



**DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION**

STANDARD PRACTICE

**PREPARATION OF SPECIFICATIONS,
STANDARDS AND HANDBOOKS**

AREA SDMP

DISTRIBUTION STATEMENT A Approved for public release; distribution is unlimited.

FOREWORD

This standard is approved for use by all organizations of the Federal Aviation Administration (FAA). It establishes format and content requirements for specifications and standards that will be used in the National Airspace System (NAS) for program-particular configuration items, processes and materials. This standard requires MIL-STD-961D and MIL-STD-962C be used as base documents for NAS specifications and FAA standards development respectively. The tailoring of MIL-STD-961D and MIL-STD-962C is required to adapt them for FAA use and is described in this standard. Copies of MIL-STD-961D/1 and MIL-STD-962C may be obtained from the FAA NAS Document Control Center.

This standard supersedes FAA-STD-005D. Replacement of FAA-STD-005D became necessary when:

- The Department of Defense (DOD) canceled MIL-STD-490 which FAA-STD-005D referenced and adapted for FAA use
- FAA-STD-005D became an impediment to greater use of Commercial Off-the-Shelf (COTS) in NAS subsystems

Section 6, paragraph 6.3 contains a more detailed description of the changes incorporated in this document. FAA-STD-005e continues utilizing practices of other government agencies to appeal to the largest contractor base and minimize the unique practices that contractors must implement to respond to FAA needs. This can reduce the FAA resources expended for specification and standards development and maintenance.

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1. SCOPE

1.1 Scope. This standard establishes the format and content requirements for performance specifications, detail specifications and associated documents, issued by the FAA. Associated documents for performance and detail specifications include associated specifications, specification sheets, supplements, revisions, amendments and notices. This standard also establishes formats and contents for the preparation of FAA standards and handbooks prepared either by FAA activities or by contractors under contract to the FAA. Guidance documents such as handbooks for the tailoring of MIL-STD-XXX or like procedural documents are not to be confused with FAA maintenance technical handbooks which are FAA orders and come under the guidance of the directive system in their preparation guidelines.

2. APPLICABLE DOCUMENTS

2.1 General. The documents listed in this section receive further discussion in section 4 of this standard. This section does not include documents cited in other sections of this standard that are provided as additional information only or which serve solely as examples. Documents of this type are referenced in section 6 per the requirements of MIL-STD-962C. While every effort has been made to ensure the completeness of the list provided below, document users are cautioned that they must meet all specified requirements documents cited in section 4 of this standard, whether or not they are listed.

2.2 Government documents.

2.2.1 Specifications, standards, and handbooks. The following specifications, standards and handbooks form a part of this document to the extent specified herein.

STANDARDS

Military

MIL-STD-961D, Notice 1	Department of Defense, Standard Practice for Defense Specifications. 22 August 1995
MIL-STD-962C	Defense Standards and Handbooks. 20 October 1995

OTHER PUBLICATIONS

FAA-D-2494/b

TECHNICAL INSTRUCTION BOOK MANUSCRIPT:
ELECTRONIC, ELECTRICAL, AND MECHANICAL
EQUIPMENT, REQUIREMENTS FOR PREPARATION
OF MANUSCRIPT AND PRODUCTION OF BOOKS.
March 14, 1984

SD-1

Department of Defense Standardization
Directory. 1 May 1995

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

3. DEFINITIONS

3.1 Acronyms used in this standard. The acronyms used in this standard are defined as follows:

AMSC	Acquisition Management Systems Control
AQL	Acceptable Quality Levels
COTS	Commercial Off-the-Shelf
DID	Data Item Description
DOD	Department of Defense
DoDISS	Department of Defense Index of Specifications and Standards
DOT	Department of Transportation
FAA	Federal Aviation Administration
FSC	Federal Supply Class
FSG	Federal Supply Group
HDBK	Handbook
LTPD	Lot Tolerance Percent Defectives
MIL	Military
NAS	National Airspace System
NDI	Non-developmental Item
OPI	Office of Primary Interest
RFP	Request for Proposal
SD	Standardization Directory
SOW	Statement of Work
SRB	Specification Review Board
STD	Standard
TIB	Technical Instruction Book

3.2 Handbooks. FAA handbooks referenced herein are guidance documents, containing information or guidelines for use in the design, engineering, production, acquisition and/or supply management operations. These documents are used to present information, procedural and technical use data, or design

information related to processes, practices, services or commodities. They provide industry with reference material that should serve to standardize FAA assets. The use of handbooks is optional unless invoked by a specification or contract document. When the term "handbook" is used in this standard, it does not apply to maintenance orders often referred to as FAA Maintenance Technical Handbooks.

3.3 NAS Design Specification (NAS-DD-1000). The FAA document that defines the functional architecture including basic NAS elements, subelements, subsystems and their interrelationships.

3.4 NAS Systems Requirements Specification (NAS-SR-1000). The FAA document that defines the operational requirements and is the approved document for operational requirements for the NAS. This document serves as a basis to perform studies and analysis, identify engineering concepts to satisfy operational requirements and as a source document for system specification preparation.

3.5 NAS System Specification (NAS-SS-1000). The FAA document that defines functional, performance, design, construction, logistics, personnel and training, documentation, verification and interface requirements for the NAS.

3.6 Order. An FAA order is a permanent directive on individual subjects or programs which apply to the FAA. It directs action or conduct using action verbs. It prescribes policy, delegates authority, empowers and/or assigns responsibility for compliance with stated requirements or direction. Orders empower or direct only FAA personnel. They carry no weight with contractors. Thus orders are not to be used for the purpose of direction outside the FAA and are not to be used in contract documents. Other documents more suited to this purpose are described and defined below.

3.7 Specification. A document prepared specifically to support acquisition which clearly and accurately describes the essential technical requirements for purchased material or products, and the criteria for determining whether the requirements are met.

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

3.9 Standardization code. This code is used by System Engineering Management to index, sort and reference the topic by class of equipment, process or service the contents of a standard or handbook address. It will appear on the self-cover of the document and can be used to determine the Office of Primary Interest for the document.

4. GENERAL REQUIREMENTS

4.1 General and coverage. This section covers both the general principles that govern the requirements contained within FAA specifications and the textual requirements, format, style and arrangement of contents needed to prepare an FAA specification, standard or handbook. Specifications developed for or by the FAA shall be prepared in accordance with section 4, General Requirements and section 5, Detailed Requirements of MIL-STD-961D/1. Standards and handbooks developed for or by the FAA shall be prepared in accordance with section 4, General Requirements and section 5, Detailed Requirements of MIL-STD-962C. Exceptions, additions or deletions to each of these referenced Military Standards are noted under the appropriate sections below. Specification related practices and requirements are contained in paragraph 4.1.1 while standards related practices and requirements are contained in paragraph 4.1.2.

4.1.1 Specifications, tailoring of (MIL-STD-961D/1). Indented paragraph numbers which are not in bold print refer to paragraphs within MIL-STD-961D/1. Figure 1 of this standard is a sample cover sheet of a specification.

Replace paragraph 4.3, Data requirements, with the following:

4.3 Data requirements. Specifications shall not contain requirements for the development, preparation, acquisition of rights, submission, delivery, maintenance, updating, approval or distribution of plans, reports, drawings, manuals and other data products. Data Item Descriptions (DID's) shall not be included in any section of a specification for equipment, assemblies, components, parts, materials or any other type of commodity. Data can only be required in the contract. Only data product and technical manual specifications (see MIL-STD-961D/1 sections 3.8, 3.41 and FAA-D-2494/b) shall contain content and format requirements for data products. Data product specifications shall list in section 6 the DID's for which they are the source documents. DID's shall not be included in technical manual specifications written for items, products or commodities, however, technical manuals specifically specifying documentation can include DID's within the body of the document and/or in section 6. This provides a clear delineation between all articles or items including software procured under contract, and documentation such as reports, plans, process descriptions, white papers and manuals.

Replace paragraph 4.3.1, Data product specifications, with the following:

4.3.1 Data product specifications. The information specified in 5.3.6.5 shall be included in section 6 of a data specification to indicate the DID's that must be included in the contract to acquire the documentation defined in the specification. The DID's for which the specification serves as a source document shall be listed in section 6 of the data specification (see 5.3.6.5).



Note: This draft, dated March 5, 1996 prepared by ASD-140 has not been approved and is subject to modification. DO NOT USE FOR ACQUISITION PURPOSES.

DEPARTMENT OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION

PERFORMANCE SPECIFICATION

INTEGRATED WIDGET PROCESSOR AND CONTROL UNIT ASSEMBLY

The Widget and Weather System
Integrated Product Team, AND-990

DISTRIBUTION STATEMENT A. Approved for public release; distribution is unlimited.

FIGURE 1. Example of self-cover for an FAA specification.

Replace paragraph 4.3.2, Technical manual specifications, with the following:

4.3.2 Technical manual specifications. The information specified in 5.3.6.6 shall be included in section 6 of the specification to indicate the proper contractual method of acquiring the technical manuals. FAA specification FAA-D-2494/b should be utilized for generation of technical and training manuals.

Substitute the word "FAA" for military or DOD where those terms are used in paragraph 4.6.

Delete paragraph 4.8, Classified material.

Replace paragraph 4.9.1, Grammar and style, with the following:

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

Replace paragraph 4.21d, "References shall not be made to the following types of documents:" (1)-(3), with the following:

(1) Directives (i.e., FAA Orders), instructions, regulations and other types of policy documents, except in section 6, for information only.

(2) DID's, except as allowed by the provisions of 4.3 and 5.3.6.5.

(3) Management, manufacturing and process type documents that are possibly integral to the contract, should be cited in the contract, but not in the specification.

Replace paragraph 4.22, Preparation of manuscripts for reproduction, with the following:

Section 4.22 Manuscript preparation for reproduction. Manuscripts submitted for printing and distribution shall be typed, single spaced, printed on one side only on 8 1/2 X 11 inch plain paper. A margin of 1 inch at the top, sides and bottom shall be provided. Bond paper (which has a water mark) shall not be used.

Replace paragraph 5.2.2, Specification titles, with the following:

5.2.2 Specification titles. A specification title shall consist of a basic item name and sufficient modifiers to differentiate between similar specifications. Duplication of specification titles is not permissible. Reference to major assemblies or end items shall be included in the title only to the extent necessary to distinguish between similar items.

Delete paragraph 5.2.2.1, Item names.

Replace paragraph 5.2.3, Identification of specifications, with the following:

5.2.3 Date of specification. Once the document is approved by the Configuration Control Board, the date of approval shall appear under the specification identifier on the front cover and in the upper right hand corner on all other pages. Drafts shall not have a date in this location. The space shall be blank until the document is approved. Dates for draft documents should be inserted on the cover page as part of the disclaimer note.

Delete subparagraphs 5.2.3.1, 5.2.3.1.1, 5.2.3.1.2, 5.2.3.2, 5.2.3.3, 5.2.3.4, 5.2.5.1 and 5.2.5.2.

Delete paragraph 5.2.6, DD Form 1426 note.

Add paragraph 5.2.6, Specification numbering, as follows:

5.2.6 Specification numbering. FAA specifications are assigned traceability numbers by Systems Engineering Management, Configuration Management following endorsement by the Specification Review Board (SRB). This alphanumeric designator will utilize the following format: FAA-(1)(nnnn), where "nnnn" equals a four digit number and the "1" is one of the following alpha characters:

- 'C' Construction, (buildings, towers and other fixtures)
- 'D' Documentation, (Technical Instruction Books (TIB's)), but does not include software documentation whose treatment is described in other FAA documents.
- 'E' Old "A" level specifications (functional performance specifications or subsystem specifications designated "item level" specifications) which were previously referred to as "B" and "C" specifications.
- 'G' General engineering or electronic requirements applicable to a wide range of processes as in a standard specification.
- 'P' Purchase descriptions, are used for small items or COTS and Non-developmental Items (NDI's) where little or no development is required. These specifications are subject to the SRB process.
- 'S' Leased services, such as telephone lines.
- 'O' Used when the operational requirements are written in performance based terms and the system solution will be unique.

The specification number is placed in the uppermost right corner of the cover page (see Figure 1). Specification numbers will not be issued until the draft specification has been endorsed by Systems Engineering Management through the SRB process.

Delete paragraph 5.2.7, Designation of federal supply class (FSC), group (FSG), or area.

Delete paragraph 5.2.8, AMSC number.

Replace paragraph 5.2.9, Distribution statement, with the following:

5.2.9 Distribution statement. All standardization documents prepared by the FAA will cite the appropriate distribution statement in accordance with the technical and proprietary nature of the specification in the lowest left corner of the cover page flush to the left hand margin. The distribution statement shall be placed on all drafts, as well as the camera-ready copy of the document. Since most standardization documents do not contain sensitive technical information, the following distribution statement is the one that will usually be used:

"DISTRIBUTION STATEMENT A. Approved for public release; distribution is unlimited."

Those documents with proprietary restrictions or those with FAA confidential information shall carry a distribution statement labeled "B", which carries the information explaining the extent of the restrictions and limits imposed on the documents distribution.

Delete paragraph 5.3.3.6, Qualification.

Replace paragraph 5.3.5, SECTION 5, with the following:

5.3.5 SECTION 5. Packaging requirements are specified in the contract or order. The following standard requirement shall be used in all specifications where packaging of an item will be required.

5. PACKAGING

5.1 Packaging. Packaging requirements shall be as specified in the contract or order (see paragraph 6.2 of MIL-STD-961D/1).

Delete paragraph 5.3.6.4, Acquisition requirements.

Replace paragraph 5.3.6.5, Associated DID's, with the following:

5.3.6.5 Associated DID's. A data product specification (specifying program documentation requirements) shall list, in section 6, the DID's for which it serves as the source document.

Replace paragraph 5.3.6.6, Technical manual specifications, with the following:

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

6.X Technical manuals. The requirement for technical manuals should be considered when this specification is applied to a contract. If technical manuals are required, specifications and standards that have been determined necessary and justified through program management studies must be listed on a separate Contract Data Requirements List (DD Form 1423), which is included as an exhibit to the contract. The technical manuals must be acquired under separate contract line item in the contract. (See FAA-D-2494/b)

Delete paragraph 5.4.1, Activity symbols.

Delete paragraph 5.4.2, Standardization Document Improvement Proposal (DD Form 1426).

Replace paragraph 5.7.4, Revision indicators, with the following:

5.7.4 Revision indicators. Revisions of specifications shall be indicated by a lower case letter following the number and preceding any suffix. Example: FAA-O-1723a. The first revision shall be marked with the letter "a" and succeeding revisions shall be indicated by the letters in alphabetical sequence, except that the letters i, o, q, s and z shall not be used.

Replace paragraph 5.9.2, Document identifiers for amendments to specifications, with the following:

5.9.2. Document identifiers for amendments to specifications. The document identifier of the amendment shall be the same as the specification with which it is associated. The word "AMENDMENT" followed by a sequentially assigned Arabic serial number, and the date of approval shall appear under the document identifier. Amendments shall be numbered consecutively for each specification. Amendment numbers, including those for interim amendments, will be assigned by the preparing activity for the specification. A line shall be placed between the approval date and the supersession data shown. Identification of specification amendments shall be in the following formats:

Amendment to specification:

FAA-P-3902
AMENDMENT 1
March 10, 1995

or

FAA-O-5446c
AMENDMENT 2
April 15, 1995
SUPERSEDING
AMENDMENT 1
February 8, 1993

Replace paragraph 5.9.4.1, Amendments to coordinated specifications, with the following:

5.9.4.1 Amendments to coordinated specifications:

"This amendment forms a part of ____, dated ____, and is approved for use by all organizations of the Department of Transportation."

Replace paragraph 5.9.4.2, Amendments to limited coordination specification, with the following:

5.9.4.2 Amendments to limited coordination specification:

"This amendment forms a part of ____, dated ____, and is approved for use by the (preparing activity), Department of the (____) and is available for use by all organizations of the Department of Transportation."

Delete paragraph 5.10.5, Reinstatement notice.

Delete paragraph 5.10.10, FSC, FSG, or area designation.

Delete paragraph 5.10.11, Distribution statement.

Delete paragraph 5.10.12, Concluding Material.

Delete subparagraph 5.11.3a

Delete paragraph 5.12.3, Document identifier.

Delete paragraph 5.12.4, Date and supersession data.

Delete paragraph 5.12.5, FSC, FSG, or area designation.

Delete Appendix A, Program-Unique Specification Preparation Guidelines.

4.1.2 Standards and handbooks, tailoring of (MIL-STD-962C). Indented paragraph numbers refer to MIL-STD-962C. When reading MIL-STD-962C, freely substitute the term FAA when either DOD or military are used in the MIL standard and substitute National Airspace System (NAS) when weapons system is used.

Replace paragraph 4.3.1, Grammar and style, with the following:

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

Replace paragraph 5.2, Self-cover, with the following:

5.2 Self-cover. The security classification (if applicable), DOT seal, department, organization, title, document identifier, date of issue, standardization code and distribution statement shall appear on the self-cover (see Figure 2). In addition, drafts of all documents shall have the word "DRAFT" in front of the document identifier and carry one of the following notes at the top-right of the self-cover, as applicable:

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

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

The note and the word "DRAFT" shall be removed from the camera ready master after approval and prior to reproduction. Once the document has been approved by the Configuration Control Board, the approval date shall appear under the document identifier.

Replace paragraph 5.2.1, Heading, with the following:

5.2.1 Headings. Each standardization document shall have the following heading on the self-cover:

DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION
XXXXXXXXXX XXXXXXXXXXXX XXXXXXXX

Where the third line above contains one of the following six titles:

INTERFACE STANDARD
DESIGN STANDARD
TEST METHOD STANDARD

FAA-STD-005e

August 1, 1996

FAA-STD-005e

SUPERSEDING

FAA-STD-005D

August 4, 1993



Note: This draft, dated March 20, 1996 prepared by ASD-140 has not been approved and is subject to modification.
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DEPARTMENT OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION

STANDARD PRACTICE

PREPARATION OF SPECIFICATIONS, STANDARDS AND HANDBOOKS

AREA SDMP

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FIGURE 2. Example of self-cover for an FAA standard

STANDARD PRACTICE
MANUFACTURING PROCESS STANDARD
HANDBOOK

Add paragraph 5.2.1.1, Distribution statement, with the following:

5.2.1.1 Distribution statement. All standardization documents prepared by the FAA will cite the appropriate distribution statement in accordance with the technical and proprietary nature of the standard, in the lower left corner of the cover page flush to the left hand margin. The distribution statement shall be placed on all drafts, as well as the camera ready copy of the document. Since most standardization documents do not contain sensitive technical information, the following distribution statement is the one that will usually be used:

"DISTRIBUTION STATEMENT A. Approved for public release; distribution is unlimited."

Those documents with proprietary restrictions or those with FAA confidential information shall carry a distribution statement labeled "B", which carries the information explaining the extent of the restrictions and limits imposed on the document's distribution. Figure 2, Example of a self-cover for an FAA standard illustrates a sample of a distribution statement.

Replace paragraph 5.2.3.1, Identification of coordinated documents, with the following:

5.2.3.1 Identification of FAA standards and handbooks. All FAA standardization documentation shall be identified by the letters FAA-STD or FAA-HDBK followed by a hyphen and Arabic numbers. The number is assigned to the document by the Systems Engineering Management, Configuration Management Group in accordance with departmental procedures. Once the document is approved by the Configuration Control Board, the date of approval shall appear under the document identifier on the front cover and in the upper right hand corner on all other pages. Drafts shall not have a date in this location. The space shall be blank until the document is approved. Dates for draft documents should be inserted on the cover page as part of the disclaimer note. The document identifier and effective date of issue (when approved) shall appear in the upper right hand corner of the self-cover. The document identifier shall appear on all other pages at the top center of each page. Drafts of proposed standardization documents shall have the word "DRAFT" preceding the document identifier.

Example: FAA-STD-024b
August 20, 1995

Delete paragraph 5.2.3.2, Identification of limited coordination documents.

Delete paragraph 5.2.5, Measurement system identification.

Delete paragraph 5.2.6, DD Form 1426 note.

Replace paragraph 5.2.8, Designation of federal supply class (FSC), group (FSG), or area assignment, with the following:

5.2.8 Designation of FAA standardization number. Standardization documents shall be assigned a standardization code equivalent to the Federal Standardization Code (FSC) as defined in the Standardization Directory, (SD-1). The applicable code identifier is assigned by the System Engineering Specification and Standards Group, and shall appear in the lower right corner of the self-cover. The code identifies the assignment of type/class of the subject of the document and subsequently indicates the office of primary interest via cross reference and indexing. Standardization documents covering more than one standardization number shall be designated with one number only. Dual or multiple numbers or standardization designations shall not be used.

Delete paragraph 5.2.9, AMSC number.

Replace paragraph, 5.3.1, Preambles, with the following:

5.3.1, Preambles. The following statement shall appear as the first sentence of the first paragraph of the forward.

"1. This FAA (standard) (handbook) is approved for use by all organizations of the Federal Aviation Administration."

Delete paragraph 5.3.2, Beneficial comments statement.

Delete paragraph 5.7.1, Activity symbols.

Replace paragraph 5.10.5, Cancellation notice, with the following:

5.10.5 Cancellation of document. The preparing activity (or lead standardization activity in the case of global documents) will issue a notice of cancellation (NAS Change Proposal), coordinating with the custodians, NAS review board members, and user activities giving the reason for cancellation and identifying the superseding document, if any.

Delete paragraph 5.10.8.5, FSC, FSG, or area designation.

Delete paragraph 6.2, Issue of DoDISS.

Delete paragraph 6.3, Associated Data Item Descriptions.

5. DETAILED REQUIREMENTS

This section is not used.

6. NOTES

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

6.1 Intended use. Documents conforming to the requirements of this standard are intended for use as standardization documents by all departments within the FAA. The purpose of this document is to establish a common format for the preparation of specifications, standards and handbooks within the FAA.

6.2 Tailoring guidance. The paragraphs within this standard have been specifically tailored to the unique needs of the FAA. In some cases they have been revised, in others they are deleted, but additions have been kept to an absolute minimum. This is in keeping with the overriding philosophy not to invoke new requirements unless they are fully justifiable.

6.3 Document rationale, practices and goals. The following subparagraphs describe some of the reasoning, justification and intent of the changes incorporated in this document.

a. This standard establishes practices for developing performance specifications, detail specifications and program-unique specifications prepared for or by the FAA. A specification is a detailed and precise presentation of a project, product or process that contains language that defines the needs of a program, system or project in the form of verifiable and concise requirements. The requirements are outlined and described in a form that permits validation of the requirement by means of experiment, observation, measurement or test. This standard covers the requirements for both performance and detail specifications that are used on multiple programs or applications. This standard also covers the requirements for unique-program performance and detail specifications that are used for a single program or system with little or no potential for use with other programs or systems. The requirements for unique-program specifications were previously covered by MIL-STD-490, which has been canceled.

b. It is recommended that first preference be given to developing performance specifications. If it is not practical or cost effective to develop a performance specification, a non-government (commercial) standard/specification should be used. If it is not practical or cost effective to develop a performance specification or a non-government standard/specification, a detail specification may be developed, but only as a last resort.

c. There are three primary objectives for the changes to this standard. First, for the FAA to meet its needs in the current economic and political environment, it must increase access to an expanded industry base that can meet its needs at lower costs with state-of-the-art commercial technology. The changes herein will move the FAA to greater use of performance-based specifications and commercial-type specifications and standards. The second objective is to ensure that the contents of specifications cover only the requirements for a product (preferably in terms of performance) and the tests to verify that those requirements are met. Specifications should not include contractual provisions, such as data requirements, quality assurance, packaging or contract administration. The third objective is to ensure this standard remains current and valid. FAA-STD-005D imposed the requirements of MIL-STD-490A, Specification Practices. That standard has been canceled. This revision to FAA-STD-005 will correct the invalid reference and base the standard on more current practices and procedures outlined in MIL-STD-961D/1. The scope of this standard has been broadened to include a more thorough coverage of all program related requirements documentation and now references MIL-STD-962C for the preparation of FAA standards and handbooks.

d. 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 "checklist" to assist in document preparation.

(1) For commercial products, consideration should first be given to using or developing a non-government standard or including FAA requirements in an existing non-government standard or developing or revising a commercial item description.

(2) Documents should be structured and formatted to categorize requirements as precisely as possible. Requirements that are generally necessary but can occasionally be removed should be written so that they can be tailored out while leaving other requirements unaffected. Requirements that are necessary only in certain instances should be written so that they can be tailored in. There is sufficient flexibility to make adjustments which may be required for a particular document.

(3) Detailed application guidance should be provided in the "Notes" section of 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: (a) how to apply the document to different contract types and different program phases, (b) the source of and flexibility inherent with specific document requirements, (c) guidance on what is required to satisfy document requirements, (d) the extent of government review and approval and (e) the relationship between the particular document and other related documents in the acquisition process.

(4) A carefully documented, permanent record should be maintained by the preparing activity of the source and reason behind particular requirements and changes to requirements contained in specifications and standards. 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 "Notes" section of the document and solicit feedback as experience develops. This record should provide a basis for related application guidance and a history useful in future document revisions.

(5) 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. "Shall" shall not appear in sections 1, 2, 3 or 6 of a standard. "Shall" shall not be used in handbooks. (The reference for this is MIL-STD-962C requirements section paragraph 4.3.6 h, pg. 9).

(6) Requirement 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.

(7) 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.

(8) Care should be taken to avoid unnecessary reference to other standardization documents and document "tiering". References should be justified. When only a portion of another document needs to be referenced, only that portion should be referenced. Document authors are cautioned that only first tier references are contractually binding. Critical requirements appearing in references below the first tier should be directly stated in the specification.

(9) Ways to increase the use of commercial products and non-government standards which will satisfy government requirements should be an important consideration during document preparation or revision.

(10) DID's should be developed and circulated with standardization documents during the draft coordination stages when applicable.

(11) Feedback on the success or difficulties (benefits and costs) encountered in the application of the document on specific contracts should be encouraged. Such feedback may be made by letter or other appropriate form.

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

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

(14) All documents should allow for the use of contractor systems and contractor data when they will satisfy FAA/government requirements.

e. This standard revision strongly suggests the non-use of fixed levels of defects, such as Acceptable Quality Levels (AQL) and Lot Tolerance Percent Defectives (LTPD), as firm specification requirements. Such specification requirements imply that defects are allowable, institutionalize the process of accepting non-conforming materiel, and do not motivate contractors to improve product quality. In addition, AQL's and LTPD's are not requirements or tests for the product being acquired. They reflect levels of risk that the customer is willing to take when acquiring a product. As such, AQL's and LTPD's should not be part of the specification, but may be part of the quality assurance provisions in the contract.

f. Beneficial comments (recommendations, additions, deletions) and any pertinent data which may be of use in improving this document should be addressed to: Federal Aviation Administration, Systems Engineering Management, ASD-140 Specifications and Standards Group, 800 Independence Ave. SW, Washington DC 20591.

g. Specifications prepared in accordance with this standard may be prepared as an FAA procuring activity or contractor specification. Unique-program specification types outlined in FAA-STD-005D or in MIL-STD-490 Type A, B, C,F, etc. type of specifications have been replaced with five generic specification types: system, item, software, process and material. MIL-STD-961D/1 practices utilize an integrated methodology, consistent with acquisition reform initiatives underway within the FAA, which are intended to combine development-type B and product-type C specifications into one document. This approach streamlines the acquisition process. The baseline methodology then for functional specifications contains functional/performance requirements, design constraints and verification provisions of the system as a single statement or entry. Item level specifications in like manner contain allocated functional/performance requirements, design constraints and verification provisions of the system's pieces and are updated by adding the verified design solutions to the content and documented with revision letter changes.

h. An expanded definition of a standard beyond that provided in section 3.8 of this document is provided:

An FAA standard describes the characteristics, (i.e. fit, form, function) or expected performance (critical parameters or operational needs) of a system, process, document, communication interface, software application, procedure or equipment. It is action neutral, states no opinion (i.e. it merely describes), and does not require or contain language demanding action. A standard does not contain action verb(s) such as "this is how it should be done... do this...or complete by...". A standard establishes uniform engineering and technical requirements and is intended to limit selectivity to an accepted procedure or equipment type. An FAA standard shall not convey uniqueness (e.g. Do this the FAA accepted or "standard" way.) nor should a standard imply an acceptability for use or exclusivity in matters of policy. An FAA standard does not give rights of preference unto itself but must be invoked by another document; an FAA specification or a Request for Proposal (RFP)/Statement of Work (SOW). An FAA standard therefore does not demand conformity nor command such authority to force adoption of the characteristics or performance it describes.