F/A-18, F-5/T-38, MATERIALS HANDLING MANUAL

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SUBJECT: Parts Protection Specification

TITLE: SUPPLIER PACKAGING USING BEST COMMERCIAL PRACTICES
1. **SCOPE**

1.1 This specification establishes the requirements of supplier packaging using best commercial practices for parts including electronic components to be shipped to Northrop Corporation, Aircraft Division.

1.2 This specification covers procurement, selection, and inspection of preservation end packaging when referenced on Northrop Grumman Engineering Drawings, Purchase Orders, Specifications, and Manufacturing Operation Sheets.

2. **APPLICABLE DOCUMENTS**

2.1 The primary use of the following documents and the other specifications which they reference is guidance in the selection of methods, materials, and designs. Unless otherwise specified herein, they do not state the requirements of this specification.

2.1.1 Government

2.1.1.1 MIL-STD-2073-1 Preservation, Methods of

2.1.1.2 MIL-STD-129 Marking for Shipment and Storage

2.1.1.3 MIL-STD-2073-1 Procedures for Development and Application of Packaging Requirements

2.1.1.4 MIL-STD-1686 Electrostatic Discharge, Control Program for Protection of Integrated Systems

2.1.2 Other Publications

2.1.2.1 P-003 Protection of Electrostatic Discharge Sensitive (ESDS) Components during Handling and Storage

2.1.3 Uniform Freight Classifications

(Applications for copies should be addressed to Uniform Classification Committee, Room 1106, 222 S. Riverside Plaza, Chicago, Illinois 60606.)

2.1.4 National Motor Freight Classifications

(Applications for copies should be addressed to American Trucking Associations, Inc., Tariff Order Section, 1616 P Street N.W., Washington, D.C., 20036.)

NOTE: Changes are indicated by a bar (I) in the right hand margin.
3. REQUIREMENTS

3.1 Packaging Materials, Procedures and Workmanship

3.1.1 Materials shall be of good commercial quality. Any material or constituent which contacts the part shall have no substance which can cause or promote part deterioration.

3.1.1.1 Newspapers and rags are not acceptable as wrapping material.

3.1.1.2 Shredded paper of loose fill material such as polyethylene or polystyrene chips or chopped corrugated is not acceptable as dunnage or cushioning material.

3.2 Preservation and Protection

3.2.1 Cleaning, drying and preservation of each item shall be suitably performed by methods similar to those in specification MIL-STD-2073-1, and shall prevent corrosion of parts for at least 90 days indoor storage when retained in original container without removal of preservative materiel.

3.2.1.1 All bare (uncoated or unpainted) metal parts that are not inherently corrosion resistant shall be preserved as noted in paragraph 3.2.1.

3.2.1.2 All parts preserved with grease or oil shall be wrapped with greaseproof material prior to placing in the container.

3.2.1.3 Electrostatic Discharge sensitive components shall be packaged with appropriate protection in accordance with P-003.

3.3 Packaging and Packing

3.3.1 The packaging system shall be of adequate performance and minimum cost. Proper physical and chemical protection and cleanliness must be maintained. Existing or standard designs, methods and sizes shall be used whenever practical and economical. Exposure conditions, both mechanical and physical, that create potential corrosion shall be anticipated through the transport, delivery, and acceptance phases and reflected in the protection system used.

3.3.2 Design and construction of any container shall permit nondestructive easy opening and removal of dunnage and, after inspection, the repacking of the part(s) in the proper condition of preservation and protection for storage in the same container(s) and dunnage.

3.3.2.1 All containers shall have lids securely attached to enclose within container.

3.3.2.2 All containers having a bottom surface area greater than 5 square feet or having contents of 60 lbs or more shall have a minimum of 2 skids (or runners) 2 1/2 inches thick on the bottom surface for forklift provisions.

3.3.2.3 Containers that have identification printing or logos other than that of the Supplier which is supplying the parts to Northrop Grumman shall not be used. Example ABC Milling Company shall not send parts to Northrop Grumman in Mrs. Tucker’s Cooking Oil containers.

3.3.2.4 Different part numbers shall not be packed in the same unit container.

3.3.2.5 When more than one part is placed in a single container (multiple quantities), each part shall be wrapped, bagged or interleaved with acceptable material to prevent scratches or other damage to parts. The total quantity of parts shall not exceed the weight limitation of the container used and shall provide for ease in handling and storage. A large quantity of parts (over 10) in a single container is not acceptable, except for nuts, bolts shims, hardware type parts, raw stock or electronical components as specified in 3.3.2.6.

3.3.2.6 Electronic components packaged in multiple quantities, i.e. resistor tab strip or integrated circuits packaged in tubes shall be acceptable in accordance with 3.2.1.3.
3.3.3 The latest applicable public carrier rules and regulations shall be used including Uniform Freight and National Motor Freight Classifications.

3.3.4 The shipping container should be able to withstand and adequately protect each part and package from rough handling when tested in accordance with the requirements of MIL-STD-2073 for Level B packs.

3.3.5 Raw stock material, rough forgings, and rough castings may be shipped on pallets or skids in accordance with the following requirements:
1. The load shall not extend beyond any edge of the pallet or skid.
2. The load shall be secured so that there is not movement on the skid or pallet.
3. The weight of the load shall not damage the pallet or skid during handling and transportation.
4. Detail or finished parts shall not be shipped on skids or pallets.

3.4 Marking and Labeling

3.4.1 Containers shall be durably labeled or marked to show applicable items listed below:
- **Exterior (shipping) containers:** Show items 1 through 5
- **Intermediate boxes:** Show items 4 through 6
- **Unit boxes:** Show items 3 through 8

1. Number _____ of _____ (Shipping containers)
2. Northrop Grumman Purchase Order number, and item (Listing) Number on P.O.
3. Supplier’s name, Mark or Identification Number
4. Quantity of items in container (Over 1)
5. Part Numbers (Standard; Manufacturer; Northrop)
6. Part Name or Description
7. Manufacturer or Assembly Date (Month/Year)
8. Rubber Cure Date (Calendar quarter and year. i.e., 2Q 92)

3.4.2 A sensitive electronic symbol and ESD caution note shall be applied in accordance with P-003.

3.4.3 Precautionary and handling markings (FRAGILE, THIS SIDE UP, etc.) shall be applied as needed. Restrictions against exposure to inclement weather shall be noted for applicable shipping containers.

4. QUALITY ASSURANCE PROVISIONS

4.1 Packages which do not conform to these requirements are subject to rejection and return at the supplier’s expense.

5. PREPARATION FOR DELIVERY

5.1 This section is not applicable to this specification.

6. NOTES:

6.1 Information pertaining to this specification may be obtained from Packaging, Handling, Storage and Transportability Engineering, Dept. MTP6, Integrated Systems, Western Region