

MIL-T-60530A(MU)
 19 February 1971
 SUPERSEDING
 MIL-T-60530(MU)
 30 November 1966

MILITARY SPECIFICATION

TECHNICAL DATA PACKAGE FOR AMC MATERIEL

1. SCOPE

1.1 This document covers the preparation of a complete technical data package suitable for use as a basis for competitive procurement, installation, and maintenance of military materiel developed by or for the Army Materiel Command and subordinate activities.

1.2 This specification covers the following elements of the Technical Data Package:

- a. "Product" Engineering Drawings in accordance with MIL-D-1000.
- b. Military Specifications in accordance with Defense Standardization Manual 4120.3-M and MIL-STD-490.
- c. Supplementary Quality Assurance Provisions
- d. Inspection and Test Equipment Drawings in accordance with MIL-D-1000
- e. Engineering Parts Lists and Data Lists in accordance with MIL-D-1000
- f. Preparation for Delivery Requirements

2. APPLICABLE DOCUMENTS

2.1 The following documents of the issue in effect on date of invitation for bids or request for proposal, form a part of this specification to the extent specified herein:

SPECIFICATIONS

Federal

L-P-517
 L-P-519

Plastic Sheet, Scribe-Coated
 Plastic Sheet, Tracing, Glazed and
 Matte Finish

Military

MIL-P-116
 MIL-D-1000

Preservation, Methods of
 Drawings, Engineering and Associated Lists

FSC MISC

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SPECIFICATIONS (Continued)

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| MIL-P-14232 | Parts, Equipment and Tools for Army Materiel - Packaging and Packing of |
| MIL-T-50301 | Technical Data; Quality Control System Requirements for |
| MIL-S-83490 | Specifications, Types and Forms |

STANDARDS

Military

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|-------------|--|
| MIL-STD-100 | Engineering Drawing Practices |
| MIL-STD-105 | Sampling Procedures and Tables for Inspection by Attributes |
| MIL-STD-109 | Quality Assurance Terms and Definitions |
| MIL-STD-130 | Identification Marking of US Military Property |
| MIL-STD-143 | Specifications and Standards, Order of Precedence for the Selection of |
| MIL-STD-171 | Finishing of Metal and Wood Surfaces |
| MIL-STD-490 | Specification Practices |
| MIL-STD-647 | Packaging Standards, Preparation and Use of |
| MIL-STD-726 | Packaging Requirements Code |

PUBLICATIONS

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| Standardization Manual 4120.3-M Chapter V | Outline of Form and Instructions for the Preparation of Specifications and Associated Documents |
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(Copies of specifications, standards, and publications required by suppliers in connection with specific procurement functions should be obtained from the procuring activity or as directed by the Contracting Officer.)

2.2 Other publications. The following document forms a part of this standard to the extent specified herein. Unless otherwise indicated, the issue in effect on date of invitation for bids or request for proposal shall apply.

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| ANSI Y14.5 | Dimensioning and Tolerancing for Engineering Drawings |
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(Non-Military activities obtain copies of ANSI standards from: American National Standards Institute, 1430 Broadway, New York, N. Y. 10018)

3. REQUIREMENTS

The requirements specified herein apply to the preparation of such data as is specifically required by the contract. Nothing in this specification shall in itself be construed as requiring the delivery or preparation of any data item not otherwise required by the contract.

3.1 Engineering drawings.- Engineering drawings supplied under this specification shall be in conformance with the requirements of Form 1, MIL-

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D-1000. Unless otherwise specified drawings shall be prepared in pencil on tracing cloth or pencil on matte finish plastic sheet. Engineering drawings conforming with the requirements of Form 2, MIL-D-1000 will be accepted only if they meet all of the conditions in 3.1.2.2. Form 3 drawings will not be acceptable under this specification unless otherwise permitted by the contract.

3.1.1 Intended use. Engineering drawings prepared under this specification shall be suitable for the following categories of intended use, as defined in MIL-D-1000.

3.1.1.1 Category E - Procurement of identical items.- Drawings suitable for procurement of identical items shall be prepared for:

- a. Complete end items
- b. All sub-assemblies
- c. All components except components of sub-assemblies covered by authorized "specification control" and "source control" drawings.
- d. All repair parts for maintainable sub-assemblies covered by "specification control" and "source control" drawings.

3.1.1.2 Category F Procurement (interchangeable items).- Drawings suitable for procurement of the same items in the future from the original manufacturer and functionally and physically interchangeable items from other sources shall be prepared for components authorized as "Specification Control" and "Source Control".

3.1.1.3 Category G - Installation.- Installation drawings shall be prepared for each major item or combination of items which are intended to be installed in a vehicle, weapon, or facility.

3.1.1.4 Category H - Maintenance.- Drawings in this category shall be prepared for each major item when drawings which are fully adequate for procurement do not provide sufficient information for effective maintenance. On contracts which include the preparation of maintenance manuals, Category H drawings need not be separately supplied.

3.1.2 Existing data.- Use of existing data shall conform to the following;

3.1.2.1 Existing Government data shall be screened prior to the preparation of new drawings and shall be selected in the group order of precedence established in MIL-STD-143.

3.1.2.2 Existing drawings meeting the requirements of MIL-D-1000 for the same categories (3.1.1) Forms 1 or 2 will be acceptable provided:

- a. They were in existence prior to the issuance of the invitation for bid or request for proposal.
- b. They are furnished with the same rights of use as though they were Form 1 drawings.

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c. They are furnished with an overall cost savings to the Government in lieu of preparing new drawings.

d. They do not reference data categorized under group IV of MIL-STD-143.

3.1.2.3 Existing drawings that can be modified to meet the requirements of MIL-D-1000 shall be altered and reidentified, if necessary, and furnished in lieu of new drawings provided they conform to 3.1.2.2.

3.1.3 Types of drawings.- The types of drawings to be furnished shall be in accordance with MIL-STD-100 and the following supplementary requirements:

3.1.3.1 Detail drawings.- Except as otherwise provided, a mono-detail or tabulated drawing shall be prepared for each identifiable part for which there is not existing data (see 3.1.2).

3.1.3.2 Inseparable assembly drawings.- An inseparable assembly drawing may be prepared in lieu of individual mono-detail drawings for inseparable (welded, brazed, bonded, riveted, sewn, or glued) assemblies intended to be procured and replaced as a unit, where (except for standard hardware) the separate parts are of the same material and where each part is manufacturable by a similar process. Example: A welded or riveted bracket entirely constructed of the same material, a wooden, metal, or plastic chest, or a canvas case may be covered by an inseparable assembly drawing without mono-detail drawings. A glass prism bonded to an aluminum plate would require support by mono-detail drawings. Mono-detail drawings shall be used whenever they are necessary for clarity of complex configurations.

3.1.3.3 Specification control drawings.

a. Specification Control Drawings may be prepared only for vendor-developed items which will not normally require replacement of any of its component parts during the life of the materiel provided that such items are advertised or cataloged as available to the trade or the public on a unrestricted basis at an established range of price or are procurable on order from two or more suppliers in a specialized segment of industry. Typical examples of items in this latter category are special motors, transformers, potted servo amplifiers, hydraulic valves and similar products of industries which normally provide customer application engineering services for a commercial product line.

b. Unless otherwise provided in the contract or specifically approved by the government technical representative, Specification Control Drawings will not be acceptable in lieu of detail disclosure for items which will normally require replacement of any of its component parts during the life of the materiel. Any exception to this requirement will require that, as a minimum mono-detail drawings be supplied by the contractor for all spare parts.

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c. Notwithstanding the provisions of paragraphs a and b, above, the Government reserves the right to require fully detailed design disclosure for any component developed under the contract.

d. Specification Control Drawings shall not be prepared under circumstances where a Military Detail Specification would be more appropriate (3.4.2).

e. Specification control data shall not be tailored to the characteristics of a single vendor's product to the exclusion of other equally suitable products. Conversely, specification data shall not be so broad as to permit acceptance of products which will not perform in the equipment under all required environmental conditions.

3.1.3.4 Source control drawings.- Source control drawings shall be prepared only upon written authorization of the Government technical representative. Requests for authorization to use Source Control Drawings shall be accompanied by a written justification setting forth the technological or other factors beyond the control of the contractor which prevent the determination of performance, reliability and configuration control requirements needed to prepare a Specification Control Drawing. This justification will form a part of the permanent engineering file. Source Control Drawings shall not be used for items available only from the contractor, unless the intent to do so was previously and specifically disclosed in the proposal and accepted by the Government as a condition of the contract.

3.1.3.5 Undimensioned master drawings.- Undimensioned master drawings shall be supplied for etched circuit boards, panels, reticles, special scales, and other components for which dimensioned detail drawings would be impractical. Master drawings shall be prepared on dimensionally stable plastic sheet meeting the requirements of L-P-517 or L-P-519. Drawings shall be of high quality, clearly drawn, typed, or scribed with sharp, clean-cut lines to insure a high degree of legible reproducibility. Applied patterns shall be photographically opaque except for desired open areas. Unless otherwise specified in the contract, the contractor shall supply plastic sheet for master drawings in accordance with standard format requirements.

3.1.3.6 Assembly drawings.- Assembly drawings shall be prepared for the major end item and for each level of sub-assembly required for spare parts supply, bench sub-assembly and testing, localization of major functional requirements and adjustments, and clarity of parts identification, assembly and diagnostic procedures. Insofar as practical, each sub-assembly drawing shall include pertinent functional specifications.

3.1.3.7 Electrical diagrams.- A schematic drawing shall be prepared for each electrically functional sub-assembly; i.e. one having a measurable input and output relationship. A connection or wiring diagram, or, for more complex electronic items, a wiring list, shall be prepared for each sub-assembly stage covered by an assembly drawing.

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3.1.3.8 Mechanical schematic diagram.- A mechanical schematic diagram shall be prepared for each major item or functional assembly comprising a complex arrangement of gears, clutches, linkages, cams, etc. where operating principles cannot readily be derived from a study of assembly drawings.

3.1.3.9 Installation drawings.- Installation drawings shall be prepared for each major item or combination of items which are intended to be installed in a vehicle, weapon, or facility.

3.1.4 Dimensions and tolerances.

a. Dimensions and tolerances shall be specified in accordance with ANSI Y14.5 and shall be selected to assure that build-up of maximum tolerances will not cause functional or assembly difficulties. Where fitting at assembly or selective assembly is intended, the detail drawing of each component shall clearly indicate the specific dimension or dimensions which will require fitting or selection at assembly, and shall indicate the fitting or selection criteria.

b. Tolerances shall be as liberal as possible consistent with assembly, functional and reliability requirements, but under no circumstances shall the desirability of maximizing tolerance limits on a component be permitted to compromise the feasibility of assembly and adjustment, or to compromise performance requirements of the assembled item.

c. Use of the basic hole system of tolerancing is preferred over the basic shaft system. (6.3.2 and 6.3.3)

3.1.5 Protective finishes.

3.1.5.1 Selection.- Unless otherwise specified, protective organic and inorganic finishes for metal and wood surfaces shall be selected from MIL-STD-171.

3.1.5.2 Dimensioning of finished surfaces.

a. Surfaces protected by hard inorganic chemical finishes (plating, anodize, oxide, etc.) shall be dimensioned to include any build-up resulting from the finish process. It will be the manufacturer's responsibility to allow for finish build-up in machining of the surfaces.

b. Surfaces protected by organic or other soft finishes shall be dimensioned to exclude the build-up resulting from painting.

3.1.6 Drawing formats.- Except as provided in 3.1.3.5, or unless otherwise specified in the contract, preprinted drawing formats for use in the preparation of Form 1 drawings will be supplied by the Government upon application by the contractor accompanied by an estimate of the number of each size of drawing format which will be required.

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3.1.7 Drawing numbers.- A block of drawing numbers will be provided by the Government upon request of the contractor. Appropriate request forms will be supplied by the government technical representative. The contractor shall report all number assignments according to an established schedule to the Government and shall return all unused drawing numbers to the Government upon completion of the contract or at such earlier time as may be specified by the Government technical representative.

3.1.8 Code identification.- The appropriate code identification numbers will be provided by the Government and shall be entered on all Form 1 drawings as required by MIL-STD-100.

3.2 Military specifications.- Specifications supplied under this specification shall be Military Specifications in conformance with Form 1b MIL-S-83490, DOD Manual 4120.3-M, and this specification. A specification shall be prepared for:

- a. The major item(s) and system described in the Technical Scope of Work.
- b. Components and intermediate assemblies which can be expected to be repetitively procured as spare parts and for which the necessary performance requirements and quality assurance provisions are lengthy and complex. As a general guide, it shall be assumed that any spare part requiring performance specifications in excess of two single-spaced typewritten pages, or quality assurance provisions in excess of four typed pages will be covered by a Military Specification in lieu of drawing notes or a SQAP.
- c. Components and intermediate assemblies for which a Qualified Products list (QPL) will be required.
- d. Test equipment under the conditions specified in 3.4.2.
- e. Materials and essential processes.

3.2.1 Specifying requirements (Section 3).- Instructions for preparation of Section 3 of Military Specifications are contained in DOD Manual 4120.3-M, MIL-STD-490 and Appendix I of this specification.

3.2.2 Quality assurance provisions.- Quality Assurance Provisions, Section 4, of Military Specifications shall be prepared in accordance with DOD Manual 4120.3-M and MIL-STD-490.

3.2.3 Preliminary draft.- A preliminary draft of each required specification shall be submitted to the government technical representative for review and approval.

3.2.4 Final copy.- The final copy of each required specification will be prepared by the contractor based on comment of the Government. Copy shall be typewritten, on 8" x 10-1/2" bond paper. Illustrations, if any, will be integrated into the body of the copy as required. Copy shall be suitable for photographing for lithographic reproduction.

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3.2.4.1 Illustrations.- Illustrations used in specifications shall be of the contrast and clarity required for satisfactory reproduction by the lithographic process, and shall be mounted flat without bulges or ripples.

3.3 Supplementary quality assurance provisions (SQAP).

3.3.1 Items requiring a SQAP.- A SQAP shall be prepared for each part falling within the following criteria, unless this specification or the Technical Scope of Work forming a part of the contract requires the preparation of a Military Specification (3.2) or unless a Military Specification already exists:

a. Components subassemblies and assemblies with detailed technical or drawing characteristics that affect reliability, interchangeability, function or safety.

b. Components, subassemblies, and assemblies that are supported by detailed technical or drawing characteristics and that are:

(1) Items of issue, having mating characteristics requiring field interchangeability, or

(2) Items destined for use in subsequent assembly or loading applications or for use in modifications, reconditioning, or retrofit programs.

3.3.2 Items not requiring SQAP.- SQAP will not be developed for the following items:

a. Components, subassemblies, or assemblies that are not items of issue (except those covered by 3.3.1, above).

b. Commercial, proprietary or off-the-shelf items, unless modified, or where specific performance requirements are necessary for the military application.

c. Simple items such as nuts, bolts, washers, locks, hinges, etc. except where these items are employed for critical usage or high accuracy is required.

d. Items not supported by detail drawings and all requirements are contained in detail specification.

e. Components (e.g., springs, gears, etc.) having like characteristics, and which are applicable to a category of related items. In such cases, the quality assurance provisions rather than SQAPs should be included in the specification for those items.

3.3.3 Format and content of SQAP.- Unless otherwise specified SQAPs shall be prepared in accordance with the requirements of Appendix II of this specification.

3.4 Inspection and test equipment documentation.

3.4.1 Drawings.- Where design of field test equipment intended for issue at Organizational through General Support Maintenance levels is required, the contractor shall prepare a complete set of engineering drawings in accordance with 3.1. The following exceptions apply to requirements for design of Acceptance Inspection and Depot Maintenance test equipment only:

a. Multi-detail drawings may be prepared in lieu of mono-detail drawings; dash numbers shall be used to identify separable details.

b. Drawings may be prepared in pencil on translucent bond paper in lieu of linen or plastic sheet.

c. Detail-assembly drawings may be used provided clarity is not adversely affected.

d. Preparation of sub-assembly drawings shall be minimized consistent with clarity.

e. Source control drawings may be prepared where the cost of developing specification control data is not economically justifiable.

f. A separate block of test equipment drawing numbers will be provided by the Government upon request of the contractor. (3.1.7)

3.4.2 Specifications.- Insofar as practicable, detail performance requirements and inspection requirements for test equipment will be included on the major assembly drawing. Where these requirements are lengthy and complex, a military detail specification shall be prepared by the contractor in lieu of drawing notes. As a general guide, a specification shall be prepared whenever the functional and inspection requirements would exceed four typewritten letter-size pages. Description, set-up and operating instructions for use of the equipment shall not be included in the military specification. When required, specifications shall be prepared in accordance with requirements of 3.2.

3.5 Engineering lists.- The contractor shall prepare the following engineering lists in accordance with the requirements of MIL-STD-100. Automatic Data Processing System (ADPS) data or Electronic Accounting Machine (EAM) tape or cards to be processed and stored by the design activity for subsequent automatic list preparation may be acquired in lieu of machine or manually prepared lists at the option of the Government Contracting Officer or government technical representative. Instructions for the preparation of these kinds of submissions will be provided by the Contracting Officer.

3.5.1 Engineering parts list.- An Engineering Parts List shall be prepared in accordance with MIL-STD-100 for each major item, for each intermediate assembly and for each item of Test Equipment.

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3.5.2 Engineering data list.- An Engineering Data List shall be prepared in accordance with MIL-STD-100 for each major item, for each intermediate assembly which has its own peculiar performance specification and for each item of test equipment.

3.6 Preparation for delivery.- Unless otherwise specified, packaging, packing and marking requirements shall be developed for each major item, each item of test equipment, and each component designated as a repair part except for items where the packaging requirements are presently prescribed in a specification.

3.6.1 Format.- Packaging requirements shall be documented in Section 5 of individual commodity specifications. Items not covered by specifications shall have packaging requirements prepared in accordance with MIL-STD-726, MIL-STD-647 or on Packaging Data Sheets AMC Form 1029 and continuation sheet, in accordance with Appendix III for use with MIL-P-14232. The System of packaging documentation will be as specified by the Government. Preprinted packaging data sheet forms will be supplied by the Government, upon application by the contractor accompanied by an estimate of the number of packaging data sheets which will be required.

3.6.2 Where detailed engineering drawings or specification figures are required to properly prescribe packaging requirements, in lieu of packaging data continuation sheets, they shall be prepared in accordance with 3.1.

3.7 Identification and Marking.- Marking requirements for identification of Military Property shall be as required by MIL-STD-130 and additional provisions of MIL-STD-100.

3.8 Description of Manufacture and Processes.- Detailed instructions for the preparation and format for special manufacturing techniques, processes and methods shall be as prescribed by the Government design activity in the contract.

3.9 Validation of technical data package.- Where the manufacture of engineering prototypes or a pilot production quantity is required by the contract as a means of testing the adequacy of the technical data package, for its intended use, manufacture or purchase of components shall be on the basis of technical data to be supplied under this specification, and documents referenced therein. No other technical data, industry or company specifications or standards, or oral technical instructions not intended to be delivered or disclosed to the Government, shall be used to supplement the drawings or specifications during manufacture, purchase, or inspection. This restriction shall not apply to use of administrative procedural specifications or standards normally used by the contractor in manufacture or purchase of components; nor is this restriction intended to apply to detail manufacturing data pertaining to "Specification Control" drawings or "Source Control" drawings which have been approved for use.

4. QUALITY ASSURANCE PROVISIONS

4.1 Responsibility for inspection.- Unless otherwise specified in the contract or purchase order, the supplier is responsible for the performance of all inspection requirements as specified herein. Except as otherwise specified in the contract or order, the supplier may use his own or any other facilities suitable for the performance of the inspection requirements specified herein, unless disapproved by the Government. The Government reserves the right to perform any of the inspections set forth in the specifications where such inspections are deemed necessary to assure supplies and services conform to prescribed requirements.

4.1.1 Supplier's engineering data control system.- The supplier shall provide and maintain an adequate system for the detailed examination and technical review of all engineering drawings and related documents to be supplied under the terms of the contract. The system shall conform with MIL-T-50301 and assure the conformance of the engineering drawings and related documents to all requirements specified herein.

4.1.1.2 Engineering drawing control procedures.- The supplier's procedures shall adequately cover:

a. Assignment of responsibility for detail examination, review and final supplier approval of engineering drawings and related documents.

b. Qualifications of personnel performing detail examination and review of engineering drawings and related documents.

c. Procedural flow of engineering drawings and other documentation.

d. Review of material selection.

e. Review for standardization (Engineering drawings and related documents).

f. Review for standardization (Component and specification selection per MIL-STD-143).

g. Check lists to be used in the detail examination, review and final approval of engineering drawings and referenced documents. The check lists shall specify each examination that will be performed to verify conformance of engineering drawings and referenced documents to the applicable requirements of this specification.

h. Method of insuring that engineering changes found necessary during prototype manufacture have been incorporated into the engineering drawings and related documents.

i. Method of safeguarding classified information.

j. Methods providing for the prevention and ready detection of discrepancies and for timely and positive corrective action.

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4.2 Acceptance criteria.

4.2.1 Quantitative.- Each drawing category shall be examined to assure inclusion of all engineering drawings and referenced documents necessary to make a complete set adequate for the specified category of use.

4.2.2 Content.- Each drawing and referenced document comprising a category shall be examined for conformance to the requirements of 3.2, MIL-D-1000.

4.2.3 Form. Each drawing shall be examined for conformance to the requirements of 3.3 and 3.4, MIL-D-1000 and 3.1 herein.

4.2.4 General.- Each drawing and referenced document shall be examined for conformance to the following requirements:

4.2.4.1 Engineering drawings have not been prepared when suitable specifications, standards or engineering drawings exist.

4.2.4.2 Altered or selected parts have been properly delineated.

4.2.4.3 Material requirements are as specified.

4.2.4.4 Classified information is properly safeguarded.

4.2.4.5 Rights in data have been properly identified.

4.2.4.6 The order of precedence of references and applicable specific identification of types, grades, etc. are as specified.

4.2.4.7 Special inspection and test requirements are shown when required.

4.2.4.8 Part identification requirements are specified when required.

4.2.4.9 Legibility and reproducibility as required in MIL-D-1000.

4.2.4.10 Microfilm, reproducible and non-reproducible drawings, including originals have been properly prepared for delivery.

4.3 Nonconforming drawings and referenced documents.- Failure of an engineering drawing or referenced document to conform with any of the applicable requirements of this specification shall result in the rejection of the non-conforming document. Non-conforming engineering drawings and referenced documents shall be re-examined after correction of all discrepancies. The supplier shall identify the deficiencies corrected and the action taken to prevent recurrence.

4.4 Certification.- The signature of the supplier's authorized representative on the original drawing list, cover sheet or any other certifying document shall constitute a certification of compliance with all requirements of the supplier's control system, with this specification and the contract, and that 100% examination of all documents has been performed.

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4.5 Validation of the technical data package.- Where the manufacture of engineering prototypes or a pilot production quantity is required by the contract as a means of testing the validity of the final technical data package, the contractor shall certify that all components were manufactured or procured on the basis of drawings and specifications supplied under this specification, and that no other technical data, industry or company specifications which do not form a part of the final Technical Data Package were used to supplement the drawings and specifications during manufacture, purchase, or inspection. Any exceptions shall be cited in the certification (see 3.9). The contractor shall further certify that all components were given 100% inspection against the requirements of the Government approved drawings and specification, and that any variations therefrom were authorized by means of an approved Request for Waiver or Engineering Change Proposal.

5. PREPARATION FOR DELIVERY

Technical data shall be carefully handled throughout the drafting, checking, and approval cycle, prior to delivery to the Government. Preparation for delivery shall be as prescribed in Specification MIL-D-1000.

6. NOTES

6.1 Intended use.- This specification is intended for use in development and engineering contracts which include specific requirements for preparation and delivery of a complete technical data package suitable for competitive procurement, installation and maintenance of military equipment designed by or for the Government. This specification also provides the ordering data for MIL-D-1000.

6.2 Ordering data.

6.2.1 Procurement requirements. Procurement documents should specify the following:

- a. Title, number, and date of this specification.
- b. Packaging information documentation system (3.6.1).
- c. Contractual provisions for GPE (or non-GPE) drawing formats.

6.2.2 Contract data requirements.- Data conforming to Data Item Description DI-E-1115 will usually be required for delivery in connection with this specification. Such data will be specified for delivery on a DD Form 1423 included in the contract. Unless all elements are being procured without exception each of the data items of 1.2 should be listed separately.

6.3 Definitions.- For the purpose of this specification the following definitions apply:

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6.3.1 Technical Data Package (TDP).- A technical description of an item adequate for use in procurement. The description defines the required design configuration and assures adequacy of item performance. It consists of all applicable technical data such as plans, drawings, and associated lists, specifications, standards, models, performance requirements, quality assurance provisions, and packaging data.

6.3.2 Basic hole system.- A basic hole system is a system of fits in which the design size of the hole is the basic size and the allowance, if any, is applied to the shaft.

6.3.3 Basic shaft system.- A basic shaft system is a system of fits in which the design size of the shaft is the basic size and the allowance, if any, is applied to the hole.

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Preparing activity:

Army - MU

Review activities:

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Project No. MISC-A737

APPENDIX I

INSTRUCTIONS FOR THE PREPARATION OF MILITARY SPECIFICATIONS

A. Scope

This Appendix to Specification MIL-T-60530 supplements Chapter V of Defense Standardization Manual 4120.3-M for specific application to the preparation of Military Specifications for AMC Materiel.

B. General Requirements

Section 3 of a military specification shall be so written that compliance with all requirements will insure the suitability of the equipment for its intended purpose, and non-compliance with any requirement will indicate the unsuitability of the equipment for the intended purpose. Only those requirements shall be specified which are necessary and practically attainable. It is considered essential in view of past experience with failures during IPT that the following be added: "Essential functional and operational requirements shall not be omitted on the assumption that engineering drawings are sufficiently definitive or that quality control during production will be sufficiently effective to assure consistent reproducibility of original development performance requirements without final testing of the item or system. Requirements shall not be omitted solely because testing is expensive or time consuming; if the requirement is essential, even relatively expensive testing shall be specified for First Article and at periodic intervals during production in order to detect intentional or unintentional variances in materials and processes which may adversely affect function, reliability, and service life.

C. Qualification

Qualification will not be specified as a requirement of Section 3 except as specifically directed by the technical supervisor. Establishment of a Qualified Products List (QPL) for a specific product restricts competition to those suppliers whose product has been tested and approved by the Government prior to procurement, and is justifiable only on the basis of time and expense involved in conducting special environmental, storage and reliability tests.

D. Independence of Section 3 requirements

Each requirement of Section 3 shall be simply and concisely stated and unambiguous. Each requirement shall be self-sufficient and shall be stated in terms which are independent of test methods and procedures. Section 3 should provide a firm basis for preparation of Section 4. One test for adequacy of Section 3 is whether it would serve as a sound contractual basis for acceptance or rejection of equipment when detailed test methods and procedures are to be developed by the contractor. It is recognized, however, that when requirements are stated in terms of per-

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APPENDIX 1 (Continued)

formance, each condition affecting performance must be specified in detail if repeatability of results is to be achieved. Such a detailed list of conditions will often constitute a test method or procedure and be more appropriate for inclusion in Section 4. The dependence of Section 3 on Section 4 in these cases is acceptable.

E. Requirements for First Article and Special Samples

Specifications shall not differentiate between production items and special testing samples with respect to Section 3 performance requirements. All equipment to be delivered under the specification is expected to meet all of the requirements. Production items are expected to perform interchangeably with preproduction, initial production, qualification or special requirements. The fact that certain tests are conducted on a limited sampling basis, as prescribed in Section 4, has no effect on requirements specified in Section 3. Nevertheless, Section 3 requirements should be so specified as to be readily translatable to a practical test procedure. There shall be sufficient coordination between Section 3 and Section 4 specialists to insure that compliance with requirements will be determined by the most appropriate inspection procedure; i.e., 100% inspection, standard sampling per MIL-STD-105, or special sampling.

F. Avoidance of instructions and procedures

1. In order to clearly differentiate between test procedures and requirements, the specification of Section 3 requirements as instructions shall be avoided. Statements such as "Each item shall be subjected to. . ." or "the mean daily rate shall be computed. . ." are procedural instructions, not statements of requirements. The statement of requirements shall necessarily include the conditions relating to the performance requirement, but not to the methods and procedures by which these conditions are attained.

APPENDIX II

INSTRUCTIONS FOR THE PREPARATION OF SUPPLEMENTARY
QUALITY ASSURANCE PROVISIONS (SQAP)

A. Scope

This Appendix to Specification MIL-T-60530 provides instructions for the preparation of Supplementary Quality Assurance Provisions (SQAP) sheets as required by Paragraph 3.3 of the basic specification.

B. General Requirements

Certain components of military materiel, selected in accordance with criteria contained in the basic specification, require the preparation of SQAP sheets which specify detailed quality assurance provisions in a manner essentially similar to Section 4 of a military specification. A SQAP bears the same relationship to the engineering drawing that Section 4 of a military specification bears to the requirements specified in Section 3 of the specification.

C. Outline of Form

1. Supplementary Quality Assurance Provisions shall be prepared in accordance with the following instructions unless otherwise specified by the procuring activity.

2. Each SQAP will include the following introductory note:
"THIS SQAP FORMS A PART OF (SPECIFICATION MIL-X-LXXV) (DRAWING XXXXX) AS SPECIFIED IN THE CONTRACT. INSPECTION SHALL BE CONDUCTED AS SPECIFIED HEREIN, AND IN ACCORDANCE WITH REFERENCED DOCUMENTS."

3. The SQAP will consist of four parts as follows:

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APPENDIX II (Continued)

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| PART I | List of Applicable Documents. |
| PART II | Examination Provisions. |
| PART III | Certification Provisions. |
| PART IV | Test Methods and Procedures. |

4. Part I--List of Applicable Documents. a. This part of the SQAP will comprise a listing of technical data applicable to inspection requirements for the pertinent component or subassembly. Format for part I will be as follows:

PART I--LIST OF APPLICABLE DOCUMENTS

| DRAWING NO. | LIST OF DRAWINGS NOMENCLATURE | DATA LIST |
|-------------|-------------------------------|-----------|
| NUMBER | LIST OF SPECIFICATIONS | TITLE |
| NUMBER | LIST OF STANDARDS | TITLE |

b. When a drawing comprises more than one sheet, the number of sheets will be shown parenthetically after the drawing number.

c. The Data List column will be used to indicate that the specified drawing contains a subordinate list of drawings. When the Data List column is used, the following note should be added after the last drawing listed:

"An entry in the Data List column indicates that additional drawings listed in the specified drawings form a part of this List of Applicable Documents."

5. Part II--Examination Provisions. a. Minimum criteria for inspection of components and subassemblies will be presented in the form of one or more tabulations identified by Roman numerals (Table I, II, III, etc.) and one of the following titles, as appropriate:

- (1) Classification of Quality Conformance Characteristics.
- (2) 100% Inspection.
- (3) Special Sampling Inspection.

b. Classification of Quality Conformance Characteristics and 100% Inspection Tables.

(1) Examination criteria will be tabulated under appropriate column headings and will include each quality conformance characteristic number as shown in the following example:

| <u>CLASS</u> | <u>CHARACTERISTIC</u> | <u>PER DWG OR SPEC</u> | <u>INSPECTION METHOD</u> |
|---------------------------|-----------------------|------------------------|--------------------------|
| <u>CHARACTERISTIC NO.</u> | | | |

CRITICAL: NONE

MAJOR: AQL--PERCENT DEFECTIVE

101.

102.

Note. AQL's may be assigned to either a group of characteristics (as shown) or to individual characteristics as provided for by MIL-STD-105). In addition, a Dimension column may be used when essential for complete identification of characteristics.

(2) Sampling instructions. Each table titled "Classification of Quality Conformance Characteristics," will contain a statement below the title similar to the one that follows: "Use Sampling Tables in _____ (ref document, e.g., MIL-STD-105)."

(3) Class. Each quality conformance characteristic specified on the applicable drawing which is intended to be subject to inspection prior to acceptance, will be classified as to the effect of any failure to comply with specified requirement. Such defects will be classified as critical, major, or minor, as defined in MIL-STD-109. Critical defects, if any, will be tabulated first, followed by tabulation of major defects, then minor defects, in that order. Tabulations of critical or major defects that require "certification" of materials or processes, in lieu of verification, will be included in part III of the SQAP, as applicable.

(4) Numbering of quality conformance characteristics. Characteristics will be numbered sequentially within their classification group. Quality conformance characteristics determined as critical will be numbered from 1 through 99; major from 101 through 199; minor from 201 through 299. The appropriate number of each characteristic will appear in the column for the Class heading (see example in (1) above). If both a Classification of Quality Characteristics table and a 100% Inspection table are required, the characteristic numbers representing each classification group will be sequentially numbered from table to table; e.g., if the last major characteristic of table I is numbered 107, the first major characteristic of table II will be numbered 108 (unless classified as critical, characteristic numbering for 100% inspection will be as prescribed for major defects). Sequential numbering will prevent a characteristic number (101, 210, etc.) from being repeated in any one SQAP.

(5) Characteristic column. Description of characteristics will be as brief as possible, but sufficiently definitive to clearly identify the characteristic from other characteristics. The less significant characteristic may be grouped under a single characteristic description such as "completeness of machining operations," or "completeness of assembly," and classified as minor.

(6) Drawing or Specification number column. The "Per DWG or Spec" column of the Inspection Provisions Table is intended for use of SQAP's applicable to subassemblies in which certain characteristics of components of the subassembly are subject to inspection. In such cases, the number of the drawing or specification upon which the selected characteristic is specified will be specified in this column.

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APPENDIX II (Continued)

(7) Inspection Method column. This column is intended to define either directly or by reference, the examination, inspection methods, and procedures by which each characteristic will be inspected. Obvious inspection methods, which employ commercial inspection equipment or the human senses, may be included in the table by single words, or brief phrases such as "visual," "tactile," STD gage, STE (standard testing equipment), SME (standard measuring equipment), etc. These brief phrases or references will not be used, however, if any special instruction, precautions, or test equipment descriptions are needed. In such cases, the nomenclature and drawing number of the special gage or test equipment will be included in the table, such as "Location Fixture C8744873," "Concentricity Gage C7244866," "Test console F7244997," or by reference to the appropriate paragraph of part IV of the SQAP.

c. Special sampling table. Special sampling plans may be specified in lieu of a standard lot sampling plan for certain unusually costly, destructive, or time-consuming tests. The sampling may be specified as a low percentage of production, or a small sample from each month's production, whichever occurs first. When it is determined that special sampling is required, the tabulation of Examination Provisions will include in the heading the essence of the following sampling instructions, using an appropriate sample size, production quantity, and frequency:

"Special sampling--Three items (selected at random) from each 50 produced, or one from each month's production whichever occurs first, shall be subjected to the following examinations:"

| <u>NUMBER</u> | <u>CHARACTERISTIC</u> | <u>PER DWG OR SPEC</u> | <u>INSPECTION METHOD</u> |
|---------------|-----------------------|------------------------|--------------------------|
|---------------|-----------------------|------------------------|--------------------------|

Each characteristic will be numbered in sequence starting with the number 301. When tests are specified and tabulated as above, the following statement will be used:

"Failure of any one sample shall be cause to cease those operations causing failure until corrections have been made and approved by the Government. Sampling shall not be resumed until _____ consecutively produced _____ item(s) are accepted by the Government."

6. Part III--Certification Provisions. a. Where materials, heat treatment, finishes, welding, brazing, bonding, or other processes are of critical or major importance to the function of the item, but are not amenable to examination under normal inspection of the completed item, a requirement for certification will be specified in part III of the SQAP.

b. A certification requirement similar to the following statement will be stated immediately below the part III heading:

"Certification shall include both the specified requirements and the actual results pertaining to each characteristic specified below. Certification shall be provided prior to performing final

acceptance inspection, and will suffice for the remainder of the contract provided the manufacturing processes and techniques to produce the items for which certification was issued have not been changed. Any and all changes will require a new certification from the contractor. Pertinent test data including methods used and scope of quantity covered shall also be cited."

c. Certification requirements will be tabulated under the following headings:

| <u>NUMBER</u> | <u>CHARACTERISTIC</u> | <u>TEST DATA TO COMPLY WITH</u> | <u>CERTIFICATION METHOD</u> |
|---------------|-----------------------|-------------------------------------|-----------------------------|
|---------------|-----------------------|-------------------------------------|-----------------------------|

(1) Each characteristic will be numbered in sequence starting with number 401, unless there is no Special Sampling table preceding it, in which case, the first characteristic will be numbered 301.

(2) The characteristic to be certified will be briefly identified as "weld," "bond," "heat treat," etc.

(3) Under Test Data To Comply With, specify the document which contains the test requirements.

(4) The Certification Method column will reference the paragraph of part IV that specifies the basis and form of the certification to be provided. Where no reference to part IV is required, this column may be deleted.

d. When no certification is required, the words "none required" will be added under the heading part III--Certification Provisions.

7. Part IV--Test Methods and Procedures. a. General. Each characteristic listed in parts II and III of the SQAP will be carefully analyzed, and a determination made as to the methods, procedures, equipment, and sequence of examinations and tests that will best insure the acceptance of those products which conform with requirements and the rejection of those which do not conform. To insure correlation of the references under the Inspection Method column in part II, the following parenthetical remarks will be entered below the part IV title: "(As referenced under Inspection Method column, part II.)"

b. Extent of coverage. Except for those obvious inspection methods which employ commercial inspection equipment and are described by a single word or brief phrase, or by reference to an existing drawing or other document in the tabulation of Inspection Methods, each characteristic listed in parts II and III of the SQAP, will be covered in part IV by a detailed description of the Test Methods and Procedure to be used to inspect for conformance.

c. Test equipment. The determination of the type of test equipment design to be incorporated in Inspection Methods, if any, will be based on criteria specified in AMCR 702-2. Use of special inspection equipment will be specified only when such designs have been completed, approved,

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APPENDIX II (Continued)

and are available for release concurrently with the SQAP. All other inspection equipment will be described verbally or schematically in such detail as is necessary to clarify the inspection method. Commercial model numbers will not be used to augment an inspection equipment description. If the commercial model number is an essential part of the description, the item will be considered as class A inspection equipment and will be covered by a Government Source Control or Specification Control drawing in accordance with MIL-STD-100, Engineering Drawing Practices.

d. Paragraph numbering. Inspection methods referenced in parts II and III will be defined in part IV and will be numbered in numerical sequence starting with paragraph 1. Subparagraphs applicable to a single characteristic will be numbered by the Dewey decimal system, e.g., 1.1, 1.2, etc.

D. Other format requirements.

1. SQAP number. The SQAP number should be identical to the number of the component or assembly for which the SQAP is prepared.

2. Title blocks. The Title block of a SQAP will include the words "Supplementary Quality Assurance Provisions For" followed by the nomenclature of the item to which the SQAP applies.

APPENDIX II (Continued)

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FORMAT

| SUPPLEMENTARY QUALITY ASSURANCE PROVISIONS (SQAP) | | | |
|--|-------------|---|--------------------|
| THIS SQAP FORMS A PART OF (SPECIFICATION MIL-F-13926) (DRAWING A76688718) AS SPECIFIED IN THE CONTRACT. INSPECTION SHALL BE CONDUCTED AS SPECIFIED HEREIN, AND IN ACCORDANCE WITH REFERENCED DOCUMENTS. | | | |
| <p><u>RESPONSIBILITY FOR INSPECTION</u> - Unless otherwise specified in the contract or purchase order, the supplier is responsible for the performance of all inspection requirements as specified herein. Except as otherwise specified, the supplier may utilize his own facilities or any commercial laboratory acceptable to the Government. The Government reserves the right to perform any of the inspections set forth in this document where such inspections are deemed necessary to assure supplies and services conform to prescribed requirements.</p> | | | |
| <u>PART I -- LIST OF APPLICABLE DOCUMENTS</u> | | | |
| <u>LIST OF DRAWINGS</u> | | | |
| <u>NUMBER</u> | | <u>NOMENCLATURE</u> | |
| C7641866 | | SURFACE QUALITY COMPARISON STANDARD | |
| D780606 | | TESTING HARDNESS, TESTER ABRASION | |
| <u>LIST OF STANDARDS</u> | | | |
| <u>NUMBER</u> | | <u>TITLE</u> | |
| MIL-STD-105 | | SAMPLING INSPECTION AND TABLES FOR INSPECTION BY ATTRIBUTES | |
| <u>REVISIONS</u> | | SUPPLEMENTARY QUALITY ASSURANCE PROVISIONS FOR: | |
| <u>SYM</u> | <u>DATE</u> | <u>APPROVED</u> | <u>EO</u> |
| ORIG | | | FT84060 |
| A | | | FT4073 |
| B | | | FT5040 |
| | | | |
| | | | |
| | | | |
| | | | |
| <u>COMPONENT DRAWING</u> | | Approved | LENS, OBJECTIVE |
| <u>NUMBER</u> | <u>DATE</u> | | CODE |
| | | | SQAP 76688718 IDEN |
| | | | SHEET 1 OF 3 |

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APPENDIX II (Continued)

| LIST OF SPECIFICATIONS | | | |
|--|---|------------------------|-------------------------------|
| <u>NUMBER</u> | <u>NOMENCLATURE</u> | | |
| MIL-G-174 | GLASS, OPTICAL | | |
| MIL-C-675 | TESTING OF GLASS OPTICAL ELEMENTS | | |
| MIL-A-003920 | ABRASIVE, OPTICAL THERMOSETTING | | |
| MIL-O-13830 | OPTICAL COMPONENTS OF FIRE CONTROL INSTRUMENTS: GENERAL SPECIFICATIONS GOVERNING THE MANUFACTURE, ASSEMBLY, AND INSPECTION OF | | |
| <u>PART II -- EXAMINATION PROVISIONS</u> | | | |
| <u>TABLE I -- CLASSIFICATION OF QUALITY CONFORMANCE CHARACTERISTICS</u> | | | |
| 100% examination shall be performed for critical characteristics unless otherwise stated. Examination of major and minor characteristics shall be performed in accordance with the classification of quality conformance characteristics contained herein utilizing the sampling tables and procedures contained in MIL-STD-105 as applicable. | | | |
| <u>PART II -- EXAMINATION PROVISIONS (cont.)</u> | | | |
| <u>CLASS</u> | <u>CHARACTERISTIC</u> | <u>PER DWG OR SPEC</u> | <u>INSPECTION METHOD</u> |
| <u>CRITICAL</u> | NONE | | |
| <u>MAJOR</u> | 1.0% DEFECTIVE | | |
| 101. | OUTSIDE DIAMETER | A76688718 | SME |
| 102. | AXIAL THICKNESS | " | COMPARATOR INDICATOR |
| 103. | FOCAL LENGTH | " | LENS BENCH |
| 104. | CONCENTRICITY | " | " " |
| 105. | RESOLUTION | " | " " |
| 106. | MAXIMUM TRANSMISSION AT .950 MICRON | " | STE-1 |
| 107. | SURFACE QUALITY | A76688718 | STE-1 |
| 108. | SURFACE COATING | " | STE-2 |
| 109. | CEMENT | " | STE-3 |
| <u>MINOR</u> | 2.5% DEFECTIVE | | |
| 201. | COMPLETION OF MACHINING & FINISHING OPERATIONS | A76688718 | VISUAL |
| Submitted | Approved | Nomenclature | SOAP 76688715 SHEET 2 OF 3 |

APPENDIX II (Continued)

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PART III -- CERTIFICATION PROVISIONS

Certification shall include test data and results for each characteristic specified below. Certification shall be required prior to performing final acceptance inspection and will suffice for the remainder of the contract, provided the manufacturing processes and techniques used to produce the items for which certification was issued have not been changed. Any and all changes will require a new certification from the contractor.

| <u>NUMBER</u> | <u>CHARACTERISTIC</u> | <u>TEST DATA TO COMPLY WITH</u> |
|---------------|----------------------------------|-------------------------------------|
| 301. | MATERIAL, OPTICAL GLASS, GRADE C | A76688718 & MIL-G-174 |
| 302. | CEMENT | A76688718 & MIL-A-003920 |

PART IV -- TEST METHODS AND PROCEDURES

"(As referenced under Inspection Method column, Part II.)"

1. A flat glass specimen having the same index of refraction (d) as the objective lens, A76688718 shall be coated (both surfaces) with each lot of objective lenses. The coated specimen shall be measured with a Spectrophotometer to determine conformance with the drawing characteristics for transmission. The accepted coated glass specimen shall be used as a visual comparison sample for acceptance of that lot of coated lenses, and may also be used for successive lots of coated lenses. Where a lot of lenses deviate in coating color from the accepted visual comparison sample, the glass specimen coated with the lot of lenses shall be measured with a Spectrophotometer to determine acceptance. Any glass specimen to be re-used as a visual comparison sample for subsequent coating lots shall be free from any previous coating film prior to recoating.

2. Conduct test for surface quality in accordance with MIL-O-13830 utilizing test equipment conforming to DWG D76418866.

3. Conduct test for coating quality and coating hardness in accordance with MIL-O-13830 and MIL-C-0675 utilizing test equipment conforming to DWG C76418866.

4. The test methods and procedures outlined in MIL-O-13830 shall apply.

Submitted

Approved

Nomenclature

SQAP 76688718

SHEET 3 OF 3

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APPENDIX III

INSTRUCTIONS FOR THE PREPARATION OF PACKAGING DATA SHEETS

A. Scope

This Appendix to Specification MIL-T-60530 provides instructions for the preparation of Packaging Data Sheets as required by paragraph 3.6 of the basic specification.

B. General Requirements

1. Preliminary draft.- Two copies of the preliminary draft of each Packaging Data Sheet prepared on AMC Form 1029 and continuation sheets when required, shall be submitted to the government technical representative for review and approval.

NOTE: Continuation sheet shall be used for continuation of notes, sketches or illustrations.

2. Final copy.- The final copy of the packaging data sheet shall be an original and prepared on the basis of the approved draft and comments received from Government technical representative. Preparation shall be accomplished on preprinted packaging data sheet forms supplied by the Government. All entries will be made using standard 12-point type and capital letters. Care shall be exercised to prevent typewritten information from touching preprinted lines, numbers, or titles. A ribbon capable of providing legible reproduction will be used. Illustrations shall be rendered in black ink.

3. Instructions for completion of packaging data sheets.- Packaging data sheets shall be prepared in accordance with the following instructions.

(1) General requirements.

(a) Dimensions for all materials employed will be specified as inches and fractions of an inch. Dimensions listed for the size of containers required for item designation will be in sequence prescribed in the applicable container specification. Dimensions involving mixed numbers will be recorded on the packaging data sheets as a whole number first, a space, and then a fraction; e.g., 11-1/4. All fractions will be recorded as a number (the numerator), a virgule (/) and another number (the denominator): e.g., 1/8, 3/8, 5/8, etc. Fractions provided by a single key of the typewriter will not be used. All entries will be made using standard 12-point type and capital letters.

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APPENDIX III (Continued)

b. Care will be exercised to prevent typewritten information from touching preprinted lines, numbers, or titles. A ribbon capable of providing legible reproduction will be used.

c. When special requirements are to be entered in "Notes," they will be identified by letters as A, B, C, etc., or by asterisks as *, **, ***. Note symbols will be shown in the appropriate blocks.

d. Logistical data will be recorded decimally as:

1. Item and unit of issue weight, unit, and intermediate package weight in pounds and hundredths (.01) of a pound.

2. Item and unit of issue cube, unit, and intermediate package cube in cubic feet and thousandths (.001) of a cubic foot.

3. Item and unit of issue size, unit, and intermediate package size in feet and hundredths (.01) of a foot, e.g., 3 1/2 inches x 3 1/2 inches x 3/4 inch equals .29 x .29 x .06.

4. Data less than .01 pound, .001 cubic feet, or .01 foot will be recorded .01, .001, or .01 respectively. A decimal and the applicable numbers of zeros will follow a whole number.

(e) When single items are packaged and packed as a single unit, with the unit package and the exterior container being one and the same, the following statement will be entered in "Notes": "UNIT PACKAGE WILL SERVE AS SHIPPING CONTAINER."

(f) When logistics data for an intermediate package and an exterior pack are required; i.e., palletization or other forms of unitization, the data will be entered in "Notes".

(2) Detailed requirements for completing AMC Form 1029. The following requirements are listed in sequence with items on AMC Form 1029.

(a) Federal item name. Enter the Federal item name (FIN), beginning with the noun. When absolutely necessary, the nomenclature may be continued in "Notes". However, the description normally will be restricted to the space provided.

(b) Part or drawing number. Enter the complete part number of the item prefixed by a capital gothic letter "P" e.g., P1234567. Also enter in the right hand margin.

(c) Federal stock number. Enter the complete Federal stock number; also enter in the right hand margin adjacent to the part Number.

(d) Item category (MIL-STD-647). Not applicable.

(e) Method. Enter the unit protection method, e.g., I, III, or submethod (e.g., IA-8, IC-1), applicable to the particular item being packaged. Methods and submethods used will be as outlined in MIL-P-116.

APPENDIX III (Continued)

(f) Cleaning. Enter the applicable cleaning process by symbol, e.g., C-3, C-5. Drying procedure symbols D-1 and D-4 will be entered when these procedures are utilized as cleaning processes. Optional requirement: When cleaning process C-1 is entered, reference may be made to "Notes" where the applicable process will be adequately described.

(g) Drying. Unless otherwise specified, MIL-P-116 will be entered in this block. In instances where a drying procedure is required that does not fully conform to a procedure outlined in MIL-P-116, specific instructions will be provided in "Notes."

(h) Level A unit package requirements.

1. Preservative. Enter the preservative specification(s) or preservative type(s) as specified in MIL-P-116. If there is more than one type, grade, or class for a preservative type, entry will be made by specification. When the preservative specification is specified, the type, grade, or class, etc., will be entered in the space provided.

2. Intimate wrap. Enter the applicable material by specification number, size, style, type, grade, and/or class. If spaces are not available for materials to be recorded, preparing activities will employ the blank blocks following "Closure" to specify requirements. If clarification is required regarding the use of the material, specific instructions will be provided in "Notes."

3. Cushioning. Enter the applicable material by specification number, size, style, type, and/or class. If clarification is required regarding the use of the material, specific instructions will be provided in "Notes." In cases where special die cuts, filler pads, inserts, etc., are required, an 8- by 10 1/2-inch continuation sheet will be used for implementing requirements (sketches, photographs, bills of material, etc.). In such instances, supplementary drawings will be referenced on AMC Form 1029.

4. Container. Enter the specification, size, style, type, grade, and class, using symbols and numbers as reflected in the applicable specification; e.g., PPP-B-636, 6 inches x 6 inches x 6 inches, RCS - W5c. Any explanatory remarks will be entered in "Notes."

5. Desiccant. Enter the applicable material by specification number and quantity, as applicable. If spaces are not available for material to be recorded, specific instructions will be entered in "Notes."

6. Closure. Enter the specification, size, type, grade, and class of tape; or type, grade, and class of adhesive to be used. Any explanatory remarks will be entered in "Notes."

7. Barrier. Enter the applicable material by specification number,

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APPENDIX III (Continued)

size, style, type, grade, and class. If spaces are not available for materials to be recorded, preparing activities will employ the blank blocks following "Closure" to specify requirements. If clarification is required regarding the use of material, specific instructions will be provided in "Notes."

8. Container. Same as 4 above.

9. Closure. Same as 6 above.

10. Blank spaces. The blank spaces are to be used for listing additional materials that are normally used in packaging; e.g., humidity indicators, blocking, etc., which will be used in completion of the unit package. Any explanatory remarks will be entered in "Notes."

(i) Steps. Enter numerical characters for step sequence followed by alphabetic characters or asterisks (when applicable) for references to figures and notes.

(j) Drawing or specification. Enter the applicable specification or drawing number for the packaging materials used.

(k) Size and notes. Enter size of all materials in inches and fractions of an inch.

(l) Style, type, grade, and class. Enter requirements peculiar to the materials as indicated in the specification. If no entry is made, any requirements in the specification will be assumed to be applicable and permissible to use.

(m) Unit package quantity. Enter quantity of items in the unit package.

(n) Unit package weight. Enter the unit package weight in accordance with (d) above.

(o) Unit package cube. Enter the unit package cube in accordance with (d) above.

(p) Unit package size (exterior). Enter the exterior size of unit package in the sequence presented in the applicable container specification. The size for bags and cylindrical packages will be computed on the basis of rectangular solids.

(q) Intermediate package quantity. Enter the quantity of unit packages to be placed in the intermediate container. The symbol "UP" will be added to the quantity of unit packages; e.g., "4 UP" indicates four unit packages. Enter the word "None" when no intermediate quantity is required.

(r) Preparing activity. Enter the name or symbol of the packaging

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APPENDIX III (Continued)

data sheet preparing activity. The Federal Cataloging Activity Codes in appendix A-1, AR 708-16, will be used for the symbol.

(s) Date. Enter the date on which the packaging data sheet was prepared; e.g., 26 Mar 64.

(t) Revision.- Enter the revision symbol as an alphabetic character beginning with an "A" for the first revision, then proceeding through the alphabet for each succeeding revision. Alphabetic characters "I," "O," and "n" will not be used.

(u) Date. Enter the date on which the packaging data sheet was revised, e.g., 26 Mar 64.

(v) Sheet number. Enter the sheet number and total sheet number for the packaging data sheet, e.g., 1 of 2, 2 of 2.

(w) Figures and notes. Enter any implementing requirements, explanatory remarks, requirement for intermediate container and closure as applicable, and other necessary information for which sufficient space is not provided elsewhere on the packaging data sheet. When additional space is necessary, a continuation sheet will be used.

(3) Detailed requirements for completing AMC Form 1029a. The following requirements are listed in sequence with items on AMC Form 1029a.

(a) Sheet number. Enter the sheet number and total sheet number for the packaging data sheet, e.g., 1 of 2, 2 of 2.

(b) Part Number. Enter the complete part number of the item.

(c) Federal stock number. Enter the complete Federal stock number.

(d) Packaging level. Enter the packaging level(s), as specified in AR 700-15, for which the packaging data sheet is applicable.

(e) Federal item name. Enter the Federal item name (FIN), beginning with the noun.

(f) Date. Enter the date on which the packaging data sheet was prepared, e.g., 26 Mar 64.

(g) Item weight. Enter item weight in pounds and hundredths of a pound.

(h) Item cube. Enter item cube in cubic feet and thousandths of a cubic foot.

(i) Item size. Enter item size in feet and hundredths of a foot.

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APPENDIX III (Continued)

(j) Revision date. Enter the date on which the packaging data sheet was revised, e.g., 26 Apr 66.

(k) Unit of issue weight. Enter unit of issue weight in pounds and hundredths of a pound. When the issue quantity is greater than one, the weight will be shown for the accumulative total of the unit of issue; e.g., if the unit of issue is 4 each, the weight shown will be for the 4.

(l) Unit of issue cube. Enter the unit of issue cube in cubic feet and thousandths of a cubic foot. When the unit of issue quantity is greater than one, the cube will be shown for the accumulative total of the unit of issue. When it is known that the items can be nested, thus reducing accumulative cube, the cube shown will be for the nested condition.

(m) Unit of issue size. Enter the unit of issue size in feet and hundredths of a foot. Configuration will be considered as in (l) above.

(n) Unit of issue quantity. Enter the established unit of issue, e.g., 1, 4, 12.

(o) Revision number. Enter the revision number as an alphabetic character beginning with an A for the first revision, then proceeding through the alphabet for each succeeding revision. Alphabetic characters I, O, and N will not be used.

(p) Unit quantity. Enter quantity of items in the unit package.

(q) Method. Enter the unit protection method, e.g., I, III or sub-method (e.g., 1A-8, IC-1), applicable to the particular item being packaged. Methods and submethods used will be as outlined in MIL-P-116.

(r) Cleaning. Enter the applicable cleaning process by symbol, e.g., C-1, C-3, C-5, as specified in MIL-P-116.

(s) Drying. MIL-P-116 will be entered in this block. In instances where a drying procedure is required that does not fully conform to a procedure outlined in MIL-P-116, specific instructions will be provided in "Notes."

(t) Unit package.

1. Preservative. Enter the preservative specification(s) as specified in MIL-P-116. When the preservative specification is specified, the type, grade, or class will be entered in the space provided.

2. Intimate wrap. Enter the applicable material by specification number, size, style, grade, and/or class. If clarification is required regarding the use of the material, specific instructions will be provided in "Notes."

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APPENDIX III (Continued)

3. Cushioning. Enter the applicable material by specification number, size, style, type, and/or class. If clarification is required regarding the use of the material, specific instructions will be provided in "Notes." In cases where illustrations of special die cuts, filler pads, inserts, etc., are required, a continuation sheet will be used.

4. Desiccant. Enter the applicable material by specification number and quantity, as applicable. If spaces are not available for material to be recorded, specific instructions will be entered in "Notes."

5. Container. Enter the specification, size, style, type, grade and class, using symbols and numbers as reflected in the applicable specification; e.g., FP-B-636, 6 inches x 6 inches x 6 inches, RSC-W5c. Any explanatory remarks will be entered in "Notes."

6. Barrier. Enter the applicable material by specification number, size, style, type, grade, and class. If clarification is required regarding the use of material, specific instructions will be provided in "Notes."

7. Container. Same as 5 above.

8. Closure. Enter the specification, size, type, grade, and class of tape; or type, grade, and class of adhesive to be used. Any explanatory remarks will be entered in "Notes."

9. Blank spaces. The blank spaces are to be used for listing additional materials that are normally used in packaging; e.g., humidity indicators, blocking, etc., which will be used in completion of the unit package. Any explanatory remarks will be entered in "Notes."

(u) Step. Enter numerical characters for step sequence followed by alphabetic characters or asterisks (when applicable) for reference to figures and notes.

(v) Drawing or specification. Enter the applicable specification or drawing number for the packaging materials used.

(w) Size. Enter size of all materials in inches and fractions of an inch.

(x) Style, type, grade, and class. Enter requirements peculiar to the materials as indicated in the specification. If no entry is made, any requirements in the specification will be assumed to be applicable and permissible to use.

(y) Unit package. Enter the data required by 1, 2, and 3 below.

1. Size. Enter the exterior size of unit package in sequence presented in the applicable container specification. The size for bags and

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APPENDIX III (Continued)

cylindrical packages will be computed on the basis of rectangular solids. Sizes will be in feet and hundredths of a foot.

2. Weight. Enter the unit package weight. Weight will be shown in pounds and hundredths of a pound.

3. Cube. Enter the unit package cube. Cube will be shown in cubic feet and thousandths of a cubic foot.

(s) Intermediate package. Enter the data required in 1, 2, and 3 below.

1. Size. Enter intermediate container size in accordance with (y)1 above.

2. Weight. Enter intermediate container weight in accordance with (y)2 above.

3. Cube. Enter intermediate container cube in accordance with (y)3 above.

(aa) Intermediate quantity. Enter the quantity of unit packages to be placed in the intermediate container. Enter the word "None" when no intermediate quantity is required.

(ab) Item characteristics (MIL-STD-647). Enter the item category, e.g., ALAL, surface chemistry, surface mechanical configuration-complexity, flexibility-fragility. Items will be identified to each category division that most accurately describes the characteristics being considered.

(ac) Intermediate package. Enter requirements for intermediate container and closure.

(ad) Step. Enter numerical characters for step sequence followed by alphabetic characters or asterisks (when applicable) for references to figures and notes.

(ae) Drawing or specification. Enter the applicable specification or drawing number for the packaging materials used.

(af) Size. Enter all sizes in inches and fractions of an inch.

(ag) Style, type, grade, and class. Enter requirements peculiar to the materials as indicated in the specification. If no entry is made, any requirement in the specification will be assumed to be applicable and permissible to use.

(ah) Source. Enter the name or symbol of the packaging data sheet preparing activity. The Federal Cataloging Activity Codes in appendix A-1,

APPENDIX III (Continued)

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AR 708-16, will be used for the symbol.

(ai) Marking. Enter reference to applicable publication, notes, or drawings.

(aj) Inspection. Enter reference to applicable inspection plan as specified in MIL-P-14232.

(ak) Level A packing requirement. Enter reference to applicable publication or notes.

(al) Level B packing requirement. Enter reference to applicable publication or notes.

(am) Level C packaging and packing requirements. Enter reference to applicable publication or notes.

(an) Notes. Enter any implementing requirements, explanatory remarks, and other necessary information for which sufficient space is not provided elsewhere on the packaging data sheet. When additional space is necessary, a continuation sheet will be used.

(4) Continuation sheets. Continuation sheets will be prepared on white, translucent, bond paper listing at the top the same information, and in the same sequence, as contained on AMC Forms 1029 and 1029a. In the lower right of the continuation sheets for AMC Form 1029 will be entered the same data as required by f(2)(r), (s), (t), (u), and (v) above. The lower portion of the continuation sheet used with AMC Form 1029a will be utilized for drawings, illustrations, material notes, and other related data.

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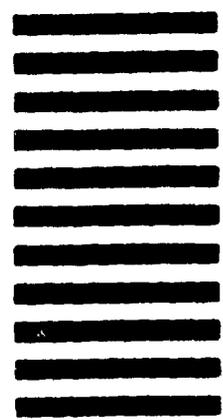
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