
PACKAGING, HANDLING AND TRANSPORTABILITY INSTRUCTIONS

For Direct Shipment and via Regional/Wholesale Warehouse of Items
to the U.S. Government

PM-801A

Oct. 16, 2013

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An electronic copy of this document is available as a PDF at the link below:

http://www.lockheedmartin.com/us/aeronautics/materialmanagement/scm-shipping/scm-shipping_shippinginstructions.html

REVISION RECORD

PM-801 SECTIONS REVISED	DESCRIPTION	REVISION
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REVISION RECORD

SECTIONS ADDED	DESCRIPTION	REVISION
2.3	Level A and B packing requirements	A
2.6	MIL-STD callouts for exterior and interior containers	A
6.0	Entire section added - Providing standardized container dimensions	A
8.1	WAWF receiving report and DD 250 - DFARS text added	A
11.0	Added Acronyms section	A
12.0	Added Addresses section	A
Supplement A	F-35 Additional Packaging, Handling and Transportability Instructions	A
	Revised by: Craig Spyhalski	A

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1.0 OVERVIEW

1.1 Purpose of PM-801

The purpose of this document is to set out the requirements, establish guidelines, and supplements the purchase order ("PO") of which this document is a part, and establishes the packaging, packing, marking, handling, transportability and shipping instructions for any shipments by Seller or Seller's subtier suppliers at all tiers, to the U.S. Government via Wide Area Work Flow (WAWF) Receiving Reports.

(Note: In this document the term "PO" is interchangeable with the word "Contract" as may be used elsewhere in the PO. The term "Buyer" is interchangeable with the term "LOCKHEED MARTIN" as may be used elsewhere in the PO).

1.2 PM-801 Compliance

Seller shall ensure that each of its subtier suppliers making any such shipment to other than Seller shall comply with PM-801 as though it were Seller hereunder. Seller shall have access to and an understanding of military packaging standards. Any deviation proposed by Seller requires written approval of Buyer prior to the implementation thereof.

1.3 F-35 Requirements

The F-35 Sustainment program has unique requirements for packaging and labeling. Consequently, this document is broken up into two sections, the base document and the Supplement section located in the back of this document. The Supplement section ("A") for this document is solely focused on F-35 unique requirements and can be found on page 31. The Supplement information is intended to support the base document information except where notated.

1.4 Communications in English

Seller shall transmit all communications, data, drawings, messages, and correspondence in the English language.

1.5 Measurements and Standards in English

Seller shall submit all standards and cost in U.S. units of measure (i.e. all drawings are to be dimensioned in inches).

2.0 PACKAGING

The following content outlines the requirements for effective preservation, packaging and packing of deliverable assets and those U.S. Government assets under Seller's control. The design, development, test, and approval of data and packaging shall comply with the requirements, criteria and procedures outlined in MIL-STD-2073-1E w/ Change 1, and this document.

2.1 Seller Compliance

Seller shall implement and maintain an integrated packaging process based upon compliance with MIL-STD-2073-1E w/ Change 1 for military packaging and ASTM D3951-10, or equivalent standard, for commercial packaging. The process, documentation, media, data, codes and metrics shall be made available to the Buyer.

2.2 Levels of Protection

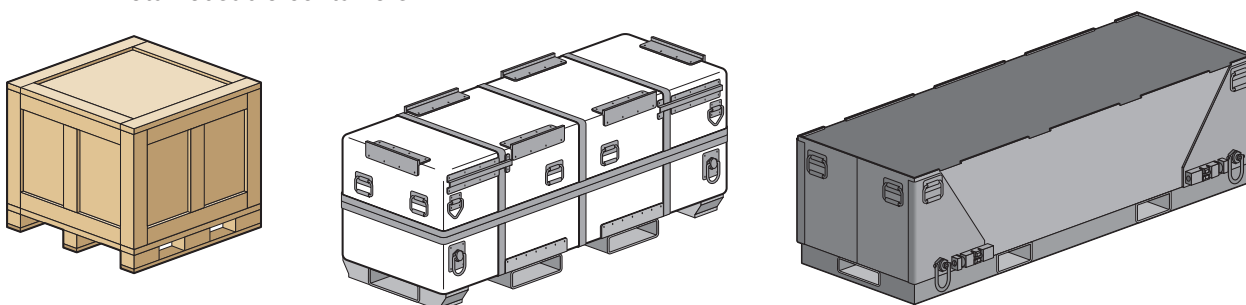
Levels of packing specify how the contents will be protected, unless otherwise stipulated in the Purchase Order.

2.2.1 Military Levels of Packing

There are two military levels of packing.

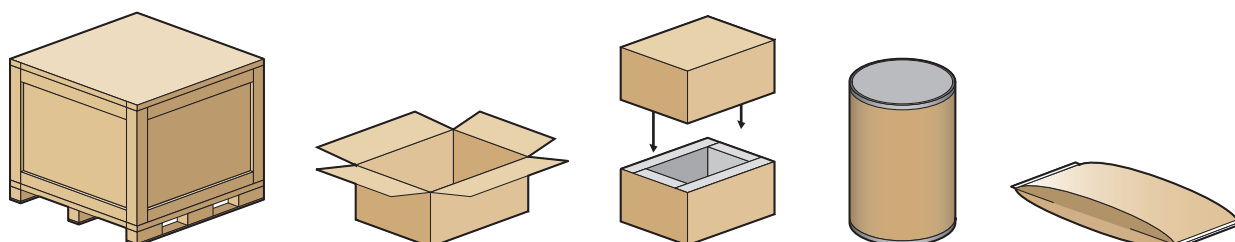
2.2.1.1 Level A Packing - Definition

Level A packing protection is required to meet the most severe worldwide shipment, handling, and storage conditions. A "Level A" pack must, in tandem with the applied method of preservation, be capable of protecting material from the effects of direct exposure to extremes of climate, terrain, and operational and transportation environments. Examples of situations which indicate a need for use of a Level A pack are: War Reserve Material, mobilization, strategic and theater deployment and employment, open storage, deck loading and Foreign Military Sales (as specified in the contract). Examples of containers used for Level A packing requirements include, but are not limited to, overseas type wooden boxes, and plastic and/or metal reusable containers.



2.2.1.2 Level B Packing - Definition

Level B Packing protection is required to meet moderate worldwide shipment, handling, and storage conditions. A "Level B" pack must, in tandem with the applied preservation, be capable of protecting material not directly exposed to extremes of climate, terrain, and operational and transportation environments. Examples of situations which indicate a need for use of a Level B pack are: security assistance, such as Foreign Military Sales (as specified in the contract) and containerized overseas shipments. Examples of containers used for Level B packing requirements include, but are not limited to, domestic wood crates, weather-resistant fiberboard containers, fast pack containers, weather-resistant fiber drums and weather-resistant paper, and multi-wall shipping sacks.



2.2.2 Levels of Protection Reference Guidelines

DOD and Non-DOD levels of protection are specified in Table 1 below for the following anticipated destinations and use factors to ensure that items are not degraded during shipment and storage.

Note: For F-35 see Supplement A

Table 1

		LEVELS OF PROTECTION			
		DOD (MIL-STD-2073-1E w/ Change 1)		Non-DOD (ASTM D3951-10)	
Item	*QUP	Level of Preservation Military (M)	Levels of Packing (A or B)	Preservation (X)	Packing (X)
(Line item number, item name, NSN, part number, etc.) For example: Repairables, Spares, Support Equipment					
Air/Overseas/FMS	1	M	B		
Surface/Overseas/FMS	1	M	B		
Repairables/Spares	1	M	B		
Air/Surface/CONUS Consumables - Storage Required	1	M			X
Air/Surface/CONUS Consumables - No Storage Required	1			X	X

*QUP – Quantity per Unit Pack

Use this chart as reference: Above is Lockheed Martin's interpretation of standards

Note: Table 1 does not apply to F-35. For F-35 levels of protection see Supplement A

2.3 Level A and B Packing Requirements

When practicable, the exterior container being shipped to a single destination shall:

- Contain items of the same National Stock Number.
- Contain identical quantities of unit/intermediate packs.
- Contain items of the same contract.
- Contain items having the same lot number, cure, manufacture or expiration date.
- Be the most cost effective and be of minimum cube to contain and protect the items.

2.4 Military Level of Preservation

A military level of preservation is that level designed to protect an item during shipment, handling, indeterminate storage, and distribution to consignees worldwide. A military level of preservation ensures contents of package are protected against environmental factors such as, but not limited to, the following: fresh water, salt water, dust, electrostatic discharge (if applicable), rust, etc.

There are five basic methods of preservation :

Method 10 Physical protection

Method 20 Preservative coating only

Method 30 Waterproof protection

Method 40 Watervaporproof protection

Method 50 Watervaporproof protection with desiccant

See MIL-STD-2073-1E w/ Change 1 section 5.2 for additional information.

2.5 Amended Shipping Instructions (ASI)

Items shipped in response to Amended Shipping Instructions shall be preserved, packaged, and packed in accordance with the requirements detailed in the ASI. Changes in cost resulting from ASI shall be identified and processed according to applicable Purchase Order provisions, provided by Buyer.

2.6 Container Selection

Acceptable exterior and interior shipping containers for Levels A and B military packing are listed below per MIL-STD-2073-1E w/ Change 1. Selection criteria shall reflect the most economical container that provides the required protection for any given military packing application.

2.6.1 Exterior Containers

Exterior Shipping Containers (MIL-STD-2073-1E w/ Change 1)

Selection by Maximum Weight of Contents and Level of Packing

Specification	Description	Weight of Contents (max. lbs.)	Military Packing Level	Remarks
PPP-B-585	Boxes, Wood: Wirebound - Class 1 Wirebound - Class 2	400 300	B A	
PPP-B-1672	Box, Shipping: Reusable with Cushioning		B	See table C-IV, Type I thru IV for weight and size restrictions
PPP-D-729	Drums: Shipping and Storage, Steel, 55-Gallon		A	
MIL-C-104	Crates, Wood: Lumber and Plywood Sheathed, Nailed, and Bolted	30,000	A	Size limitation: 30'Lx9'Wx10'H (unless otherwise specified)
MIL-DTL-2427	Box, Ammunition Packing: Wood, Nailed		A	Top opening or end opening with or without handles
MIL-C-3774	Crates, Wood; Open Type I Type II	12,000 16,000	A	Bolted or nailed assembly; size limitations: Type I-16'x8'x8' Type II- 40'x8'x16'
MIL-D-6054	Drum, Metal-Shipping and Storage		A	MS27683: 16 to 80 gal capacity MS27684: 3 to 12 gal capacity

Exterior Shipping Containers (MIL-STD-2073-1E w/ Change 1)
Selection by Maximum Weight of Contents and Level of Packing (continued)

Specification	Description	Weight of Contents (max. lbs.)	Military Packing Level	Remarks
MIL-D-6055	Drum, Metal Reusable, Shipping and Storage (Cap. 88 to 510 cubic inches)		A	MS24347; various sizes available
MIL-PRF-11264	Containers, Shipping, Reusable		A	For vehicular assemblies weighing over 1600 pounds
MIL-B-46506	Boxes, Ammunition Packing, Wood, Wirebound		A	Top opening, with or without handles
NAVICP Dwg. P069	Container, Molded, Reusable	4	A	For circuit boards and modules; See table CIV, Type VI
NAVICP Dwg. 13414	Container, Modular, Reusable	120	A	For major repairables; See table C-IV, Type VII
NAVICP Dwg. 15024	Container, Shipping and Storage	40	A	For gyroscopic instruments; See table C-IV, Type VIII
NAVICP Dwg. 15450	Container, Shipping and and Storage	75	A	For depot level repairables; see table C-IV, Type X

Exterior Shipping Containers (MIL-STD-2073-1E w/ Change 1)
Selection by Maximum Weight of Contents and Level of Packing (continued)

Specification	Description	Weight of Contents (max. lbs.)	Military Packing Level	Remarks
WRALC Dwg. 11214-5002-100	Container, Shipping and Storage	16.5	A	For gyroscopic instruments; See table C-IV, Type IX
Dwg. 11214-5002-200	Containers, Shipping and Storage	25	A	For gyroscopic instruments; See table C-IV, Type IX
WRALC Dwg. 11214-5002-300	Containers, Shipping and Storage	54	A	For gyroscopic instruments; See table C-IV, Type IX
WRALC Dwg. 11214-5002-400	Containers, Shipping and Storage	91	A	For gyroscopic instruments; See table C-IV, Type IX
ASTM-D5118	Fiberboard Shipping Boxes Weather resistant	See Table in ASTM-D5118	B	See table C-III for standard sizes
ASTM-D5168	Boxes, Fiberboard, Triple Wall, Weather	See ASTM-D5168	B	
ASTM-D6039	Crates, Wood, Open and Covered Style A Style B	4,000	A B	For size and weight restrictions, see ASTM-D6039
ASTM-D6251	Wood-Cleated Panelboard Boxes Type III Class 1, domestic Class 2, overseas	1,000 1,000	B A	Plywood Panels Plywood Panels
ASTM-D6256	Wood Cleated Shipping Boxes with Skidded, Load Bearing Bases	2,500	A,B	

Exterior Shipping Containers (MIL-STD-2073-1E w/ Change 1)
Selection by Maximum Weight of Contents and Level of Packing (continued)

Specification	Description	Weight of Contents (max. lbs.)	Military Packing Level	Remarks
ASTM-D6880	Boxes, Wood Class 1 – Light Duty Class 2 – Heavy Duty	800 1,000	B A	Skidded as required

2.6.2 Interior Containers

Interior Shipping Containers (MIL-STD-2073-1E w/ Change 1)

Specification	Description
PPP-B-566	Drum, Metal Reusable, Boxes, Folding, Paperboard: Variety 1, Process I or II Variety 2, Process I Variety 2, Process II
PPP-B-676	Boxes, Setup
PPP-C-96	Cans, Metal, 28 Gage and Lighter
PPP-T-495	Tubes, Mailing, and Filing
MIL-DTL-117	Bags, Heat-Sealable
MIL-DTL-6060	Bags, Watervaporproof, Heat-Sealable, Complex
MIL-DTL-22020	Bags, Transparent, Flexible, Sealable, VCI Treated
ASTM-D5118	Fiberboard Shipping Boxes: Class do

2.7 SPIRES

If adequate military packaging requirements have already been developed for repairable or serviceable spare parts, Seller shall access the Special Packaging Instruction Retrieval & Exchange System (SPIRES) to retrieve existing special packaging instructions. <https://spires.wpafb.af.mil/sindex.cfm>.

2.8 Container Types

Seller shall select unit, intermediate, and exterior containers in accordance with MIL-STD-2073-1E w/ Change 1. Examples of container types include, but are not limited to, the following:

2.8.1 Containers Made From Regulated Wood Packaging Materials (WPM)

Seller shall process or treat raw wood in accordance with the current version of International Standard for Phytosanitary Measures (ISPM) No.15 - "Guidelines for Regulating Wood Packaging Material in International Trade". This document can be found at: <https://www.ippc.int/publications/workbook-chapter-11-united-states-import-requirements-implementation>. In conjunction with ISPM 15, Seller shall obtain certification from an accredited agency recognized by the Seller's National Plant Protection Organization (NPPO). (United States - Animal and Plant Health Inspection Service (APHIS) – http://www.aphis.usda.gov/import_export/plants/plant_exports/wpm/index.shtml

2.8.2 Containers made from Non-Regulated WPM

Plywood, particle board, and oriented strand board or veneers are exempt from the requirements of paragraph 2.8.1 above.

2.8.3 Reusable Containers

Seller shall use reusable containers for spares and for items subject to recycling for repairs, overhaul, or other technical order compliance. Below are examples of reusable containers in the order of precedence:

Multi-Application Containers

Multi-Application containers are designed to protect a variety of components within a given fragility and size range. Short life multi-application containers include "fast packs," consisting of a family of standard size cushioned fiberboard shipping containers of four types. A complete list of fast pack containers is in MIL-STD-2073-1E w/ Change 1 and is fully described in commercial standard PPP-B-1672. Packaging tests are not required when fast packs are selected. Seller is encouraged to use fast pack containers for the low labor costs of insertion and removal of items.



2.8.4 Short Life Containers (10 trips minimum)

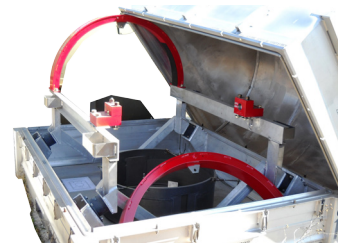
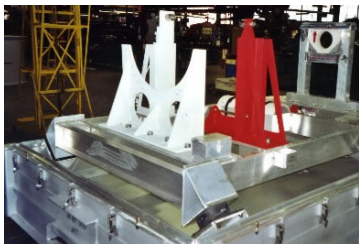
Short Life containers are capable of being reused a limited number of times and fabricated from wood, plywood, fiberboard or similar material that has limited life.



2.8.5 Unique Containers

A unique container that doesn't conform to commercial standards may be necessary to protect a component and provide safe transport. In these cases, when cost justifiable and pre-approved by the Buyer's Packaging Engineer, the Seller may design their own container. Upon design completion, the Seller's engineering drawings must also be sent to Buyer's Packaging Engineer for approval (for control of materials, dimensional tolerances, form fabrication and assembly) prior to fabrication.

Note: Major subcontractors with preapproved packaging policy and procedures in place with LM do not need Buyer's Packaging Engineer approval.



2.9 Preservation and Packaging Data (P/P Data) Requirements

Seller shall comply with the detailed Preservation and Packaging Data when provided by Buyer or the U.S. Government. Seller shall not develop P/P Data without authorization from Buyer, and will be advised by Buyer when such data development is required. If Seller is not required to submit data, and data is not furnished by Buyer or the U.S. Government, items will be packaged as specified herein, and Seller shall not be entitled to reimbursement of any developmental data costs.

3.0 HAZARDOUS MATERIALS

3.1 Hazardous Material Packaging (HM)

Seller shall package hazardous materials as detailed in accordance with MIL-STD-2073-1E w/ Change 1, table J-Ia, code "HM".

MIL-STD-2073-1E w/ Change 1 APPENDIX J TABLE J-Ia

HM

Packaging and marking for hazardous materials shall comply with applicable requirements for Performance Oriented Packaging contained in the International Air Transport Association (IATA) Dangerous Goods Regulations or the International Maritime Dangerous Goods Code (IMDG) and with Code of Federal Regulations (CFR) Title 29, Title 40 and Title 49. All performance test requirements shall be supported by certificates and reports attesting to the date and the results obtained from performance oriented packaging testing. The contractor, if not a self-certifier, shall be responsible for assuring that third party sources providing performance testing services are, in fact, registered with the Department of Transportation. The contractor's signed certification that the packaged configuration meets IATA or IMDG requirements shall be incorporated on the DD Form 250, Material Inspection and Receiving Report, and other related acceptance document if the DD Form 250 is not used. All certificates and reports shall be available for inspection by authorized Government representatives for a period of three years.

3.2 Hazardous Material Package Testing

Seller shall test hazardous material packaging as detailed in accordance with MIL-STD-2073-1E w/ Change 1, Appendix F.

3.3 Hazardous Material Shipment Documentation

Seller shall include documentation for all hazardous materials as detailed in accordance with MIL-STD-2073-1E w/ Change 1.

3.4 Submission of Material Safety Data Sheet (MSDS)

Seller shall prepare an MSDS for every item categorized as a restricted article or hazardous material. Seller shall ensure that the format complies with the Occupational Safety and Health Administration's (OSHA) Hazard Communication Standard, 29 CFR 1910.1200. In order for the MSDS to be valid, Seller shall ensure that all information required by Article 1910.1200(g) of the Standard appears on the form.

3.5 Classification for Explosives or other Dangerous Items

Seller shall submit to Buyer, and/or Buyer's Packaging Engineering Address, the Department of Transportation (DOT)-approved explosive and dangerous articles classification data.

3.6 Certifications/Exemptions/Permits

Seller shall include Buyer and the U.S. Government as parties to all such certifications and permits. The manufacturing certification shall be applied to the container and referenced on shipment documentation at the time of shipment.

3.7 Emergency Response/Hazard Communication

Emergency response information and hazard communication shall be provided by Seller with the shipment per the requirements as detailed in 49 CFR, Subpart G, and 29 CFR 1910.1200.

4.0 MARKING REQUIREMENTS

Note: For all F-35 markings requirements see Supplement A

4.1 Military Marking Requirements

Seller shall mark all unit, intermediate, and exterior packs in accordance with MIL-STD-129P w/ Change 4. Interior bags or containers, when enclosed within another container to complete a unit pack, shall also be marked by Seller as specified for unit pack identification in accordance with MIL-STD-129P w/ Change 4.

4.2 Bar Code, Address and Special Marking Requirements

Seller shall apply address markings to include the military shipping label (MSL) and respective bar code symbols, which shall be as detailed in DOD 4500.9-R, Part II, Chapter 208 and as summarized in MIL-STD-129P w/ Change 4. Special marking requirements shall be applied by Seller when required by the Purchase Order of which this PM-801 is a part.

5.0 TRANSPORTABILITY NOTIFICATION

5.1 Transportability Notification Criteria

Where item design factors or configuration inhibit transportability, except when TMS manuals give specific directions for tooling shipments, Seller shall prepare and submit, to Buyer's Packaging Engineering Address (see Section 12.0), a transportability report describing the shipment. The report can be in accordance with Seller's format.

5.2 Advanced Notification Requirements

Seller shall provide advanced notification to Buyer's Packaging Engineer when:

- A. **Domestic Transport** - Dimensions exceed 8 feet in height, 8 feet in width, 32 feet in length, and/or gross weight is in excess of 11,200 pounds
or
- B. **International Transport** - Dimensions exceed 7 feet in height, 6.5 feet in width, 18.5 feet in length, and/or gross weight is in excess of 10,000 pounds
or
- C. **Requires Isolation** - Item requires temperature, pressure, shock, or vibration isolation in containers and fixtures
or
- D. **Unique Configuration** - Unusual and/or abnormal item configuration
or
- E. **Exceptionally Long Items** - When exceptionally long items are shipped using any method other than flat bed trucks.

6.0 STANDARDIZED CONTAINER DIMENSIONS - DOMESTIC

The following information should be used as guidelines for Standardized Container Dimensions. These guidelines only apply to domestic situations. For precise specifications, contact your freight forwarder or shipping line. In the case of international applications, consult the appropriate resources.

6.1 Truck Trailers

Commonly Used Truck Trailer Information

Overall			Interior			Capacity	
Length	Width	Height	Length	Width	Height	Volume	Weight (lbs)
48'	8' 0"	13' 6"	47' 6"	7' 8.5"	8' 10.5"	3,250 cu ft	46,500
	8' 6"	13' 6"	47' 6"	8' 2.5"	8' 4.5"	3,464 cu ft	46,500
		13' 6"	47' 6"	8' 2.5"	9' 0"	3,509 cu ft	46,500
53'	8' 6"	13' 6"	47' 6"	8' 2.5"	8' 11.3"	3,489 cu ft	46,500

6.2 Aircraft Containers

Commonly Used Unit Load Device (ULD) Information

ULD Type	Length	Width	Height	Tare (lbs)	Max Gr Weight (lbs)
1/1S - PG*	19' 10.5"	8' 0"	8' 0"	882	30,000
2/2Q - PM*	10' 5"	8' 0"	8' 0"	287	15,000
LD7**	10' 5"	7' 4"	5' 4"	440	13,300
LD9**	10' 5"	7' 4"	5' 4"	440	13,300
LD3**	5' 1.5"	5' 0.5"	5' 4"	154	3,500

* Upper Deck ** Lower Deck

Note: All container measurements shown are external dimensions

6.3 Ocean Containers

Container specifications listed are based on world-wide standards. However, some manufacturers and shipping lines will have container specifications which may vary from those provided below. It is important to always inquire about precise specifications from your shipping line or freight forwarder when you arrange for a shipment.

Configurations / Specifications:

Container Size/Type		Length	Width	Height	Max Gr Weight (lbs)
20' Standard	External	20' 0"	8' 0"	8' 6"	52,911
	Internal	19' 3"	7' 7"	7' 2"	52,911
40' Standard	External	40' 0"	8' 0"	8' 6"	67,197
	Internal	39' 4"	7' 7"	7' 8"	67,197
40' High Cube	External	40' 0"	8' 0"	9' 6"	67,197
	Internal	39' 4"	7' 7"	8' 8"	67,197

7.0 SHIPPING PROCEDURES AND RECORDS

7.1 Shipment Routing

For shipments at USG expense, please refer to Section 7.4 below. For shipments at Lockheed Martin expense (**Note: For F-35 see section 3.1 in Supplement A for shipment routing instructions**), please refer to the routing guidelines found within the Carrier Selection Guide accessible via the Lockheed Martin Aeronautics Material Management home page on the Internet: <http://www.lockheedmartin.com/aeronautics/materialmanagement/index.html>

The Carrier Selection Guide will be the tool for routing guidelines, unless notified by the Buyer to utilize the Lockheed Martin Transportation Management System (TMS).

7.2 Shipments of Classified Materials

Seller shall prepare and ship classified materials in compliance with the National Industrial Security Program Operating Manual (NISPOM) and the applicable NATO Security Regulation.

7.3 Shipments Originating Within the U.S.

For shipments originating within the continental United States which are eligible for U. S. Government Transportation, Seller shall ship in compliance with DOD 4500.32-R Military Standard Transportation and Movement Procedure (MILSTAMP), using either a Commercial Bill of Lading (CBL) or the Defense Transportation System (DTS). Commercial collect shipments are made only when authorized by Buyer in writing or directed by the Purchase Order.

7.4 Commercial Bills of Lading (CBLs)

Seller shall make shipments in accordance with DOD 4500.32-R Military Standard Transportation and Movement Procedure. Control of CBLs rests with the resident U.S. Government Transportation Officer having appropriate delegated authority. Ultimate control will remain with the cognizant Transportation Officer for the Prime Contract.

7.5 Shipping System

Seller shall maintain a shipping system and supporting procedures to ensure that all requirements of this specification are met. Upon request by Buyer, Seller shall make available records of examinations and tests made by Seller regarding packaging integrity.

7.6 Direct Shipment Authorization (DSA)

Seller shall not direct ship any U.S. Government assets unless it has first obtained written Direct Ship Authorization (DSA) from Buyer. Approval by Buyer requires the U.S. Government Representative's written approval.

8.0 WIDE AREA WORK FLOW RECEIVING REPORTS (WAWF RR)

Procedures and instructions for the use, preparation and distribution of the Wide Area Work Flow Receiving Report (WAWF RR) or DD Form 250, are found in Appendix F of the DFAR Supplement: Material Inspection and Receiving Report and can be found at this link: http://www.acq.osd.mil/dpap/dars/dfars/html/current/appendix_f.htm

8.1 WAWF RR and DD Form 250

A. The WAWF RR and the DD Form 250 are multipurpose reports used—

- (1) To provide evidence of Government contract quality assurance at origin or destination;
- (2) To provide evidence of acceptance at origin, destination, or other;
- (3) For packing lists;
- (4) For receiving;
- (5) For shipping;
- (6) As a contractor invoice (the WAWF RR or DD Form 250 alone cannot be used as an invoice, however the option exists to create an invoice from the Receiving Report or a Combo (Invoice and Receiving Report) both of which minimize data entry); and
- (7) As commercial invoice support.

B. Do not use the WAWF RR or the DD Form 250 for shipments—

- (1) By subcontractors, unless the subcontractor is shipping directly to the Government; or
- (2) Of contract inventory. The WAWF Property Transfer document should be used for this type of shipment. Training for the preparation of this document type is available at <https://wawftraining.eb.mil>, under the Property Transfer and Receipt section.

8.2 Preparation and Distribution of WAWF Receiving Report

Seller shall prepare and distribute WAWF Receiving Report in compliance with Appendix F, Department of Defense (DOD) Federal Acquisition Regulation (FAR) Supplement and Address Data Listing (PM-801, sec. 9.2), and supplemental Shipping Instructions (i.e. Shipping Data List (SDL) and Appendix VII/D) as are furnished by the Buyer. Accurate preparation of this document is crucial since it supports payment to Seller.

8.3 Submitting WAWF Receiving Report Electronically

Seller shall submit receiving report electronically via WAWF (Wide Area Work Flow): <https://wawf.eb.mil/notice.xhtml>

8.4 Forward Copy of WAWF Receiving Report

Seller shall forward a copy of the accepted WAWF Receiving Report to Buyer. The accepted copy (e-mail or fax) will allow the Buyer to pay Seller.

8.5 Correction of WAWF Receiving Report

Seller shall promptly prepare a corrected copy of the WAWF Receiving Report when correction is required due to errors or omissions, or when requested by Buyer in writing. Seller shall ensure that the corrected document will receive the same distribution as the document it replaces.

9.0 ADDITIONAL INFORMATION

9.1 Ensuring Supply Chain Security

Lockheed Martin supports the U.S. Customs and Border Protection (CBP) Customs-Trade Partnership Against Terrorism (C-TPAT) initiative. The C-TPAT program is a joint effort between CBP and the trade community to reduce the threat of terrorism by protecting the integrity of cargo imported into the United States. To the extent that Seller is a foreign supplier of imported goods, it agrees to utilize, based on risk, appropriate security measures throughout the supply chain such as transportation, conveyance, warehouse, brokers, consolidators, or other elements. The Seller agrees to work with these business partners to ensure that effective security measures are in place and adhered to and, where necessary, develop sufficient security measures within its own supply chain.

The Seller shall ensure the following processes are in place to assist the Buyer in supporting the U.S. C-TPAT) initiative. The following instructions pertain to the Seller's exporting, shipments to the U.S.

- A. The shipping papers shall contain accurate weight, piece count of the number of boxes shipped and value of goods in U.S. dollars as stated on the PO.
- B. The Seller shall ensure that shipments of ocean containers are secured with high security mechanical seals. Seals must be affixed at the manufacturer point of origin (loading) and shall meet or exceed the ISO guideline for high security seals "ISO 17712, Freight Containers – Mechanical Seals". The Seller shall record all seal numbers on the shipping paperwork.
- C. The physical integrity of the ocean container structure shall be verified prior to loading, to include the reliability of the locking mechanisms of the doors. The following seven-point inspection process is required for all containers:
 - 1) Front wall; 2) Left side; 3) Right side; 4) Floor; 5) Ceiling/Roof; 6) Inside/Outside doors; 7) Outside/Undercarriage.



- D. The Seller shall store ocean containers in a secure area to prevent unauthorized access and/or manipulation.

9.2 Address Data Listing Information

Lockheed Martin has been provided the Defense Automatic Addressing System Center Inquiry (DAASINQ) URL to use for the most up-to-date Shipping Addresses for DODAAC (Department of Defense Activity Address Codes) and MAPAC (Military Assistance Program Address Code).

Details can be found in the following website: <https://www.daas.dla.mil/daasing/>

Lockheed Martin Material Management Suppliers should use the DAASINQ Home Page to obtain current in-the-clear Shipping Address Codes found on the Shipping Data Lists or Released Purchase Orders for WAWF Receiving report (DD250). Reference the URL directly or via the Lockheed Martin Aeronautics Material Management External Home Page located at: <http://www.lockheedmartin.com/us/aeronautics/materialmanagement/>

- > Click on Shipping, then Shipping Instructions.
- > Locate and click on Block entitled "Attachment "D" Appendix VII/D
- > Save attachment which contains "Address Data Listing Instruction"

Refer to Shipping Data list to obtain Ship To Code, and follow the outline below to assure the latest ship-to code is being utilized by each Supplier. WAWF Receiving Report address, must match the TAC 2 address within DAASINQ

IF USAF - AIR FORCE BASES (WITHIN THE USA)

1. Select DODAAC from left side.
2. Enter 6 character code from Shipping Data List (i.e. FB2029/Hill AFB)
3. Click on the Scan Query button to submit your query from processing
4. Select TAC2 Address
5. If no TAC2 Address is provided, use TAC1 Address.

(Note: Use your web browser's Print function to print your report. Keep this with the WAWF Receiving Report original as back up.)

IF USAF bases located outside Continental U.S. (for FMS ADDRESSES, call the Freight Forwarder)

1. Select MAPAC from left side.
2. Enter 6 character code from SDL (i.e. DIS002/Israel)
3. Click on the Scan Query button to submit your query from processing.
4. Select TAC2 Address – Address nearest Supplier shipping location should be used for WAWF Receiving Report
5. If no TAC2 Address is provided, use TAC1 Address.

(Note: Use your web browser's Print function to print your report. Keep this with the WAWF Receiving Report original as back up.)

In the event difficulties are incurred obtaining the above information, please contact your Lockheed Martin Buyer; Direct Ship Administrator (817)-777-5908; or LM Aeronautics Traffic Office (817) 777-4559.

9.3 Other Applicable Documents

The following documents relating to Specifications and Standard Practices shall be considered a part of this shipping instruction to the extent specified herein:

PM-5010J	Packaging, Labeling and Shipping Guidelines
ASTM D3951-10	Standard Practice for Commercial Packaging
MIL-STD-129P w/ Change 4	Marking for Shipment and Storage, dated 19 September 2007
MIL-STD-2073-1E w/ Change 1	Standard Practice for Military Packaging, dated 7 January 2011
NISPOM	National Industrial Security Program Operating Manual, Section 5-408 and 5-409
T.O. 00-85B-3	HOW TO PACKAGE AIR FORCE SPARES

10.0 DEFINITIONS

The following list of definitions clarify terms used in this document:

Consumable: An item of supply (except explosive ordnance, major end items of equipment, and repairables) that is normally expended or used up beyond recovery in the use for which it was designed or intended.

Repairable: An item which, by the application of engineering, economic, and other factors, could be reasonably restored to a serviceable condition through regular repair procedures.

Unique Identification (UID): A combination of data elements for an item that is globally unique and unambiguous, ensures data integrity and data quality throughout life of the item, and supports multi-faceted business applications and users. Unique identifiers rely upon two methods of serialization: (1) Serialization within the enterprise and (2) Serialization within the original part number of the enterprise.

11.0 ACRONYMS

ASI	Amended Shipping Instruction
CBL	Commercial Bill of Lading
CBP	U.S. Customs and Border Protection
C-TPAT	Customs-Trade Partnership Against Terrorism
CONUS	Continental United States
DAASINQ	Defense Automatic Addressing System Center Inquiry
DOD	Department of Defense
DODAAC	Department of Defense Activity Address Codes
DOT	Department of Transportation
DSA	Direct Shipping Authorization
DTS	Defense Transportation System
FMS	Foreign Military Sales
IAW	(part of IAW MIL-STD-2073 – see page 10??)
MAPAC	Military Assistance Program Address Code
MILSTAMP	Military Standard Transportation and Movement Procedure
MSDS	Material Data Safety Sheets
MSL	Military Shipping Label
NISPOM	National Industrial Security Program Operating Manual
NPPO	National Plant Protection Organization
NSN	National Stock Number
P/P DATA	Preservation and Packaging Data
QUP	Quantity per Unit Pack
SPIRES	Special Packaging Instruction Retrieval & Exchange System
USG	United States Government
WAWF	Wide Area Work Flow
WPM	Wood Packaging Materials

12.0 ADDRESSES

Buyer's Packaging Engineering Address:

Lockheed Martin Aeronautics Company – Fort Worth
P.O. Box 748
Fort Worth, TX 76101
Attn: Packaging Engineering
Mail Zone: 6888

Lockheed Martin Aeronautics Company – Marietta
86 South Cobb Drive
Marietta, GA 30063
Attn: Packaging Engineering
Mail Zone: 0664

SUPPLEMENT A: F-35 ADDITIONAL PACKAGING, HANDLING AND TRANSPORTABILITY INSTRUCTIONS

This F-35 program-specific set of instructions pertains to Shipments of F-35 Global Sustainment items from Seller Locations to Regional Warehouses (3PL), Retail Military Supply Locations, Retail Contractor Logistics Services (CLS) Supply Locations, and Military Depot Supply Locations.

Oct. 16, 2013

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1.0 OVERVIEW

These instructions supplement the purchase order ("PO") of which this document is a part, and establish the packaging, packing, marking, handling, transportability and shipping instructions for any shipment by the Seller or Seller's sub-tier suppliers at all tiers, for the F-35 Sustainment program (post production). This document only applies to the F-35 Sustainment program and does not apply to F-35 Production. Seller shall ensure that each of its sub-tier suppliers making any such shipment to other than Seller shall comply with PM-801 as though it were Seller hereunder. The term "PO" is interchangeable with the word "Contract" as may be used elsewhere in the PO. The term "Buyer" is interchangeable with the term "LOCKHEED MARTIN" as may be used elsewhere in the PO. The term "PHS&T" is used to identify the Lockheed Martin F-35 organization whose charter it is to administer this document. It is imperative that Seller have access, understand and provide military packaging and labeling standards. Any deviation proposed by Seller requires written approval of F-35 Global Sustainment PHS&T prior to the implementation thereof.

Any questions regarding the ABOVE instructions shall be directed to the Buyer listed on the Purchase Order.

Note: The term "PHS&T" is used to identify the Lockheed Martin F-35 organization whose charter it is to administer this document for the F-35 program.

2.0 PRESERVATION, PACKAGING AND PACKING

This procedure establishes the requirements for effective preservation, packing and marking of F-35 Sustainment assets. The design, development, test, and approval of data and packaging shall comply with the requirements, criteria and procedures outlined in this document and either MIL-STD-2073-1D, MIL-STD-2073-1E, or MIL-STD-2073-1E w/ Change 1 as specified per CLIN in each respective F-35 LRIP contract. If it is not specified per CLIN in each respective F-35 LRIP contract, items shall be packaged in accordance with MIL-STD-2073-1E w/ Change 1.

Unless otherwise stipulated in the Purchase Order of which this PM-801 is a part, military levels of preservation and packing shall be as specified below for the following anticipated destinations and use factors to ensure that items are not degraded during shipment and storage.

Shipping Destination	MIL-STD-2073-1E w/ Change 1	
	Level A	Level B
Maritime (e.g. Aircraft carrier)	X	
Austere/ Combat zone	X	
Military Depot or Air Terminal		X
Operational, Test, or Training Base		X
Regional/Wholesale Warehouse		X

The above matrix is Lockheed Martin's interpretation of MIL-STD-2073-1E w/ Change 1 section 3.10 and shall be referenced before each shipment. Examples of locations requiring military levels of packaging can be found in section 3.2 of this Supplement.

3.0 ROUTING AND MARKING REQUIREMENTS

3.1 Routing Requirements

The LM Transportation Management System (TMS) is used to route shipments. The Seller shall utilize the TMS application, via Exostar, to route all shipments.

- TMS is accessible via Exostar at: <https://portal.exostar.com>

3.2 Marking Requirements

Any items that are being shipped directly to military installations, including those listed below, shall be marked in accordance to MIL-STD-129P w/ Change 4. There shall be no more than one part number per box with the exception of multiple items comprising a kit; however the kit should have its own part number.

Examples of Locations Requiring Military Levels of Packaging and Labeling

Maritime:

Naval Base Norfolk, VA
Naval Base San Diego, CA
Naval Base Puget Sound, WA
Naval Base Sasebo, Japan
Naval Base Bahrain
Naval Air Station Sigonella, Italy
Joint Base Pearl Harbor-Hickam, HI

Austere/ Combat zone:

Any location in the USCENTCOM area of operations (e.g. Afghanistan, Kuwait, Iraq, etc)
Any location in the USAFRICOM area of operations (e.g. North Africa, Horn of Africa, etc)

Military Depot or Air Terminal:

Fleet Readiness Center East, Cherry Point, NC
Fleet Readiness Center, San Diego, CA
Fleet Readiness Center South East, Jacksonville, FL
Oklahoma City Air Logistics Center, Tinker AFB, OK
Ogden Air Logistics Center, Hill AFB, UT
Warner Robins Air Logistics Center, Robins AFB, GA
Air Mobility Command Terminal, Charleston Air Force Base, Charleston, SC
Air Mobility Command Terminal, Travis Air Force Base, Fairfield, CA
Air Mobility Command Terminal, Naval Air Station, Norfolk, VA

Operational, Test, or Training Base:

NAS Patuxent River, MD
Eglin AFB, FL
MCAS Yuma, AZ
Edwards AFB, CA
Nellis AFB, NV
MCAS Beaufort, SC
MCAS Iwakuni, Japan
Amendola, Italy (Italian Air Force)
Grottaglie, Italy (Italian Navy)

Regional/Wholesale Warehouse

Lockheed Martin's current 3PL provider

3.3 External Shipping Label

Seller shall mark all exterior, intermediate, unit packages in accordance with MIL-STD-129P w/ Change 4. Interior bags or containers, when enclosed within another container to complete a unit pack, shall also be marked by Seller as specified for unit pack identification in MIL-STD-129P w/ Change 4.

3.4 Military Shipping Label

Seller shall apply address markings to include the military shipping label (MSL) and respective bar code symbols, which shall be as specified in DOD 4500.9-R, Part II, Chapter 208 and as summarized in MIL-STD-129P w/ Change 4. Special marking requirements shall be applied by Seller when required by the Purchase Order of which this PM-801 is a part or an Appendix thereto.

3.4.1 RFID

Seller shall encode the MSL with passive RFID tags when shipping to F-35 depot locations. Examples of F-35 depot locations are:

Fleet Readiness Center East, Cherry Point, NC
Fleet Readiness Center, San Diego, CA
Fleet Readiness Center South East, Jacksonville, FL
Oklahoma City Air Logistics Center, Tinker AFB, OK
Ogden Air Logistics Center, Hill AFB, UT
Warner Robins Air Logistics Center, Robins AFB, GA

4.0 WAWF REQUIREMENT

If the items on the P.O. are designated as vendor direct ship, the DD250 requirement shall be levied on the P.O. line item and the Wide Area Work Flow (WAWF) shall be utilized. (Note: Government source inspection and/or acceptance will be added to the P.O. line item as applicable)

Suppliers must utilize Wide Area Work Flow (WAWF) to complete the WAWF receiving report (DD FORM 250) prior to shipment. Information on WAWF can be found in section 8.0, page 24 of this document.

5.0 PACKAGING DATA

5.1 Generation

Seller shall have a qualified packaging specialist or engineer generate MIL-STD-2073-1E w/ Change 1 codes for each item shipped in accordance with the "Packaging Data Registration" document (section 4.3 below) and send these codes to PHS&T. Items shipped to a location requiring a commercial packaging standard must still provide these codes. The choice of codes must meet the standards described in Section 4.3 of this Supplement.

5.2 Data Retention

Seller shall retain each packaging registration sheet for each part shipped as well as any Special Packaging Instructions (SPI) and tests & examinations. Lockheed Martin Aeronautics will collect this data in order to have the ability to re-package an item to Military levels of packing. If the seller ships a package that is not packaged to a military standard level, but a commercial level, they shall still provide the instructions on how to package that item for future use by the F-35 organization. The registration form is found below as an attachment to this document.

5.3 Submit Registration

ALGS F-35: Military Standard Packaging Data Registration

Email the completed Packaging Data Registration form to: supplier-phst-data.fc-jsf@lmco.com

Please have your Packaging Specialist write the information in the Code or Text column below for each shipment, including consumables and hazardous items. Data elements requiring a code have an asterisk (*) next to them; reference the corresponding codes below this form.

1388 HF Code (LM Use Only)	Data Element Title	Code or Text
CAGECDXH	Cage Code (OEM)	
REFNUMHA	Part Number (Lockheed Martin)	
REFNUMHA	Part Number (OEM)	
MEPRESHF	Methods of Preservation*	
CDPROCHF	Cleaning and Drying Procedures*	
PRSMATHF	Preservative Materials*	
WRAPMTHF	Wrapping Materials*	
CUSHMAHF	Cushioning and Dunnage Materials*	
CUSTHIHF	Cushioning Thickness*	
UNICONHF	U/I Container*	
OPTPRIHF	Optional Procedure Index*	
SPEMRKHF	Special Markings*	
PKGCODHF	Packing Codes*	
UCLEVLHF	Unit Container Levels*	
SPINUMHF	Special Packaging Instruction Number	
SUPPKDHF	Supplemental Packaging Data	
SPDATEHF	SPI Number Julian Date	
UNPKWTHF	Unit Pack Weight	
LENUPKHF	Unit Pack Length	
WIDUPKHF	Unit Pack Width	
DEPUPKHF	Unit Pack Depth	
UNPKCUHF	Unit Pack Cube (Cubic feet)	
PKCAGEHF	Packaging Data Preparer Cage	

Signature of Packaging Specialist

Printed name here

MIL-STD-2073-1E w/ Change 1 Methods of Preservation	
10	Method 10 - The unpreserved item(s) shall be protected from physical damage and mechanical malfunction. Cushioning materials, dunnage, blocking and bracing shall be applied as required to protect the item(s) and the enclosing media and restrict the movement of the item within the container. The materials selected for all blocking and bracing, and the design and application thereof, shall be compatible with the item and its bearing load limitations. Materials shall be as clean and as dry as practicable. Method 10 packs shall pass the applicable inspection requirements of table G-I.
20	Method 20 - Physical protection with preservative (with greaseproof wrap, as required). Items shall be treated with appropriate preservatives in accordance with the procedures of 5.2.2.2 or 5.2.2.3. Contact preservative coated items shall be wrapped in material conforming to MIL-PRF-121 or QQ-A-1876. Flexible wraps shall snugly enclose the coated part or item and be secured to prevent unintentional unwrapping. Parts or items coated with hard film preservatives conforming to MIL-PRF-16173, Grade 1 or 4, may, when dried, be exempted from wrapping. Projections, sharp edges, or other features of the item, which may damage the wrap, shall be cushioned as required in accordance with 5.2.3. The type of cushioning and wrapping material used shall be commensurate with the size, weight and configuration of the preserved part or item. Method 20 packs shall pass the applicable inspection requirements of table G-I. When it has been determined to protect items with VCI, they shall be preserved in accordance with 5.2.4.9.
30	Method 30 - Waterproof or waterproof-greaseproof protection with preservative as required. Items protected in accordance with Method 30 shall be heat sealed within a waterproof or waterproof-greaseproof bag. Projections, sharp edges or other physical characteristics of the item, which may damage the waterproof or waterproof-greaseproof barrier or container shall be cushioned in accordance with 5.2.3. The item shall also be cushioned as required to mitigate shock, thereby preventing physical and functional damage to the item. Unless otherwise specified, preservative coating requirements shall be determined in accordance with 5.2.2.1. All packs prepared in accordance with any method of this basic group shall pass the applicable quality assurance tests specified in tables G-I and G-II.
31	Method 31 - Waterproof bag, heat sealed. The item, preserved, wrapped and cushioned as required in 5.2.3.5, shall be enclosed in a heat sealed bag conforming to MIL-DTL-117, Type III, Class B, Style 2. When specified, a designated bag, other than noted herein, shall be provided. (Note: When specified in the contract or order, a carton or box shall be required to effect the unit container and the primary cushioning specified in the contract or order shall be placed between the outside of the bag and the inside of the carton or box.) When it has been determined to protect items with VCI, they shall be preserved in accordance with 5.2.4.9.
32	Method 32 - Container, waterproof bag, heat sealed. The item, preserved, wrapped and cushioned as required in 5.2.3.5, shall be enclosed in a close fitting container (box) selected from table C-I, which in turn shall be enclosed in a heat sealed waterproof bag conforming to MIL-DTL-117, Type III, Class B, Style 2, or MIL-DTL-117, Type III, Class C, Style 1. When specified, a protective wrap of heavy duty kraft paper or equivalent material (tape sealed) shall be provided to protect the barrier material during handling and storage.
33	Method 33 - Greaseproof-waterproof bag, heat sealed. The item, preserved, wrapped and cushioned as required in 5.2.3.5, shall be enclosed in a close fitting heat sealed bag conforming to MIL-DTL-117, Type II, Class C, Style 1, 2 or 3; or Type III, Class C, Style 1. When specified in the contract or order, a designated bag, other than noted herein, shall be provided. (Note: When specified in the contract or order, a carton or box shall be required to effect the unit container, and the primary cushioning specified in the contract or order shall be placed between the outside of the bag and the inside of the carton or box.) When it has been determined to protect items with VCI, they shall be preserved in accordance with 5.2.4.9.
40	Method 40 - Watervaporproof protection with preservative as required. Items protected in accordance with Method 40 shall be heat sealed within a watervaporproof enclosure. Projections, sharp edges or other physical characteristics of the item, which may damage the watervaporproof enclosure, shall be cushioned as required in accordance with 5.2.3. The item shall also be cushioned as required to mitigate shock, thereby preventing physical and functional damage to the item. Unless otherwise specified, preservative coating requirements shall be determined in accordance with 5.2.2.1. All packs prepared in accordance with any method of this basic group shall pass the applicable quality assurance tests specified in tables G-I and G-II.

41	Method 41 - Watervaporproof bag, heat sealed. The item, preserved, wrapped and cushioned as required in 5.2.3.6, shall be enclosed in a close fitting heat sealed bag conforming to MIL-DTL-117, Type I, Class E, Style 1, 2 or 3; or Type I, Class F, Style 1; or Type II, Class E, Style 1. (Note: For electrostatic protection refer to 5.2.4.1.) When specified in the contract or order, a designated bag, other than noted herein, shall be furnished. (Note: When specified in the contract or order, a carton or box shall be required to complete the unit container and the primary cushioning specified in the contract or order shall be placed between the outside of the bag and the inside of the carton or box.)
42	Method 42 - Container, watervaporproof bag, heat sealed, container. The item, preserved, wrapped and cushioned as required in 5.2.3.6, shall be enclosed in a close fitting inner container (box), selected from table C-I, and enclosed in a heat sealed bag conforming to MILDTL-117, Type I, Class E, Style 1; or Type II, Class E, Style 1. Bags in accordance with MILDTL-6060 shall be used when the construction limitations of MIL-DTL-117 are exceeded. When specified in the contract or order, a designated bag, other than noted herein, shall be furnished. The sealed bag shall then be enclosed within an appropriate outer container (box), selected from table C-I or table C-II, unless otherwise specified in the contract or order. When fiberboard containers are selected or specified for the outer container of this method, they shall conform to the weather resistant class and grade of ASTM-D5118 or ASTM-D5168 as applicable. When wood, wood cleated plywood, or wood cleated panelboard is specified as the outer container of this method, 6 mil polyethylene film conforming to A-A-3174 or equivalent material shall be used as an overwrap (tape sealed) around the sealed bag to prevent chafing or rupture by the outer container. When the primary cushioning is located between the sealed bag and the outer container, this overwrap is not required. Closure, banding, or sealing of the outer container shall be performed in accordance with the applicable container specification procedures or ASTM-D1974, making certain that no damage is inflicted on the bag. (Note: When the outer container becomes the shipping container, it shall be marked as a shipping container in accordance with MIL-STD-129; the bag shall be marked as a unit pack in accordance with MIL-STD-129.)
43	Method 43 - Floating watervaporproof bag, heat sealed. The item, preserved, wrapped and cushioned as required in 5.2.3.6 and anchored or shock mounted as necessary, shall be enclosed in a heat sealed bag conforming to MIL-DTL-6060. (Note: When the outer container becomes the shipping container, it shall be marked as a shipping container in accordance with MIL-STD-129; the bag shall be marked as a unit pack in accordance with MIL-STD-129.)
44	Method 44 - Rigid container (other than metal), sealed. The item, preserved, wrapped, and cushioned as required in 5.2.3.6, shall be enclosed in a sealed, snug fitting, rigid container other than all metal. Any sealed rigid container other than all metal may be used if the sealed container provides a watervapor transmission rate (WVTR) not exceeding 0.075 grams per 100 square inches per 24 hours when tested in accordance with ASTM-D4279.
45	Method 45 - Rigid metal container, sealed. The item, preserved, wrapped and cushioned as required in 5.2.3.6, shall be snugly enclosed in a sealed, rigid metal container. Any selected type of rigid metal container with machine seamed or reusable gasketed closure may be used. When specified in the contract or purchase order or when dictated by the requirements of the item, the metal container may be vacuum sealed.
50	Method 50 (formerly Method II) - Watervaporproof protection with desiccant. Items protected in accordance with Method 50 shall be heat sealed in a watervaporproof enclosure with activated desiccant. Unit packs of all of these methods shall also include a humidity indicator. Projections, sharp edges, or other physical characteristics of the item which may damage the watervaporproof bag or container shall be cushioned as required in accordance with 5.2.3. The item shall also be cushioned as required to mitigate shock, thereby preventing physical and functional damage to the item. Preservative coating requirements shall be determined in accordance with 5.2.2.1. When bags are used, the bag size shall be of sufficient surface area to permit two subsequent resealings after item inspection. Unless prohibited in the contract or order, carrying cases or housings, which function as a sealed container, may also be used as the watervaporproof enclosure within which the desiccant and humidity indicator will be placed. Precautions shall be prominently noted on the item cases or housings that the desiccant and indicator cards shall be removed prior to placing the item into use. Requirements for desiccant and humidity indicators are as follows: a. Desiccant (activated) - The bagged, activated desiccant shall conform to MIL-D-3464. Type I shall be used unless Type II or III is specified or required because of special characteristics of the item. Desiccant shall be in standard unit sized bags. The desiccant shall be strategically located in the pack so as not to be load bearing. Optimally, it is to be placed in voids of the item or pack interior. Desiccant shall be adequately secured to prevent its shifting or movement

	or placed in specially designed desiccant baskets affixed to the container interior. Under no circumstances shall desiccant be permitted to come in direct contact with critical surfaces of the enclosed item. The desiccant shall not be unnecessarily exposed to the ambient environment when removed from the sealed desiccant storage container. Removal of the desiccant and its insertion into the unit pack shall be the last action prior to final sealing of the bag or container. b. Quantity of desiccant - The minimum quantity of desiccant to be used per unit pack shall be computed in accordance with either Formula I or II as applicable. The various values of "X" take into consideration the quality and types of dunnage. The inner container (when applicable) shall be considered in the dunnage calculations. Formula I - To find units of desiccant for use within a sealed container other than rigid all metal: $U = CA + X1D + X2D + X3D + X4D$ Formula II - To find units of desiccant for use within a sealed rigid metal container: $U = KV + X1D + X2D + X3D + X4D$ Symbols used above are defined as follows: U = The number of units of desiccant to be used. C = 0.011 when the area of the barrier material is stated in square inches. C = 1.6 when the area of the barrier material is stated in square feet. A = Area of container (barrier) stated in square inches or square feet. K = 0.0007 when volume is stated in cubic inches. K = 1.2 when volume is stated in cubic feet. V = Volume within rigid metal container in cubic inches or cubic feet. X1 = 8.0 for cellulosic material, including wood and any other material not noted below. X2 = 3.6 for bound fibers (synthetic or vegetable fibers bound with rubber). X3 = 2.0 for glass fibers (fiberglass). X4 = 0.5 for synthetic foams and rubber. D = Pounds of dunnage within the container. Note: Formula II may also be used to determine the units of desiccant required for sealed rigid containers other than all metal, when the sealed enclosure provides a WVTR not exceeding 0.001 grams per 24 hours per 100 square inches, tested in accordance with ASTM-D4279 using the constant atmosphere method. c. Humidity indicators. Humidity indicators shall conform to MS20003. The humidity indicator shall be firmly secured directly behind the inspection window or immediately within the closure seal of the container. When specified, externally mounted humidity indicating elements or devices shall be installed in the barrier or rigid container used to effect the unit pack. Externally mounted color change humidity indicating devices shall conform to SAE-AS26860. All packs prepared in accordance with any method of this basic group shall pass the applicable quality assurance tests of tables G-I and G-II.
51	Method 51 - Watervaporproof bag with desiccant, heat sealed. The item, preserved, wrapped, cushioned and desiccated with humidity indicator as required in 5.2.3.7, shall be enclosed within a heat sealed bag conforming to MIL-DTL-117, Type I, Class E, Style 1, 2 or 3; Type II, Class E, Style 1, or Type IV, Class E, Style 1. When specified in the contract or order, a designated bag, other than noted herein, shall be furnished. (Note: When specified in the contract or order, a carton or box shall be required to complete the unit container, and the primary cushioning specified in the contract or purchase order shall be placed between the outside of the bag and the inside of the carton or box.)
52	Method 52 - Container, watervaporproof bag with desiccant, heat sealed, container. The item, preserved, wrapped, cushioned and desiccated with humidity indicator as required in accordance with 5.2.3.7, shall be enclosed in a close fitting inner container (box) selected from table C-I. The item and container shall then be enclosed in a heat sealed bag

	conforming to MIL-DTL-117, Type I, Class E, Style 1; or Type II, Class E, Style 1; or Type IV, Class E, Style 1. When specified in the contract or purchase order, a designated bag, other than noted herein, shall be furnished. Bags in accordance with MIL-DTL-6060 shall be used when the construction limitations of MIL-DTL-117 are exceeded. The sealed bag shall then be enclosed within an appropriate outer container (box) selected from table C-I or table C-II. When fiberboard outer containers are used, they shall conform to the weather resistant Class and Grade of ASTM-D5118 or ASTM-D5168 as applicable. When wood, wood cleated plywood or wood cleated panelboard boxes are specified as the outer container, a 6 mil polyethylene film conforming to A-A-3174 shall be used as an overwrap (tape sealed) around the sealed bag to prevent chafing or rupture by the outer container. When the primary cushioning is located between the sealed bag and the outer container, this overwrap is not required. Closure sealing or banding (as applicable) shall be in accordance with the applicable container specification procedures or ASTM-D1974, making certain that the bag is not damaged. (Note: When the outer container becomes the shipping container, it shall be marked as a shipping container in accordance with MIL-STD-129; the bag shall be marked as a unit pack in accordance with MILSTD-129.)
53	Method 53 - Floating watervaporproof bag with desiccant, heat sealed. The item, preserved, wrapped, cushioned, and desiccated with humidity indicator as required in 5.2.3.7 and anchored or shock mounted as necessary, shall be enclosed in a sealed bag conforming to MIL-DTL-6060. When specified in the contract or order, a window of material conforming to MIL-PRF-22191, Type I shall be provided in the bag in accordance with MILDTL-6060 procedures for packs 15 cubic feet or larger. When specified, externally mounted plug type humidity indicators conforming to SAE-AS26860 shall be used. When an exterior container is to be placed over the floating bag, a removable inspection port shall be provided in the exterior container body, so situated as to coincide with the location of the inspection window of the bag or the mounted humidity plug.
54	Method 54 - Rigid container (other than metal) with desiccant, sealed. The item, preserved, wrapped, cushioned and desiccated with humidity indicator as required in 5.2.3.7, shall be enclosed in a sealed, close fitting, rigid container other than all metal. Any sealed, rigid container other than all metal may be used if the sealed container provides a WVTR not exceeding 0.075 grams per 100 square inches per 24 hours when tested in accordance with ASTM-D4279 using the constant atmosphere method.
55	Method 55 - Rigid metal container with desiccant, sealed. The item, preserved, wrapped, cushioned and desiccated with humidity indicator as required in 5.2.3.7, shall be enclosed in a sealed, close fitting, metal container. Any selected type of rigid metal container with a machine seamed or welded closure or reusable container with a gasketed or threaded closure shall be used.
AE	Seal or plug all openings and preserve by Method 10.
AH	Preserve Method 20 as follows: Fog spray or flush internally with preservative indicated by preservation code. All openings shall then be plugged or sealed to prevent entrance of dirt and moisture. Exterior unpainted ferrous metal surfaces shall be coated with a suitable paint or enamel, or coated with cold application, nontacky, corrosion preventive compound conforming to MIL-PRF-16173, Grade 4.
AU	Preservative compounds shall not be applied to windings, commutators or peripheries of armatures or rotors. Shafts shall be coated with MIL-PRF-16173, Grade 2 preservative and wrapped with MIL-PRF-121 material, secured in place with ASTMD5486 tape. Commutators shall be wrapped with MIL-PRF-121 material, held in place with ASTM-D5486 tape. Exposed surfaces of steel collector rings shall be coated with MIL-PRF-16173, Grade 2 preservative. No preservative is required for bronze, brass or corrosion resisting metals. All collector rings shall be wrapped with MIL-PRF-121 material, secured in place with ASTM-D5486 tape. Corrodible surfaces, except shafts, commutators, and collector rings, may be preserved by the use of insulating varnish applied during the manufacturing process. In addition to the foregoing requirements, armatures and rotors shall be wrapped with MIL-PRF-121 material, secured with ASTM-D5486 tape.
AW	Preserve in accordance with any of the following alternate methods (used for gaskets and similar items):

	a. Seal in bags conforming to Class B, C or E of MIL-DTL-117, using stiffening material internally if needed to maintain rigidity. b. Preservation method 42 or 44. c. Place between sheet of, or in fold of, corrugated fiberboard of sufficient stiffness to resist bending, overwrap with waterproof wrapping paper conforming to PPPB-1055 and seal with pressure sensitive tape conforming to ASTM-D5486 or adhesive conforming to MMM-A-260. Authorization to use other waterproof barrier materials may be granted upon request.
BC	Preserve by Method 20 as follows: Coat all pieces of set with preservative compound conforming to MIL-PRF-16173, Grade 4. Wrap or bag each preserved piece individually in MIL-PRF-121 material. Cushion or segregate individually wrapped or bagged pieces in the storage container to prevent movement and possible physical damage. (Segregated identical pieces, such as buckets and seal strips, are to be kept as close together in the container as possible to facilitate ease of counting.) Individually preserved, wrapped or bagged pieces need not be identified since container markings are in accordance with MIL-STD-129. Itemized packing lists for inclusion within or attachment to the outside of the container shall be furnished in accordance with MIL-STD-129. The lists shall show quantity and nomenclature of all items included in the set. (Used for turbine blade sets and similar items.)
BD	Remove parts made of rubber, fiber, or nonmetallic materials adversely affected by preservative compounds and package by Method 41 without a preservative. Preserve metal parts of assembly to conform to the requirements of Method 40. Mark the bag containing nonmetallic parts "Parts for Assembly" and include it within, or securely attached to, the pack containing metal parts in a manner which will assure its being found when the pack is opened. (Use for couplings and similar items.)
BL	Plug or seal all openings and preserve Method 20.
DB	Preserve by Method 10 modified as follows: Preserve in transparent barrier bag made of A-A-3174 or Type III MIL-PRF-22191 material. A-A-3174 or MIL-PRF-22191, Type III material, A-A-3129 or PPP-C-795 cushioning shall be used to cushion sharp edges and protrusions of the preserved items. Bag closure shall be made by any suitable means, except that staples shall not be used. When use of a bag is not practicable, the item shall be completely wrapped in the above barrier or cushioning material and secured with pressure sensitive tape. Also, the use of shaped or molded packs utilizing MIL-PRF-22191 or A-A-3174 materials in conjunction with plastic coated board is acceptable provided the pack's cube is not increased and the pack meets the tests specified in Appendix G. Strip or block form of multiple packages shall incorporate provisions for separating unit quantities.
DC	Preserve by Method 20 modified as follows: Preserve in a transparent barrier wrap made of Type II, MIL-PRF-22191 barrier material, or bag conforming to Type II, Class C, Style 2 of MIL-DTL-117. MIL-PRF-22191, Type II barrier material shall be used to cushion sharp edges and protrusions of item to prevent bag puncture. AA-3129 or PPP-C-795 may also be used to cushion sharp edges and protrusions if item is first wrapped in MIL-PRF-22191, Type II barrier material. The bag closure shall be made by any suitable means, except that staples shall not be used. Also, the use of shaped, pre-formed or molded packages utilizing MIL-PRF-22191 or A-A-3174 materials in conjunction with plastic coated board is acceptable, provided that the package cube is not increased and materials are compatible with preservative specified. However, these packages shall be capable of meeting the tests specified in Appendix G. Strip or block form of multiple packages shall incorporate provisions for separating unit quantities.
DR	Preserve by Method 30 as follows: Each unit shall have all internal fluid-carrying passages, which are not prelubricated, filled with the specified preservative, allowing space for internal thermal expansion. If filling is not practical, the unit shall be internally fog-sprayed or flushed, then drained to the drip point. All ports, fittings, openings, etc., shall be capped or plugged with noncorrosive (noninteracting) metal caps or plugs conforming to NAS 847 or equivalent. All hydraulic preservative operating fluid used shall be filtered through a 3 micron absolute filter prior to being used as specified above. Exterior bare metal surfaces, subject to corrosion, shall be coated with compound conforming to MIL-PRF-16173, Grade 2 or MIL-C-11796, Class 3. Unit shall be wrapped with a greaseproof wrap conforming to MIL-PRF-121 or equivalent; seal seams with ASTM-D5486 tape to effect a measure of waterproofness and prevent unwrapping. The unit must be adequately cushioned with material specified and placed in a grade V3c container fabricated in accordance with

	ASTM-D5118 (as a minimum), Style FOL or CSSC. All seams, corners, and manufacturer's joint shall be tape-sealed with two inch tape conforming to ASTM-D5486, Type III or IV.
DW	Preserve by Method 52 as follows: Item shall be cleaned, wrapped, blocked and braced in an interior carton fabricated in accordance with ASTM-D5118, Class domestic. MIL-PRF-131 barrier material, sealed as required, shall be utilized around the first container. The cushioning, to be specified under the cushioning code and in the thickness required to adequately protect the item, shall be placed between the barrier and the outer container.
EK	Preserve by Method 10 as follows: Each bolt shall have the shank and threads protected by means of a sleeve extending over the full length of the shank and thread. The sleeve shall be manufactured from paperboard, asphalt impregnated chipboard, or spiral wrap of kraft paper over chipboard, lined with material conforming to MIL-PRF-121. Plastic sleeve coverings may also be used.
GS	Preserve by Method 33 (modified) in a transparent, flexible, sealable, volatile corrosion inhibitor treated bag conforming to MIL-DTL-22020. The interleaf furnished inside each Class 2, cold sealable bag shall be withdrawn after inserting item and prior to final sealing in accordance with MIL-DTL-22020. Items with sharp edges or protrusions shall be wrapped with sufficient layers of transparent, flexible, pressure (cold) sealable volatile corrosion inhibitor barrier material conforming to MIL-PRF-22019, Type II to prevent bag puncture. The latex coated (nonprinted) side of the barrier material shall always be facing the item. Alternately, the item may be completely wrapped with transparent, flexible, pressure (cold) sealable volatile corrosion inhibitor barrier material conforming to MIL-PRF-22019, Type II as indicated above and further preserved in a transparent barrier bag conforming to Type II, Class C, Style 2 of MIL-DTL-117. Closure shall be by heat-sealing when this alternate method is used. In addition to markings required elsewhere in the contract, unit identification and caution labels shall be in accordance with MIL-STD-129.
GX	Preserve by Method 41 as follows: Items subject to damage by electromagnetic and electrostatic field forces shall be initially wrapped in material conforming to MIL-PRF-81705, Type III, or bags conforming to MIL-DTL-117, Type II, Class H, Style 2, or cushioned in material conforming to A-A-3129, Type I, Grade B or PPP-C-795, Class 2 or PPP-C-1797, Type II, to prevent bag puncture, and unit packed in a heat-sealed bag conforming to MIL-DTL-117, Type I, Class F, Style 1. Reclosable cushioned pouches conforming to MIL-DTL-81997, Type I or II, Code Packaging procedure may be used in lieu of initial wrap or cushioning. Lead or terminal configurations for all items shall be maintained as manufactured without causing loads or stresses capable of causing damage to the item. Materials used to maintain item position and lead or terminal configuration shall permit item removal without damage to the item. Electrostatic discharge (ESD) sensitive caution labels shall be applied in accordance with MIL-STD-129.
HM	Packaging and marking for hazardous materials shall comply with applicable requirements for Performance Oriented Packaging contained in the International Air Transport Association (IATA) Dangerous Goods Regulations or the International Maritime Dangerous Goods Code (IMDG) and with Code of Federal Regulations (CFR) Title 29, Title 40 and Title 49. All performance test requirements shall be supported by certificates and reports attesting to the date and the results obtained from performance oriented packaging testing. The contractor, if not a self-certifier, shall be responsible for assuring that third party sources providing performance testing services are, in fact, registered with the Department of Transportation. The contractor's signed certification that the packaged configuration meets IATA or IMDG requirements shall be incorporated on the DD Form 250, Material Inspection and Receiving Report, and other related acceptance document if the DD Form 250 is not used. All certificates and reports shall be available for inspection by authorized Government representatives for a period of three years.
JF	Preserve by Method 10 – Items shall be preserved in a vacuum formed skin pack, formed from either cellulose acetate, cellulose butyrate or cellulose propionate. The material shall be 10 to 15 mils minimum thickness prior to draw and 2 to 4 mils thickness after draw. Class domestic fiberboard meeting the requirements of ASTM-D4727 shall be used as a stiffener.
JM	Preserve Method 10 as follows: Unit container shall consist of one piece of 3/8-inch plywood and one piece of double wall fiberboard meeting the requirements of ASTM-D4727, each 4 inches longer and wider than the item dimensions. Place item on plywood, cover with fiberboard and staple fiberboard to plywood on sides and end. For items longer than 96 inches, frame panel in accordance with PPP-B-601 (used for backing boards and similar flat items.)

KD	Preserve Method 31. Apply VV-L-800 preservative. Place item in a bag conforming to MIL-B-22020 and place bagged item into a weather resistant fiberboard box fabricated in accordance with ASTM-D5118. Fill voids with fiberboard meeting the requirements of ASTM-D4727 or A-A-1898, Grade II material as required.
KF	Clean each item in accordance with any applicable process. Use non-corrosive material to plug any crevices, holes or cavities. Preserve by directly applying strippable, plastic coating compound (hot dipping) conforming to MIL-P-149 or equivalent to the clean dry metal surface of the item. Apply the compound in such a way that upon removal, no compound will be retained in the voids. The compound shall be a Type II, transparent, cellulose acetate butyrate variety. Apply as many layers of the plastic coating compound as necessary to protect the item from contact damage and to seal it from moisture. Wrap the individually coated items in MIL-PRF-121 greaseproof, waterproof, barrier material. (Use on labyrinth rings and similar items in sets.)
KG	Each fully buttoned shirt shall be neatly folded, secured with stainless steel (AISI Type 304 or 316) pins, aluminum clips or plastic fasteners, and inserted into a snug-fitting, clear plastic bag. The bag shall be closed by heat sealing, taping (provided the back panel overlaps the front panel), or by a bag designed to effect a reverse tuck closure.
KH	Each pair of shoes or boots shall be individually wrapped prior to being placed in a shoe box. Each pair of individually wrapped shoes or boots shall be packaged in a set-up style shoe box or a mailer type box.
ZZ	Method of preservation shall be in accordance with with specific instructions or drawings provided.
	MIL-STD-2073-1E w/ Change 1 Cleaning & Drying Procedures
0	No requirement.
1	Any suitable process that is not injurious to the item.
X	See method of preservation code for this requirement.
Z	Special requirements - See specific instructions or drawings provided.
	MIL-STD-2073-1E w/ Change 1 Preservative Materials
00	No requirement.
01	MIL-C-16173, grade 1 corrosion preventive, solvent cutback, cold application, hard film.
02	MIL-C-16173, grade 2 corrosion preventive, solvent cutback, cold application, soft film.
03	MIL-C-16173, grade 3 corrosion preventive, solvent cutback, cold application, water displacing soft film.
06	MIL-C-11796, class 3 light preservative compound, soft film, hot application.
07	MIL-L-3150, medium preservation oil, cold application.
09	MIL-PRF-32033, lubricating oil, general purpose preservative (water displacing, low temperature)
10	MIL-PRF-21260, preservative and break-in lubricating oil, internal combustion engine, Grade 10, 30 or 50
11	MIL-G-23827, grease, aircraft & instrument, gear & actuator screw.
12	MIL-G-81322, grease, aircraft, general purpose.
13	MIL-G-10924, grease, automotive and artillery.
15	MIL-PRF-46170, hydraulic fluid, synthetic, rust inhibited, fire resistant
17	MIL-L-6085, lubricating oil, instrument, aircraft, low volatility.
19	MIL-C-16173, grade 4, corrosion preventive, solvent cutback, cold application, transparent, non-tacky.

20	MIL-PRF-46002, preservative oil, contact and volatile corrosion inhibited
21	MIL-PRF-16173, Grade 5, corrosion preventive, solvent cutback, water displacing soft film, low pressure steam removable
27	MIL-STD-2073-1E w/ Change 1: MIL-C-16555, type I, fire retardant, aluminum and aluminum gray.
28	MIL-STD-2073-1E w/ Change 1: MIL-C-16555, type II, class 1, fire retardant, olive drab.
29	MIL-STD-2073-1E w/ Change 1: MIL-C-16555, type II, class 2, fire retardant, Marine Corps green.
30	MIL-PRF-46010, corrosion inhibiting lubricant, solid film, heat cured
31	MIL-C-6529, Type II, corrosion preventive, ready mixed, for reciprocating aircraft engines
32	MIL-C-6529, Type III, corrosion preventive, ready mixed, for turbojet aircraft engines
33	MIL-PRF-7808, lubricating oil, synthetic base, for aircraft turbine engines
38	MIL-P-149, strippable plastic coating (hot dipping)
43	MIL-STD-2073-1E w/ Change 1: MIL-G-25537, grease, aircraft, helicopter.
49	Vendor's protective grease or oil coating.
50	MIL-L-7870, lubricating oil, general purpose, low temperature.
51	MIL-L-6081, lubricating oil, jet engine, grade 1010
52	MIL-PRF-8188, corrosion preventive oil, synthetic base, for aircraft gas turbine engines
53	MIL-STD-2073-1E w/ Change 1: MIL-L-6082, lubricating oil, aircraft, reciprocating (piston) engine (fire retardant)
56	MIL-PRF-23699, lubricating oil, synthetic base, for aircraft turbine engines
57	MIL-STD-2073-1E w/ Change 1: MIL-L-21260, lubricating oil, internal combustion engine, preservative and break-in, grade 10, light viscosity oil.
58	MIL-STD-2073-1E w/ Change 1: MIL-L-21260, lubricating oil, internal combustion engine, preservative, grade 2, medium viscosity oil.
59	MIL-STD-2073-1E w/ Change 1: MIL-L-21260, lubricating oil, internal combustion engine, preservative, grade 3, heavy viscosity oil.
65	MIL-PRF-83282, hydraulic fluid, synthetic, fire retardant
79	MIL-STD-2073-1E w/ Change 1: MIL-B-46176, brake fluid, silicone, automotive, operational and preservative.
80	MIL-P-53030, primer coating, epoxy, water reducible
89	Preserve with normal operating lubricant.
XX	MIL-STD-2073-1E w/ Change 1: See method of preservation code for this requirement.
ZZ	Special requirements - see specific instructions or drawings provided.
MIL-STD-2073-1E w/ Change 1 Wrapping Materials	
00	No requirement.
BA	QQ-A-1876, aluminum foil
CA	A-A-203, kraft wrapping paper.
DA	A-A-1249, paper, tissue.
EA	MIL-P-17667, neutral wrapping paper.
EB	MIL-P-17667, Type I, neutral wrapping paper, flat
EC	MIL-P-17667, Type II, neutral wrapping paper, creped

FA	MIL-P-130, laminated and creped wrapping paper.
GB	MIL-PRF-121, greaseproof, waterproof barrier
GC	MIL-PRF-121, Type I, medium duty, greaseproof, waterproof barrier
GH	MIL-PRF-121, Type II, light duty, greaseproof, waterproof barrier
JA	A-A-3174, plastic sheet, polyolefin, 2 mil.
JL	MIL-PRF-22019, transparent volatile corrosion inhibitor treated barrier material.
JV	MIL-PRF-22191, Type III, transparent waterproof barrier material.
K3	MIL-PRF-81705, Type II, transparent electrostatic protective barrier material.
LA	A-A-50177, lens paper.
MB	MIL-PRF-3420, volatile corrosion inhibitor treated material.
N9	MIL-STD-2073-1E w/ Change 1: MIL-PRF-81705, Type III, transparent, electrostatic protective, static shielding barrier material
XX	MIL-STD-2073-1E w/ Change 1: See method of preservation code for this requirement.
ZZ	Special requirements - see specific instructions or drawings provided.
MIL-STD-2073-1E w/ Change 1 Cushioning and Dunnage Material	
00	No requirement.
AD	Cushion, anchor, block or brace as required.
BG	A-A-1898, Grade II, water resistant cellulosic cushioning.
BN	PPP-C-850, polystyrene cushioning.
DA	A-A-1051, paperboard cushioning.
DH	MIL-STD-2073-1E w/ Change 1: MIL-PRF-20092, latex foam rubber.
FA	PPP-C-1120, Class A, water resistant bound fiber.
FE	PPP-C-1120, Class A, Type II, medium soft density, water resistant bound fiber.
FH	PPP-C-1120, Class A, Type III, medium firm density, water resistant bound fiber.
FL	PPP-C-1120, Class A, Type IV, firm density, water resistant bound fiber.
GA	A-A-59136, cushioning material, closed cell, foam plank
GC	MIL-P-19644, expanded polystyrene foam.
GD	MIL-PRF-26514, Type I, Class 1, rigid polyurethane foam.
GE	MIL-PRF-26514, Type I, Class 2, Grade A, flexible polyurethane foam, light load range.
GF	MIL-PRF-26514, Type I, Class 2, Grade B, flexible polyurethane foam, medium load range.
GH	MIL-PRF-26514, Type I, Class 2, Grade C, flexible polyurethane foam, heavy load range.
GT	PPP-C-1797, polypropylene foam cushioning.
HA	A-A-1507, chipboard sheet used as a stiffener on one side of item.
HB	A-A-1507, chipboard sheet used as a stiffener on both sides of item.
HD	A-A-1507, chipboard sheet used as pads, cells, die cuts or sleeves.

JA	ASTM-D4727, domestic fiberboard used as a stiffener on one side of item
JB	ASTM-D4727, domestic fiberboard used as a stiffener on both sides of item
JC	ASTM-D4727, domestic fiberboard used as pads, cells, die cuts or sleeves
LC	PPP-C-795, Class 1, cellular plastic film cushioning.
LE	MIL-STD-2073-1E w/ Change 1: MIL-PRF-26514, Type I, Class 2, flexible polyurethane foam used as corner pads.
LK	Wood blocking and bracing, fasteners, or steel strapping, for tie-down purposes. Rubber tired wheels shall be blocked clear of the floor of the crate or skid and shall not be load bearing.
LN	Plastic containers (vials, boxes, etc.) shall be constructed of rigid, transparent material that, if applicable, is resistant to any lubricant or preservative being used.
LP	MIL-STD-2073-1E w/ Change 1: A-A-55057, plywood, padded as required.
LT	PPP-C-795, Class 2, antistatic cellular plastic film cushioning.
MA	MIL-PRF-83671, Class 2, Grade A, flexible foam-in-place polyurethane.
MB	MIL-PRF-83671, Class 1, rigid foam-in-place polyurethane.
MD	MIL-PRF-83671, Class 2, Grade B, flexible foam-in-place polyurethane.
NA	PPP-C-795, cellular plastic film cushioning; or A-A-3129, open cell plastic cushioning; or PPP-C-1797, polypropylene foam cushioning; or A-A-59136, polyethylene foam cushioning.
NB	A-A-3129, Type I, Grade B, anti-static open cell plastic cushioning; or PPP-C-1797, Type II, polypropylene foam cushioning. Other electrostatic free cushioning is acceptable provided it meets the static decay rate test requirement of A-A-3129.
NG	A-A-3129, open cell plastic cushioning.
NS	Weather resistant fiberboard meeting the requirements of ASTM-D4727 used as pads, cells, die cuts or sleeves; or plastic molding material conforming to MIL-P-19644; or polyurethane foam conforming to MIL-PRF-26514.
P4	MIL-P-81997, cushioned pouch, electrostatic protective, transparent.
XX	MIL-STD-2073-1E w/ Change 1: See method of preservation code for this requirement.
ZZ	Special requirements - see specific instructions or drawings provided.
MIL-STD-2073-1E w/ Change 1 Cushioning Thickness	
0	Not applicable.
A	1/4 inch thick.
B	1/2 inch thick.
C	3/4 inch thick.
D	1 inch thick.
E	1-1/4 inches thick.
F	1-1/2 inches thick.
G	1-3/4 inches thick.
H	2 inches thick.
J	2-1/4 inches thick.
K	2-1/2 inches thick.

L	2-3/4 inches thick.
M	3 inches thick.
N	3-1/4 inches thick.
P	3-1/2 inches thick.
Q	3-3/4 inches thick.
R	4 inches thick.
S	4-1/4 inches thick.
T	4-1/2 inches thick.
U	4-3/4 inches thick.
V	5 inches thick.
W	5-1/4 inches thick.
X	MIL-STD-2073-1E w/ Change 1: As required to protect the item or elements of the package.
Z	Special requirements - see specific instructions or drawings provided.
MIL-STD-2073-1E w/ Change 1 Unit/Intermediate (U/I) Containers	
00	No requirement.
10	Any suitable container included in this table may be used.
A1	Bags made of material conforming to MIL-P-130, MIL-DTL-17667, MIL-PRF-121, or any material authorized by MIL-DTL-117. Closure may be by staples, tape, adhesive or heat seal.
A2	Any bag or sack used by the vendor.
AA	MIL-STD-2073-1E w/ Change 1: A-A-2714, mailing bags, cloth.
AC	MIL-STD-2073-1E w/ Change 1: A-A-160 or A-A-1588, sacks, shipping, paper (cushioned).
AH	MIL-STD-2073-1E w/ Change 1: A-A-881, bags, textile, shipping.
AN	A-A-550, bags, paper, grocers.
B1	MIL-STD-2073-1E w/ Change 1: MIL-B-117, Type I, Class B, Style 3, heavy duty, waterproof, one side opaque and other side transparent bag.
B2	MIL-B-117, Type I, Class C, Style 3, heavy duty, waterproof, greaseproof, one side opaque and other side transparent bag.
B3	MIL-B-117, Type I, Class E, Style 3, heavy duty, watervaporproof, greaseproof, one side opaque and other side transparent bag.
B8	MIL-STD-2073-1E w/ Change 1: MIL-B-117, Type I, Class A, Style 2, heavy duty, waterproof, electrostatic protective, transparent bag.
B9	MIL-B-117, Type I, Class F, Style 1, heavy duty, watervaporproof, electrostatic protective, opaque bag.
BD	MIL-B-117, bag.
BE	MIL-B-117, Type I, Class C, Style 1, heavy duty, waterproof, greaseproof, opaque bag.
BL	MIL-B-117, Type I, Class B, Style 2, heavy duty, waterproof, transparent bag.
BS	MIL-B-117, Type I, Class E, Style 1, heavy duty, watervaporproof, greaseproof, opaque bag.
BT	MIL-B-22020, bag, transparent, heat sealable, VCI treated.
BV	MIL-B-117, Type II, Class C, Style 1, medium duty, waterproof, greaseproof, opaque bag.

CG	MIL-STD-2073-1E w/ Change 1: PPP-D-723, Type I, domestic type fiber drum.
CH	MIL-STD-2073-1E w/ Change 1: PPP-D-723, Type II, normal overseas type fiber drum.
D1	PPP-B-566 or PPP-B-676, folding or setup box.
D2	MIL-STD-2073-1E w/ Change 1: PPP-B-566, A-A-2807, or PPP-B-676, folding, metal-edged or setup box.
D3	PPP-B-566, PPP-B-676, or ASTM-D5118, folding, setup or fiberboard box.
D4	Vendor's setup or folding box.
DA	PPP-B-566, folding paperboard box.
DE	PPP-B-676, setup box.
DJ	MIL-STD-2073-1E w/ Change 1: A-A-2807, metal-edged paperboard box.
DO	Any suitable fiber box included in this table may be used (see J.4.9.1).
DP	ASTM-D5168, box, triple wall, fiberboard.
DQ	ASTM-D5168, Class 1, non-weather resistant triple wall fiberboard box.
DR	ASTM-D5168, Class 2, weather resistant triple wall fiberboard box.
E5	ASTM-D5118, fiberboard box.
E6	Vendor's fiberboard box.
E7	ASTM-D5118, Type CF, Class domestic, single wall, corrugated fiberboard box.
E8	ASTM-D5118, Type CF, Class domestic, double wall, corrugated fiberboard box.
E9	ASTM-D5118, Class weather resistant fiberboard box; or PPP-B-566, water resistant folding box; or PPP-B-676, water resistant setup box.
EC	ASTM-D5118, Type CF, Class domestic, corrugated fiberboard box.
ED	ASTM-D5118, Type CF, Class weather resistant, corrugated fiberboard box.
EE	ASTM-D5118, Type CF, Class weather resistant, single wall, corrugated fiberboard box.
EF	ASTM-D5118, Type CF, Class Weather Resistant, single wall, Full Telescoping container.
EG	ASTM-D5118, Type CF, Class Weather Resistant, double wall, Full Telescoping container
EN	ASTM-D5118, Type SF, Class domestic, solid fiberboard box.
EP	ASTM-D5118, Type SF, Class weather resistant, solid fiberboard box.
EZ	MIL-STD-2073-1E w/ Change 1: PPP-B-601, cleated plywood box, domestic or overseas, demountable, assembled with fasteners other than nails and screws. Inspection door for reading humidity indicator provided for Method 50 packages. Top, one side and one end will be marked "REUSABLE CONTAINER AND CUSHIONING – USE FOR RETURN OF NRFI ASSEMBLY" in black letters a minimum 2" high.
F2	ASTM-D6251, Type III, Class 2, overseas cleated plywood box or ASTM-D6880, Class 2, heavy duty nailed wood box.
F3	ASTM-D6251, Type III, Class 1, domestic cleated plywood box or ASTM-D6880, Class 1, light duty nailed wood box.
F5	Vendor's wood box.
F6	ASTM-D6251, Type III, Treatment B, Style I or J, cleated plywood box, surface treated in accordance with the requirements of the specification.
F7	ASTM-D6251, Type III, or ASTM-D6880, heavy or light duty, determined by shipment destination. Provided with nominal 2" x 4" skid. Box provided with an inspection door, located for clear reading of the humidity indicator, for Method 54 only. Inspection door shall be hinged, cleated or sealed (similar to inspection door specified in MIL-C-104). Wood and plywood boxes shall have top panels secured with wood screws and boxes banded. The top, one side, and one end of

	the box shall be marked "REUSABLE CONTAINER AND CUSHIONING -USE FOR RETURN OF NRFI ASSEMBLY" with black letters, minimum 2" high. In addition, mark box "TO OPEN - USE SCREWDRIVER" with one inch minimum high letters. Letter sizes may be appropriately reduced in proportion to size of container.
F9	Shallow box, constructed of plywood and wood as follows: Sides and ends of one piece of lumber, 3/4 inch minimum thickness. Top and bottom of one piece standard grade 3/8 inch plywood with exterior weather-resistant glue. End cleats shall run across the grain of the ends and shall extend within 1/8 inch of the outside surface of the top and bottom. Sides shall extend over the cleats. Battens shall be applied in accordance with ASTM-D6880 except exterior battens or cleats shall not be used on the top.
FA	PPP-B-621, wood box.
FB	ASTM-D6880, Class 1, light duty wood box.
FC	ASTM-D6880, Class 2, heavy duty wood box.
FD	ASTM-D6251, Type III, wood cleated plywood box
FF	ASTM-D6251, Type III, Class 2, wood cleated plywood box, overseas
FG	ASTM-D6251, Type III, Class 1, wood cleated plywood box, domestic
FJ	MIL-STD-2073-1E w/ Change 1: PPP-B-601, cleated plywood box, domestic or overseas, demountable, assembled with fasteners other than nails or screws.
FK	MIL-STD-2073-1E w/ Change 1: ASTM-D6251, wood-cleated panelboard box.
FL	ASTM-D6251, Type II, Class 1, domestic, wood-cleated panelboard box.
FM	MIL-STD-2073-1E w/ Change 1: ASTM-D6251, Class 2, overseas wood-cleated panelboard box.
FO	Any suitable wood box included in this table may be used (see J.4.9.1).
FU	ASTM-D6256, wood-cleated skidded box, load bearing base.
FV	ASTM-D6256, Class 1, domestic, wood-cleated skidded box.
FW	ASTM-D6256, Class 2, overseas, wood-cleated skidded box.
GB	ASTM-D6256, Class 1 or 2. Provide box with inspection door located for clear reading of the humidity indicator for Method 54 packages only. The inspection door shall be hinged, cleated and sealed (similar to inspection door specified by MIL-C-104). The top, one side and one end of the shipping container shall be marked "REUSABLE CONTAINER – USE FOR RETURN OF NRFI ASSEMBLY" in black letters, minimum 2" high.
HA	PPP-B-96, metal can.
K1	MIL-D-6054 or MIL-D-6055, metal reusable drum, depending upon size or capacity limits of container.
KE	MIL-D-6054, reusable metal drum.
KF	MIL-D-6055, reusable metal drum (capacity from 88 to 510 cu. in.).
MA	MIL-C-104, wood crate, lumber or plywood sheathed, nailed or bolted.
MB	MIL-C-104, Type I, Class 1, nailed wood crate, lumber sheathed.
MC	MIL-C-104, Type II, Class 1, bolted wood crate, lumber sheathed.
MF	MIL-C-104, Type I, Class 2, nailed wood crate, plywood sheathed.
MG	MIL-C-104, Type II, Class 2, bolted wood crate, plywood sheathed.
MH	MIL-C-104, Type II, Class 1 or 2, bolted wood crate, provided with lifting attachments and an inspection port (Method 54 packages only). The top, one side and one end of the crate shall be marked "REUSABLE CONTAINER – USE FOR RETURN OF NRFI ASSEMBLY" with black letters a minimum of two inches high.
MJ	MIL-STD-2073-1E w/ Change 1: MIL-C-3774, open wood crate.

MO	Any suitable wood crate included in this table may be used (see J.4.9.1).
MV	ASTM-D6039, open or covered wood crate.
MX	MIL-STD-2073-1E w/ Change 1: ASTM-D6039, Style B, open or covered wood crate, light duty.
MY	NAVICP Drawing No. 15024, for shipping and storage of gyroscopic instruments.
NO	ASTM-D5118, Type CF, Class weather resistant, double wall, corrugated fiberboard box.
NR	PPP-B-1672, Type I, vertical star cushioning in reusable box.
NS	PPP-B-1672, Type II, folding convoluted cushioning in reusable box.
NV	PPP-B-1672, Type III, telescoping encapsulated cushioning in reusable box.
NW	PPP-B-1672, Type IV, horizontal star cushioning in reusable box.
NY	NAVICP Drawing No. P069, molded reusable container for circuit cards and modules
NZ	NAVICP Drawing No. 13414, modular reusable container for packaging major repairables.
PK	MIL-STD-2073-1E w/ Change 1: PPP-B-601, overseas type, cleated plywood box; PPP-B-621, Class 2, overseas type nailed wood box; or ASTM-D5168, Class 2, weather resistant triple wall fiberboard box. Provide with nominal 2" by 4" skids. See box specifications for weight limitations. The packaged item shall be centered and cushioned on all surfaces between the unit package and shipping container with cushioning conforming to PPP-C-1120, Type III or IV, Class C; A-A-59136; PPP-C-850, Type I; MIL-PRF-26514 or MIL-R-20092, Type II, Class 4 as required. Close, seal and reinforce fiberboard boxes in accordance with the appendix to the box specification. Steel banding is not permitted for fiberboard boxes. Wood and plywood boxes shall have top panels secured with wood screws and boxes banded. The top, one side and one end of the shipping container shall be marked "REUSABLE CONTAINER AND CUSHIONING – USE FOR RETURN OF NRFI ASSEMBLY" in black letters, minimum 2" high. In addition, mark box "TO OPEN – USE SCREW-DRIVER" in black letters, minimum 1" high. Letter sizes may be appropriately reduced in proportion to size of container.
RC	NAVICP Drawing No. 15450, modular reusable container for packaging depot level repairables.
RD	PPP-B-585, wirebound wood box.
RE	MIL-STD-2073-1E w/ Change 1: PPP-B-585, Class 3, wirebound wood box.
RF	MIL-STD-2073-1E w/ Change 1: PPP-B-26, bag, plastic.
RG	MIL-STD-2073-1E w/ Change 1: PPP-D-729, drum, steel, 55 gal.
RH	MIL-B-2427, ammunition box, nailed wood.
RJ	MIL-B-46506, ammunition box, wirebound wood.
RK	MIL-PRF-11264, reusable wood containers, heavy duty.
SD	MIL-B-117, Type I, Class C, Style 2, heavy duty, waterproof, greaseproof, transparent bag.
SE	MIL-B-117, Type I, Class E, Style 2, heavy duty, watervaporproof, greaseproof, transparent bag.
SF	MIL-B-117, Type III, Class E, Style 1, light duty, watervaporproof, greaseproof, opaque bag.
SG	MIL-B-117, Type I, Class H, Style 2, heavy duty, waterproof, electrostatic protective, electrostatic shielding.
WD	Plastic containers constructed of rigid transparent material that, if applicable, is resistant to lubricant or preservative being used. Containers too small for adequate marking shall be overpackaged in envelopes for identification marking purposes.
WM	PPP-T-495, mailing tube.
WY	Warner-Robins Air Logistics Center Drawing Nos. 11214-5002-100, 11214-5002-200, 11214-5002-300, or 11214-50020-400 for shipping and storage of avionics instruments.

XX	MIL-STD-2073-1E w/ Change 1: See method of preservation code for this requirement.
ZZ	Special requirements - see specific instructions or drawings provided.
MIL-STD-2073-1E w/ Change 1 Optional Procedure Index	
A	Packaging is in accordance with a procedural specification or a SPI. The appropriate specification number will be shown in-the-clear in the supplemental data area.
E	Certain options can be exercised as to specific method of preservation or DoD approved packaging materials, but only as indicated in supplemental data. However, basic preservation method shall be retained and unit package dimensions shall not be increased by more than one inch. Equal or better protection shall be given the item and there shall be no increase in the package cost.
F	MIL-STD-2073-1E w/ Change 1: For other than SPI items, optional use of flexible polyurethane foam-in-place cushioning is permitted. Cushioning shall conform to MIL-F-83671, Class 2, grade B. If F-I-P requires a larger container than conventional packaging would require, the F-I-P container requirements will be coded in place of the conventional data.
M	All packaging data is mandatory for compliance and no substitutions are permitted. Fast packs should be included in this category.
O	Options can be exercised as to specific method of preservation or DoD approved packaging materials to be used. However, basic preservation method shall be retained, supplemental data shall be complied with, and unit package dimensions shall not be increased by more than one inch. Equal or better protection shall be given the item and there shall be no increase in the package cost.
P	For SPI items, polyurethane foam-in-place is permitted as specified on the SPI only when the SPI pack is not available.
R	MIL-STD-2073-1E w/ Change 1: For other than SPI items, optional use of flexible polyurethane foam-in-place cushioning is permitted. Cushioning shall conform to MIL-F-83671, class 1. If F-I-P requires a larger container than conventional packaging would require, the F-I-P container requirements will be coded in place of the conventional data.
MIL-STD-2073-1E w/ Change 1 Special Markings	
01	Fragile
02	Arrow up
03	Contains Desiccant.
04	Fragile, Arrow up and Method 50
05	Delicate instrument
06	Delicate instrument and Arrow up
07	Glass – do not drop
08	MIL-STD-2073-1E w/ Change 1: Keep dry
09	MIL-STD-2073-1E w/ Change 1: Perishable – keep frozen
10	MIL-STD-2073-1E w/ Change 1: Keep at 40 degrees temperature
11	MIL-STD-2073-1E w/ Change 1: Sling point
12	Fragile, Method 50
13	MIL-STD-2073-1E w/ Change 1: Open this side

14	Center of balance
15	MIL-STD-2073-1E w/ Change 1: Use no hooks
16	MIL-STD-2073-1E w/ Change 1: Top
17	MIL-STD-2073-1E w/ Change 1: Reusable container
18	MIL-STD-2073-1E w/ Change 1: Remove top first
19	Method 50 reusable container
20	Do not bend
21	MIL-STD-2073-1E w/ Change 1: Do not sling
23	MIL-STD-2073-1E w/ Change 1: Perishable biologicals, do not freeze
24	Open for inspection or use only
25	MIL-STD-2073-1E w/ Change 1: Box _____ of _____
26	MIL-STD-2073-1E w/ Change 1: Load bearing area
28	MIL-STD-2073-1E w/ Change 1: Do not drop or throw
29	MIL-STD-2073-1E w/ Change 1: Do not hump
30	MIL-STD-2073-1E w/ Change 1: Top heavy
31	MIL-STD-2073-1E w/ Change 1: Center of gravity
32	Type I, shelf life
33	Type II, shelf life
34	MIL-STD-2073-1E w/ Change 1: Manufacturer's part number
36	Fragile, arrow up, and glass
37	Fragile, arrow up
39	ESD sensitive electronic device requirements of MIL-STD-129 apply
40	Omission of marking for sensitive, controlled or pilferable items per MIL-STD-129
51	MIL-STD-2073-1E w/ Change 1: Marking shall be accomplished in accordance with the marking requirements in the applicable procedural packaging specification.
52	MIL-STD-2073-1E w/ Change 1: Hardness critical
60	Asbestos Warning Label
00	No special marking.
ZZ	Special requirements.
MIL-STD-2073-1E w/ Change 1 Packing Codes	
A	MIL-STD-2073-1E w/ Change 1: Overpacking shall be accomplished using fiberboard boxes, weather resistant class, fabricated in accordance with ASTM-D5118, or triplewall, corrugated fiberboard boxes, Class 2, conforming to ASTM-D5168.
B	Overpacking shall be accomplished using Class 2, overseas wood cleated panelboard boxes, conforming to ASTM-D6251, or wirebound wood boxes conforming to PPP-B-585, Class 3.
C	Overpacking shall be accomplished using cleated-plywood wood boxes conforming to PPP-B-601, Grade A, or nailed and lock-corner wood boxes conforming to PPP-B-621, Class 2 or covered wood crates conforming to ASTM-D6039.

D	MIL-STD-2073-1E w/ Change 1: Overpacking shall be accomplished using open wood crates conforming to MIL-C-3774, or open wood crates conforming to ASTM-D6039.
E	Overpacking shall be accomplished to meet the performance test requirements of ASTM-D4169, Distribution Cycle 18, Assurance Level 1.
F	Overpacking is not required: the unit container shall also serve as the shipping container
H	MIL-STD-2073-1E w/ Change 1: Overpacking shall be accomplished using boxes fabricated in accordance with ASTM-D5118, class weather-resistant. When size and weight limitations are exceeded, a suitable container shall be selected from table C.II.
M	MIL-STD-2073-1E w/ Change 1: Overpacking shall be accomplished using Class 1, domestic wood cleated panelboard boxes conforming to ASTM-D6251 or wirebound wood boxes conforming to PPP-B-585, Class 1, or loadbearing base, skidded, wood-cleated boxes conforming to MIL-B-26195, Type I.
N	MIL-STD-2073-1E w/ Change 1: Overpacking shall be accomplished using cleated plywood wood boxes, domestic type, conforming to PPP-B-601, or nailed and lockcorner wood boxes conforming to PPP-B-621, Class 1, or covered wood crates, domestic class, conforming to ASTM-D6039, Style B.
P	MIL-STD-2073-1E w/ Change 1: Overpacking shall be accomplished using open wood crates conforming to ASTM-D6039, Style B, or open wood crates, nonweather resistant, domestic class, conforming to MIL-C-3774.
Q	Overpacking shall be accomplished in accordance with MIL-STD-2073-1, Table C.II for the packing level specified.
R	MIL-STD-2073-1E w/ Change 1: Overpacking shall be accomplished to meet the performance test requirements of ASTM-D4169, Distribution Cycle 18, Assurance Level 2.
T	MIL-STD-2073-1E w/ Change 1: Overpacking shall be accomplished by use of fiberboard containers fabricated in accordance with ASTM-D5118, weather-resistant class, or ASTM-D5168, Class 2; or whenever practicable, by means of shrink-film conforming to A-A-3174.
Z	Special requirement. See specific instructions or drawings provided.
2	Overpacking shall be accomplished using cleated-plywood boxes, overseas type, conforming to PPP-B-601 or nailed wood boxes conforming to PPP-B-621, Class 2, Style 4.
4	MIL-STD-2073-1E w/ Change 1: See method of preservation.
5	MIL-STD-2073-1E w/ Change 1: Overpacking shall be accomplished using cleated-plywood boxes, domestic type, conforming to PPP-B-601 or nailed wood boxes conforming to PPP-B-621, Class 1, Style 4.
7	MIL-STD-2073-1E w/ Change 1: Overpacking shall be accomplished using cleated-plywood boxes, domestic type, conforming to PPP-B-601, or nailed wood boxes conforming to PPP-B-621, Class 1, Style 4, or wirebound wood boxes.
0	MIL-STD-2073-1E w/ Change 1: Packing not authorized.
MIL-STD-2073-1E w/ Change 1 Unit Container Levels	
O	Unit container is not an acceptable shipping container.
A	Unit container provides level A packing protection.
B	Unit container provides level B packing protection.
D	MIL-STD-2073-1E w/ Change 1: No container is required.
M	MIL-STD-2073-1E w/ Change 1: Unit container provides minimal packing protection (see 5.4).
Z	Unit container requires special consideration (air only, inside storage only, etc.)