

# LMSSC PACKAGING STANDARD

P-51

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## PARTS (SELECTED QUANTITIES) IN WOOD/CORRUGATED BOX

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### 1.0 SCOPE

This standard provides for the packaging of a single item, assembly, component, fixture, etc., or when specified, the multiple packaging of parts within a wood box, veneer cleated box or corrugated fiber container.

### 2.0 REFERENCES

2.1 Lockheed Packaging Standard LPS 40-001 (General Requirements Specification)

### 3.0 REQUIREMENTS

#### 3.1 GENERAL

- 3.1.1 The requirements of LPS 40-001 shall be met in addition to provisions of this Packaging Standard.
- 3.1.2 The quantity per unit package shall be in accordance with the requirements of this document.
- 3.1.3 Item(s) shall be wrapped/interleaved, as applicable, cushioned and adequately dunnaged within the container to protect the items from damage during shipment. Guidance in selecting appropriate methods for blocking/bracing container contents are detailed in ASTM D5728.
- 3.1.4 Items may be nested within each other to reduce package cube, providing that no degradation to the item(s) results from such action.
- 3.1.5 Item(s) having electrical connectors shall be protected with correct size and type of plastic caps (see Paragraph 5.1.2). SOFT plastic caps are not acceptable.

**CAUTION:** ONLY STATIC PROTECTIVE CAPS OR STATIC PROTECTIVE BARRIER FILM SHALL BE USED ON ELECTRICAL CONNECTORS WHERE STATIC CHARGE BUILDUP COULD RESULT IN DAMAGE TO ASSOCIATE COMPONENT(S). (SEE PARAGRAPH 5.1.2).

- 3.1.6 Any loose item(s) required per part shall be enclosed in a plastic bag and secured within the unit package so as to prevent damage to other items.
- 3.1.7 Exposed silver or silver-plated parts shall be protected with tarnish-inhibitor material. Minimum surface area of the tarnish inhibitor shall be twice the area of the silver surface of the items.

**NOTE:** The treated side of the inhibitor material must be facing the items.

**CAUTION:** ITEMS HAVING ANY SURFACES INCOMPATIBLE WITH THE TARNISH INHI- BITOR SHALL BE COMPLETELY WRAPPED WITH A NEUTRAL MATERIAL PRIOR TO APPLICATION.

- 3.1.8 Tarnish inhibitor may be adjacent to, but shall not be allowed to come in contact with, chemically finished surfaces such as anodize, iridite, chromate coatings and other nonferrous metals (e.g., cadmium, copper and brass).
- 3.1.9 Shipments of items/materials classified as hazardous, e.g., flammable, explosive, toxic, combustible, corrosive, compressed gas, magnetic, radioactive, poisons, oxidizing materials, etc., shall be properly identified, packaged and marked in compliance with applicable carrier/state/federal regulations.

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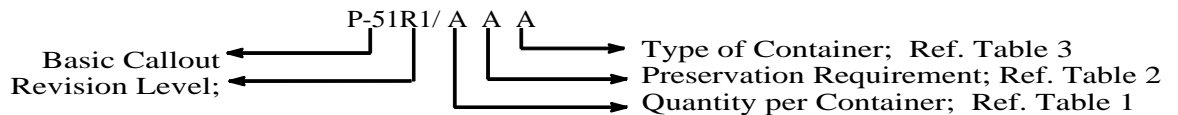
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- 3.1.10 The operational integrity of the item(s) shall be protected against damage during shipment from the supplier to destination. Critical areas and/or surfaces of the item(s) shall be protected from abrasion by wrapping, blocking, cushioning, etc.
- 3.1.11 Large delicate/critical components, assemblies, parts, subject to damage from shock/vibration during transportation/handling, shall be adequately protected against such hazards by proper application of cushioning material, container design or other suitable shock mitigating methods (Ref MIL-HDBK 304).

**CAUTION:** ELECTRONIC ASSEMBLIES CONTAINING DISCRETE MICROCIRCUITS (SEMI- CONDUCTORS, INTEGRATED CIRCUITS, PRINTED WIRING BOARDS, ETC.), SUSCEPTIBLE TO DAMAGE FROM ELECTROSTATIC, ELECTROMAGNETIC OR RADIOACTIVE FORCES, SHALL BE PROTECTED WITH SUITABLE MATERIALS, SHIELDING, THROUGH COMPONENT DESIGN PRECAUTIONS TO PREVENT ASSEMBLY FAILURE. STATIC PRODUCING MATERIALS, i.e., POLY- ETHYLENE, POLYSTYRENE OR NYLON, SHALL NOT COME IN DIRECT CON- TACT WITH AN ITEM WHICH CAN BE DEGRADED BY STATIC DISCHARGE. SEE PARAGRAPH 5.1.2 FOR LIST OF ACCEPTABLE STATIC PROTECTIVE MATERIALS.

- 3.1.12 The type of preservation and quantity per unit container shall be as specified by the Lockheed Packaging Standard (LPS) callout on the procurement document.
- 3.1.13 The basic callout (P-51R1) prescribes the shipment of designated item(s) in wood/vener or corrugated fiber containers. The suffix letters following the basic callout, e.g., P-51R1/A A A identifies specific quantity, preservation and container requirements.



**3.2 UNIT PACKAGING**

- 3.2.1 Unless otherwise specified, each item shall be individually wrapped with a neutral material. Include tarnish inhibitor and provide protective caps as applicable (Ref Paragraphs 3.1.4 and 3.1.6). Place item(s) in a snug fitting container (see Paragraph 5.1.2) and provide necessary blocking/bracing, cushioning, etc., to protect the item(s) (Ref Paragraph 3.1.2).

**3.3 INTERMEDATE PACKAGING**

Not applicable.

**3.4 PACKING**

- 3.4.1 Shipping containers as packed, shall protect the item(s) from damage during ordinary handling/shipping and shall meet the minimum requirements of common carriers for safe transportation at the lowest rate to the point of delivery.
- 3.4.2 Enclose or attach a copy of packing slip to the shipping container.

**3.5 MARKING** (Unless otherwise specified in the contract or P.O. use the following criteria)

- 3.5.1 Unit Package Marking - Label or mark each package to show at least the part number per contracting document, quantity, and supplier identity. Additional markings may be specified in the item detail specification or drawing. Marking should be limited to that required by the P.O. or material specification.

- 3.5.2 Shipping Container Marking - Label or mark each container to show part number per contracting document, the LMSSC contracting document number, supplier, destination and quantity of parts. Marking should be limited to that required by the P.O. or material specification.
- 3.5.3 Special, precautionary and handling markings shall be applied as required. Packages containing tarnish inhibitor shall be marked/labeled: "Protected with Tarnish Inhibitor – Do Not Open Until Ready for Use or Inspection". Special and precautionary handling labels shall meet ASTM D5445, Pictorial Marking for Handling of Goods.

**4.0 QUALITY ASSURANCE**

- 4.1 Packaging shall be accomplished in such a manner as to prevent physical damage to, or degradation of, the packaged items during delivery to the using activity. It shall be the prerogative of LMSSC to return damaged items, at supplier's expense, when such damage is attributable to improper or inadequate protection.

**5.0 NOTES**

- 5.1 The following information is intended as a guide or aid to suppliers in meeting the requirements of this specification.
  - 5.1.1 DEFINITION - Unprotected Silver Surfaces. All metallic silver surfaces (having stringent reflectivity or conductivity requirements, close-tolerance finishes and/or dimensions, without supplementary tarnish-resistant treatment), the deterioration of which may result in premature failure or malfunction of the item or equipment having such surfaces.

5.1.2 REFERENCES

<u>Commodity</u>	<u>Military/Commercial Specification</u>
Box, Corrugated (Tri-Wall)	ASTM D5168
Box, Fiberboard	ASTM D5118, Type CF, Class Domestic, SW, Style RSC, Grade 44 ECT or 200 Mullen
Box, Wood	ASTM D6880
Box, Wood Cleated, Plywood	ASTM D6251
Box, Wood Cleated, Veneer	PPP-B-576
Securement of Cargo	ASTM D5728
Fiberboard, Corrugated/Solid	ASTM D4727, Type CF, Class Domestic SW, Grade 200
Polyurethane Foam Cushioning	MIL-PRF-26514, Type I, Class 2, Grade B
Paper, Wrapping (Neutral)	MIL-DTL-17667, Type I
Plastic Sheet	A-A-3174, Type I, Class I, Grade B
Protective Caps	AS 90376 or NAS 831, NAS 813, 820
Fiber Box, Closing	ASTM D1974

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Table 1 PACKAGE QUANTITY REQUIREMENTS	
<b>LPS Suffix</b>	<b>Quantity per Container</b>
A	Package quantity shall be one each.
B	Package quantity shall be at supplier discretion, commensurate with carrier/container limitations.
C	Package quantity shall be in accordance with the assembly requirements, i.e., sets, reel quantity, kit quantity, drawing/specification or procurement document.
D	Package quantity shall not exceed the quantity specified in the procurement document.

Table 2 PRESERVATION/wrapping requirements	
<b>LPS Suffix</b>	<b>Type of Protection</b>
A	Item(s) shall be wrapped with a neutral material (Ref MIL-DTL-17667, Type I).
B	Items shall be interleaved with a neutral material (Ref MIL-DTL-17667, Type I).
C	No interleave or individual wrapping required.
D	Type of preservation shall be in accordance with item specification/drawing requirements.
E	Items must be separated from each other to prevent metal-to-metal contact. Use of spacers/separators between each item may be used in lieu of individual wrapping or interleaving.
F	Kit assemblies, sets, or specified grouping of items shall be wrapped as composite entities (not individual). Wrapping material shall not degrade the product.
G	Item(s) shall be wrapped or placed in bags made from plastic sheet (Ref L-P-378) and sealed. Thickness shall be minimum .004 inch.
H	Item(s) may be coiled/formed to a minimum practical diameter to reduce package cube. Use of stiffeners to prevent deformation of the item may be applied as applicable.

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Table 3 Containers		
<b>LPS Suffix</b>	<b>Type/Style</b>	<b>Specification</b>
A	Box, Wood/Corrugated - Any Style, providing that provisions of this specification are met	Suppliers Option (Ref Paragraph 5.1.2)
B	Box, Corrugated, Domestic - Any Style, Single Wall (SW)	ASTM D5118 & ASTM D1974
C	Box, Corrugated, Domestic - Any Style, Double Wall (DW)	ASTM D5118 & ASTM D1974
D	Box, Corrugated, Weather Resistant - Any Style, Single Wall (SW)	ASTM D5118 & ASTM D1974
E	Box, Corrugated, Weather Resistant - Any Style, Double Wall (DW)	ASTM D5118 & ASTM D1974
F	Box, Corrugated, Triple Wall - Any Style, (Nonweather Resistant)	ASTM D5168
G	Box, Wood, Nailed, Domestic - Any Style	ASTM D6880
H	Box, Wood, Cleated, Domestic - Any Style	ASTM D6251
I	Box, Wood, Cleated, Veneer, Domestic - Any Style	PPP-B-576