeral. The word "FIGURE" shall be in full capitalization, followed by the title. Only the first letter of the title shall be capitalized. Figure titles shall be centered below the graphic and, if possible, shall be on the same line with the figure number. If the title of the figure is too long to be typed on one line, the second line shall be aligned with the first letter of the title.

4.2.5.2 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.

4.2.5.3 Art work. Original art work should be provided for all illustrations unless otherwise agreed to by the DoDSSP. Negatives of illustrations may be furnished upon approval of the DoDSSP. Original art work must be made large enough to retain clearly all details after reduction. For best results, illustrations should be prepared 50 to 100 percent larger than the size desired on the printed page. One-column figures should not exceed 18 picas (approximately 3 inches wide); two-column figures should not exceed 37 1/2 picas (approximately 6 1/4 inches wide); length of figures should not exceed 8 13/16 inches. Illustrations prepared for reduction should have the arrow heads, lines, shading, lettering, and the like, uniform and of a sufficient thickness and size to assure clear definition when reduced. A scaling reference for reduction is shown on figure 22.

4.2.6 Footnotes. Footnotes may be used as indicated below.

4.2.6.1 Footnotes to text. Footnotes to the text should be avoided. Their purpose is 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 standard with Arabic numerals. The Arabic numeral shall also be used to identify the reference in the text.

4.2.6.2 Footnotes to tables. Footnotes may contain mandatory information that cannot be presented as data within a table. Number footnotes separately for each table as they appear in the table. The symbol "1/", "2/", etc. shall be used and shall be placed immediately following a word and preceding a numeral requiring the footnote. Numbered footnotes are listed in order immediately below the table. Where numerals will lead to ambiguity (for example in connection with a chemical formula), superior letters, daggers, and other symbols may be used.

4.2.6.3 Notes to figures. Notes to figures are numbered separately from textual footnotes within the document. Drafting or dimensional notes are numbered consecutively and placed below the figure and above the title. The word "NOTES:" is typed in the left margin of the figure and the explanatory information is typed in Arabic number sequence under NOTES:. Example:

NOTES:

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

4.2.7 Foldouts. Foldouts shall be avoided except where required for legibility. When foldouts are required, they should be grouped in one place, preferably at the end of the standard (in the same location as figures) and suitable reference to their location shall be included in the text.

4.2.8 Listings. Simple listings, when used, should be indented and may be captioned without use of the Roman numeral required for more formal tabulations. Such listings should have a minimum of ruled lines.

4.2.9 Use of decimals. Decimals shall be used instead of fractions wherever possible.

4.2.10 Metric practices. Metric practices shall conform to FED-STD-376. When an existing inch-pound (or non-SI metric) standardization document is revised, a decision shall be made as to how to metricate such a document (refer questions to the DMSSO). In general, the following methods shall be used:

- a. New parallel document. For very complex documents filled with many conversion-susceptible measurements, the logical method is to issue a new SI metric standardization document (with a new DoD number) following the guidance herein. Great care shall be used to assure that the new document is hard metric, and that equivalents are carefully selected. After that, the basic document and the metric document would be revised concurrently, until such time as the inch-pound document is no longer required and is canceled.

- b. Metric appendix. For less complex documents, or for very complex documents where retention of the original document number is considered necessary, a hard metric appendix may be prepared. The basic document would remain in inch-pound units and refer to the appendix for metric information. The appendix shall refer to the basic document for technical features and cite only the metric equivalents, exercising care to assure that equivalents are carefully selected.
- c. Metric notes. For relatively simple documents with only a few measurement units, metrication may be handled by appropriate notes, by one or more footnotes, or by use of conversion tables. In some cases, simply citing the conversion factor(s) will be sufficient; however, great care is required to avoid a mere soft conversion.

4.2.10.1 Preferred metric units. Unless otherwise specified, the preferred metric units for commonly used quantities shall be in accordance with FED-STD-376. Optimum rationalization shall be achieved in the preparation of standardization documents. Metric sizes will generally be expressed in whole numbers. There shall be no soft conversion of units merely for the sake of conversion.

4.2.10.2 Dual dimensions. The use of dual dimensions (i.e., both metric and U.S. customary inch-pound measurements) on drawings or other pictorial illustrations to be used in a standard shall be avoided unless it is determined that such usage is beneficial. The use of tables to translate inch-pound units to metric equivalents is acceptable. For text material, when preference is given in the standard 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. In general, where it has long been standard practice to cite metric units alone (such as citing temperatures only in degrees Celsius), inch-pound equivalents may be omitted. A specific repetitive equivalent, for example 1.00 inch (25.4 mm), need be inserted only the first time it appears in each paragraph of a standard.

4.2.10.3 Identification. All measurement-sensitive military standards developed for metric usage shall be identified by the symbol "DOD". The "DOD" symbol shall be used in new metric, including hard conversion, standardization documents that are measurement-sensitive (i.e., the dimensions are critical to the operation or interfacing of the item) as well as in new standardization documents that are not measurement-sensitive, but are usable in a metric environment. The "MIL" symbol shall not be changed to "DOD" on any military standard that is already numbered. Existing soft conversion documents already changed to the "DOD" symbol shall not revert to "MIL". All measurement-sensitive military sheet form standards developed for metric usage shall be marked with the symbol "DS" in lieu of "MS". The "MS" symbol shall not be changed to "DS" on any military sheet form standard that is already numbered. Any exceptions to the preceding criteria shall be submitted to DMSSO for approval. Metric standards and handbooks shall be identified by the symbol "DOD" and the word "METRIC" shall be placed in a rectangular box above the standard and handbook identifier on the first page.

Example:

| |
|--------|
| METRIC |
|--------|

 DOD-STD-396
 8 December 1977

4.2.10.3.1 Metric standardization documents. Metric standardization documents that are measurement-sensitive shall be clearly identified with the word "METRIC" as the last word of the title and shall be shown in the upper right-hand corner immediately above the document number. Soft converted standardization documents, shall not be marked in this manner. The symbol "DOD" shall also be used for documents that are not measurement-sensitive, but are usable in a metric environment; but the word "METRIC" shall be omitted in such cases.

4.2.11 Recycled, virgin and reclaimed materials. Except when intended use of the item will be jeopardized by the use of reclaimed or recycled materials, in preparing new and revising or amending standards, preparing activities will insure that:

- a. There are no exclusions to the use of recovered materials.

- b. There are no requirements that items be manufactured from virgin materials.
- c. Within one year from the date of issue by the Environmental Protection Agency of guidelines designating items which are or can be produced with recovered materials, standards for such products require the use of recovered materials to the maximum extent possible.

4.3 Marking of classified material. All forms of standards and handbooks are working documents and should be designed to avoid unnecessary restrictions on their dissemination. Documents having security classifications shall be appropriately marked and handled in accordance with security regulations.

4.3.1 Notes for self cover of document drafts. Drafts of all military standards and handbooks shall carry the following note at the upper left-hand corner of the self cover:

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

In those instances when the preparing activity has assigned an agent the responsibility for preparing and coordinating a draft, the following note shall be used instead:

"NOTE: This draft, dated _____, and prepared by (name of agent), as agent for (name of 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 camera ready master after approval and prior to reproduction.

4.4 Validation of references. During revisions, references to other documents shall be carefully checked to insure that the referenced data are currently applicable and available at the time of issuance of the revision and to provide for any feasible reduction in number or simplification of references.

4.5 Concluding material. The following concluding material shall be provided at the end of the document following any tables or figures and before the DD Form 1426.

- a. International interest.
- b. Preparing activity.
- c. Custodians (applies to coordinated standards).
- d. Interested activities, reviewer and user (applies to single department or fully coordinated).
- e. Civil agency coordinating activities.
- f. Project.
- g. Agent, if assigned.

4.5.1 International standardization agreements. The preparing activity is responsible for implementing of international standardization agreements as they relate to its responsibilities. When standards reference international standardization agreements as part of their requirements, the following statement shall be added:

"Certain provisions of this standard (identified by paragraph number or similar manner, if appropriate) are the subject of international standardization agreement (insert the ABCA or ASCC standard number, the NATO, STANAG, NETR or NEPR number, or other appropriate documentary reference). When amendment, revision, or cancellation of this standard is proposed which will modify the international agreement concerned, the preparing activity will take appropriate action through international standardization channels including departmental standardization offices to change the agreement or make other appropriate accommodations."

4.5.2 Activity symbols. The symbols used to identify the preparing activity, custodians, reviewer and user activities, and other interested activities shall be in accordance with the current issue of SD-1, (Standardization Directory) and listed as shown in the following example:

Custodians:
 Army - AR
 Navy - OS
 Air Force - 16

Preparing activity:
 Navy - OS

(Project 0000-0000)

Review activities:
 Army - AT, CR, ME
 Navy - EC, SH, YD
 Air Force - 11, 26, 85
 DLA - GS

User activities:
 Army - MR
 Navy - CG , MC
 Air Force - 22, 90

Civil Agencies Coordinating Activities: (where appropriate)
 AGR - APS
 HEW - FEC

Agent:
 DLA - GS

For initial issues of standards, the DepSO or (when authorized by its DepSO) the participating, assignee, or lead service activity will designate the preparing activity of the document or the custodian for each department. Review and user activities will be assigned by the custodian of each department.

If an activity is listed as a preparing activity or custodian, it should not be designated as a reviewer or user activity, nor should a reviewer indicate user activity interest. If a military department has no interested activity, the department shall be omitted from its sequential order of listing.

4.5.3 Standardization Document Improvement Proposal (DD 1426). Preparing activities shall include this form as the last sheet of each copy of book form military standards and military handbooks. It shall not be included on MS standard sheets, unit page form standards, and notices. It shall be self-addressed and the document identifier block shall be completed by the preparing activity. This form is not required on classified standards and handbooks; however, if used, security regulations shall apply.

5. DETAILED REQUIREMENTS

5.1 MS (or DS) sheet form standards.5.1.1 Document identifiers.

5.1.1.1 Coordinated MS sheet form standards. Coordinated MS standards are identified by MS numbers. The MS number consists of the symbol MS followed by an Arabic number. There shall be no space between the MS and the Arabic number.

Example: MS10016

5.1.1.2 Limited coordination MS sheet form standards. Limited coordination MS sheet form standards shall be identified by a suffix to the MS number. This suffix shall be in accordance with the following:

- a. Army: Use, parenthetically, the symbols contained in the list of DOD Standardization Activities and Other Interested Activities in SD-1.

Examples: MS10016(MI), MS24678(ER); MS54321(GL), etc.

- b. Navy: Use, parenthetically, the symbols contained in the list of DOD Standardization Activities and Other Interested Activities in SD-1. If the issuance is applicable to two or more activities of the Navy and Marine Corps, the suffix "(NAVY)" shall be used.

Examples: MS48642(SH), MS24684(EC); MS98765(NAVY), etc.

- c. Air Force: Use, parenthetically, the symbols contained in the list of DOD Standardization Activities and Other Interested Activities in SD-1.

Examples: MS12345(10), MS23456(17); MS45678(99), etc.

5.1.2 Dating. MS sheet form standards shall be approved and dated by the preparing activity immediately prior (not more than thirty days and simultaneously, if possible) to being forwarded to the DoDSSP for reproduction and distribution. The approval date shall appear on each page of MS sheet form standards in the block titled "Approved". The date of approval shall be the date of the month, the three character abbreviation of the month, and the last two digits of the year.

Example: 30 Jun 82.

5.1.3 Format. The format shall be as specified in this section and in the examples on the figures referenced herein. National Item Identification Numbers (NIIN's) shall not appear on MS standards. NIIN's now listed on existing standards shall be deleted when the standards are next revised.

5.1.3.1 Presentation. Presentation shall be primarily graphical with tabulations and notes as required. Convenience in identifying subject matter and flexibility in presentation require close relationship between title and technical content.

5.1.3.2 Multiple-page MS sheet form standards. Since the MS sheet form standard lends itself so well to condensed presentation of engineering data, it often permits presentation of all needed data on a single page, which shall always be kept as the goal of standards developers. Where, for good reason, an MS standard requires several pages to permit adequate presentation, the number of pages shall always be kept to the minimum consistent with good engineering usage. If more than a single page is required, for example, to handle a related series of items, all pages shall indicate the total number of pages in addition to the page number.

5.1.3.3 Graphical presentations. Graphical representations shall normally be the first item of the data presented and shall be placed at the top of the page. Dimensioning and tolerancing shall be in accordance with ANSI Y14.5-1973.

5.1.3.4 Tabulations. Data shall ordinarily be presented in the form of tables. Where feasible, tabulations shall be placed immediately beneath the corresponding illustration clearly identifying the data tabulated. When tabulations show variations of the same basic item, provisions shall be made for identifying each

permissible variation by a dash number. Notes to tables shall appear directly under the tables in logical sequence. It is not necessary to list variations, such as finish or material, which are clearly defined by the dash number with applicable notes. In these cases, the tabulation of additional variations merely adds additional columns that serve no useful purpose.

5.1.3.5 Other method of data presentation. When tabulation of data is not warranted and the following information is required, it shall be included in the following sequence, as applicable.

- a. Material designation.
- b. Finish (protective or surface condition).
- c. Screw thread criteria.
- d. Required references to other documents.
- e. Heat treatment.
- f. Data applying to specific workmanship criteria (freedom from all burrs, sharp edges, etc.).
- g. General dimensional tolerance data.
- h. Status notes.
- i. Identification of international standardization agreements.

5.1.3.6 Notations. Extensive notes and notes which require computations to be made shall be avoided. Numerals, letters, and symbols shall be harmoniously styled, consistent with MS standards for like items, and clearly legible. Where feasible, finished condition rather than method shall be indicated (e.g., a dimension with a tolerance rather than the note "reamed"; a definite statement of hardness rather than the note "case hardened"). Required references to other documents shall be made by identifying the documents by symbols. Where required, the applicable portion of the reference shall be identified.

5.1.3.7 DD forms for MS standards. The MS standard forms for coordinated and limited coordination standards are DD Forms 672 for the 20 percent reduction to the finished size, and DD Form 672-1 for 40 percent reduction (see figures 1, 23 and 24).

5.1.4 Titling. Titles indicate the scope of the document and shall be consistent with content. Item names in titles shall make maximum use of Cataloging Handbook H6. When it is impracticable to use H6, titles for standards shall be selected on the basis of agreement between standardization and cataloging organizations of the preparing activity.

5.1.4.1 Modifiers. The title shall include, where appropriate, in addition to the approved basic or item name, such modifiers as are necessary to identify the coverage of the standard and clearly distinguish between other standards covering similar items. Nondefinitive modifiers shall not be used.

5.1.5 Location of title. Enter the title in the block headed "Title" at the bottom of the sheet.

5.1.6 Project Number. The project number shall be designated below the form and under the page number block (see figure 1).

5.1.7 Implementation paragraph. One of the following implementation paragraphs shall appear on all MS standards in the lower half of the left-hand margin, printed parallel to the ruled border in a vertical position.

5.1.7.1 Implementation paragraph for coordinated MS sheet form standards:

"This military standard is approved for use by all Departments and Agencies of the Department of Defense. Selection for all new engineering and design applications for repetitive use shall be made from this document when applicable." (See figure 1.)

5.1.7.2 Implementation paragraph for limited coordination MS sheet form standards:

"This military standard is approved for use by (preparing activity), Department of the _____ and is available for use by all Departments and Agencies of the Department of Defense." (See figure 23.)

Air Force limited coordination MS sheet form standards shall use the following preamble:

"This military standard is approved for use within the Department of the Air Force, and is available for use by all Departments and Agencies of the Department of Defense."

5.1.8 Federal supply class or group, or standardization area designation. The standard shall be assigned a federal supply class or group, or standardization area as appropriate. Federal supply classes and groups are defined in the Cataloging Handbook H2-1, groups and classes, and standardization areas are defined in the Standardization Directory SD-1. The designation shall appear in the upper right corner of the first page of the standard. The symbol "GP" shall follow the FSG number, (i.e., 59GP) when the standard has application to more than one FSC in a given FSG.

5.1.9 Supersession. Documents that are being superseded by the issuance of an MS standard shall be identified in the space provided in the title block.

5.1.10 Letter size and date of status notes. Status notes shall be hand lettered or typed in capital letters in such a manner as to insure complete legibility after reduction, if any, for printing. The date shall be written with the day first, followed by the month, followed by the year. Parentheses shall not be placed around the date.

5.1.11 DS/MS part number (see 3.1.2.2 for applicability). The DS/MS part number is composed of the symbol MS and Arabic number of the standard on which the items are described (see figure 4), and an assigned dash number. (This requirement is not retroactive for parts where the type designation was previously used as a basis for the part numbering system.) The part number shall not exceed 15 spaces.

5.1.12 Serial (or dash) numbering system. The most acceptable industry or service coding system available shall be utilized for the dash number. If no acceptable system for a given item exists either in industry or in the services, a suitable coding system for assigning a dash number shall be developed. If neither of these criteria offers a good solution, then a nonsignificant, sequential dash number shall be used beginning with -1 (see figure 4). The dash number may be coded or uncoded as required; in coded numbers, a code letter may be substituted for the first dash of the dash number (see examples A and B of figure 4). If a coded dash number is established or adopted, it must result in a distinctive part number for each different standard item or part, and the coding system shall be shown on the standard, but in no case shall it exceed 15 spaces. The NIIN shall never be used as a dash number or as a part number. When a letter follows a number or a number follows a letter, the dash "-" shall be omitted. When alpha coding is used in a part number, the letters "I", "O", "Q", "S", and "Z" should be avoided.

5.1.13 Part numbers for revisions. MS standards that are revised to reflect item changes shall have new dash numbers assigned when the items are not both functionally and physically interchangeable with the current items. If the new items are interchangeable with the old, but not vice versa, a note to this effect shall be included in the standard.

5.1.14 Cross references to former standard part number identification. The MS part number shall be cross referenced in a table, or in a note where convenient, to any part number which previously identified the part. Where the part was formerly identified by several part numbers, a separate sheet for cross referencing may be used.

5.1.15 Part marking. When parts are required to be marked, the MS standard shall show the appropriate location of the marking, preferably on the illustration of the item.

5.1.16 Mandatory notes. The following shall be mandatory for use on MS standards as part of the "Notes", to be placed therein when applicable (see figure 1).

- a. "In the event of a conflict between the text of this standard and the references cited herein, the text of this standard shall take precedence."
- b. "Referenced Government documents of the issue listed in that issue of the Department of Defense Index of Specifications and Standards (DoDISS) specified in the solicitation form a part of this standard to the extent specified herein."

5.1.17 Legibility. Lettering and dimensioning shall be in accordance with DOD-STD-100. Size shall be such as to insure legibility after reduction in printing. The MS number shall be in bold face type approximately equal in height to the letters "MS" which are preprinted on the forms.

5.1.18 Content.

5.1.18.1 MS sheet form standards. The content of MS standards shall be limited to essentials for interchangeability, application of design features, and performance factors in engineering and design. This shall be listed under a "Requirements" heading whereas graphical data references shall be listed under a "Notes" heading. MS standards shall provide information essential for selection and application ordinarily without requiring reference to other documents; to this end, reference to other documents shall be held to a practicable minimum. In general, MS standards shall contain the minimum technical data required (to describe the item) for use by engineers and designers.

5.1.18.2 MS standards for physical items (see 3.8 for applicability). The contents of MS standards for physical items shall be graphical, tabular, or a combination, as appropriate. These standards are used to cover a wide variety of chemical, mechanical, and electrical or electronic component parts. The number of items covered by any one standard may range from one to several hundred. The number of sheets comprising a single standard may range from one to several. The number of sheets comprising a single standard shall be kept to the minimum needed. Items having numerous configurations or styles should be covered by a separate standard for each style or configuration; e.g., hexagon-head bolts, fixed composition (insulated resistors) (see figure 6).

5.1.18.3 MS standards covering design features. The contents of MS design features standards which are usually graphic, shall be limited to the description essential to insure the desired results, such as to insure functional or physical interchangeability, provide for safety, standardize relative location of controls and instruments, or provide suitable clearance for assembly and repair, or for proper operation. Design features MS standards which indicate only the features of a design shall not contain part numbers. Any number used shall be only for the purpose of tabulating the needed information (see figure 5).

5.1.19 Revisions. Changes shall be indicated by upper case in alphabetical sequence in the revision block. In no case shall a revision letter appear in the MS number block. Changes shall be shown by the same letter in circles adjacent to the changes and in the revision block (see figure 1). Prior revision letters, except those in the revision block, shall be removed. Coordinated MS standards issued on the basis of limited coordination MS standards shall be regarded as revisions and shall show the corresponding letter, but in the revision block only. If the previous entries in a revision block are too numerous as to prevent further notation, the word "REDRAWN" shall be placed above the title block at the left margin and only the current revision letter and date placed in the revision block.

5.1.19.1 Complete revisions. Complete revisions made at any time shall be indicated by the words "ENTIRE STANDARD REVISED" placed above the title block at the left margin and the revision date with new revision letter only, in the revision block.

5.1.19.2 Footnote revisions. When the change involves a part of a footnote or the addition of an entire footnote, the revision letter shall be placed at the left of the first word of the note affected. If a reference footnote is revised, the revision letter shall appear only at the footnote and not at each affected dimension or callout.

5.1.19.3 Multiple page MS standard revisions. If any one page of a multiple page MS standard requires revision, the entire standard shall be reissued. The new revision letter and new approval date shall appear in the revision block on the first page only. The first page shall carry in the body of the standard, above the MS title block, the notation, "A denotes change(s)". On the pages in which the actual change(s) in the text occurs, the revision letter in a circle shall appear in the body only in appropriate relation to the change. Since the pages following the first page shall not carry revision data and approval dates, the following note shall be inserted in the revision block of those pages: "A For change(s) see page(s) 2, 3, etc.," (see figure 7). Upon subsequent revisions, the previous revision letter shall be removed, and the current revision letter in a circle shall be shown. When the revision block is filled, the next issue shall begin with the revision letter being prepared. No previous letter from the other page shall be carried forward.

5.1.19.4 Page numbering. Pages shall be numbered consecutively below the MS number block and shall show the total number of pages as follows: "Page 1 of 3", "Page 2 of 3", and "Page 3 of 3" (see figure 7).

5.1.20 Cancellation of MS sheet form standards. MS sheet form standards shall be canceled as specified in the appendix to this standard. Status notes, supplementary and usage information, and other criteria for MS sheet form standards shall be in accordance with the appendix. When an item is no longer standard, or the entire standard is inactivated or canceled, the standard shall be marked with an appropriate status note in accordance with the appendix of this military standard.

5.1.21 Data requirements for MS sheet form standards. DI-S-7195, "Preparation of Military Standards and Handbooks", applies to MS sheet form standards and shall be specified when required as a deliverable data item.

5.1.22 Notice of reinstatement (see figure 28). The preparing activity, or with its permission, another activity may reinstate a canceled standard by issuance of a notice of reinstatement. The notice, sequentially numbered, shall supersede the previous notice of cancellation, identify all interested activities as of the date of reinstatement; and, when applicable, include information on the changed status of the document and other applicable information. When it is necessary to reissue the standard as a revision with a new number, information shall be included on the first page to show the relationship to the canceled document. (See DoD 4120.3-M for DoDSSP requirements.)

5.2 Military (or DOD) bookform standards.

5.2.1 Document identifiers.

5.2.1.1 Coordinated MIL-STD bookform standards. Approved coordinated military standards in bookform shall be identified by a symbol composed of the letters MIL-STD (or DOD-STD) followed by a hyphen and an Arabic numeral. The number is assigned to the standard by the preparing activity in accordance with departmental procedures. The date of approval shall appear under the document identifier. The document identifier and effective date of issue shall appear in the upper right-hand corner of the self-cover for MIL-STD bookform standards. Subsequent pages shall be numbered with document identifier only in the top center of each page.

Example: MIL-STD-1459A
30 June 1982

5.2.1.2 Limited coordination MIL-STD bookform standards. Limited coordination bookform standards shall be identified in the same manner as coordinated ones, except that a suffix to the number shall be added as in 5.1.1.2 (see figure 8).

Example: MIL-STD-975C(NASA)
31 October 1980

5.2.2 Dating. MIL-STD bookform standards shall be approved and dated by the preparing activity immediately prior (not more than thirty days and simultaneously, if possible) to being forwarded to the DoDSSP for reproduction and distribution. For MIL-STD bookform standards, the approval date shall be entered immediately below the document identifier. The document identifier shall appear on each page of MIL-STD bookform standards (see 5.2.12).

5.2.3 Format. Content shall be governed by its purpose in order to meet the specific requirements involved; however, the preferred method of preparation of MIL-STD bookform standards is the sectionalized format. The intent of the sectionalized format is to facilitate the selective application and tailoring of requirements. In general, text and illustrations shall be developed in the following sequence:

- a. Self-cover
- b. Promulgation sheet
- c. Foreword
- d. Contents
- e. Section 1: Scope
- f. Section 2: Referenced documents
- g. Section 3: Definitions
- h. Section 4: General requirements
- i. Section 5: Detailed requirements
- j. Section 6: Notes
- k. Appendixes
- l. Index
- m. Concluding material
- n. DD Form 1426, "Standardization Document Improvement Proposal"

5.2.4 Self-cover. The security classification (if applicable), title, FSC, group or area, document identifier, date of issue, the Department of Defense seal, and either the AMSC number or the statement "NO DELIVERABLE DATA REQUIRED BY THIS DOCUMENT" shall appear on the self-cover (see figures 8 and 9).

5.2.4.1 Titling. The title indicates the scope of the document and shall be consistent with the content. Item names in titles shall make maximum use of Cataloging Handbook H6. When it is not practical to use H6, the titles for standards shall be selected on the basis of agreement between standardization and cataloging organizations of the preparing activity.

5.2.4.1.1 Modifiers. The title shall include, where appropriate, in addition to the approved basic or item name, such modifiers as are necessary to identify the coverage of the standard and clearly distinguish between other standards covering similar items. Nondefinitive modifiers shall not be used.

5.2.4.1.2 Location of title. The title shall appear at the top of the self-cover immediately below the heading "MILITARY STANDARD" (see figures 8 and 9).

5.2.5 Federal supply class or group, or standardization area designation. The federal supply class or group, or standardization area designation, as applicable, shall appear in the lower right-hand corner of the self-cover of military standard bookform standards.

5.2.6 Promulgation sheet. The promulgation sheet shall include the required statements as shown in figure 10. The promulgation sheet shall appear in the printed text on the back of the self-cover. The document identifier shall appear centered at the top of the page and the page number shall be lower case Roman numeral, i.e., ii.

5.2.7 Implementation paragraphs. One of the following implementation paragraphs shall appear on the promulgation sheet on the back of the self-cover for MIL-STD bookform standards.

5.2.7.1 Implementation paragraph for coordinated MIL-STD bookform standards.

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

5.2.7.2 Implementation paragraph for limited coordination MIL-STD bookform standards.

"This military standard is approved for use by (preparing activity), Department of the _____ and is available for use by all Departments and Agencies of the Department of Defense."

5.2.8 Foreword. A foreword shall be prepared, if desirable, to explain the reasons or purpose for the new standard or give background information in the case of a revised standard. The foreword may also include a brief resume of development history or a statement of reason for a particular format or sequence in the presentation of specific requirements. If a foreword is included, it should appear on the second page facing the promulgation sheet.

5.2.9 Contents page. The single word "CONTENTS" in capital letters shall head the contents page. Identification numbers and headings for sections and paragraphs shall be shown in the listing and may be shown for subparagraphs. The contents also shall include a reference to the appendixes and index if these are included. A separate caption or title shall head each list of figures and tables. Page numbers shall be as shown on figure 11 for each caption or title.

5.2.10 Paragraph identification.

5.2.10.1 Subject headings. Wherever practicable, each paragraph and subparagraph shall be given a subject heading. The first letter of the first word in the paragraph headings shall be capitalized. Paragraph headings in any one section shall not be duplicated. Each heading shall indicate the subject matter of the paragraph.

5.2.10.2 Section and paragraph numbering. Sections, paragraphs, and subparagraphs shall be numbered consecutively, using a period to separate the number representing each breakdown.

Example: Section - - - - - 3 Second paragraph - - - - 3.2
 First paragraph - - - - - 3.1 First subparagraph - - - 3.2.1
 First subparagraph - - - 3.1.1 Second subparagraph - - - 3.2.2

When only one paragraph falls within a major section, it is not given a separate number. Paragraph numbering beyond the fourth digit is cumbersome (e.g., 4.3.2.2.1). Rearrangement of material should be made where practical to avoid need for the fifth digit and beyond.

5.2.10.3 Itemization. Itemization within a paragraph or subparagraph should be identified by lower case letters followed by a period to avoid confusion with paragraph numerals.

5.2.10.4 Cross reference. References to parts within the standard shall be held to a minimum. Cross references shall be used only to clarify the relationship of requirements within the standard and to avoid inconsistencies and unnecessary repetition. When the cross reference is to a paragraph, subparagraph, etc., within the standard, the cross reference shall be only to the specific paragraph number. The word "paragraph" shall not appear (e.g., see 3.1.1).

5.2.11 Printer's copy. All manuscripts shall be prepared in accordance with the requirements of DoD 4120.3-M and 4.2 of this standard. If the manuscript cannot be prepared on DD Form 1183 (Proportional Spacer Machine Typing Layout Sheet) (see figure 27), it shall be typed single spaced on white bond paper, on one side of the paper only. The self-cover, if typed, will be suitably prepared for offset reproduction in the format shown on the figures for cover sheets in this standard.

5.2.12 Page numbering. The cover shall not be numbered. Pages between the cover and the first sections shall be numbered consecutively in the bottom center of each page with lower case Roman numerals, omitting number i (e.g., ii, iii, iv, etc.). Beginning with the first right-hand page of the first section as page 1, all pages including appendixes and the index shall be numbered consecutively in the bottom center of the page, using 8-point Arabic numbers. Numbers shall not appear on blank pages. On fold-out pages and other pages which must unavoidably be left blank, the page before the blank page shall be numbered with both page numbers; for example, 23/24. Page numbers of appendixes and indexes shall be a continuation of the page numbers of the text. The standard document identifier and, when applicable, the activity, shall appear at the top center of all pages with the exception of the self-cover. For numbering pages of test method standards, see 5.2.14.5.1.4.

5.2.13 Sectionalized standards. The objective of the sectional format is to separately identify individual requirements or groups of requirements and to provide application guidance to facilitate the selective application of these requirements. The format is flexible, but the requirement sections are generally broken down into general requirements, individual tasks or requirements, and application guidance subsections. Content should include methods, processes, procedures, or techniques. Preparation options are either to separate the requirements within the standard into sections or to divide the standard into parts.

5.2.13.1 Sectionalized requirements. Detailed requirements shall be segregated into independent sections as individual or coherent groups of requirements. The prime consideration in preparing the standard shall be to provide flexibility in the use of the standard. Requirements shall be structured so as to allow their inclusion or exclusion in contracts and solicitations by reference to specific sections. Preparation instructions are contained in 5.2.14.5. An index of sectionalized requirements may be provided when considered appropriate or can be provided as an element of the application appendix.

5.2.13.2 Standards issued in parts. Bookform standards may be issued in parts where the nature of the contents warrants such handling. All parts shall be identified by the same document identifier followed by a dash and sequential number.

Example: MIL-STD-176-1
MIL-STD-176-2
MIL-STD-176-3

Each part may be revised and issued independently of the other parts. Revisions shall be identified as prescribed in 5.2.15 except that the revision letter shall be placed after the last numeral.

Example: MIL-STD-176-3A

Each part shall identify the number of parts comprising the standard. This shall be placed in parenthesis following the document title.

Example: (Part 2 of three parts)

5.2.14 Content. Military bookform standards shall contain numbered sections as outlined below:

- a. Section 1: Scope.
- b. Section 2: Referenced documents.
- c. Section 3: Definitions.
- d. Section 4: General requirements.
- e. Section 5: Detailed requirements.
- f. Section 6: Notes.

When it is not logical to expound on one of the above sections in the document under preparation, enter "Not applicable" beside the section title.

5.2.14.1 CONTENT OF SECTION 1: SCOPE.

5.2.14.1.1 Purpose. A clear concise delineation of the function or purpose of the standard and the extent or range of its technical content shall be used as the first sentence of the scope. Subsequent sentences may be used to delineate the coverage more precisely. The scope is to be written so as to function as an abstract. (See ANSI Z39.14 for information on preparing abstracts. Figures will not be included in the scope.)

5.2.14.1.2 Applicability. A statement shall be made, where appropriate, on the extent of selective application of the provisions of the standard.

5.2.14.1.3 Application guidance. A standard shall contain sufficient guidance regarding the phase or phases of program activity and acquisition for which it is intended in order to facilitate its proper use. The standard will also state the range of characteristics, processes or disciplines to which it applies and the interrelationship between the facets of the subject of the standard and the phases of intended use. Where misinterpretation of the intent of application is possible, statements of nonapplication will be inserted to preclude likely misinterpretation. When more extensive application and tailoring guidelines are needed than can be included readily in the main body of the standard, an appendix will be included. Appendixes will not impose contractual requirements.

Example:

1.2.2 Application guidance. In determining the applicability of the tasks herein and tailoring them to a program, the following principles shall be followed:

- a. Every program is different.
- b. Every design involves compromises among different desirable characteristics.
- c. Programs must achieve a balance between operational need, equipment performance, cost, and schedule.
- d. Maintainability tasks vary in their nature from one acquisition phase to another.

Application guidance and rationale for selecting tasks to fit the needs of a particular maintainability program are included in Appendix B. Appendix B does not impose contractual requirements.

When other application guidance is contained later in text, assist the standard user in referring to it by appropriately inserting the following:

"For additional information on application, refer to (subsection number) on application guidance."

5.2.14.1.4 Tailoring of task, method or requirement descriptions. In this subsection, state whether task, method or requirement descriptions are intended to be tailored to suit unique requirements of users and to what extent tailoring is required. Tailoring should be required whenever practicable. Rationale should be provided when tailoring is not required. Specific details regarding options, additions, modifications or deletions which should be considered by the contracting activity when tailoring the task, method or requirement description to fit program needs should be listed under the 'Details to be Specified' paragraph under each individual description. Means of identifying the selected specific details (detail/description letters/numbers) should be identified in this subsection.

5.2.14.1.5 Method of reference. In this subsection, require citation of both the standard and applicable specific task, method or requirement (including its identifying description number) in requirement documents such as the contract statement of work.

5.2.14.1.6 Classification. Where applicable, a breakdown of the item covered by the standard shall be made by listing the identifying names of the types, classes, grades, sizes, etc., under which requirements of the standard are specified. (If only one type, class, etc., is covered, it shall be so stated in the scope paragraph and the classification paragraph omitted.) Where the names in the breakdown do not provide self-evident definitions, appropriate clarification shall be included in section 3, "Definitions".

5.2.14.1.7 Classification criteria. For the purpose of the above mentioned breakdown, the criteria for classification are as follows:

Type. This term implies differences in like items or processes as to design, model, shape, etc.

Class. This term implies differences in mechanical or other characteristics which provide distinctive departures under the same type, such as on the basis of end use or kind of material of which principally composed.

Grade. This term implies differences in quality. Where practical, the first grade should be the highest grade.

Composition. This term is used to classify commodities differentiated entirely upon the basis of chemical composition.

Other classifications. If the terms "types", "classes", "grades", and "composition", do not serve accurately to differentiate between the terms covered, other items such as "style", "color", "form", "size", "weight", "power supply", "temperature", "condition", "unit", "enclosure", "duty", "insulator", etc., may be used.

5.2.14.1.8 Classification designations. Classification shall be designated as follows, except in case of conflict with established precedence or recognized trade practices:

Type by Roman numerals thus: Type I, Type II, etc.

Class by Arabic numerals thus: Class 1, Class 2, etc.

Grade by capital letters thus: Grade A, Grade B, etc.

Other classifications, as needed, shall be designated in a manner appropriate to the subject covered. Class designations for bookform standards shall not be changed in succeeding revisions; that is, if the initial issue of the standard provided for type I and type II, and the revision deletes type I, then only type II shall be listed with a notation that type I is obsolete.

5.2.14.2 CONTENT OF SECTION 2: REFERENCED DOCUMENTS.

5.2.14.2.1 List of references. Government specifications, standards, handbooks, drawings, and publications may be referenced in military standards. Other nongovernment documents promulgated by industry organizations and technical societies may also be referenced. Government regulations or codes, such as the Federal Insecticide, Fungicide, and Rodenticide Act, Drug and Cosmetic Act, Federal Hazardous Substances Labeling Act, Atomic Energy Act, and Department of Transportation regulations and screw-thread standards for Federal Services, shall be referenced in standards, where applicable. Care shall be taken in referencing nongovernment publications to assure the availability of copies and prior approval of the copyright owner. All and only those documents identified and referenced in sections 3, 4 and 5 of the standard shall be listed in section 2. References shall be confined to documents currently available at the time of issuance of the standard. Figures bound integrally with the standard shall not be listed in section 2.

5.2.14.2.2 Limitation on references. A standard shall not conflict with provisions in referenced documents unless it is necessary to make special exceptions. In that case, the specific provisions to which exception is made shall be stipulated. Unnecessary reference to other standardization documents and document 'tiering' shall be avoided. It is not intended that other documents be made a part of a standard by reference unless the items, materials, tests or other services in the referenced documents are required in the quality and detail which these documents are designed to produce. The use of phrases such as 'to the extent specified in the contract' or 'when required by the statement of work' in imposing reference documents shall be avoided. The applicability of all documents listed in section 2 of a standard shall be defined in sections 3, 4, or 5, as appropriate. The whole of a listed document shall not be made applicable by reference unless all of its provisions are clearly required. When a document or portion of a document is used as a reference the extent of its applicability as a requirement or as guidance only shall be specifically indicated. When a reference to a document can be quoted word for word without adversely affecting the technical essence or readability of the standard (normally less than a page in content), it may be quoted without referencing the document in the text and section 2. (When any copyrighted material is quoted, written permission of the copyright owner to quote must be obtained.) Further, one of the statements below shall be entered in section 2 of non-product bookform standards.

"The documents cited in this section are for guidance and information."

"The following documents and the documents referenced in the cited documents (first tier) form a part of this standard to the extent specified. All others are for guidance and information only."

NOTE: If it is necessary to make documents below the first tier a part of the standard, then such documents should be listed in section 2.

5.2.14.2.3 Government documents. Referenced Government documents shall be listed by document title identifier excluding revision letters, or suffix (preparing activity symbols) and the "00" designation for "USED IN LIEU OF". Titles should be taken from the documents rather than an index. Government SPECIFICATIONS, STANDARDS, HANDBOOKS, DRAWINGS, and PUBLICATIONS shall be listed numerically (except Federal specifications which shall be listed alpha-numerically) under these headings and in individual groups such as Federal, Military, and Departmental activity (such as Naval Air Systems Command, etc.). These listings shall be included under the following subparagraphs:

"2.1 Government documents.

2.1.1 Specifications, standards, and handbooks. Unless otherwise specified, the following specifications, standards, and handbooks of the issue listed in that issue of the Department of Defense Index of Specifications and Standards (DoDISS) specified in the solicitation form a part of this standard to the extent specified herein."

The following types of publications shall be listed (as applicable) in the order shown after 2.1.1:

Federal Specifications
 Military Specifications
 Federal Standards
 Military Standards
 Federal Handbooks
 Military Handbooks

"2.1.2 Other Government documents, drawings, and publications. The following other Government documents, drawings, and publications form a part of this standard to the extent specified herein."

The following types of publications shall be listed (as applicable) in the order shown after 2.1.2:

Other Government documents (e.g., Dept. of Transportation standards)
 Drawings
 Publications

Where detailed drawings referred to in a standard are listed in an assembly drawing, it is only necessary to list the assembly drawing. The following parenthetical source paragraph shall be included at the end of 2.1:

"(Copies of specifications, standards, handbooks, drawings, and publications required by contractors in connection with specific acquisition functions should be obtained from the contracting activity or as directed by the contracting officer.)"

5.2.14.2.4 Nongovernment publications. Nongovernment documents and DoD accepted documents not normally furnished by the Government shall be listed in appropriate order completely identified under the following subparagraph.

"2.2 Other publications. The following document(s) form a part of this standard to the extent specified herein. Unless otherwise specified, the issues of the documents which are DoD adopted shall be those listed in the issue of the DoDISS specified in the solicitation. The issues of documents which have not been adopted shall be those in effect on the date of the cited DoDISS."

In addition, the following parenthetical source statement shall follow each individual publication, or each group of related publications which may be obtained from a common source:

"(Application for copies should be addressed to the (name and address of the source.)"

The following source paragraph shall be placed at the bottom of the list when applicable.

"(Nongovernment standards are generally available for reference from libraries. They are also distributed among nongovernment standards bodies and using Federal agencies.)"

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

"2.3 Order of precedence. In the event of a conflict between the text of this standard and the references cited herein, the text of this standard shall take precedence."

5.2.14.3 CONTENT OF SECTION 3: DEFINITIONS. Definitions of all key terms used in the standard shall be stated in sufficient detail for adequate clarity, unless the terminology is generally accepted and not subject to interpretation. Definitions may be included by reference to documents listed under section 2. When standard definitions exist in DoD documents, a different definition shall not be used in standards.

5.2.14.4 CONTENT OF SECTION 4: GENERAL REQUIREMENTS. Statements of requirements under this section shall include characteristics common to the area covered. General requirements are those which will not normally be expected to vary from program to program. They can be expected to be imposed on almost all programs. However, even these requirements should be written to allow tailoring when necessary. This section shall include all general requirements that are automatically imposed whenever the standard is invoked in a solicitation or contract. All other requirements that must be selectively applied shall be stated in detail requirements, section 5, of the standard. If there are no general requirements to be included, the statement "Not applicable" shall appear in this section.

5.2.14.5 CONTENT OF SECTION 5: DETAILED REQUIREMENTS. All essential statements of requirements for the item covered shall be stated in this section. In the case of physical items, material (including chemical and physical characteristics, as applicable), dimensions, weight, color, marking, and quantity or performance shall be clearly specified. Individual tasks or requirements statements and test methods are utilized in sectionalizing a standard. A sectionalized standard must result in the application of individual tasks or requirements statements or test methods through their specific callout. Requirements can be expected to vary from program to program and shall be written so that they can be selectively applied. Development of formalized "program plans" is an example of a requirement which will normally be in the sectionalized standard category. Test methods are also utilized in sectionalized standards and should state only such characteristics that can be confirmed by reliable quality criteria or test equipment.

5.2.14.5.1 Sectionalized format.

5.2.14.5.1.1 Requirements. All detailed statements of requirements covered by the standard shall be stated in this section. In all cases, requirements will be presented as individual or as a coherent group of requirements to enable selective application and identification by reference to the applicable section. Each requirement, or coherent group of requirements, shall include a purpose, application guidance, tasking requirement, and, as necessary, any additional support information. Format is as follows:

Purpose. A statement of intent which defines the objective of the requirement. It may include the anticipated results and benefits.

Application guidance. Guidance shall be provided for cost effective use of the requirements. Information may include the range of application and define such features as program phase and system application, as well as the rationale which is instrumental in the development of the requirement(s).

Tasking requirements. A self-contained tasking statement that specifies each requirement or group of coherent requirements in a manner which enables independent application to the specific acquisition. These requirements identify such items as methods, processes, procedures, techniques, and equipments, as well as the general approach(es) which complies with the intent of the requirement(s) and will achieve the desired results. Requirements which result in a data product, or relate to the generation of data, shall be identified for ease of matching the data required to tasking requirement. References that are limited to application and apply to the specific task shall also be included.

Support information. Statements that provide associated or related information considered necessary during the requirements selection process or in the performance of the requirement.

The preparation of an index of sections shall be based on the complexity of the standard and the usefulness of the index (see figure 31).

5.2.14.5.1.2 Test methods. Bookform standards shall be issued, when required, to cover tests methods covering a single commodity area or other defined area. The test method standard format as a minimum shall include the scope, description of needed test equipment and facilities, step-by-step test procedures, and descriptions of data to be collected. Use test forms where appropriate.

5.2.14.5.1.2.1 Tentative test methods. Special provisions have been made for tentative test methods. When appropriate, the preparing activity for a test method standard shall include new or modified test methods as tentative test methods prior to formal coordination (see figure 13). A tentative test method is mandatory for use only by the submitting activity and will be identified by an appropriate preamble. Tentative test methods provide a means of keeping all methods applicable to an area in one standard, provide a ready reference by users of new or modified methods without the need for copying such methods in specifications, and provide an opportunity for trial use of new or modified tests without affecting the status of standard test methods. The preparing activity also retains responsibility for maintaining the standard including both standard and tentative test methods.

5.2.14.5.1.3 Identification numbering of requirements and test methods. Each requirement or coherent group of requirements and each test method shall be identified by a number. Any appropriate numbering system may be used which provides for consecutive numbering on revisions of requirements or test methods. For example, if a requirement or test method is numbered 204 for the first time issue, the first revision of this requirement or test method shall be 204A, the second revision 204B, and so forth. For other standards, if the requirement or test method is numbered 1100 for the first time issue, the first revision of this shall be 1100.1, and the second 1100.2, and so forth. Each individual requirement or test method shall begin on a right-hand page and the identifying number, including the latest revision identifier, if applicable, and date of approval shall appear in the lower right-hand corner of the first page (see figure 12). Succeeding pages shall include the identifying number, the latest revision identifier, if applicable, and date of approval in the lower left-hand corner for even numbered pages and in the lower right-hand corner for odd numbered pages. When an individual requirement or test method is revised, its approval date shall be updated to reflect the approval date of the change notice. When the entire standard is revised, all updated requirements or test methods shall identify the date of the revision. Requirements or test methods which have not been updated shall retain the previously indicated date. If a change occurs in the requirement or test method, the entire requirement or test method shall be revised. There shall be no individual page changes or revisions within a requirement or test method.

5.2.14.5.1.3.1 Identification numbering of tentative test methods. Tentative test methods shall be numbered in accordance with 5.2.14.5.1.3. In addition to the number, the capital "T" shall be prefixed to indicate that it has not been coordinated with all activities. The date of issue shall also be inserted below the "T" number. Consecutive revision indicators shall be used; for example: T1101, T1101.1, and T1101.2 for the third issuance of the test method to indicate it is fully coordinated.

5.2.14.5.1.4 Page numbering. Each requirement or test method shall begin on the right-hand page and the first page shall be numbered at the bottom center Arabic numeral 1. Successive pages shall be numbered 2, 3, 4, and so forth at the bottom center of the page. When the last page of a requirement or test method ends on an odd numbered page, the back of that page shall not be numbered nor marked "intentionally left blank".

5.2.14.5.2 Application guidance. Application guidance provides information on the requirement's use, range of application, as well as the rationale which supported its development. The degree of allowable flexibility in the specific requirement, allowable tolerances, and permissible variations which are acceptable should be provided. Government information, inputs, and prerequisites in applying the requirements should be provided. Application guidance shall be provided as part of the requirement or task statement or as an appendix to the document (see appendix B), or in both locations.

5.2.14.6 CONTENT OF SECTION 6: NOTES. If section 6 is to be included, it shall contain information of a general or explanatory nature (see figure 32). It shall contain information designed to assist in determining the applicability of the standard and supersession data. This section shall include the following in the order listed as applicable:

- a. Intended use.
- b. Data requirements list and cross reference.
- c. Government-furnished and Government-loaned property (if appropriate).
- d. Patent notice (if appropriate).
- e. Subject term (key word) listing.
- f. Identification of changes.

5.2.14.6.1 Intended use. Information relative to the use of the standard shall be included under this heading. If there are any particular applications for which the standard is not well adapted, this information also may be included.

5.2.14.6.2 Data requirements (see 4.1.2). When the standard requires the contractor to develop deliverable data (e.g., engineering drawings, technical manuals, reports, plans, etc.) the following shall be inserted in section 6 of that standard.

"When this standard is used in an acquisition which incorporates a DD Form 1423, Contract Data Requirements List (CDRL), the data requirements identified below shall be developed as specified by an approved Data Item Description (DD Form 1664) and delivered in accordance with the approved CDRL incorporated into the contract. When the provisions of the DoD FAR clause on data requirements (currently DoD FAR Supplement 52.227-7031) are invoked and the DD Form 1423 is not used, the data specified below shall be delivered by the contractor in accordance with the contract or purchase order requirements. Deliverable data required by this standard is cited in the following paragraphs.

| Paragraph No. | Data Requirement Title | Applicable DID No. | Option |
|---------------|------------------------|--------------------|--------|
|---------------|------------------------|--------------------|--------|

(Data item descriptions related to this standard, and identified in section 6 will be approved and listed as such in DoD 5000.19-L., Vol. II, AMSDL. Copies of data item descriptions required by the contractors in connection with specific acquisition functions should be obtained from the Naval Publications and Forms Center or as directed by the contracting officer.)"

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

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

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

5.2.14.6.4 Patent notice. When a standard is prepared to cover a patented process, the standard shall list the patents involved and include the following paragraph:

"6. . . . 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"

In cases where no royalty-free licenses are obtainable, the standard should list the patents together with their expiration date and the statement that the Government does not have a royalty-free license.

5.2.14.6.5 Subject term (key word) listing. The standard shall contain a listing of subject terms (key words) which would allow identification of the document during retrieval searches. The subject terms are to be compatible with names and terms contained in the Cataloging Handbook H6, in the DoD "Thesaurus of Engineering and Scientific Terms (TEST)," in the "DDC Retrieval and Indexing Terminology (DRIT)," and in the lexicon which is predominant in the technical field germane to the standard. 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 considered to be proper or recognized nouns such as "military standard" should not be separated.

5.2.14.6.6 Identification of changes from previous issue. Revisions of standards should include asterisks or vertical lines at the margins of the pages to indicate where changes have been made with respect to the previous issue. The following note should be included in section 6 of the standard:

"6. . . . Changes from previous issue. The margins of this standard are marked (asterisks or vertical lines) to indicate where changes (additions, modifications, corrections, deletions) 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 should be included in section 6 of this standard:

"6. . . . Changes from previous issue. Asterisks or vertical lines are not used in this revision to identify changes with respect to the previous issue due to the extensiveness of the changes."

5.2.14.7 Appendixes. Appendixes may be added to a standard for purposes of illustration, application, and general information relating to the standard. An appendix shall be within the scope of the standard and shall not be inconsistent with the standard itself. Ordinarily, mandatory features should not be incorporated in appendixes. The appendix shall be referenced in the basic portion of the standard indicating the extent to which it applies. A statement as to whether or not the material in an appendix is a mandatory part of the standard shall appear at the beginning of the appendix. Appendixes shall be captioned and the sections numbered in multiples of 10, with paragraphs numbered 10.1, 10.2, 20.1, 20.2, 30.1, 30.2, and so on. When more than one appendix is required, identification shall be alphabetical (A, B, etc.). The appendix shall begin on the next page following the standard. Identify the upper center of each page with the standard identifier and the word "APPENDIX" two lines below the identifier. The title shall be located two lines below the word "APPENDIX" on the beginning page only.

5.2.14.8 Index. Where the standard covers a subject having an extensive classification breakdown or is otherwise lengthy, an index shall be included. The index shall alphabetically list all key terms and give the page or section and paragraph numbers in which they principally appear.

5.2.15 Revisions. Revisions, except page revisions, shall be indicated by a capital Gothic letter immediately following the document identifier. The latest approval date shall appear under the document identifier. The first revision shall be marked with the letter "A", and succeeding revisions shall be indicated by other letters in alphabetical sequence, except that the letters "I", "O", "Q", "S", and "Z" shall not be used (see figure 9).

Example: MIL-STD-140B
1 December 1978

5.2.15.1 Page revisions. Minor changes in a standard normally shall be made by reissuing completely revised pages on which the changes are to be shown. Revised pages shall be prepared in the same manner as pages for a new standard. If an additional page is to be inserted in revising a page or pages, it shall be identified by the previous page number followed by the letter "a", etc. Example: Page 8a follows page 8 as an inserted page. A note "Supersedes page (no.) of (date)" shall be placed in the lower left-hand corner of each revised page (see figure 14). A change notice shall be prepared for all page revisions (see 5.2.17). Amendments are not issued for MIL-STD bookform standards. Complete pages (both sides) must be replaced so that the old page can be removed and the new page inserted. Any page that is being replaced because it is on the opposite side of a page being changed will have the "supersedes note" (see figure 14) and will be noted as having been "REPRINTED WITHOUT CHANGE" (see figure 15).

5.2.15.2 Complete revisions. Complete revisions shall be prepared when the changes in a standard are of considerable length in relation to the content of the original, or when it is necessary to change the security classification. When revisions are made, the entire contents shall be analyzed and brought up to date. Revisions shall conform to the details outlined herein for standards or original issue, except that the document identifier shall be followed by the revision symbol (see 5.2.15).

5.2.16 Issuance of page revisions. Notices are used to transmit page revisions or new pages for standards. Notices are not used to make or transmit complete revisions.

5.2.17 Notice issuances. Notices shall carry the same title and document identifier as the standard which they affect and shall be used for transmitting new pages and page revisions of the standard. These notices and the appended pages are noncumulative.

- a. For holders of military standards, pages transmitted by notices are either new pages or replacements for stipulated pages issued in the basic document, or by previous change notices. When new pages are entered in the standard, the notice shall be retained as a check sheet.
- b. For activities stocking these notices, the notices and their appended pages are to be received, stocked, and issued as separate publications. They are not cumulative and shall be retained as separate publications until the military standard is completely revised or canceled.
- c. All notices (regardless of notice number) shall be prepared in the format shown on figure 15. Since these notices are noncumulative, they shall not include a supersession note.

5.2.18 Supersession. The identification of each document that is superseded and its date, including the previous standard, shall be placed directly under the document identifier, separated from the date by a ruled line.

Example: MIL-STD-129H
3 January 1978
SUPERSEDING
MIL-STD-129G
1 September 1976

5.2.18.1 Supersession note. If the listing of superseded documents is lengthy, a parenthetical "(see note)" may be placed under the ruled lines, and a note included in the notes section. "Supersession note" may be used to list superseded documents in text form.

5.2.19 Cancellation. A cancellation notice (figure 16) shall be issued under any one of the following conditions.

- a. The standard is no longer required.
- b. The standard is superseded by another document.
- c. The requirements of the military standard are incorporated in a federal standard with the concurrence of the DoD.

5.2.19.1 Notice of cancellation. A notice of cancellation shall be coordinated by the preparing activity with the review and using activities without establishing a project. When applicable, the notice of cancellation shall be circulated with the draft of the superseding document. Upon receipt of concurrences, the preparing activity will approve the notice of cancellation, date it, and arrange for printing in accordance with DoD 4120.3-M. The preparing activity will notify the assignee activity and the other custodians of the action taken. A project number, if needed for record and control purposes, shall be obtained from the assignee activity or lead service. The cancellation notice shall show only the preparing activity and agent, when applicable (see figure 16).

5.2.20 Notice of reinstatement (see figure 28). The preparing activity, or with its permission, another activity may reinstate a canceled standard by issuance of a notice of reinstatement. The notice, sequentially numbered, shall supersede the previous notice of cancellation, identify all interested activities as of the date of reinstatement; and, when applicable, include information on the changed status of the document and other applicable information. When it is necessary to reissue the standard as a revision with a new number, information shall be included on the first page to show the relationship to the canceled document. (See DoD 4120.3-M for DoDSSP requirements.)

5.2.21 Standardization Document Improvement Proposal (DD Form 1426). Preparing activities shall include this form as the last sheet of military standard bookform standard and handbooks. It shall not be included on notices. It shall be self-addressed and the document identifier block shall be completed by the preparing activity. The form shall be printed in such a manner that it can be readily detached leaving a 1/2 inch stub. This shall be normally provided for by a vertical line on the face and reverse side of the form, along which is printed the words: "To detach this form, cut along this line." This form is not required on classified standards; however, if used, security regulations shall be complied with (see figures 25 and 26).

5.2.21.1 Utilization of DD Form 1426. All bookform standards and handbooks shall include the following note as the last numbered paragraph on the promulgation sheet.

" Beneficial comments (recommendations, additions, deletions) and any pertinent data which may be of use in improving this document should be addressed to: (insert name and address of the preparing activity) by using the self-addressed Standardization Document Improvement Proposal (DD Form 1426) appearing at the end of this document or by letter."

5.2.22 Data requirements for military bookform standards. DI-S-7195, "Preparation of Military Standards and Handbooks" shall be specified when required as a deliverable data item.

5.3 MIL-STD (or DOD-STD) unit page form standards.

5.3.1 Document identifiers.

5.3.1.1 Coordinated MIL-STD unit page form standards. Approved coordinated military standards in unit page form shall be identified by a document identifier composed of the letters MIL-STD followed by a hyphen and an Arabic numeral. The number is assigned to the standard by the preparing activity in accordance with departmental procedures. The date of approval shall appear under the document identifier.

Example: MIL-STD-1533
1 October 1972

5.3.1.2 Limited coordination MIL-STD unit page form standards. Limited coordination unit page form standards shall be identified in the same manner as coordinated standards, except that a suffix to the number shall be added as in 5.1.1.2.

Example: MIL-STD-222(SH)

5.3.2 Headings.

5.3.2.1 Proposed MIL-STD unit page form standards. Drafts of proposed standards shall carry the following note at the top of the first page:

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

5.3.2.2 Revised drafts. The first page of subsequent drafts shall show the new date. The first page shall also include a note indicating that the previous draft has been superseded.

Example: PROPOSED MIL-STD-14
12 September 1973
~~SUPERSEDING DRAFT~~
4 October 1971

5.3.3 Dating. MIL-STD unit page form standards shall be approved and dated by the preparing activity immediately prior (not more than thirty days and simultaneously, if possible) to being forwarded to the DoD Single Stock Point (DoDSSP) for reproduction and distribution. For MIL-STD unit page form standards, the approval date shall be entered immediately below the document identifier.

5.3.4 Format. The format of these single page standards shall be as specified in this section (see figure 17).

5.3.5 Titling. Titles indicate the scope of the document and shall be consistent with content. Item names in titles shall make maximum use of Cataloging Handbook H6. When it is impracticable to use H6, titles for standards shall be selected on the basis of agreement between standardization and cataloging organizations of the preparing activity.

5.3.5.1 Modifiers. The title shall include, where appropriate, in addition to the approved basic or item name, such modifiers as are necessary to identify the coverage of the standard and clearly distinguish between other standards covering similar items. Nondefinitive modifiers shall not be used.

5.3.6 Location of title. The title shall be centered at the top of the first page immediately below the heading "MILITARY STANDARD".

5.3.7 Federal supply class or group, or standardization area designation. The federal supply class or group, or standardization area designation, if applicable, shall appear in the lower right-hand corner of the first page.

5.3.8 Implementation paragraphs.

5.3.8.1 Implementation paragraph for coordinated MIL-STD unit page form standards. The following statement shall be placed below the title:

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

5.3.8.2 Implementation paragraph for limited coordination MIL-STD unit page form standards. The following statement shall be placed below the title (see figure 17):

"This military standard is approved for use by (preparing activity), Department of the _____, and is available for use by all Departments and Agencies of the Department of Defense."

Air Force limited coordination MIL-STD unit page form standards shall use the following statement:

"This military standard is approved for use within the Department of the Air Force, and is available for use by all Departments and Agencies of the Department of Defense."

5.3.9 Purpose paragraph. Where required, a paragraph titled "Purpose" shall be placed immediately below the title or implementation paragraph. This paragraph shall state the general intent of the standard.

5.3.10 Scope. Each standard shall contain a paragraph titled "Scope" immediately following the "Purpose" paragraph if used, implementation paragraph, or the title. The scope shall clearly and concisely identify the area covered by the standard.

5.3.11 Definition paragraph. Where required for clarity, a paragraph titled "Definitions" shall follow the "Scope" paragraph. All key terms having special meanings not defined elsewhere in military standards shall be defined in this paragraph.

5.3.12 Precedence of tables and text. When the standard contains both tables and text, tabular material shall, where feasible, follow the applicable text.

5.3.13 Revisions. Changes to MIL-STD unit page form standards shall be promulgated as revisions. Revisions shall be indicated by a capital Gothic letter immediately following the document identifier. The latest approval date shall appear under the document identifier. The first revision shall be marked with the letter "A", and succeeding revisions shall be indicated by other letters in alphabetical sequence, except that the letters "I", "O", "Q", "S", and "Z" shall not be used.

Example: MIL-STD-5A
16 June 1972

When revisions are made, the entire contents shall be analyzed and brought up to date. Revisions shall conform to the details outlined herein for standards or original issue (see figure 9).

5.3.14 Supersession. The identification of each document that is superseded and its date, including the previous standard, shall be placed directly under the document identifier, separated from the date by a ruled line.

Example: MIL-STD-642
9 October 1973
SUPERSEDING
Cm1 C B2-24A
19 December 1972

5.3.14.1 Supersession note. If the listing of superseded documents is lengthy, a parenthetical "(see note)" may be placed under the ruled lines, and a note included in the notes section "Supersession note" may be used to list superseded documents in text form.

5.3.15 Cancellation. A cancellation notice (figure 16) shall be issued under any one of the following conditions.

- a. The standard is no longer required.
- b. The standard is superseded by another document.
- c. The requirements of the military standard are incorporated in a federal standard with the concurrence of the DOD.

5.3.15.1 Notice of cancellation. A notice of cancellation shall show only the preparing activity and agent, when applicable (see figure 16).

5.3.16 Notice of reinstatement (see figure 28). The preparing activity, or with its permission, another activity may reinstate a canceled document by issuance of a notice of reinstatement. The notice, sequentially numbered, shall supersede the previous notice of cancellation, identify all interested activities as of the date of reinstatement; and, when applicable, include information on the changed status of the document and other applicable information. When it is necessary to reissue the document as a revision with a new number, information shall be included on the first page to show the relationship to the canceled document. (See DoD 4120.3-M for DoDSS² requirements.)

5.3.17 Data requirements for MIL-STD unit page form standards. DI-S-7195, "Preparation of Military Standards and Handbooks" shall be specified when required as a deliverable data item.

5.4 Military handbooks (MIL-HDBK or DOD-HDBK).

5.4.1 Document identifiers.

5.4.1.1 Coordinated military handbooks. Approved coordinated military handbooks shall be identified by "MIL-HDBK" followed by a hyphen and an Arabic numeral assigned by the preparing activity in accordance with departmental procedures. The date of approval of a handbook shall appear directly under the document identifier.

Example: MIL-HDBK-772
30 March 1981

5.4.1.2 Limited coordination military handbook. Limited coordination military handbooks shall be identified in the same manner as coordinated one, except that a suffix to the number shall be added as in 5.1.1.2.

Examples: MIL-HDBK-123(AR), MIL-HDBK-214(AS), MIL-HDBK-246(17)

5.4.2 Headings for proposed military handbooks. Drafts of proposed military handbooks shall carry the following note at the top of the self-cover:

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

5.4.3 Dating. Military handbooks shall be approved and dated by the preparing activity immediately prior (not more than thirty days and simultaneously, if possible) to being forwarded to the DoD Single Stock Point for reproduction and distribution. The approval date shall appear on the cover of military handbooks immediately below the document identifier.

5.4.4 Format. The content and method of presentation of the material in a military handbook shall be governed by its subject and coverage. Otherwise the text, style, illustrations, and other requirements not covered in 5.4 shall be in accordance with the instructions contained in 5.2 of this standard for military bookform standards.

5.4.5 Self-cover. The self-cover is illustrated on figure 18.

5.4.5.1 Titling. Titles indicate the scope of the document and shall be consistent with content. Item names in titles shall make maximum use of Cataloging Handbook H6. When it is impractical to use H6, titles for handbooks shall be selected on the basis of agreement between standardization and cataloging organizations of the preparing activity.

5.4.5.1.1 Modifiers. The title shall include, where appropriate, in addition to the approved basic or item name, such modifiers as are necessary to identify the coverage of the handbook and clearly distinguish between other handbooks covering similar items. Nondefinitive modifiers shall not be used.

5.4.5.2 Location of title. The title shall appear at the top of the self-cover immediately below the heading "MILITARY HANDBOOK".

5.4.6 Federal supply class or group, or standardization area designation. The federal supply class or group, or standardization area designation, if applicable, shall appear in the lower right-hand corner of the self-cover of military handbooks (see figure 18).

5.4.7 Promulgation sheet. The promulgation sheet shall conform to figure 19.

5.4.8 Foreword. See 5.2.8.

5.4.9 Contents page. See 5.2.9.

5.4.10 Content of military handbooks. Military handbooks shall contain numbered sections as outlined below:

- a. Section 1: Scope.
- b. Section 2: Referenced documents.
- c. Section 3: Definitions.
- d. Section 4: General statements or information, or descriptions of basic plan or scheme for setting up handbooks (particularly for series of abbreviations, symbols, codes, etc.).
- e. Section 5: Specific statements, information or arrangement of material in logical sequence. When it is not logical to expound on one of the above sections in the document under preparation, enter "Not applicable" beside the section title.

5.4.11 Revisions. Revisions, except page revisions, shall be indicated by a capital Gothic letter immediately following the document identifier. The latest approval date shall appear under the document identifier. The first revision shall be marked with the letter "A", and succeeding revisions shall be indicated by other letters in alphabetical sequence, except that the letters "I", "O", "Q", "S", and "Z" shall not be used.

Example: MIL-HDBK-705B
26 June 1972

5.4.12 Supersession. The identification of each document that is superseded and its date, including the previous handbook, shall be placed directly under the document identifier, separated from the date by a ruled line.

Example: MIL-HDBK-705B
 26 June 1972

 SUPERSEDING
 MIL-HDBK-705A
 2 July 1969

5.4.12.1 Supersession note. If the listing of superseded documents is lengthy, a parenthetical "(see notes)" may be placed under the ruled lines, and a note included in the notes section. "Supersession note" may be used to list superseded documents in text form.

5.4.13 Cancellation. A cancellation notice shall be issued under any one of the following conditions.

- a. The handbook is no longer required.
- b. The handbook is superseded by another document.
- c. The requirements of the military handbook are incorporated in a federal handbook with the concurrence of the DoD.

5.4.13.1 Notice of cancellation. A notice of cancellation shall show only the preparing activity and agent, when applicable.

5.4.14 Notice of reinstatement for military handbooks. The preparing activity, or with its permission, another activity may reinstate a canceled military handbook by issuance of a notice of reinstatement. The notice, sequentially numbered, shall supersede the previous notice of cancellation, identify all interested activities as of the date of reinstatement, and when applicable, include information on the changed status of the document and other applicable information. When it is necessary to reissue the document as a revision with a new number, information shall be included on the first page to show the relationship to the canceled document. (See the Defense Standardization Manual 4120.3-M for DoDSSP requirements.)

5.4.15 Standardization Document Improvement Proposal (DD Form 1426). Preparing activities shall include this form as the last sheet of the military handbook (see 5.2.21 and figures 25 and 26).

5.4.15.1 Utilization of DD Form 1426 (see 5.2.21.1).

5.4.16 Data requirements for military handbooks (MIL-HDBK). DI-S-7195, "Preparation of Military Standards and Handbooks", applies to 5.4 and shall be specified when required as a deliverable data item.

6. NOTES

6.1 Intended use. Standards conforming to the requirements of this standard are intended for use as military standardization documents and are listed in the DoDISS. The purpose of this standard is to standardize the preparation of military standards and handbooks, to ensure the inclusion of essential data and descriptions essential to the selection and application of items and processes, and to aid in the use and analysis of DoD standardization documents.

6.2 Data requirements. When this standard is used in an acquisition which incorporates a DD Form 1423, Contract Data Requirement List (CDRL), the data requirements identified below shall be developed as specified by an approved Data Item Description (DD Form 1664) and delivered in accordance with the approved CDRL incorporated into the contract. When the provisions of the DoD FAR clause on data requirements (currently DoD FAR Supplement 52.227-7031) are invoked and the DD Form 1423 is not used, the data specified below shall be delivered by the contractor in accordance with the contract or purchase order requirements. Deliverable data required by this standard is cited in the following paragraphs.

| <u>Paragraph no.</u> | <u>Data requirement title</u> | <u>Applicable DID</u> | <u>Options</u> |
|----------------------|----------------------------------|-----------------------|----------------------------------|
| a. 4 and 5.1 | Military Standards and Handbooks | DI-S-7195 | MS sheet form standards |
| b. 4 and 5.2 | Military Standards and Handbooks | DI-S-7195 | Military bookform standards |
| c. 4 and 5.3 | Military Standards and Handbooks | DI-S-7195 | MIL-STD unit page form standards |
| d. 4 and 5.4 | Military Standards and Handbooks | DI-S-7195 | Military handbooks (MIL-HDBK) |

(Copies of DIDs required by contractors in connection with specific acquisition functions should be obtained from the Naval Publications and Forms Center or as directed by the contracting officer.)

6.3 Subject term (key word) listing.

Data item descriptions
 Document identifiers
 Formats
 Handbooks
 Metric system
 Military bookform standards
 Military handbooks
 Military standards
 MIL-STD unit page form standards
 MS sheet form standards
 Notice, cancellation
 Notice, reinstatement
 Part numbers
 Preparation of military standards
 Rationalization
 Reclaimed materials
 Recycled materials
 References
 Requirements
 Revisions
 Rights in data
 Standards
 Supersession
 Symbols
 Tailoring of requirements
 Titling
 Virgin materials

6.4 Changes from previous issue. Vertical lines or asterisks are not used in this revision to identify changes with respect to the previous issue due to the extensiveness of the changes.

To be placed on all drafts prior to approval.
 NOTE: -This draft, dated () prepared by (), has not been approved and is subject to modification. DO NOT USE PRIOR TO APPROVAL. (Project)

| | | | |
|---|--|---------------------------------|---|
| FED. SUP CLASS | | | |
| <p>CLASSIFICATION</p> <p>Letters to be at least 1/4" high after reduction. Place on all sheets of a classified standard. Classification may be placed inside or outside border.</p> <p>Located where applicable</p> | <p>When required</p> <p>NATIONAL SECURITY INFORMATION. Unauthorized Disclosure Subject to Criminal Sanctions.</p> <p>Size and location depend upon contents. Place on all sheets of a classified standard.</p> <p>NOTES:</p> <ol style="list-style-type: none"> 1. Referenced Government (or nongovernment) documents of the issue listed in that issue of the Department of Defense Index of Specifications and Standards (DoDISS) specified in the solicitation form a part of this standard to the extent specified herein. 2. For design feature purposes, this standard takes precedence over acquisition documents referenced herein. <p>When illustrations, sketches, or art work are included, the provisions of DOD-STD-100 will be followed insofar as practicable, except that lettering may be typewritten.</p> <p>Insert procurement reference used to purchase items described herein. If none exists, insert the work "NONE".</p> <p>When required</p> <p>Certain provisions (identified by paragraph number or similar manner, if appropriate) of this standard are the subject of international standardization agreement (insert the ABCA or ASCC standard number, the NATO, STANAG, or NEPR number, or other appropriate documentary reference). When revision or cancellation of this standard is proposed which will affect or violate the international agreement concerned, the preparing activity will take appropriate reconciliation action through international standardization channels, including departmental standardization offices, if required.</p> <p>Revisions indicated by capital letters in alphabetical sequence with approval dated to be inserted by the preparing activity prior to submission for printing will be shown in the revision block (see 5.1.19.1).</p> <p>Approval dates to be inserted by the preparing activity prior to submission for printing.</p> | | |
| <p>User activities: Army - Navy - Air Force -</p> <p>Review activities: Army - Navy - Air Force -</p> | <p>CLASSIFICATION</p> | | |
| <p>P.A</p> <p>Other Cust</p> <p>Procurement Specification</p> | <p>International interest</p> | <p>TITLE</p> <p>SUPERSEDES:</p> | <p>MILITARY STANDARD</p> <p>MS</p> <p>PAGE OF</p> |

This implementation paragraph applies to coordinated MS Standards (see 5.1.7.1).
 This military standard is approved for use by all Departments and Agencies of the Department of Defense. Selection for all new engineering and design applications and for repetitive use shall be made from this document when applicable.

APPROVED 9 JAN 72 REVISED (A) 12 FEB 74

DD FORM 672 1 MAY 73 (Coordinated) PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

FIGURE 1. Basic format for MS sheet form standard.

| MIL-E-5400T PARAGRAPH NUMBER AND DESCRIPTION | Exp Dev | Adv Dev | Eng Dev | Pre-Prod (Proto) | Prod | Remarks |
|--|---------|---------|---------|------------------|------|---------------------------------------|
| 3.1 Parts, Materials and Processes | N | A | A | A | A | |
| 3.1.1 Selection of parts and materials | N | A | A | A | A | Tailoring req'd for MIL-STD-965 also. |
| 3.1.1.1 Approval of nonstandard parts and materials | N | A | A | A | A | |
| 3.1.1.1.1 Category I Contracts | T | T | T | T | T | |
| 3.1.1.1.2 Category II and Category III Contracts | T | T | T | T | T | |
| 3.1.1.1.3 Reordered Production Equipment | T | T | T | T | T | |
| 3.1.1.1.3.1 Continuation of production | T | T | T | T | T | |
| 3.1.1.1.4 Time Schedule of material App. Requests | N | A | A | A | A | |
| 3.1.1.1.5 Samples required for part and matl. approval | N | A | A | A | A | |
| 3.1.1.2 Use of Military part identifiers | G | G | G | G | G | |
| 3.1.1.3 Choice of part and materials | N | A | A | A | A | |
| 3.1.1.4 Replaceability by standard parts & materials | N | A | A | A | A | |
| 3.1.1.5 Equipment Performance | G | G | G | G | G | |
| 3.1.2 Capacitors | N | A | A | A | A | |
| 3.1.3 Metal castings | N | N | N | A | A | |

Program Phases
 EXP DEV- Exploratory Development
 ADV DEV- Advance Development
 ENG DEV- Engineering Development
 PREPROD (PROTO)- Preproduction (Prototype)
 PROD- Production

N- Not applicable this phase
 A- Applicable this phase
 T- Essentially a "tailoring" paragraph
 G- General statement

FIGURE 2. Example of specifying or exception method of tailoring requirements.

TABLE A-1. Application matrix

| TASK | TITLE | TASK TYPE | PROGRAM PHASE | | | |
|------|--|-----------|---------------|-------------|-------------|--------------|
| | | | CONCEPT | VALID | FSED | PROD |
| 101 | RELIABILITY PROGRAM PLAN | MGT | S | S | G | G |
| 102 | MONITOR/CONTROL OF SUBCONTRACTORS AND SUPPLIERS | MGT | S | S | G | G |
| 103 | PROGRAM REVIEWS | MGT | S | S(2) | G(2) | G(2) |
| 104 | FAILURE REPORTING, ANALYSIS, AND CORRECTIVE ACTION SYSTEM (FRACAS) | ENG | NA | S | G | G |
| 105 | FAILURE REVIEW BOARD (FRB) | MGT | NA | S(2) | G | G |
| 201 | RELIABILITY MODELING | ENG | S | S(2) | G(2) | GC(2) |
| 202 | RELIABILITY ALLOCATIONS | ACC | S | G | G | GC |
| 203 | RELIABILITY PREDICTIONS | ACC | S | S(2) | G(2) | GC(2) |
| 204 | FAILURE MODES, EFFECTS, AND CRITICALITY ANALYSIS (FMECA) | ENG | S | S (1)(2) | G (1)(2) | GC (1)(2) |
| 205 | SNEAK CIRCUIT ANALYSIS (SCA) | ENG | NA | NA | G(1) | GC(1) |
| 206 | ELECTRONIC PARTS/CIRCUITS TOLERANCE ANALYSIS | ENG | NA | NA | G | GC |
| 207 | PARTS PROGRAM | ENG | S | S(2)(3) | G(2) | G(2) |
| 208 | RELIABILITY CRITICAL ITEMS | MGT | S(1) | S(1) | G | G |
| 209 | EFFECTS OF FUNCTIONAL TESTING, STORAGE, HANDLING, PACKAGING, TRANSPORTATION, AND MAINTENANCE | ENG | NA | S(1) | G | GC |
| 301 | ENVIRONMENTAL STRESS SCREENING (ESS) | ENG | NA | S | G | G |
| 302 | RELIABILITY DEVELOPMENT/GROWTH TESTING | ENG | NA | S(2) | G(2) | NA |
| 303 | RELIABILITY QUALIFICATION TEST (RQT) PROGRAM | ACC | NA | S(2) | G(2) | G(2) |
| 304 | PRODUCTION RELIABILITY ACCEPTANCE ACCEPTANCE TEST (PRAT) PROGRAM | ACC | NA | NA | S | G(2)(3) |

CODE DEFINITIONSTASK TYPE:

ACC - RELIABILITY ACCOUNTING
 ENG - RELIABILITY ENGINEERING
 MGT - MANAGEMENT

PROGRAM PHASE

S - SELECTIVELY APPLICABLE
 G - GENERALLY APPLICABLE
 GC - GENERALLY APPLICABLE TO DESIGN CHANGES ONLY
 NA - NOT APPLICABLE
 (1) - REQUIRES CONSIDERABLE INTERPRETATION OF INTENT TO BE COST EFFECTIVE
 (2) - MIL-STD-785 IS NOT THE PRIMARY IMPLEMENTATION REQUIREMENT. OTHER MIL-STDs OR STATEMENT OF WORK REQUIREMENTS MUST BE INCLUDED TO DEFINE THE REQUIREMENTS.

FIGURE 3. Example of specifying or exception method of tailoring requirements.

EXAMPLE A
Coded Numbering System

| | |
|-----------------|---|
| Dash No. | |
| -4A161 | EXAMPLE OF PART NO. MS295136-4A161 |
| -4A171 | |
| -4A181 | |

EXAMPLE B
Alternate Coded Numbering System
(Letter, not number, substituted for dash of part number)

| | |
|----------------|---|
| DIA 511 | EXAMPLE OF PART NO. MS295136DIA511 |
| DIA 512 | |
| DIA 513 | |

EXAMPLE C
Nonsignificant (uncoded) Sequential System

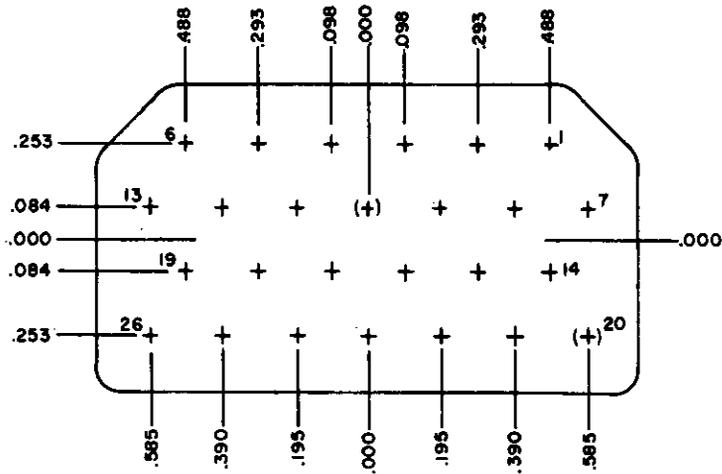
| | |
|-----------|---------------------------------------|
| -1 | EXAMPLE OF PART NO. MS295136-1 |
| -2 | |
| -3 | |

FIGURE 4. Example of part numbers.

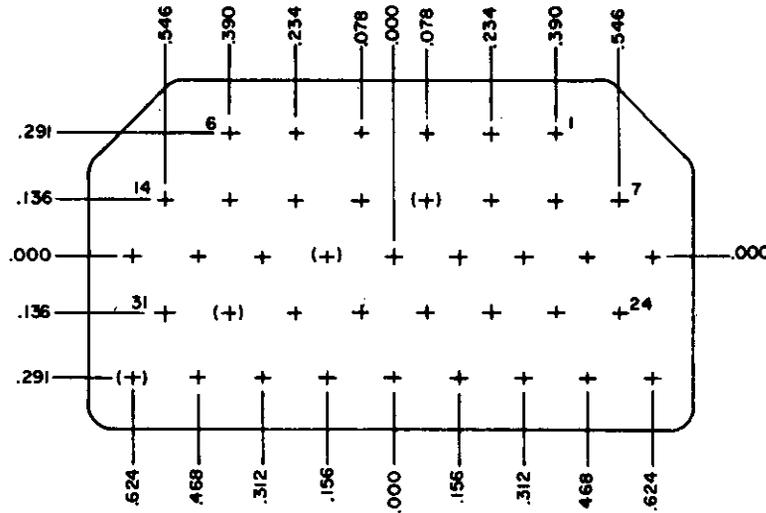
User activities: Army -
Navy -
Air Force -

Review activities: Army - EC, OS
Navy -
Air Force - 11, 80

This military standard is approved for use by all Departments and Agencies of the Department of Defense. Selection for all new engineering and design applications and for repetitive use shall be made from this document when applicable.



26 POSITION INSERT ARRANGEMENT
26 SIZE 16 CONTACTS
SHELL DESIGNATOR A - SERVICE RATING B



40 POSITION INSERT ARRANGEMENT
40 SIZE 20 CONTACTS
SHELL DESIGNATOR A - SERVICE RATING B.

© Entire standard revised

| | | | | | |
|--|----------|---------------------------|--|-------------------|---------|
| P.A | AS | International interest | TITLE INSERT ARRANGEMENTS, MIL-C-81659 ELECTRIC CONNECTOR, SERIES 1 AND 2 | MILITARY STANDARD | |
| Other Cust | EL 85 | | | MS3157 | |
| Procurement Specification MIL-C-81659 | | | SUPERSEDES: MS3421 AND MS3423 | PAGE | 1 OF 13 |

DD FORM 1 MAY 73 672 (Coordinated) PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE.

5935-2066-29

APPROVED 21 Jul 71 REVISED (A) 16 Dec 71 (B) 1 Mar 73 (C) 2 August 1976

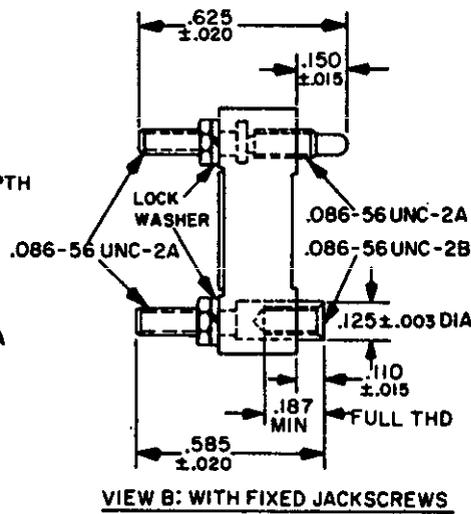
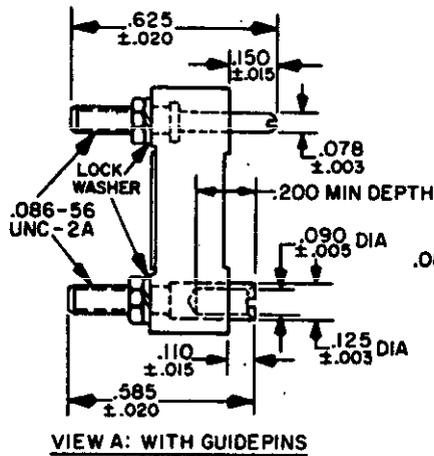
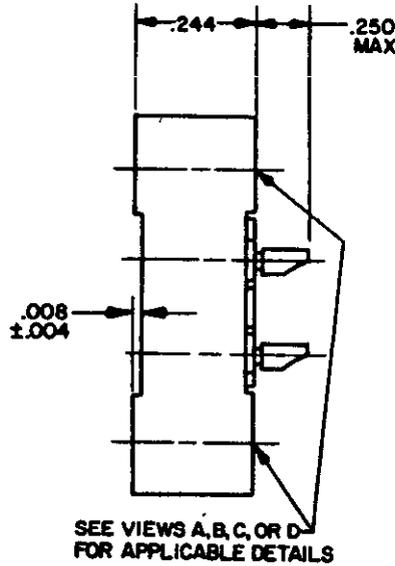
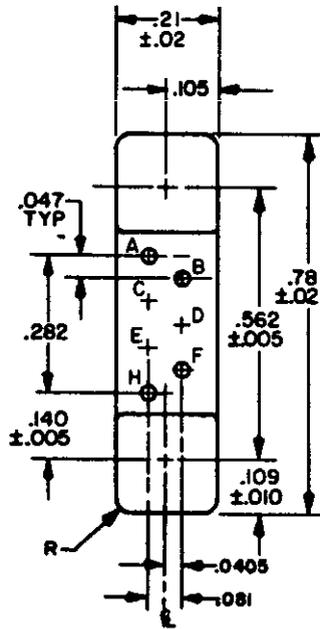
FIGURE 5. Example of design feature standard.

FED. SUP CLASS
5935

User activities: Army - ME, AM, AR
Navy - MC, OS
Air Force -

Review activities: Army - MI, AT
Navy - AS, SH 11, 99
Air Force -
DA - ES

This military standard is approved for use by all Departments and Agencies of the Department of Defense. Selection for all new engineering and design applications and for repetitive use shall be made from this document when applicable.



Ⓢ DENOTES CHANGE

APPROVED 20 May 1970
REVISED 3 APR 78
28 JAN 80

| | | | |
|--|------------------------|--|-------------------|
| P.A. Navy - EC | International Interest | TITLE | MILITARY STANDARD |
| Other Cust AF - 85 Army - CR | | CONNECTOR, RECTANGULAR, ELECTRICAL RACK AND PANEL 7 SIZE 22 SOLDER SOCKET CONTACTS | MSI4015 |
| Procurement Specification MIL-C-28748 | | SUPERSEDES: | PAGE 1 OF 3 |

DD FORM 672 (Coordinated) 1 MAY 73 PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE.

5935-3136-4

FIGURE 6. Example of physical item standard.

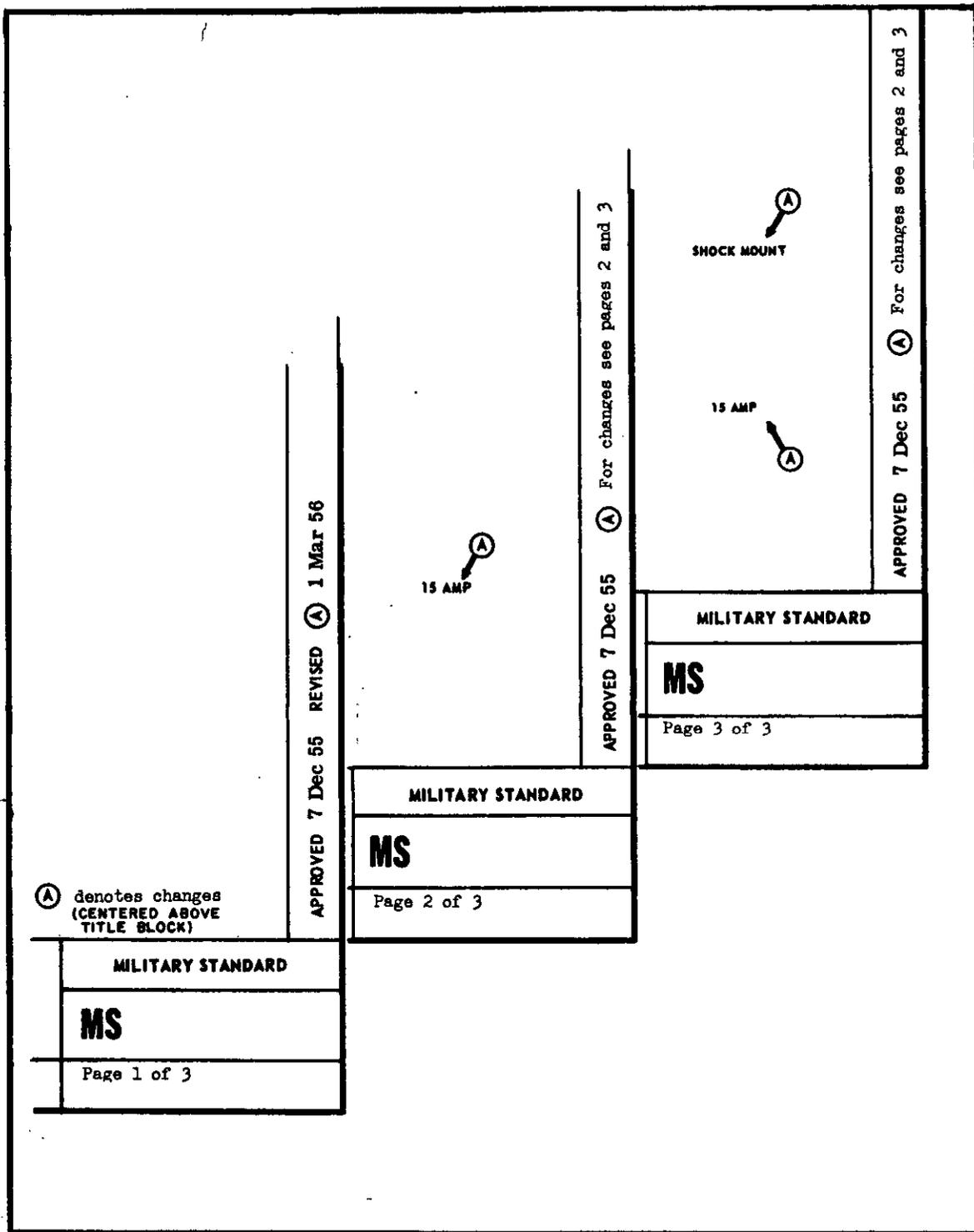


FIGURE 7. Revision of multiple-page MS standard.

**SECURITY CLASSIFICATION
(IF APPLICABLE)**

**MIL-STD-1295(AV)
3 August 1981**

MILITARY STANDARD

HUMAN FACTORS ENGINEERING

DESIGN CRITERIA FOR HELICOPTER

COCKPIT ELECTRO-OPTICAL DISPLAY SYMBOLOGY



**NO DELIVERABLE DATA
REQUIRED BY THIS DOCUMENT**

AREA HFAC

FIGURE 8. Example of self cover for MIL-STD bookform standard.

SECURITY CLASSIFICATION
(IF APPLICABLE)

MIL-STD-1629A
24 NOVEMBER 1980

SUPERSEDING
MIL-STD-1629 (SHIPS)
1 NOVEMBER 1974
MIL-STD-2070 (AS)
12 JUNE 1977

MILITARY STANDARD

PROCEDURES FOR PERFORMING
A FAILURE MODE,
EFFECTS AND CRITICALITY ANALYSIS



AMSC N3074

AREA RELI

FIGURE 9. Example of self cover for revised MIL-STD bookform standard.

DEPARTMENT OF DEFENSE
WASHINGTON, DC 20402

Marking for Shipment and Storage

1. This military standard is approved for use by all Departments and Agencies of the Department of Defense.
2. Beneficial comments (recommendations, additions, deletions) and any pertinent data which may be of use in improving this document should be addressed to: Director, DARCOM Packaging, Storage, and Containerization Center, ATTN: SDSTO-TP, Tobyhanna Army Depot, Tobyhanna, PA 18466, by using the self-addressed Standardization Document Improvement Proposal (DD Form 1426) appearing at the end of this document or by letter.

FIGURE 10. Example of promulgation sheet for MIL-STD bookform standard.

MIL-STD-000

CONTENTS

| | | <u>Page</u> |
|-----------|--|-------------|
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| | 1.2 Scope - - - - - | 1 |
| | 2. REFERENCED DOCUMENTS- - - - - | 2 |
| | 3. DEFINITIONS (Not applicable)- - - - - | 3 |
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| | 5.1 Dimensional systems - - - - - | 5 |
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FIGURES

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|----------|--|----|
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FIGURE 11. Example of table of contents for MIL-STD bookform standard.

METHOD 103B

HUMIDITY (STEADY STATE)

1. **PURPOSE.** This test is performed to evaluate the properties of materials used in components as they are influenced by the absorption and diffusion of moisture and moisture vapor. This is an accelerated environmental test, accomplished by the continuous exposure of the specimen to high relative humidity at an elevated temperature. These conditions impose a vapor pressure on the material under test which constitutes the force behind the moisture migration and penetration. Hygroscopic materials are sensitive to moisture, and deteriorate rapidly under humid conditions. Absorption of moisture by many materials results in swelling, which destroys their functional utility, and causes loss of physical strength and changes in other important mechanical properties. Insulating materials which absorb moisture may suffer degradation of their electrical properties. This method, while not necessarily intended as a simulated tropical test, is of use in determining moisture absorption of insulating materials.

2. **PROCEDURE.**

2.1 **Conditioning.** The specimens shall be conditioned in a dry oven at a temperature of $40^{\circ} \pm 5^{\circ} \text{C}$ for a period of 24 hours. At the end of this period, measurements shall be made as specified.

2.2 **Chamber.** The chamber and accessories shall be constructed and arranged in such a manner as to avoid condensate dripping on the specimens under test, and such that the specimens shall be exposed to circulating air.

2.3 **Exposure.** The specimens shall be placed in a chamber and subjected to a relative humidity of 90 to 95 percent and a temperature of $40^{\circ} \pm 2^{\circ} \text{C}$ for the period of time indicated in one of the following test conditions, as specified:

| <u>Test condition</u> | <u>Length of test</u> |
|-----------------------|-----------------------|
| A - - - - - | 240 hours. |
| B - - - - - | 96 hours. |
| C - - - - - | 504 hours. |
| D - - - - - | 1,344 hours. |

When specified, a direct-current potential of 100 volts or as specified shall be applied to the specimens during the exposure period. The length of time for the application of voltage and the points of application shall be as specified.

3. **FINAL MEASUREMENTS.**

3.1 **At high humidity.** Upon completion of the exposure period, and while the specimens are still in the chamber, the specified measurements shall be performed. These measurements may be compared to the initial measurements (see 2.1), when applicable.

3.2 **After drying period.** Upon completion of the exposure period or following measurements at high humidity if applicable, the specimens shall be conditioned at room ambient conditions for not less than 1 hour, nor more than 2 hours unless otherwise specified, after which the specified measurements shall be performed at room ambient conditions.

METHOD 103B
12 September 1963

FIGURE 12. Example of standard bookform test method standard.

This tentative test method has been prepared by the U.S. Army Armament Research and Development Command. It is optional for use by all activities.

METHOD T101.6

MOISTURE
(GAS CHROMATOGRAPHY METHOD)

1. SCOPE

1.1 This method may be used for the determination of moisture in single or double base ball powder.

1.2 The moisture is extracted from the propellant with methanol, injected into a column, and then the moisture peak is compared with a standard.

2. SPECIMEN

2.1 The sample shall consist of 3.0 grams of propellant.

3. APPARATUS

3.1 Hewlett Packard 3752 with Dual Thermal Conductivity detector or its equivalent interfaced to a PEP-II computer (or other means of peak measurement).

3.2 10 ml syringe.

3.3 Magnetic stirrer and stirring bar.

3.4 60 ml bottle and stopper.

3.5 100 ml volumetric flask.

3.6 Calibration loop.

4. REAGENTS AND STANDARDS

4.1 Methanol - Anhydrous

4.2 Distilled Water

5. CALIBRATION AND STANDARDIZATION

5.1 Gas Chromatograph Conditions: Advisory
Injection Port Temp. - 150°C
Detector Temp. - 150°C
TC Current - 200 MA

FIGURE 13. Example of a tentative test method standard.

MIL-STD-962A

MIL-STD-000A
NOTICE 2

TABLE I. Classification of defects - Continued.

| Defect | Major | Minor | Figure number |
|--|-------|-------|---------------|
| End scrap, material missing | X | --- | 33 |
| Wrinkle in cover, tension member not distorted | --- | X | 34 |
| Cogging cut-outs skipped, more than one cog | X | --- | 35 |
| Cogging cut-out overlap | --- | X | 36 |
| Cogging missed, more than one cog | X | --- | 37 |
| Wavy wire in steel cable belt | X | --- | 38 |
| Mold induced ridges on top of belts | --- | X | 39 |

Defects not shown on photographs

| Defect | Major | Minor |
|--|-------|-------|
| Cogging cut-out skipped | X | --- |
| Cogging missed, one cog | --- | X |
| Hole, not in cogging area | X | --- |
| Marking, with wrong information | X | --- |
| Marking, missing or illegible | X | --- |
| Matching faulty | X | --- |
| Porosity in cogging area | X | --- |
| Scratch through ply | X | --- |
| Wrinkle in cover, tension member distorted | X | --- |

4. GENERAL REQUIREMENTS

4.1 Sampling. All belts shall be subjected to one or more sampling procedures in accordance with MIL-STD-105, as specified by the purchaser, except where the material specification includes a sampling plan. Acceptance or rejection of the lot, subplot, or batch shall be on the same basis.

Supersedes page 3 of Notice 1.

FIGURE 14. Example of page revision of MIL-STD bookform standard.

MILITARY STANDARD
 PRINTED WIRING FOR
 ELECTRONIC EQUIPMENT

MIL-STD-275C
 NOTICE 1
 8 January 1971

TO ALL HOLDERS OF MIL-STD-275C:

1. THE FOLLOWING PAGES OF MIL-STD-275C HAVE BEEN REVISED AND SUPERSEDE THE PAGES LISTED:

| NEW PAGE | DATE | SUPERSEDED PAGE | DATE |
|----------|----------------|-----------------|--------------------------|
| 5 | 9 January 1970 | 5 | REPRINTED WITHOUT CHANGE |
| 6 | 8 January 1971 | 6 | 9 January 1970 |
| 7 | 8 January 1971 | 7 | 9 January 1970 |
| 8 | 8 January 1971 | 8 | 9 January 1970 |
| 9 | 8 January 1971 | 9 | 9 January 1970 |
| 10 | 9 January 1970 | 10 | REPRINTED WITHOUT CHANGE |
| 11 | 9 January 1970 | 11 | REPRINTED WITHOUT CHANGE |
| 12 | 8 January 1971 | 12 | 9 January 1970 |
| 13 | 9 January 1970 | 13 | REPRINTED WITHOUT CHANGE |
| 14 | 8 January 1971 | 14 | 9 January 1970 |

2. RETAIN THIS NOTICE AND INSERT BEFORE TABLE OF CONTENTS.

3. Holders of MIL-STD-275C will verify that page changes and additions indicated above have been entered. This notice page will be retained as a check sheet. This issuance, together with appended pages, is a separate publication. Each notice is to be retained by stocking points until the military standard is completely revised or canceled.

Custodians:
 Army - ER
 Navy - EC
 Air Force - 99

Preparing activity:
 Navy - EC

(Project 5999-0045)

Review activities:
 Army - MI
 Navy - AS, OS, SH
 Air Force - 11, 17
 DSA - ES

User activities:
 Army - AV, ME
 Navy - MC
 Air Force - 19

Agent:
 DLA - ES

FSC 5999

FIGURE 15. Example of notice for indicating page revisions.

NOTICE OF
CANCELLATION

MIL-STD-424C
NOTICE 1
25 August 1982

MILITARY STANDARD
CHAIN, ROLLER: POWER TRANSMISSION
OFFSET SIDEBARS, SINGLE-PITCH

MIL-STD-424C, dated 25 March 1975, is hereby canceled without replacement.

Preparing Activity
Army - ME

FSC 3020

FIGURE 16. Example of cancellation notice for MIL-STD bookform standard.

MIL-STD-0000(ER)
30 June 1982

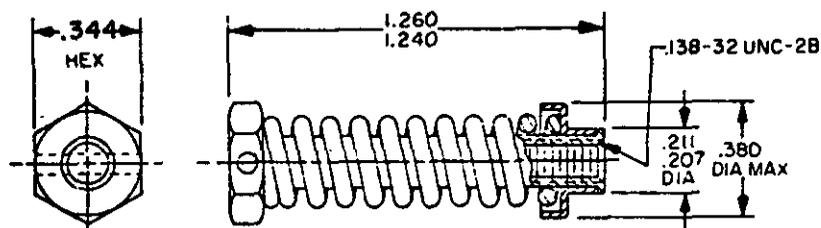
MILITARY STANDARD

SPRING LOADED MOUNTING ASSEMBLY

This military standard is approved for use by the Communications-Electronics Command, Department of the Army, and is available for use by all Departments and Agencies of the Department of Defense.

1. SCOPE. This standard covers the spring loaded mounting assembly for use with rack to panel connectors conforming to MIL-C-00000.

(Copies of specifications, standards, handbooks, drawings, and publications required by manufacturers, in connection with specific acquisition functions should be obtained from the contracting activity or as directed by the contracting officer.)



NOTES:

1. Dimensions are in inches.
2. Assembly preload to be 25 pounds \pm 3 pounds.
3. Material: Corrosion resistant steel.
4. Finish: Passivated.

Custodian:
Army - ER

Preparing activity:
Army - ER

Review activities:
Army - CR, MI

(Project 0000-A000)

FSC 0000

FIGURE 17. Example of MIL-STD unit page form standard.

METRIC

DOD-HDBK-263

2 May 1980

MILITARY HANDBOOK

**ELECTROSTATIC DISCHARGE CONTROL HANDBOOK FOR
PROTECTION OF ELECTRICAL AND ELECTRONIC PARTS,
ASSEMBLIES AND EQUIPMENT (EXCLUDING ELECTRICALLY
INITIATED EXPLOSIVE DEVICES)**

METRIC



NO DELIVERABLE DATA REQUIRED
BY THIS DOCUMENT

AREA RELI

FIGURE 18. Example of self-cover for military handbook (MIL-HDBK).

MIL-HDBK-600

DEPARTMENT OF DEFENSE
WASHINGTON, D.C. 20301

Guidelines For Identification, Marking, Labeling, Storage, and Transportation of
Radioactive Commodities

1. This standardization handbook was developed by the Department of Defense with the assistance of the military departments, federal agencies, and industry.
2. This document supplements departmental manuals, directives, military standards, etc., and provides basic and fundamental information on radioactive commodities. It contains listings of radioactive commodities, conversion tables and charts, and should provide valuable information and guidance to personnel responsible for the packaging, handling, labeling, and transportation of radioactive commodities.
3. Beneficial comments (recommendations, additions, deletions) and any pertinent data which may be of use in improving this document should be addressed to: Defense Electronics Supply Center, ATTN: Director, Directorate of Engineering Standardization, DESC-E, Dayton, OH 45444-5270, by using the self-addressed Standardization Document Improvement Proposal (DD Form 1426) appearing at the end of this document or by letter.

FIGURE 19. Example of promulgation sheet for military handbook (MIL-HDBK).

| DATA ITEM DESCRIPTION | | 2. IDENTIFICATION NO(S). | |
|-------------------------------------|--|--------------------------|--|
| 1. TITLE | AGENCY | NUMBER | |
| | 3. DESCRIPTION/PURPOSE | 4. APPROVAL DATE | |
| 5. OFFICE OF PRIMARY RESPONSIBILITY | | | |
| 6. DDC REQUIRED | | | |
| 8. APPROVAL LIMITATION | | | |
| 7. APPLICATION/INTERRELATIONSHIP | 9. REFERENCES (Mandatory as cited in block 10) | | |
| | MCSL NUMBER(S) | | |
| 10. PREPARATION INSTRUCTIONS | | | |

DD FORM 1664

REPLACES DSA FORM 402 WHICH IS OBSOLETE

PAGE _____ OF _____ PAGES

FIGURE 20. Example of DD Form 1664.

| CONTRACT DATA REQUIREMENTS LIST | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|---------------------------------|---------------------------|---------------------------------|-----------------------|--|--------------------------------------|-------------------------------|---------------------------|---|------------|--|----------------------|--|---------|--|---------|--|---------|--|---------|--|---------|--|---------|--|
| ATCH NR _____ TO EXHIBIT _____ | | CATEGORY _____ | | SYSTEM/ITEM _____ | | CONTRACTOR _____ | | | | | | | | | | | | | | | | | | | |
| TO CONTRACT/PR _____ | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1. SEQUENCE NUMBER | 2. TITLE OR DESCRIPTION OF DATA | 3. SUBTITLE | 4. AUTHORITY (Data Item Number) | 5. CONTRACT REFERENCE | 6. TECHNICAL OFFICE REPORT NO. (A) (B) (C) | 7. DATE OF DATE | 8. FREQUENCY | 9. DATE OF 1ST SUBMISSION | 10. DISTRIBUTION AND ADDRESSEES (Addressee - Regular Copies/Repro Copies) | | | | | | | | | | | | | | | | |
| 11. DATE OF SUBSEQUENT SUBM/EVENT ID | 12. PRICE GROUP | 13. ESTIMATED TOTAL PRICE | 14. CONTRACT VALUE | 15. EVENT CEI NUMBER | 16. APPROVAL /FORIA NUMBER | 17. CONTRACTOR FILE/ DOCUMENT NUMBER | 18. ESTIMATED NUMBER OF PAGES | 19. PRICE GROUP | 20. ESTIMATED TOTAL PRICE | | | | | | | | | | | | | | | | |
| 1. | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2. | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3. | | | | | | | | | | | | | | | | | | | | | | | | | |
| 16. REMARKS | | | | | | | | | | 15. TOTAL | | | | | | | | | | | | | | | |
| 1. | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2. | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3. | | | | | | | | | | | | | | | | | | | | | | | | | |
| 16. REMARKS | | | | | | | | | | 15. TOTAL | | | | | | | | | | | | | | | |
| 1. | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2. | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3. | | | | | | | | | | | | | | | | | | | | | | | | | |
| 16. REMARKS | | | | | | | | | | 15. TOTAL | | | | | | | | | | | | | | | |
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| 2. | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3. | | | | | | | | | | | | | | | | | | | | | | | | | |
| 16. REMARKS | | | | | | | | | | 15. TOTAL | | | | | | | | | | | | | | | |
| PREPARED BY _____ DATE _____ APPROVED BY _____ | | | | | | | | | | DATE _____ | | CONTRACT VALUE _____ | | REMARKS | |

DD FORM 1423
1 JAN 75

REPLACES EDITION OF 1 JUN 59, WHICH MAY BE USED UNTIL EXHAUSTED

PAGE _____ OF _____ PAGES

FIGURE 21. Example of DD Form 1423.

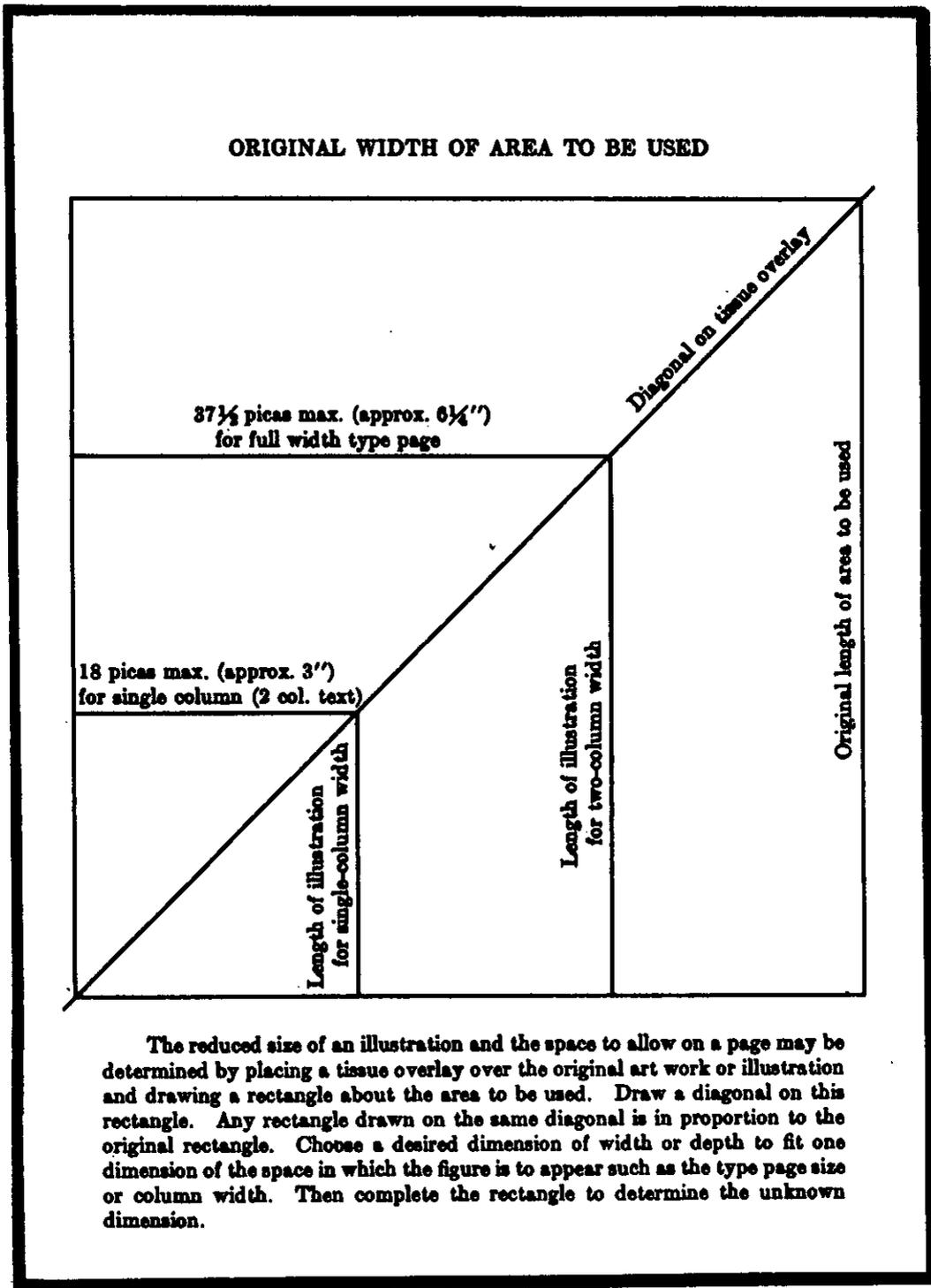


FIGURE 22. Scaling illustration for reductions.

MIL-STD-962A

This military standard is approved for use by Navy Ships Engineering Center, Department of the Navy, and is available for use by all Departments and Agencies of the Department of Defense.

FED. SUP CLASS
5930

CIRCUIT

(B) ACTUATING FORCE 2.18 LBS MAX
 (B) PRETRAVEL .060 MAX
 (F) MOVEMENT DIFFERENTIAL .035 MAX
 (G) OVERTRAVEL .015 MIN
 (C) MINIMUM OPERATING CYCLES 100,000
 (D) WEIGHT .04 LBS MAX
 (E) STRENGTH OF PUSH BUTTON AND PUSH BUTTON STOP 25 LBS
 (E) STRENGTH OF TERMINALS 5 LBS
 (H) CONTACT GAP DOUBLE .020
 (P) AMBIENT TEMPERATURE RANGE -70° to +130°C

| CURRENT CAPACITY 20 VOLT DC | | | CURRENT CAPACITY 115 VOLTS, 600 CYCLES AC | | |
|-----------------------------|-----------|-------|---|-----------|-------|
| RESISTIVE | INDUCTIVE | MOTOR | RESISTIVE | INDUCTIVE | MOTOR |
| 15 | 10 | 10 | 15 | 15 | 6 |

MATERIAL: CASE, COVER AND PUSH BUTTON: DIALYL PHTHALATE.
 DIMENSIONS IN INCHES. UNLESS OTHERWISE SPECIFIED, TOLERANCES: DECIMALS ±.015.
 EXACT SHAPE OF SWITCH OPTIONAL, PROVIDED DIMENSIONS SPECIFIED ARE NOT EXCEEDED.
 TEST REQUIREMENT: FOR SHORT CIRCUIT TEST, USE AM-16 CABLE AND CIRCUIT BREAKER M252017-15.

ⓑ CANCELLED - For procurement use MIL-S-4567/15

FOR DESIGN FEATURE PURPOSES, THIS STANDARD TAKES PRECEDENCE OVER PROCUREMENT DOCUMENTS REFERENCED HEREIN. REFERENCED DOCUMENTS SHALL BE OF THE ISSUE IN EFFECT ON DATE OF INVITATION FOR BID.

| | | |
|-----------------------------------|---|---|
| P.A. 447 - SH Other Com. | TITLE SWITCH, SENSITIVE - NOMINALLY 15 AMP, 1/2 CIRCUIT, SIDE SOLDER TERMINAL | MILITARY STANDARD MS12345(SH) |
| PROCUREMENT SPECIFICATION NONE | SUPERSEDES | PAGE 1 OF 1 |

APPROVED 13 Oct 58 REVISED 1 25 May 60 8 JUN 70

DD FORM 672-1 (Limited coordination) PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE. 5930-N155

FIGURE 23. Example of DD Form 672-1.

This military standard is approved for use by (Missile Command, Naval Sea Systems Command, Code 10), Department of the (Army, Navy, Air Force), and is available for use by all Departments and Agencies of the Department of Defense. NOTE: (Insert the applicable activity by name or code symbol and Military Department.)

FED. SUP CLASS

List review and user activities (if any) of the Department preparing MS sheet form standard.
 Review activities: Army -
 User activities: Army -

| | | | | |
|----------------------------|-------------|------------------------|-------|--------------------------|
| P.A. | MU | INTERNATIONAL INTEREST | TITLE | MILITARY STANDARD |
| Other Cust | | | | MS |
| Procurement Specifications | SUPERSEDES: | | | PAGE OF |

DD FORM 672 (LIMITED COORDINATION)
1 MAY 73

PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

DATE

APPROVED

REVISED

FIGURE 24. Example of DD Form 672 (limited coordination MS standards).

INSTRUCTIONS: In a continuing effort to make our standardization documents better, the DoD provides this form for use in submitting comments and suggestions for improvements. All users of military standardization documents are invited to provide suggestions. This form may be detached, folded along the lines indicated, taped along the loose edge (*DO NOT STAPLE*), and mailed. In block 5, be as specific as possible about particular problem areas such as wording which required interpretation, was too rigid, restrictive, loose, ambiguous, or was incompatible, and give proposed wording changes which would alleviate the problems. Enter in block 6 any remarks not related to a specific paragraph of the document. If block 7 is filled out, an acknowledgement will be mailed to you within 30 days to let you know that your comments were received and are being considered.

NOTE: This form may not be used to request copies of documents, nor to request waivers, deviations, or clarification of specification requirements on current contracts. Comments submitted on this form do not constitute or imply authorization to waive any portion of the referenced document(s) or to amend contractual requirements.

(Fold along this line)

(Fold along this line)

DEFENSE LOGISTICS AGENCY



NO POSTAGE
NECESSARY
IF MAILED
IN THE
UNITED STATES

OFFICIAL BUSINESS
PENALTY FOR PRIVATE USE \$300

BUSINESS REPLY MAIL
FIRST CLASS PERMIT NO. 4966 WASHINGTON D. C.
POSTAGE WILL BE PAID BY THE DEFENSE LOGISTICS AGENCY



FIGURE 26. Standardization document improvement proposal (DD Form 1426), reverse side.

PROPORTIONAL SPACER MACHINE TYPING LAYOUT SHEET

INCHES → 1 2 3 4 5 6 7 8 9

Units → 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

LINES ↓

MIL-STD-962

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DD 1183

FIGURE 27. Proportional spacer machine typing layout sheet (DD Form 1183).

MIL-STD-000B(25)
NOTICE 3
13 July 1984

SUPERSEDING
NOTICE 2
3 August 1983

MILITARY STANDARD
WIDGETS, IDENTIFICATION MARKING OF

MIL-STD-000B(25), dated 23 September 1980, and Notice 1 thereto, canceled by Notice 2, dated 3 August 1983 are hereby reinstated and may be used for acquisition.

(Copies of specifications, standards, handbooks, drawings, and publications required by manufacturers in connection with specific acquisition functions should be obtained from the contracting activity or as directed by the contracting officer.)

Preparing activity:
Air Force - 25

(Project 0000-F000)

FSC 0000

FIGURE 28. Example of notice of reinstatement.

MIL-STD-785B

TASK 101

RELIABILITY PROGRAM PLAN

101.1 **PURPOSE.** The purpose of task 101 is to develop a reliability program plan which identifies, and ties together, all program management tasks required to accomplish program requirements.

101.2 **TASK DESCRIPTION.**

101.2.1 A reliability program plan shall be prepared and shall include, but not be limited to, the following:

- a. A description of how the reliability program will be conducted to meet the contract requirements.
- b. A detailed description of how each specified reliability accounting and engineering design task will be complied with or performed.

101.2.2 The contractor may propose additional tasks or modifications with supporting rationale for such additions or modifications.

101.3 **DETAILS TO BE SPECIFIED.**

101.3.1 Details to be specified in the appropriate contractual document shall include the following, as applicable:

- a. Identification of each reliability accounting and engineering design task.
- b. Identification of contractual status of the program plan.
- c. Identification of additional tasks to be performed or additional information to be provided.
- d. DI-R-7079, Reliability Program Plan, applies to this task and shall be specified when required as a deliverable data item.

FIGURE 29. Example of task description.

MIL-STD-785B
APPENDIX A

60. DATA ITEM DESCRIPTIONS (DID)

60.1 The following is a list of data item descriptions associated with the reliability tasks specified herein:

| TASK | APPLICABLE DID | DATA REQUIREMENT |
|------|----------------|--|
| 101 | DI-R-7079 | Reliability Program Plan |
| 103 | DI-R-7080 | Reliability Status Report |
| 104 | DI-R-7041 | Report, Failure Summary and Analysis |
| 201 | DI-R-7081 | Reliability Mathematical Model(s) |
| 202 | DI-R-2114 | Report, Reliability Allocation |
| 203 | DI-R-7082 | Reliability Predictions Report |
| 204 | DI-R-1734 | Report, Failure Modes, Effects and Criticality Analysis Report |
| | DI-R-2115A | Report, Failure Mode and Effect Analysis (FMEA) (DI-R-211A is to be used only when MIL-STD-1629 has been designated as the basis for MIL-STD-785B, Task 204) |
| 205 | DI-R-7083 | Sneak Circuit Analysis Report |
| 206 | DI-R-7084 | Electronic Parts/Circuits Tolerance Analysis Report |
| 208 | DI-R-35011 | Plan, Critical Item Control |

60.2 The following tasks have DIDs associated with them related to imposition of MIL-STD-781C:

| | | |
|---------------------|-----------|--|
| 301 | DI-R-7040 | Report, Burn-in Test |
| 302, 303, 304 | DI-R-7033 | Plan, Reliability Test |
| 303, 304 | DI-R-7035 | Procedures, Reliability Test and Demonstration |
| 303, 304 | DI-R-7034 | Reports, Reliability Test and Demonstration (Final report) |

NOTES: (1) Only data items specified in the CDRL are deliverable. Therefore, those data requirements identified in the Reliability Program Plan must also appear in the CDRL.

(2) The PA should review all DID's and assure through tailoring, that the preparation instructions in the DID are compatible with task requirements as specified in SOW.

FIGURE 30. Example of list of data item descriptions.

MIL-STD-202F
NOTICE 4

5. NUMERICAL INDEX OF TEST METHODS

| Method number | Date | Title |
|---|--|---|
| <u>Environmental tests (100 class)</u> | | |
| 101D | 16 April 1973 | Salt spray (corrosion) |
| 102A | Cancel effective 31 December 1973. (See note on method 102.) | |
| 103B | 12 September 1963 | Humidity (steady state) |
| 104A | 24 October 1956 | Immersion |
| 105C | 12 September 1963 | Barometric pressure (reduced) |
| 106E | 1 April 1980 | Moisture resistance |
| 107E | | Thermal shock |
| 108A | 12 September 1963 | Life (at elevated ambient temperature) |
| 109B | 16 April 1973 | Explosion |
| 110A | 16 April 1973 | Sand and dust |
| 111A | 16 April 1973 | Flammability (external flame) |
| 112D | 8 July 1982 | Seal |
| <u>Physical-characteristics tests (200 class)</u> | | |
| 201A | 24 October 1956 | Vibration |
| 202D | 16 April 1973 | Shock (specimens weighing not more than 4 pounds) (Superseded by method 213.) |
| 203B | 16 April 1973 | Random drop |
| 204D | 1 April 1980 | Vibration, high frequency |
| 205E | 16 April 1973 | Shock, medium impact (superseded by method 213) |
| 206 | 12 September 1963 | Life (rotational) |
| 207A | 12 September 1963 | High-impact shock |
| 208D | 1 April 1980 | Solderability |
| 209 | 18 May 1962 | Radiographic inspection |
| 210A | 16 April 1973 | Resistance to soldering heat |
| 211A | 14 April 1969 | Terminal strength |
| 212A | 16 April 1973 | Acceleration |
| 213B | 16 April 1973 | Shock (specified pulse) |
| 214 | 9 November 1966 | Random vibration |
| 215C | 8 July 1982 | Resistance to solvents |
| 216 | Cancel effective 16 April 1973. (See note on method 216.) | |
| 217 | 1 April 1980 | Particle impact noise detection (PIND) |
| <u>Electrical-characteristics tests (300 class)</u> | | |
| 301 | 6 February 1956 | Electric withstanding voltage |
| 302 | 6 February 1956 | Insulation resistance |
| 303 | 6 February 1956 | DC resistance |
| 304 | 24 October 1956 | Resistance-temperature characteristic |
| 305 | 24 October 1956 | Capacitance |
| 306 | 24 October 1956 | Quality factor (Q) |
| 307 | 24 October 1956 | Contact resistance |
| 308 | 29 November 1961 | Current-noise test for fixed resistors |
| 309 | 27 May 1965 | Voltage coefficient of resistance determination procedure |
| 310 | 20 January 1967 | Contact-chatter monitoring |
| 311 | 14 April 1969 | Life, low level switching |
| 312 | 16 April 1973 | Intermediate current switching |

(Copies of specifications, standards, handbooks, drawings, and publications required by manufacturers in connection with specific acquisition functions should be obtained from the contracting activity or as directed by the contracting officer.)

Supersedes page 3 of Notice 3.

FIGURE 31. Example of numerical index of test methods.

6. NOTES

6.1 Intended use.

This standard contains requirements for the design and development of computer software for weapon systems.

6.2 Data requirements list and cross reference. When this standard is used in an acquisition which incorporates a DD Form 1423, Contract Data Requirements List (CDRL), the data requirements identified below shall be developed as specified by an approved Data Item Description (DD Form 1664) and delivered in accordance with the approved CDRL incorporated into the contract. When the provisions of DAR 7-104.9 (n) (2) are invoked and the DD Form 1423 is not used, the data specified below shall be delivered by the contractor in accordance with the contract or purchase order requirements. Deliverable data required by this standard is cited in the following paragraphs.

| <u>Task paragraph</u> | <u>Data requirements</u> | <u>Applicable DID</u> | <u>Options</u> |
|--------------------------------|--|-----------------------|----------------|
| a. 5.1.2.4b, 5.1.2.5c/5.2.3 | Interface Design Specification (IDS) | DI-E-2135 | --- |
| b. 5.1 | Program Performance Specifications (PPS) | DI-E-2136 | --- |
| c. 5.2 | Program Design Specification (PDS) | DI-E-2138 | --- |
| d. 5.3/5.4/5.5 | Program Description Document (PDD) | DI-E-2139 | --- |

(Data item descriptions related to this standard, and identified in section 6 will be approved and listed as such in DoD 5000.19-L., Vol. II, AMSDL. Copies of data item descriptions required by the contractors in connection with specific acquisition functions should be obtained from the Naval Publications and Forms Center or as directed by the contracting officer.)

6.3 Superseded data.

This standard includes the requirements of MIL-STD-1679 dated 1 December 1975, and DoD Standard 7935.1-S dated 13 September 1976.

(The concluding material shall follow this section.)

FIGURE 32. Example of section 6.

TABLE I

SCHEDULING TECHNICAL REVIEWS AND AUDITS

| <u>Review</u> | <u>Time Phase</u> | <u>Primary Documentation</u> |
|---------------|---|---|
| SRR | Usually accomplished in the conceptual phase. However, may be used in other phases when the conceptual phase is not accomplished. | Various analysis and trade study reports used to develop the system/system segment requirements for the specification. |
| SDR | Usually in the validation phase. | System Specification, analyses, trade studies, analyses, Drawings Level I DOD-D-1000. |
| PDR | Usually accomplished in the validation and/or full scale development phase. | Development, Type B Performance Specification, Drawings, Level I DOD-D-1000. |
| CDR | Usually accomplished in full scale development phase. | Draft Product, Type C Specification, and referenced documentation, Drawings Level I or II DOD-D-1000. |
| FCA | Usually accomplished at end of full scale development. | Test plans/procedures, reports and applicable specifications. |
| PCA | Usually accomplished early in the initial production when the developing contractor is pre-selected as the production contractor. However, may be accomplished at the end of full scale development when the developing contractor is not pre-selected as the production contractor. And the PCA is repeated with each subsequent contractor or break in production | Final Part II Specification/Type C Product Specifications and referenced documents and drawings. Drawings Level II or III DOD-D-1000. |

FIGURE 33. Example of the extracting method of tailoring requirements.

MIL-H-46855B

TABLE 1. APPLICATION MATRIX (CONTINUED)

| SIGNIFICANT PROGRAM FACTORS | MODIFICATION WHERE NOTED BY "M" | | | | |
|-------------------------------------|---------------------------------|------------------|----------------------|---------------------------|--|
| | CONCEPTUAL PHASE | VALIDATION PHASE | FULL SCALE DEV PHASE | PRODUCTION & DEPLMT PHASE | |
| MIL-H-46855 PARAGRAPH | | | | | |
| 3.2.1.1.1 Info Flow .. | E | E | - | | CONCEPTUAL 3.2.1.1.2. line 12. delete "design." |
| 3.2.1.1.2 Estimates of .. | M | E | - | | CONCEPTUAL 3.2.1.2. line 2. change "all other design" to "concepts," line 4. change "configuration" to "concept." |
| 3.2.1.1.3 Allocation .. | E | E | - | | CONCEPTUAL 3.2.1.3.1. line 7. change "used" to "available for use." Lines 14 and 15, delete "with the approval of the procuring activity." |
| 3.2.1.2 Equipment Selection | M | E | - | | CONCEPTUAL 3.2.1.3.4. line 2. change "design" to "conceptual." |
| 3.2.1.3 Analysis of Tasks | E | E | E | | VALIDATION 3.2.1.3.4 line 2. change "design" to "validation." |
| 3.2.1.3.1 Gross Analysis .. | M | E | E | | CONCEPTUAL 3.2.1.4. line 2. change "designs" to "concept documentation" and delete so much of lines 3-7 which read "represented... with contract data requirements." Line 10. add "can" before "comply". |
| 3.2.1.3.2 Analysis of Crit. | - | E | E | | VALIDATION 3.2.1.4 line 9. change "comply" to "facilitate compliance." Delete line 10. |
| 3.2.1.3.3 Workload Analysis | E | E | E | See Section 40.2.6 | CONCEPTUAL 3.2.2. Revise title to read "Human Engineering in Conceptual design." Delete lines 1-11 through "personnel interfaces." Line 12. revise "equipment detail" to "conceptual." |
| 3.2.1.3.4 Concurrence and . | M | M | E | | |
| 3.2.1.4 Preliminary System | M | M | E | | |
| 3.2.2 HE in Equipment Detail | M | E | E | | |
| 3.2.2.1 Studies, Experiments | E | E | E | | |
| 3.2.1.1 Mockups & Models | - | E | E | | |
| 3.2.2.1.2 Dynamic Simulation | - | E | E | | |
| 3.2.2.2 Equipment Detail Design ... | - | E | E | | |

SYMBOL DESCRIPTION

E = PROVISION IN EFFECT

- = PROVISION USED AT CONTRACTORS OPTION

M = MODIFICATION OF PROVISION

FIGURE 34. Example of matrix.

APPENDIX A

STATUS NOTES FOR USE ON MILITARY SHEET FORM STANDARDS

10. GENERAL

10.1 Scope. This appendix establishes uniform status criteria and status notes to be used on military sheet (MS) form standards for items used in military equipment, and defines the meaning and effect of these notes. This appendix is not a mandatory part of the standard. The information contained herein is intended for guidance only.

10.2 Form of notes. Notes with supplementary interchangeability and usage information, patterned to the notes contained in 50.1 shall, when applicable, be placed on standards to restrict procurement, usage, or incorporation of the items in design of military equipment.

10.3 Application. Each note under 50.1 is presented as a guide only. It is incumbent upon all concerned (engineering and supply personnel) to formulate more specific notes as required for inclusion on the inactivated, canceled, and superseding standards and to initiate any necessary contractual and inventory management action cause by the inactivation or cancellation of such items.

20. REFERENCED DOCUMENTS

Not applicable.

30. DEFINITIONS

30.1 Status notes (defined). As used herein "status notes" reflect the condition relative to the latest configuration, obsolescence, and interchangeability relationship of items listed on military sheet form standards for future end use of items in new design.

40. GENERAL REQUIREMENTS

40.1 Status criteria.

40.1.1 Inactive with a superseding standard. This status is assigned to prohibit the use of an item in new designs of assemblies that are required for units or systems under future contracts (see 50.1.1). A superseding standard has been developed. The inactivated standard items may be used as follows:

- a. Existing assemblies or units.
- b. New assemblies or units developed for existing design contracts where the inactive part is being used for existing designs in the same contracts.
- c. Assemblies used in existing units or systems required under future contractors

40.1.2 Inactive with no superseding standard. This status is assigned to prohibit the use of a standard in new designs of assemblies that are required for units or systems under future contracts (see 50.1.2). No superseding standard has been developed. The inactivated standard items may be used as follows:

- a. Existing assemblies or units.
- b. New assemblies or units developed for existing design contracts, when the inactive part is being used for existing designs in the same contract.
- c. Support of existing military equipment.
- d. Assemblies used in existing units or systems required under future contract.

40.1.3 Canceled with a superseding standard.

40.1.3.1 Unsatisfactory or hazardous items. This status is assigned to items not considered suitable for any application because of unsatisfactory or hazardous characteristics and a suitable superseding item has been developed. Proper disposition of all such items shall be accomplished (see 50.1.3.1).

40.1.3.2 Existing stock items may be used. This status is assigned to items considered suitable for use only for support of existing military equipment until existing stock of items is depleted. The superseding item is considered to be sufficiently better to warrant procurement and use in lieu of the canceled item for current and new design contracts and to support existing military equipment (see 50.1.3.2).

40.1.4 Canceled with no superseding standard.

40.1.4.1 Unsatisfactory or hazardous items. This status is assigned to items that, because of unsatisfactory or hazardous characteristics, are not considered suitable for use in any application. Proper disposition of all such items shall be accomplished (see 50.1.4.1).

40.1.4.2 Items no longer in service. This status is assigned to items originally used in military equipment that is no longer required. The items themselves are not suitable for use in any other application (see 50.1.4.2).

50. SPECIFIC REQUIREMENTS

50.1 Status notes for inactive or canceled standards. Status notes, patterned after the following, shall be added to the inactive or canceled standard and to the superseding standard, when applicable, (see 50.2) to provide the essential interchangeability or substitutability information for use by the design and maintenance activities. These notes are specifically related to the status conditions outlined in 40.1.

50.1.1 Inactive with a superseding standard. INACTIVE FOR DESIGN AFTER (DATE) USE MS _____. INTERCHANGEABILITY RELATIONSHIP _____ and MS _____ items identified by the same (dash number, size, duty cycle, or other pertinent identifying or descriptive details), are universally, functionally, and dimensionally interchangeable.

OR

INACTIVE FOR DESIGN AFTER (DATE) USE MS _____. INTERCHANGEABILITY RELATIONSHIP MS _____ items can universally replace the inactive _____ items identified by the same dash numbers; but the inactive _____ items cannot always replace the superseding MS _____ items.

50.1.2 Inactive with no superseding standard. INACTIVE FOR DESIGN AFTER (DATE). NO SUPERSEDING STANDARD. SEE MIL-STD-962 FOR STATUS CRITERIA.

50.1.3 Canceled with a superseding standard.

50.1.3.1 Unsatisfactory or hazardous items. CANCELED AFTER (DATE). USE MS _____. The canceled _____ items are not suitable for use in any application. Use MS _____ identified by the same dash number in all design and for replacement of canceled _____ in all existing military equipment. PERSONNEL SAFETY MAY BE INVOLVED.

50.1.3.2 Existing stock items may be used. CANCELED AFTER (DATE). USE MS _____. INTERCHANGEABILITY RELATIONSHIP MS _____ items can replace the canceled _____ items identified by the same dash numbers. The canceled _____ items cannot always replace the MS _____ items and should be used until existing stock is depleted. Use only the superseding MS items of the same dash numbers for design and replacement.

50.1.4 Canceled with no superseding standard.

50.1.4.1 Unsatisfactory or hazardous items. CANCELED AFTER (DATE). NO SUPERSEDING STANDARD. The canceled _____ items are not suitable for use in any application. PERSONNEL SAFETY MAY BE INVOLVED.

MIL-STD-962A
APPENDIX A

50.1.4.2 Items no longer in service. CANCELED AFTER (DATE). NO SUPERSEDING STANDARD. The applications for which the canceled _____ items were originally designed no longer exists. These items are not suitable for use in any other application.

50.2 Notes for superseding standards and the interchangeability relationship. The format for MS standards provides for reference to superseded standards. In addition, notes pertaining to the interchangeability relationship between the superseding and the superseded items should be included and should be patterned to the notes outlined herein, as applicable.

50.3 Special status notes. Special forms of status notes may be used when specific application to portions of a MS standard is desired. For such notes, the basic forms given in 50.1 shall be retained and any additional explanatory information as required shall follow.

APPENDIX B

USE OF APPENDIXES FOR APPLYING
AND TAILORING STANDARDS

10 GENERAL

10.1 Scope. This appendix suggests methods by which the individual requirements of a selected standard may be delineated to provide guidance for the selection and application of the standard for tailored contract use or incremental application by the procuring activity and contractor.

10.2 Providing tailoring guidance. A number of methods exists for document custodians or other responsible individuals to provide tailoring guidance. This guidance may tell the user of the standard why the document was prepared, and for what purposes its use was intended. It may also tell them when it is to be used, such as program phase, contract type, etc. Due to needed flexibility, this information is best provided in the form of an appendix to the standard. The appendix may be used to: (a) discuss its intended use, including any particular applications which are not recommended; (b) give the purpose or development history; (c) indicate the extent or range of the standards content; (d) to indicate exclusions and usage.

Tailoring is primarily accomplished by limiting or modifying the applicability of the standard. The objective of an application (tailoring) appendix is to convey to the user a complete understanding of what is required. The appendix should define the characteristics of proper application in such a way that use of appendix alone is sufficient to convey to the contracting activity and the contractor what is wanted and how it may be obtained in the most cost effective manner.

20 REFERENCED DOCUMENTS

20.1 Government documents. The following documents form a part of this appendix to the extent specified:

Military Specifications

- DOD-D-1000 - Drawings, Engineering and Associated Lists
- MIL-E-5400 - Electronic Equipment, Aerospace, General Specification for
- MIL-M-46855 - Human Engineering Requirements for Military Systems Equipment and Facilities

Military Standards

- DOD-STD-480 - Engineering Changes, Deviations and Waivers
- MIL-STD-785 - Reliability Program for Systems and Equipment and Production
- MIL-STD-965 - Parts Control Program
- MIL-STD-1521 - Technical Reviews and Audits for Equipments and Computer Programs

Military Handbooks

- DOD-HDBK-248 - Guide for Application and Tailoring of Requirements for Defense Material Acquisitions

30 DEFINITIONS

30.1 Definitions used in this appendix. For purposes of this appendix, the definitions of DOD-HDBK-248 shall apply.

40 GENERAL REQUIREMENTS

40.1 Methods of tailoring requirements. There are various methods commonly used to modify or tailor requirements in standardization documents to the specific characteristics of the program to which they are applied. These methods are indicated below:

- a. By specifying or exception. Reference the appropriate paragraphs, tasks, tests, etc., of the standard and indicate the specific or applicable requirements similar to that shown in figures 2 and 3. For further details, see Appendix "B" of MIL-E-5400 or Appendix "A" of MIL-STD-785.
- b. Supplying required details. Military standards typically state requirements in a way that self-tailor. For example, reliability tasks identified in MIL-STD-785 Appendix "A" or Classification of ECPs described in DoD-STD-480, Appendix F, can be readily identified to the type of task and program phase. The application matrix shown in figure 2 supports the text. Additional application detail is provided with direct reference to specific tasks. (See Appendix "A" of MIL-STD-785 and Appendix "F" of DOD-STD-480.)
- c. Specifying quantified requirements. The performance values desired may be added after the document is referenced.
- d. Supplementing requirements. Reference the standard and add descriptive information to specify more adequately the intended requirements or application. The Appendix associated with DOD-D-1000 and MIL-STD-965 is such an example.
- e. Restricting data items. Often standards will imply a requirement for the delivery of data and reports to the procuring activity. By restricting the deliverable data items to those absolutely required, the requirements, in essence, are tailored to the actual program needs.
- f. Extracting. Consideration should be given to extracting desired requirements from the standard in such a manner that requirements are designed specifically for a program phase, event or other milestone as represented by the table shown in figure 33. Normally, extraction for an event or milestone reduces the volume of reference material and facilitates understanding. Care must be taken not to omit essential related requirements.
- g. Variations to permit contractors choice. Many requirements can be stated in a manner that gives the contractors choice for implementation.

40.2 Examples of matrices. The applicability of sections or specific paragraphs of a standard to various factors, such as program phase, type of program, dollar value, etc., may be presented by means of a matrix. A number of these have been produced for various documents in the past by both government and industry. They would normally be produced by a working group or staff organization for guidance to the user. A detailed matrix involves a considerable amount of effort and should be developed only by experienced personnel. Above all, they must be considered guidance only. Examples are shown in figures 2, 3 and 34, and are provided for information purposes only.

40.3 Application. In the development of an Application Appendix, the following should be considered:

- a. Acquisition phase.
- b. Unique manufacturing process.
- c. Technology or process.
- d. Complexity.
- e. Criticality of performance.
- f. Quantity/rate of production/price goals.
- g. Logistic support.
- h. Requirements of all using activities.
- i. Range of performance levels and criticality.
- j. Engineering design function.
- k. Method, class of level of requirements.
- l. Life-cycle phase.

40.4 Over application. Over application of military standards can contribute significantly to unnecessary costs. The blanket application of these documents is not consistent with the efficient and economical acquisition of systems. Remember, there is generally inadequate time to properly understand and fully respond to requirements of applied standards. A well-developed Application Appendix will contribute to significant savings while simplifying the acquisition process.

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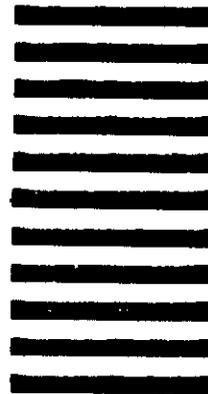
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