

<p>VOLUME 14</p> <p>“PRESERVATION, PACKAGING, AND PACKING”</p> <p>SUMMARY OF VOLUME 14 CHANGES</p> <p>Hyperlinks are denoted by <i>bold, italic, blue and underlined font.</i></p> <p>The original publication date of this Marine Corps Order (right header) will not change unless/until a full revision of the MCO has been conducted.</p> <p>The date denoted by blue font (left header) will reflect the date this Volume was last updated.</p> <p>All Volume changes denoted in blue font will reset to black font upon a <u>full revision</u> of this Volume.</p>			
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- (q) DoD Instruction 6055.05, "Occupational and Environmental Health (OEH)," November 11, 2008
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- (z) DoD Instruction 6055.05, "Occupational and Environment Health," November 11, 2008
- (aa) MCO 4450.12A
- (ab) MIL-STD-1186A

<p>VOLUME 14: CHAPTER 1</p> <p>“PRESERVATION, PACKAGING AND PACKING”</p> <p>SUMMARY OF SUBSTANTIVE CHANGES</p> <p>Hyperlinks are denoted by <i><u>bold, italic, blue and underlined font.</u></i></p> <p>The original publication date of this Marine Corps Order (MCO) Volume (right header) will not change unless/until a full revision of the MCO has been conducted.</p> <p>All Volume changes denoted in blue font will reset to black font upon a full revision of this Volume.</p>			
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CHAPTER 1

PRESERVATION, PACKAGING AND PACKING (PP&P)

0101 GENERAL OVERVIEW

010101. The preservation, packaging and packing process for the shipment and storage of military-owned equipment encompasses the life cycle of each asset to include: development and attainment of requisite protection at the time of procurement, cyclic preservation maintenance of material during terms of storage, preparation for shipment to using organizations, and the retrograde movement of serviceable and unserviceable repairable assets.

010102. The following guidance and procedures apply to items for which military packaging is required to meet operational demands and for the selection and application of packaging at the time of procurement. Accomplishment of protection prior to and during storage, and shipment among Marine Corps activities is established in references (a) through (h).

0102 PURPOSE

This Volume establishes policy covering packaging requirements, specifications, levels of protection, and project information exchange requirements for preservation, packaging, packing, unitization, and marking of Marine Corps resources. Accordingly, this policy is applicable to all Marine Corps activities whose mission involves any responsibility for protection of material throughout its life cycle and, specifically, from its development/acquisition until consumption or disposal. Furthermore, adherence to the provisions in this Volume shall ensure that Marine Corps processes and procedures are in compliance with Department of Defense (DoD) regulations for preservation, packaging, packing, and marking of material.

0103 ROLES AND RESPONSIBILITIES

Retail-level supply operations exist in every element of the Marine Air-Ground Task Force (MAGTF); both in garrison and deployed. Therefore, it is critical that all personnel responsible for packaging management, preservation, packing, unitization and marking of Marine Corps material and Marine Corps sponsored movements of associated equipment comprehensively understand and adhere to the provisions of this volume. To ensure implementation of this Volume, execution of the following responsibilities is paramount:

010301. Deputy Commandant, Installations and Logistics (DC I&L)

- A. Establish and maintain preservation, packaging and packing policies for the Marine Corps.
- B. Ensure the roles and responsibilities identified in this Volume are adhered to by the appropriate stakeholders. This will allow a comprehensive preservation, packaging and packing program that implements the internal command policies and procedures to facilitate the execution of this publication.

C. As the functional advocate for logistics information systems, ensure all applicable hardware and software systems of record are available and effective to allow data input and record-keeping for retail-level preservation, packaging, and packing operations.

D. Publish Marine Corps Transportation Account Code (TAC) policy for the movement of Marine Corps equipment as well as Marine Corps sponsored movements.

E. Coordinate with Commanding General, Training and Education Command (CG, TECOM) to ensure the implementation of effective training programs for the contents of this publication.

010302. Deputy Commandant, Programs and Resources (DC P&R)

In coordination with DC I&L (LPC), DC I&L (LPD), United States Transportation Command, Marine Corps Systems Command (MARCORSSYSCOM) and Marine Corps Logistics Command (MARCORLOGCOM), ensure the programming of adequate resources through the Program Objective Memorandum process to efficiently and economically support the Marine Corps' preservation, packaging, and packing requirements.

010303. Commanding General, Marine Corps Logistics Command (CG, MARCORLOGCOM)

A. Maintain quality assurance in the proper assignment of TACs and take direct action with shipping activities as necessary to ensure correct TAC utilization.

B. Ensure organizations that have the responsibility for acquisition/sponsorship of major end items, systems, secondary technical items and general supplies and equipment coordinate with the packaging database manager (Marine Corps Logistics Bases (COMMARCORLOGBASES), (Code 87), Albany, Georgia) to develop adequate technical packaging requirements for major items/system design and development.

C. Ensure organizations that have the responsibility for acquisition/sponsorship of major end items, systems, secondary technical items and general supplies and equipment coordinate with the packaging database manager to provide adequate protection for material entering the supply system at the time of procurement.

010304. Commander, Marine Corps Systems Command (COMMARCORSYSCOM)

A. In coordination with DC I&L, ensure the provisions of this Volume support total life cycle management in the preservation, packaging, and packing of Marine Corps material and equipment.

B. In coordination with Deputy Commandant, Combat Development and Integration, ensure the equipment information in Total Force Structure Management System is current to enable effective preservation, packaging, and packing operations.

C. Coordinate with the packaging database manager to develop adequate technical packaging requirements with major items/system design and development.

D. Coordinate with the packaging database manager to provide adequate protection for material entering the supply system at the time of procurement.

E. Maintain quality assurance in the proper assignment of TACs, with special attention to First Destination TACs, and take direct action with shipping activities as deemed necessary to ensure correct TAC utilization for program requirements.

010305. Commanding General, Training and Education Command (CG, TECOM)

A. Establish effective training programs for both entry-level and sustainment training of Marine Corps PP&P operations.

B. Commanders shall ensure that this policy is made available, understood, and is used by all personnel responsible for packaging management, preservation, packing, unitization and marking of Marine Corps material and Marine Corps sponsored movements of associated equipment.

C. Develop and implement internal command policies and procedures to facilitate the execution of this policy.

D. Ensure activities whose missions involve warehousing operations are modernized, mechanized, automated to the fullest extent possible to achieve efficiency and for the overall economy of operations.

E. Establish an intermediate capability for packaging at the Marine Logistics Group (MLG)-level to accomplish preservation and packing for repairable assets.

010306. Commanding General, Marine Corps Installations Command

A. Ensure organizations that have the responsibility for the preservation, packaging, and packing of major end items, systems, secondary technical items, general supplies and equipment implement the internal command policies and procedures to facilitate the execution of this publication.

B. Ensure that Distribution Management Offices comply with the provisions of this publication.

010307. Commanders, Marine Corps Forces (Marine Corps Component-Level Commands)

A. Commanders shall ensure that this policy is made available, understood, and is used by all personnel responsible for packaging management, preservation, packing, unitization and marking of Marine Corps material and Marine Corps sponsored movements of associated equipment.

B. Develop and implement internal command policies and procedures to facilitate the execution of this policy.

C. Ensure activities whose missions involve warehousing operations are modernized, mechanized, automated to the fullest extent possible to achieve efficiency and for the overall economy of operations.

D. Establish an intermediate capability for packaging at the MLG-level to accomplish preservation and packing for repairable assets.

010308. Commanding General, Marine Forces Reserves

A. Comply with other Marine Corps Forces requirements above.

B. Provide a minimum degree of protection for repairable assets for retrograde shipment to the appropriate maintenance or storage activity.

0104 ADMINISTRATION AND LOGISTICS

010401. Recommendations concerning the contents of this Volume are invited. Submit recommendations via the appropriate chain of command to the Assistant Deputy Commandant, I&L attention LPC.

010402. To ensure proper maintenance, use, accessibility and preservation, regardless of format or medium, records created as a result of this Volume will be managed per reference (i).

010403. Standard Operating Procedures (SOPs), desktop folders, directives and publications will be managed in accordance with Volume 3, Chapter 1 of this order.

VOLUME 14: CHAPTER 2

“PRESERVATION, PACKING, UNITIZATION AND MARKING”

SUMMARY OF SUBSTANTIVE CHANGES

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CHAPTER 2

PRESERVATION, PACKING, UNITIZATION, AND MARKING

0201 GENERAL

This chapter puts forth DoD policy for packaging, and supplements the joint DoD component policies promulgated in references (e) and (f). These policies and objectives apply to all Marine Corps activities and Marine Corps organizations whose mission involves any responsibility for protection of material throughout its lifecycle and, specifically, from its development/acquisition until ultimate use or disposal.

0202 PURPOSE

020201. Establish uniform criteria for the selection and application of packaging at the time of procurement, or the protection prior to and during storage and shipment among Marine Corps activities and organizations.

020202. Promote uniformity in packaging requirements for the same or similar items and, likewise, for the same or similar conditions of storage and distribution.

020203. Ensure optimum life, utility, and performance of material through prevention of corrosion, deterioration, or damage.

020204. Facilitate efficient receipt, storage, inventory, and distribution of material.

020205. Ensure essential and effective markings are applied for identification and handling throughout the storage and distribution cycles.

020206. Promote cost-effective measures by utilizing unit, intermediate, and exterior packs which will result in the lowest overall cost.

020207. Provide guidance for quality packaging that will enhance the material readiness of the Marine Corps.

020208. Ensure that requirements for packaging are in consonance with policies stated herein.

020209. Encourage adequate occupational safety, health, and environmental measures in packaging operations.

020210. Promote maximum practicable use of industrial/commercial packaging.

020211. Promote utilization of packaging materials and containers that are known to be reusable, or have reuse potential, and which have minimum adverse impact on the ecology.

0203 EXPLANATION OF TERMS

The following terms are applicable for the purpose of this Volume:

020301. Containerization. The use of an article of transport equipment designed to facilitate and optimize the movement of goods by one or more modes of transportation without intermediate handling of the contents.

020302. Cyclic Preservation Maintenance. The re-preservation of material in storage on which previously applied protective measures have subsequently aged or deteriorated to a state requiring renewal of the initial protection.

020303. Exercising. To put equipment into action in order to re-distribute preservative oils and lubricants.

A. Method I. By self-contained power supply.

B. Method II. By remote or external power source.

020304. Exterior Pack. A container, bundle, or assembly to whose design and construction is sufficient to protect material during shipment and storage. This can be a unit pack or a container with any combination of unit or intermediate packs.

020305. Commercial Packaging. The packaging materials and methods used by the supplier which meet the requirements of the distribution systems serving both DoD and industrial consumers.

020306. Intermediate Pack. A wrap, box, or bundle which contains two or more unit packs of identical items.

020307. Marking. Application of numbers, letters, labels, tags, symbols, or colors for handling and/or identification during shipment and storage.

020308. Military Packaging. The materials and methods prescribed in federal and military specifications, standards, drawings, or other authorized documents designed to provide the level of protection to prevent damage or deterioration during shipment, handling, and storage of material.

020309. Packaging. The technology of enclosing or protecting products for distribution, transport, warehousing, logistics, or end use.

020310. Packing. Assembly of items into a unit, intermediate, or exterior pack with necessary blocking, bracing, cushioning, weatherproofing, reinforcement, and marking.

020311. Preservation. The application of protective measures.

020312. Unitization. The assembly of packs of one or more line items of supply into a single load in such a manner that the load can be handled as a unit through the distribution system. Unitization (unitized loads/unit loads) encompasses consolidation in a container, placement on a pallet or load base, or securely binding together.

020313. Unit Pack. The first tie, wrap, or container applied to a single item, or to a group of items of a single national stock number (NSN), preserved or unpreserved, which constitutes a complete or identifiable package.

020314. Military preservation. Application of materials and/or methods designed to the unique requirements of selected commodities for which the de-processing demands of Level A preservation (would) bear significantly on the operational readiness of the item (e.g., vehicles and weapons).

020315. Reusable containers. A shipping and storage container that is designed for reuse without impairment of its protective function and can be repaired and/or refitted to prolong its life or to adapt it for shipment of items other than that for which it was originally intended. Reusable containers are either specialized or general purpose.

A. Specialized reusable containers are uniquely configured to support and protect a specific item, or variety of items, while in transportation, storage, and handling. A specialized reusable container has an expected service life equal to or greater than the service life of the item it is designed to protect. Engineering drawings or equivalent are used to define form, fit, function, materials, tolerances, and manufacturing techniques. These containers are accountable in accordance with established inventory management and accounting procedures.

B. General purpose reusable containers are designed to accommodate a number of different items within certain limits of size, weight, and fragility. A general purpose reusable container can be reused a limited number of times and may be identified by military or federal specifications.

0204 GENERAL POLICIES

020401. All Marine Corps material must have adequate packaging to protect material from corrosion, deterioration, and physical damage during storage and distribution.

020402. Maximum use will be made of commercial packaging in acquisition/procurement actions when such packaging satisfies Marine Corps needs.

020403. Military levels of protection, "A," and "B" will be developed for all Marine Corps-managed items by the organizational element having responsibility for managing the packaging data segment of the Marine Corps supply system. Technical requirements for each applicable level will satisfy storage and logistical conditions described in this chapter and will be documented in the manner prescribed under in reference (b).

020404. Packaging prescriptions will include, as appropriate to the commodity and its usage, the prescribed quantity of the item to be included in the unit, intermediate and exterior pack, and unitized load.

020405. Packaging requirements developed and prescribed for inclusion in specifications, standards, and contractual documents will provide the requisite level of protection and will be described in sufficient detail to promote competitive procurement and small business considerations.

020406. Specifications, standards, and other relative standardization documents prescribing packaging (for which the Marine Corps is the preparing activity) will be coordinated by the preparing activity with a representative cross-section of the applicable segments of industry, industrial associations, and technical societies (see reference (b)).

020407. Packaging protection is necessary to ensure serviceability and prevent physical damage throughout the anticipated storage and distribution cycle and will be provided at the time of procurement, to the maximum extent practicable. This protection may be obtained from the prime contractor, subcontractor, packaging service contractor, or other such means available to the procuring office. In-house packaging facilities may be used for purposes of initial packaging of procured items only when the sources enumerated in the preceding are not available, industry cannot furnish the service within the required timeframe, or when such services are not economically advantageous.

020408. Material originally protected to a level lower than that required for a particular shipment or storage condition will be repackaged if a higher level is needed to:

- A. Comply with levels of protection known to be required for designated shipments, special projects, transportation and handling conditions, and storage environment.
- B. Meet the level of protection specified.

020409. Packaging protection may be reduced for containerized shipments when the items are intended for immediate use, when the containerization medium is retained as a storage/issue facility, or when it is known that favorable storage will be provided upon receipt. Material previously packaged at a higher degree of protection will not be repackaged to meet this requirement.

020410. In selecting levels of protection for ammunition, explosives, or other dangerous materials, nothing in the policies or procedures contained in this manual will be construed as authorizing any compromise with established regulations or safety standards.

020411. Hazardous cargo, including shipments from supply sources to a consolidation, containerization point for onward movement, will be packed, marked, and certified per part III Chapter 24, of reference (j).

020412. The use of automated information technology to assist in logistics chain management is mandatory unless it is demonstrably proven through cost/benefit analysis that

implementation would not be practical. A military shipping label (barcoded labels) will be used to mark containers, pallets (463L), end items, and select documentation. Military shipping labels will also be used for other military equipment during sustainment, unit move, ammunition, prepositioned equipment and retrograde shipments going to/from/within the Continental United States (CONUS) and Outside the Continental United States (OCONUS), including redeployment and reconstitution in accordance with Part II and III of reference (k).

020413. DoD and Defense Transportation Regulation compliant military shipping labels will be generated for all shipments in accordance with reference (k).

020414. Performance Oriented Packaging requirements will be in compliance with the following regulations which govern the international transport of dangerous goods:

A. The United Nations "Orange Book" entitled, "Transport of Dangerous Goods," ISBN 978-92-1039-722-3.

B. The "International Civil Air Organization Technical Instructions for the Safe Transport of Dangerous Goods by Air," ISBN 978-92-9249-075-1.

C. Per the "International Maritime Dangerous Goods Code" DoD activities or commercial vendors who develop packaging designs for dangerous goods will conduct the necessary tests and show compliance or certification by marking their packages with approved logo and certification numbers.

020415. Electrostatic discharge sensitive items will be packaged with electrostatic discharge protective materials. Packaging, handling, and storage requirements and procedures will be per references (m) and (n). Staples should never be used as a closure method for electrostatic discharge protective barrier material bags.

020416. The dominant criteria for packaging for deployed MAGTF-deployed units will be those that are imposed by the end use/employment of packaged material versus those criteria imposed by lift or other constraints.

A. Break-bulk/palletized cargo will be maximized for assault echelon and airlifted elements of the MAGTF.

B. Containerization will be maximized for all other dry cargo.

C. Cargo documentation for MAGTF supplies will be produced using automated methods common to military shipping label application to enhance visibility, location, tracking, and recoverability aspects. These automated procedures will be in addition to current manual methods, those imposed by commercial shippers, or those imposed by the Surface Deployment and Distribution Command for commercially lifted overland, sea, or air movements.

020417. Marine Corps activities are encouraged to use advanced packaging techniques in conjunction with the purchasing of supplies and equipment. Information concerning the performance and reliability of advanced packaging techniques can normally be provided by the

supplier/manufacturer, and a determination should be made that the material or technique meets the performance requirements contained in reference (o). Approval for use of non-specification material will be obtained from Headquarters Marine Corps (HQMC), DC I&L (LPC-2) via the chain of command.

020418. Awareness of, and concern for human safety and environmental protection will be inherent in the planning and execution of all policies and procedures outlined in this Volume. Amplifying instructions may be found in references (p) and (q). The intent of state and local pollution abatement laws, regulations, criteria, and standards also apply.

0205 LEVELS OF PROTECTION

Military levels of protection are described in terms of the performance expected of the package or pack, and must be translated into specific technical or design requirements for individual items or categories of items.

020501. Levels of protection (technical requirements) for individual items or categories of items are normally contained in Section 5 of reference (o), or the packaging specification applicable to a given category of items (electronics, wheeled vehicles, hand tools, etc.).

020502. The level of protection to be specified in procurement documents, or applied by Marine Corps activities, is dependent upon known factors of use, storage, and/or shipping. The technical requirements of the levels for either procurement or packaging facility application will normally be selected from documentation indicated in paragraph 020501.

020503. Levels of protection for preservation and packing.

A. Level A. Maximum protection to meet the most severe worldwide shipment, handling, and storage conditions. A 'Level A' pack must, in tandem with the applied 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 'Level A' pack are mobilization (strategic and theater deployment and employment), open storage, and deck loading. Examples of containers used to meet the 'Level A' requirements are overseas-type wood boxes; and fiberglass, plastic, and metal reusable containers.

B. Level B. Intermediate protection to meet moderate worldwide shipment, handling, and storage conditions. A 'Level B' pack, in tandem with the applied preservation, must be capable of protecting material not directly exposed to the extremes of climate, terrain, and operational and transportation environments. Examples of situations which indicate a need for a 'Level B' pack are security assistance, selected containerized overseas shipments, and anticipated favorable conditions. Examples of containers used to meet the 'Level B' pack requirements are domestic wood crates, weather-resistant fiberboard containers, fast-pack containers, weather-resistant fiber drums, and weather-resistant paper and multi-wall shipping sacks.

0206 COMMERCIAL PACKAGING

Commercial packaging will be acceptable for any level of protection whenever the technical design details of the package meet all conditions of the level of protection specified. Commercial packaging must provide the same level of protection against physical and environmental damage as the military package. It will be marked to the level of protection to which it complies.

020601. Items will be given the degree of protection normally employed by the supplier to afford protection against corrosion, deterioration, and damage during shipment.

020602. Protection will be that used for distribution directly to a using customer or for subsequent redistribution, as required.

020603. Wholesale assembly bulk-type packaging practices, such as those used in interplant and intra-plant shipments, are not acceptable unless they are the usual trade practices for selected commodities.

020604. The technical requirements will be incorporated in standardization and acquisition documents, as applicable.

020605. Specific industry standards such as Electronic Industries Association or Aerospace Industries Association Standards may be used, where appropriate.

020606. Reference (r) established minimum requirements for packaging of supplies and equipment, exclusive of ammunition, explosives, or hazardous materials (excluded items are covered in Title 49, Part 173 of the Code of Federal Regulations) and as such is an acceptable reference document for commercial packaging. Well-defined individual company standards meeting the minimum requirements of reference (q) may also be used.

0207 SELECTION AND APPLICATION OF MILITARY LEVELS OF PROTECTION AND COMMERCIAL PACKAGING

020701. Determinations to use appropriate military levels of protection (or commercial packaging) will be governed by knowledge of conditions of shipment, class of material, and duration of storage. The nature and characteristics of an item and its susceptibility to corrosion, deterioration, and physical damage are also essential factors for consideration and will be the basis for determining the method of unit preservation. Levels of protection apply equally to the preservation and packing functions. Criteria applicable to the levels of military packaging (and for commercial packaging) are as follows:

A. Level A

1. High dollar value items having critical characteristics where corrosion or physical damage cannot be risked.

2. End items and secondary technical items:

- a. Placed in outdoor storage.
 - b. Likely to be exposed to the environment.
 - c. Likely to be exposed to multiple or severe handling in shipment or storage.
3. Items not necessarily of high dollar value but critical in nature, application, or requirement where any degree of corrosion, deterioration, or physical damage would render the items unserviceable or unusable.

B. Level B

1. General stocks (other than those indicated in the preceding) for CONUS warehouse storage and for redistribution upon demand and under favorable shipping conditions.
2. Overseas containerized shipments, or other favorable shipment modes, where extended environmental exposure is not anticipated.

C. Commercial Packaging

1. Commercial packaging may be adequate/used to satisfy any level of protection. This decision of adequacy can be based upon qualified knowledge of a given industry/supplier's packaging practices, or upon an analysis of the technical design details (materials and workmanship) of the industry package to meet the logistical conditions.
2. After due consideration of the criteria in paragraph 020701 preceding, commercial packaging is normally suitable for distribution directly to a using customer.

0208 PACKAGING OF FOREIGN MILITARY SALES (FMS) AND MILITARY ASSISTANCE PROGRAM (MAP) MATERIAL

020801. All FMS and MAP material will be afforded 'Level A' protection, since export shipment is generally by ocean vessel and may be subject to exposure and multiple handling during transit. This policy is established to assure safe delivery of material to the purchasing country in a serviceable condition.

020802. Considerations for exceptions to this policy involving the following modes of shipment and logistical conditions will be considered on a case by case basis:

- A. Air shipment (from origin to destination), Level B.
- B. Parcel post/consolidations (at point of origin), Level B.
- C. Shipment for known immediate use, Level B.
- D. Known favorable storage, transportation, and handling conditions (e.g. containerized), Level B.

E. At the request of the receiving country.

020803. Material in stores already packaged to 'Level A' requirements will not be repackaged to meet the exception criteria cited in paragraph 020802 above. Material already 'Level A' unit packaged will be shipped without impairing the quality of protection originally afforded.

020804. Containers for 'Level A' protection of FMS/MAP shipments will be other than fiberboard. Weather-resistant grades of fiberboard are suitable for 'Level B' applications cited in paragraph 020802 above.

020805. Commercial-type preservation may be used for FMS shipments when it is determined that such packaging (materials and workmanship) meets the requirements specified for Level A protection (see paragraph 020701.C).

<p>VOLUME 14: CHAPTER 3</p> <p>“USMC POLICY AND PROGRAM MANAGEMENT COMMITTEE”</p> <p>SUMMARY OF SUBSTANTIVE CHANGES</p> <p>Hyperlinks are denoted by <i><u>bold, italic, blue and underlined font.</u></i></p> <p>The original publication date of this Marine Corps Order (MCO) Volume (right header) will not change unless/until a full revision of the MCO has been conducted.</p> <p>All Volume changes denoted in blue font will reset to black font upon a full revision of this Volume.</p>			
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CHAPTER 3

USMC POLICY AND PROGRAM MANAGEMENT COMMITTEE

0301 GENERAL

There are several organizational elements that share the responsibility for providing and maintaining adequate protection for material acquired from the Marine Corps supply system. These organizational elements include item management, procurement, maintenance, warehousing, and distribution.

0302 USMC POLICY AND PROGRAM MANAGEMENT COMMITTEE

HQMC, DC I&L (LPC-2) is the office of primary responsibility for the administration of Marine Corps PP&P policies and for the management of Marine Corps PP&P packaging operations. HQMC, DC I&L (LPC-2) is inherently responsible for the following:

- 030201. Participates with major DoD Components in the development and implementation of DoD/joint service packaging policies.
- 030202. Promulgates policies and level of protection selection and application criteria for adequate, economical life-cycle protection for all Marine Corps supply system material.
- 030203. Provides guidance/direction to other headquarters agencies and field activities whose missions involve or interface with packaging. This responsibility may be concerned with:
 - A. Coordination/review of "preparation for delivery requirements" contained or developed for inclusion in such documents as federal and/or military specifications and standards, procurement documents, integrated logistics support plans, and statements of work to ensure compliance with policy and objectives.
 - B. Providing general guidance to and surveillance over packaging operations administered at the various field activities, both within the supporting establishment and the Operating Force (OPFOR), and providing technical and operational assistance, as required.
- 030204. Maintains necessary liaison with other DoD Components, federal government agencies, and industry on matters of packaging technology.
- 030205. Plans for working groups, staff support visits, etc., as deemed necessary, to promote effective, efficient packaging programs.
- 030206. Coordinates packaging innovations (and packaging improvement requests) which are of interest to more than one Marine Corps activity.
- 030207. Provides the sponsor for the military occupational field for Packaging Specialist 3052 and is responsible for maintaining the military occupational specialty (MOS) description, as required, in developing MOS utilization and assignment criteria.

030208. Provides for Marine Corps membership/liaison representation for DoD, the Defense Packaging Policy Group, joint service boards, committees, and working groups.

030209. Provides the chairperson for the Marine Corps Preservation, PP&P Committee; directs the activities of the PP&P committee or any task groups; and reports to Marine Corps planners, programmers, and decision makers the results of committee actions.

030210. Participates in coordinating, establishing and determining requirements for packaging training programs in cooperation with other training agencies internal and external to the Marine Corps.

030211. Serves as the "focal point" for special actions or major packaging problems, when either is considered to be of broad impact.

030212. Requests heads of HQMC principal staff agencies to appoint members to serve as advisors for specific areas of interest as the need arises and upon the recommendation of the chairperson.

030213. Assigns subjects for investigation and review as interests and needs warrant.

030214. Approves/disapproves recommendations on items submitted by the chairperson.

A. The Committee Chairperson shall:

1. Review packaging related periodicals and relay information concerning packaging materials and equipment to the Marine Corps PP&P community.

2. Attend or coordinate representation to industry trade shows and relay new and/or state-of-the-art technology in packaging equipment, materials, and processes at the Marine Corps PP&P community.

3. Review the DoD lead service documents regarding new and/or improved packaging equipment, materials, and processes. Provide information and recommendations to the Marine Corps PP&P community.

4. Review test reports concerning research and development (R&D) in the field of packaging. Broadcast the areas of R&D being pursued by industry, DoD Components, and other government agencies to the PP&P committee members to eliminate duplicate testing and/or evaluation.

5. Serve as the Marine Corps representative on the DoD sponsored Defense Packaging Policy Group.

6. Serve as the coordinator and point of contact for all activities of the committee and related task groups.

7. Schedule committee meetings and arrange for facilities through the host activity.
8. Notify members of the meeting and request proposed agenda topics (with discussion papers).
9. Develop and distribute the finalized agenda to the committee members and invited guests.
10. Conduct meetings and initiate appropriate action on behalf of the committee.
11. Prepare and distribute the minutes of each meeting.
12. Identify and assign special projects and action items to committee members.
13. Coordinate the activities of the Marine Corps PP&P Committee with the packaging boards of the U.S. Army, U.S. Air Force, U.S. Navy, and the Defense Logistics Agency.

B. MARFORS, MARCORLOGCOM, MARCORSYSCOM and the Dean of Defense Ammunition Center will:

1. Designate a member and alternate member to serve on the PP&P committee.
2. Provide agenda topics on packaging related issues.

C. Assigned Marine Corps PP&P committee members will:

1. Serve as advisory staff for the Marine Corps on matters in the area of PP&P.
2. Make recommendations regarding Marine Corps PP&P policy, and participate in the preparation of adequate and uniform procedures and regulations to carry out this policy.
3. Coordinate and recommend standardization of PP&P materials, methods, and procedures.
4. Provide a channel for the exchange of information on problems arising from the differences in PP&P requirements. Participate in the planning and accomplishment of actions designed to foster a wider understanding of the factors which make those requirements necessary.
5. Coordinate with DC I&L (LPC-2) prior to local R&D or field evaluations of PP&P related equipment, materials and/or processes to eliminate duplicate testing.

6. Develop guidance and recommendations related to:
 - a. Local programs for the reclamation and reuse of packaging materials, supplies, and containers.
 - b. Publications concerning or affecting PP&P.
 - c. Marine Corps PP&P procurement and supply operations.
 - d. Reduction of Marine Corps PP&P costs.
 - e. Training for Marine Corps PP&P activities.
 - f. Marine Corps PP&P safety operations.

7. Prepare special studies, surveys, and provide recommendations or other actions concerning any major PP&P problems noted.

0303 USMC PRESERVATION, PACKAGING, AND PACKING (PP&P) COMMITTEE PROCEDURES

030301. The committee will convene every 24 months, rotating between east and west coast locations. Special meetings may be called by the chairperson, as required. Attendance is limited to the designated members or their alternates, unless prior approval is received from the chairperson.

030302. Agenda items considered appropriate for discussion at the committee meeting, will be submitted to the chairperson following the meeting notification and call for agenda topics.

030303. The committee will recommend the establishment of task or study groups and ad hoc committees, membership thereto, and scope of activities for specific areas of study. These groups will report their findings in writing to the PP&P committee chairperson and/or to the committee.

030304. The committee will review the need to develop new or revise existing PP&P specifications and make its recommendations to the proper specification authorities.

030305. Recommendations and items which require decision by higher authority will be submitted for approval by the chairperson.

030306. Committee members and invited participants making presentations will provide a synopsis of their briefings to the chairperson at the time of the meeting for use in preparing the meeting minutes.

030307. New names will be furnished in writing to the chairperson as committee members and/or their alternates are replaced or changed.

030308. Each person nominated for membership on the committee must have a thorough knowledge in all aspects of Marine Corps PP&P as it pertains to that individual's activity.

030309. Funds for travel and participation in special projects and working groups will be provided by the respective organizational unit of each committee member.

0304 PACKAGING DATA MANAGEMENT

COMMARCORLOGBASES (Code 87), Albany, Georgia, is the office of primary responsibility for the collection, storage, maintenance, and distribution of packaging data. The organization develops a database of Defense Integrated Data System data elements and Marine Corps specific data elements, compatible with the requirements of reference (s) and (t).

030401. Database Maintenance. Database maintenance functions are used to maintain the integrity of the technical data and database.

030402. Database Inquiry. Database inquiry functions are used to search and interrogate the technical data to provide information to build management review reports and to provide on-line query of technical data files.

030403. Data Transfer. Data transfer functions are used to transfer extracted data between systems for update and review.

0305 ORGANIZATIONAL RESPONSIBILITIES

Organizations having responsibility for acquisition/acquisition sponsorship of major end items, systems, secondary technical items, and general supplies and equipment will coordinate with the packaging database manager to ensure:

030501. Development of adequate technical packaging requirements in conjunction with major items/systems design and development. Contractor-developed packaging data will be concurred with by the item manager/sponsor agency and produced in the prescribed format of a specification, drawing, or data sheet for standardized usage.

030502. Adequate protection for material entering the supply system at the time of procurement, to the extent practicable. The required military level of protection will be incorporated in procurement actions by detailed packaging prescription or by reference to packaging documents listed in the ASSIST database (formerly called DoD Index of Specifications and Standards). ASSIST is the official source for all Defense Standardization Program documents and contains the most current information. An ASSIST update is published twice per month and provides a summary of changes to DoD standardization documents for the period indicated.

A. In the interest of economy, levels of protection prescribed for application at the time of procurement shall be the minimum packaging required providing adequate protection for the type of items and the anticipated conditions of storage and shipment.

B. Commercial packaging of the type utilized in normal retail distribution practices shall be used to the maximum extent practicable, when such will satisfy the logistical requirements of the supply system.

0306 STORAGE AND DISTRIBUTION ACTIVITIES

030601. Activities whose mission involves warehousing operations also have the responsibility to ensure military levels of protection and/or storage of items are being met. Accordingly, maximum effort will be devoted to modernization/ mechanization/automation of packaging facilities to achieve efficiency and overall economy of operations (see Chapter 2 and Chapter 4 of this Volume).

030602. Specific/major responsibilities include the following:

A. Provide adequate protection (prior to storage or further shipment) for material received when necessary protection was not or could not be provided at the source of procurement or supply.

B. Maintain continuing quality protection during the term of storage in compliance with the care-in-storage program and Chapter 5.

C. Provide adequate protection for material selected for shipment to Marine Corps customers or other Marine Corps supported shipments.

D. Apply minimum adequate preservation measures to unserviceable material to maintain an "as is" condition pending repair or other disposition.

E. Acquire current packaging technical data on items for which there are recurring demands; i.e., up-to-date specifications, standards, preservation data sheets, drawings, etc., in hard copy, microfilm-microfiche, or a computerized data storage and retrieval system.

F. Make maximum practicable use of consolidation and/or the unitization of material for shipment.

G. Investigate packaging innovations of government or industry origin that may merit adoption for improvement of Marine Corps packaging.

H. Participate in the DoD Packaging Improvement Program, utilizing the Web Supply Discrepancy Reporting (WebSDR) system to report all material that is received damaged or inadequately prepared for storage or shipment (including excessive packaging) per DoD Supply Chain Material Procedures found in reference (a) and (u).

I. Provide required packaging in support of depot maintenance repair/rebuild of items prior to return to customer activities or to storage.

0307 OPERATING FORCE (OPFOR)

030701. An intermediate capability for packaging is required at the MLG-level to accomplish preservation and packing for repairable assets. During in-garrison periods, the Base facility is under the operational control of the tenant MLG, thus rendering the MLG self-sufficient. This capability is essential in providing:

- A. Support for the receipt and issue of material, to include repacking to satisfy quantitative/unit of issue requirements in support of the OPFOR and Supporting Establishment.
- B. The normal care-in-storage program, renewing protection that is maturing or has already deteriorated.
- C. The preparation of retrograde material being evacuated to maintenance facilities and serviceable material being returned to stock.
- D. Requirements for packaging generated by deployments/maneuvers/training exercises.
- E. Continuous on-the-job training of MOS 3052 Marines.

030702. In the absence of an established Base-type facility, minimal capability for packaging can be provided by utilizing field expedient improvised methods. Guidelines for field expediencies are set forth in Chapter 9 of this Volume.

0308 FIELD UNITS AND RESERVE ORGANIZATIONS

Field units of the OPFORs and Reserve organizations will provide a minimum degree of protection for repairable assets for retrograde shipment to the appropriate maintenance or storage activity. Packaging expediencies for activities lacking adequate facilities are set forth in Chapter 10 of this Volume.

VOLUME 14: CHAPTER 4

“PACKAGING FACILITIES”

SUMMARY OF SUBSTANTIVE CHANGES

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CHAPTER 4

PACKAGING FACILITIES

0401 GENERAL

All Marine Corps activities involved in storage and distribution, or having custody of backup and contingency stocks, have a responsibility to ensure military levels of protection, storage surveillance and preservation are being met.

0402 PACKAGING MACHINERY AND EQUIPMENT

040201. The types and capacities of machinery and equipment to adequately outfit a packaging installation will be governed by the primary mission of an activity and the volume of preservation and packing required to support storage and distribution activities. Activities whose mission assignment involves protection of high volume receipts from commercial procurement, all types of commodities, worldwide distribution, and high echelon and high volume of maintenance may require a broad range of packaging machinery and equipment. Conversely, activities whose mission concerns maintenance of protection levels previously applied, and/or protection for retrograde movements, may require the minimum of equipment and machinery. Likewise, activities concerned primarily with the preparation for shipment of clothing and textile items require the minimum of equipment.

040202. The following are types of packaging operations:

A. Large-Scale Packaging Operations. Packaging equipment for large-scale operations should be those that lend themselves to maximum practicable mechanization to facilitate work process flow, minimize manual handling, and promote efficiency. Examples of such equipment include, but are not limited to, the following:

1. Mechanized cleaning tanks.
2. Mechanized drying facilities.
3. Mechanized preservative tanks.
4. Automatic or semiautomatic packaging machines and bag and box makers.
5. Powered strapping, closing, and banding equipment.
6. Automated marking systems.

B. Small Volume Operations. When the volume of material requiring preservation and packing is small, manual varieties of the equipment indicated in paragraph 040202.A may be adequate; however, mechanization of the cleaning and preservative application functions is normally desirable for efficiency, minimizing the potential for recontamination of cleaned items, and disruption of preservative coatings.

0403 PACKAGING ORGANIZATION

040301. To ensure maximum effectiveness, economy, and efficiency of packaging facilities, it is imperative that a proper packaging organization be instituted. Cleaning, drying, preservation, and packing, while being separate and distinct functions, are interdependent. Similarly, the level of preservation and the level of packing impact upon each other. Therefore, total packaging functions should be an integrated operation composed of all functions (i.e., cleaning, drying, preservation, packing, unitization, and marking).

040302. Integrated packaging functions are more efficient and economical to operate.

A. Certain equipment required in preservation operations can be used in packing operations as well and vice versa (e.g., box making/box assembly equipment, container closing devices, and marking equipment).

B. Integrated packaging functions eliminate or minimize duplicate prefabrication and repositioning of containers and consumable supplies, to include cushioning, blocking, and bracing.

040303. Packaging expediencies for activities having occasional or situational requirements to perform military packaging are listed in Chapter 9 of this Volume.

0404 PRESERVATION FACILITIES

For the purpose of this publication, a preservation facility is an area, covered or open, for processing major items, such as vehicular equipment (self-propelled and/or towed) and other large, heavy items which cannot be accommodated on packaging lines discussed in paragraph 040202.

040401. Equipment required to process such items consist of, but are not limited to, the following:

A. Special devices to facilitate "preservative run-in" for internal combustion engines.

B. Equipment to atomize spray preservatives into enclosed areas.

C. Inspection equipment, such as borescopes, for storage quality control purposes.

D. Portable banding machinery and equipment.

E. Special rigs (mobile preservation) to process equipment onsite at outside storage locations.

F. Special equipment required for Method II exercising of vehicles.

VOLUME 14: CHAPTER 5

**“STANDARD OPERATING PROCEDURES (SOP) FOR
MARINE CORPS PACKAGING FACILITIES”**

SUMMARY OF SUBSTANTIVE CHANGES

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CHAPTER 5

SOP FOR MARINE CORPS PACKAGING FACILITIES

0501 GENERAL

Packaging accomplished at Marine Corps facilities will conform to the requirements of references (s), (k), and any specific instructions issued by HQMC, DC I&L (LPC-2) for particular items or circumstances.

0502 OPERATIONAL GUIDANCE

050201. Reference (t) provides criteria for control and development of standard requirements for like items based on physical characteristics, chemical characteristics, fragility, dimensions, and weight. This standard will be used in developing detailed packaging requirements for application in contracts and as a procedural document. Reference (k) provides the requirements for the uniform marking of military supplies and equipment for shipment and storage. Reference (o) covers the fundamental requirements for cleaning and drying, preservative materials (and their application), and basic methods and sub-methods of protection. This broad range of methods and sub-methods incorporates the use of a wide variety of materials for the stages of packaging mentioned in the preceding; however, in the interest of economy and efficiency of operations, concerted effort will be devoted to standardization to the least number of methods and materials adaptable to the greatest possible number of items of the active inventory.

050202. Operational guidance for accomplishing methods of preservation is contained in reference (g). This publication describes and illustrates the step-by-step process of unit and intermediate preservation, and it cites the applicable specifications for material and supplies required.

050203. Operational guidance concerning external container selection, fabrication, and application (packing) is contained in reference (w). This joint publication complements reference (g) and the unit protection provided by prescribing container applications suitable for all modes of transportation and varying environments of storage.

0503 PACKAGING DESIGN AND ENGINEERING

050301. Unit and intermediate packages and exterior containers will be designed to displace the minimum weight and cube. In packaging design and engineering for all levels of protection, items characteristics, requirements for handling, and storage conditions will be considered prior to use. Decisions concerning methods and materials to use will be based on the most critical feature of the item to be packaged.

050302. Army Materiel Command Pamphlet 706-121 contains valuable information on packaging restrictions and limitations imposed by the distribution system. Additionally, it identifies Department of Transportation and carrier rules and regulations applicable to safety in the handling and transportation of commodities.

0504 QUANTITY PACKAGING

050401. Only items of the same NSN will be placed in the same unit and/or intermediate pack except when items are part of a set or kit.

050402. The quantity per unit pack is an important factor affecting the effectiveness of the storage and issue process and, in many cases, the quality of material in storage. The quantity per unit pack is normally established by the item managing element. Ideally, the quantity packaged should be the smallest quantity normally distributed to the ultimate user, or the quantity of the item required in single applications. Unit quantities greater than those required under the aforementioned conditions result in unnecessary handling and repackaging costs, as well as deterioration of those items remaining in the opened pack.

050403. The criteria set forth in 050402 will be followed when determining unit pack quantities.

0505 INTERMEDIATE PACKAGING

Intermediate packaging is the packaging of two or more identical unit packs into another interior container and helps facilitate handling, storage, inventory, and issue operations. Intermediate packaging may be utilized for best economy of effort, most desirable and/or small or lightweight packs. It may also be used to complement the protection afforded by the unit pack, when warranted. Intermediate packaging is recommended under the following circumstances:

050501. Bagged items (unit pack), unless the materials and workmanship used in fabricating the bag meet the requirement of the exterior container for the level of protection specified.

050502. Small bin size items.

050503. Upgrading or supplementing the protection initially applied as unit preservation.

0506 EXTERIOR CONTAINERS (FOR LEVEL A AND LEVEL B SHIPMENTS)

050601. As a general rule, exterior container or individual packs, for shipment or storage, will contain items of the same NSN only (collateral equipment and consolidation, multipacks, and transport containers are exceptions). The following factors will be considered when selecting an exterior container:

- A. Level of protection required.
- B. Item characteristics; size, weight, configuration, vulnerability to damage from shock, vibration, etc.
- C. Type of Load.

- D. Rigidity necessary to protect the load.
- E. Cost and availability of the selected container and the cost that such a container will save or generate.
- F. Ease of handling the loaded container.
- G. Storage and handling facilities available to the receiver.
- H. The requirement to keep tare weight and cube to the minimum.

050602. To facilitate handling and storage, the gross weight of the contents and container will not exceed 250 pounds, except when the weight of a single item, components, or assemblies of collective-type items (with a single NSN) exceeds this limitation. In this case, the gross weight will be governed by the requirements of the applicable container specification or the guidance provided in reference (w).

050603. Containers with a gross weight exceeding 250 pounds will be provided with skids to facilitate handling. Likewise, containers weighing more than 100 pounds with length and width dimensions greater than 48 inches by 24 inches or any container which due to size or weight must be pushed, dragged, or handled by mechanical equipment should be provided with skids designed and spaced adequately to permit four-way entry/handling by forklift trucks.

050604. Container selection charts, criteria for selecting containers, and guidance concerning fabrication and use of exterior containers are contained in in reference (w).

0507 REUSABLE CONTAINERS

050701. Reusable containers will be used, to the maximum extent practicable, for the shipment of large, bulky, high dollar value items. The following guidelines will be used to determine when reusable containers are economical and logistically practicable:

- A. The container can serve a dual purpose as a shipping/storage unit.
- B. The cost of the container is offset through multiple reuse as compared to the cost of a single shipment disposal container.
- C. The item is designated as recoverable/reparable.
- D. The need exists for periodic inspection or exercising of the contained item.

050702. Examples of items for which reusable containers may be suitable include:

- A. Missiles and missile components.
- B. Electronics units.

- C. Engines.
- D. Transmissions.
- E. Axle assemblies.

050703. Additional criteria for the selection of reusable containers, special features of design, and application are contained in reference (w). Care must be exercised to assure that old markings (identification and address) are removed when reusing containers.

0508 FIBERBOARD CONTAINERS

050801. Fiberboard containers, when used properly, afford excellent opportunities for reduction in costs of preservation and packing, as well as corresponding savings in other related areas of supply distribution, particularly for domestic shipments. They will not be used as exterior shipping containers for items requiring Level A protection or when it is known or anticipated that the shipment will be subjected to prolonged exposure during transit, rough handling, or outdoor storage upon receipt. When fiberboard containers are used as exterior shipping containers, they will be marked to indicate Level B or C protection.

050802. Fiberboard containers generally will not be used to pack Type III loads as defined in reference (w); however, the proper use of scored pads, die cuts, and sleeves will convert many Type III loads to Type II loads, thereby permitting their use.

050803. More detailed instructions on the use of fiberboard containers can be found in reference (w).

0509 MULTIPACK/CONSOLIDATED SHIPMENTS

050901. Multipacks are exterior containers which are used to consolidate assorted items for shipment to a single destination. Multipack containers must meet the requirements for the levels of protection specified. All items shipped within the multipack containers will be given unit protection to the level of packaging required for the anticipated conditions and will be properly identified before being placed in the multipack containers.

050902. Consolidated shipments, in the context of this publication, refer to transportation containerized shipments, such as Shipping Containers, Military Owned Demountable Containers, Quadruple Containers, Pallet Containers, Joint Modular Intermodal Containers, etc. It is considered that these units, due to their construction, offer protection supplemental to that afforded by normal packaging methods. The supplemental protection thus provided will be duly regarded in determining whether military levels of packing or use of the usual exterior containers can be reduced or eliminated for material shipped therein; however, the protection required for material during transit, or after removal from the containerization media, will not be compromised.

0510 WEATHERPROOFING (CASE LINERS AND SHROUDS)

In some instances, weatherproofing of the final pack may be required to prevent deterioration of both the contents and the packaging materials used to provide unit and intermediate protection. When extreme climatic conditions are involved, waterproof case liners should be used to divert water and to protect against the entry of dust, dirt, or other foreign matter. Detailed information on weatherproofing or waterproofing, by use of container liners or shrouds is provided in reference (w).

0511 CLOSURE AND STRAPPING (REINFORCING) OF CONTAINERS

Closure and strapping shall be in accordance with the requirements of the applicable container specification.

0512 BLOCKING, BRACING, AND CUSHIONING

Operational guidance and approved procedures for blocking and bracing are set forth in reference (w).

0513 PACKAGING MATERIALS, SUPPLIES, AND EQUIPMENT

Commonly used cleaning, preservation, cushioning, packing, and marking materials are listed in Marine Corps data lists for Federal Supply Groups 68, 80, and 81.

0514 DANGEROUS/HAZARDOUS MATERIALS

Materials classified as "dangerous or hazardous" will be packed and labeled in accordance with the applicable model regulations; DoD test reports; or special instructions issued by cognizant regulatory agencies. Reference (f) contains instructions for the preparation of explosives and other dangerous materials for shipment by military aircraft. Compliance with the requirements listed within is mandatory and dangerous materials offered for shipment by military aircraft require certification of compliance (see DD Form 1387-2, Special Handling Data/Certification).

0515 RADIOACTIVE MATERIAL

Special handling, packaging, and storage requirements may apply to items containing radioactive material. Additional guidance can also be found in reference (f).

0516 MARKING

Each unit pack, intermediate pack, and shipping container, including items which are stored and shipped unpacked, will be marked per reference (k) (see Chapter 6 for more specific guidance).

0517 SALVAGE, REUSE, AND DISPOSAL OF PACKAGING MATERIAL

In the interest of economy and in keeping with the pollution abatement provisions of reference (d), maximum reuse shall be made of packaging materials when technically and economically feasible. Materials that lend themselves to salvage and reuse include barriers, cushioning, fiberboard (boxes

and material), and wooden and metal containers. Likewise, applicable provisions of reference (d) will be adhered to for recycling and disposal of packaging materials.

<p>VOLUME 14: CHAPTER 6</p> <p>“PACKAGING MAINTENANCE PROGRAM”</p> <p>SUMMARY OF SUBSTANTIVE CHANGES</p> <p>Hyperlinks are denoted by <i><u>bold, italic, blue and underlined font.</u></i></p> <p>The original publication date of this Marine Corps Order (MCO) Volume (right header) will not change unless/until a full revision of the MCO has been conducted.</p> <p>All Volume changes denoted in blue font will reset to black font upon a full revision of this Volume.</p>			
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CHAPTER 6

PACKAGING MAINTENANCE PROGRAM

0601 GENERAL

060101. Preserved and packed material is often held in the Marine Corps supply system for long periods of time. The depth and diversity of supply system assets, and the low turnover rate for many items, present the potential that protected items can again become subject to corrosion, deterioration, and physical damage due to aging, decomposition of packaging materials applied, and container fatigue. Also, for major items such as self-powered vehicles and equipment, the continuity of protection must be maintained by periodic exercising to redistribute preservative oils to critical surfaces in enclosed areas, such as crankcases, transmissions, differentials, etc. Therefore, an effective program of packaging maintenance is essential to ensure that the initial protection measures applied to items continue to provide the protection required to maintain item serviceability.

060102. The packaging maintenance measures contained in this chapter are fundamental to the care and storage of supplies.

0602 PURPOSE

060201. The primary purpose of a packaging maintenance program is to maintain the serviceability of all stored material through effective preservation and packing measures. Specific efforts encompassed in this objective include:

- A. Random sampling of material received through procurement action.
- B. Inspecting serviceable assets in storage, or assets being returned to stores, to detect the presence of corrosion, deterioration, fungus growth, mildew, container fatigue, or any situation which presents the potential for the foregoing circumstances.
- C. Inspecting unserviceable items awaiting repair to detect damage and/or prevent further corrosion or deterioration.
- D. Periodic technical inspecting and exercising of equipment for which the integrity of preservation is maintained by redistribution/recirculation of contained preservatives and lubricants.
- E. Initiating corrective action when improper storage practices contribute to the corrosion, deterioration, or physical damage observed.
- F. Correcting observed deficiencies on location, to the extent practicable. Such action may include container repairs, resealing of packages and containers, replacing broken or loose banding, correcting improper markings, and other similar actions which can be accomplished without removal to packaging facilities.

G. Operational testing of major and secondary technical items, in conjunction with technical inspection and exercising, to ascertain satisfactory performance or condition prior to preservation.

H. Renewing preservation and packing as necessary.

0603 PACKAGING DEFECTS FOR THE PURPOSE OF CARE-IN-STORAGE

The following classifications are for the purpose of care-in-storage:

060301. Preservation, Packing, and Marking (Critical). A critical preservation, packing, or marking defect is a defect that judgment and experience indicate is likely to present a hazard to the safety of personnel or damage to other material in storage (e.g., improper preservation, packing, and marking of items classified as “dangerous or hazardous”).

060302. Preservation Defect

A. Major. Inadequate preservation is a major defect if it has permitted or will permit any degree of corrosion or deterioration of a critical surface, or extensive corrosion or deterioration of a noncritical surface. In addition, inadequate preservation is a major defect if it fails to provide necessary protection against physical damage or if it will permit impairment of an item to render it unserviceable for use.

B. Minor. Inadequate-preservation is a minor defect if it has permitted the onset of minimal corrosion or incipient deterioration of noncritical surfaces, providing the presence of such corrosion or deterioration would not adversely affect the operability or efficient utilization of an item. Preservation which is not in strict conformance with specification requirements but is deemed sufficient to afford necessary protection to the item is a minor defect.

060303. Packing Defect

A. Major. Inadequate packing is a major defect if it fails to provide necessary protection against physical damage or damage from environmental exposure during shipment, handling, and storage.

B. Minor. Inadequate packing is a minor defect if it is not in strict accord with specifications but is sufficient to protect the item against physical damage.

060304. Marking Defect

A. Major. Incorrect marking and/or a lack of identification, special, or precautionary marking is a major defect if it could result in the loss of or damage to the item.

B. Minor. Minor marking defects include incomplete or missing contractor’s name or address, requisition number, weight, cube, or preservation information, provided that such defective marking would not result in damage to the item.

0604 WORKLOAD

060401. The workload of packaging maintenance (re-processing) is the direct result of actions required by program directives such as the following:

- A. DLM 4000.25, Defense Logistics Management System (reference (u)).
- B. DoDI 4140.1, DoD Supply Chain Material Management Policy (reference (a)).
- C. DoD 4160.21-M, Defense Material Disposition Manual (reference (h)).
- D. DoDI 6050.05, DoD Hazard Communication Program (reference (p)).
- E. MIL-HDBK-502, DoD Handbook Product Support Analysis (reference (s)).

0605 GUIDELINES FOR RE-PROCESSING

060501. Preservation or reprocessing, which may result from surveillance, inspection, exercising, and rebuild actions required by the foregoing programs, may range from very minor work that can be performed on location, to complete preservation or re-preservation of major end items. Consistent with the policy set forth in Chapter 2, preservation of items during the term of storage or incident to shipment will be the minimum necessary to assure adequate or continued protection. Excessive or unnecessary re-preservation will be avoided.

060502. Normally, reprocessing resulting from care-in-storage inspections will be to the level of protection originally provided; however, in those instances where large quantities of a single line item require reprocessing, every effort should be made to determine supply system requirements for the item to preclude expenditure of work-hours and funds on items which may be obsolete or in excess.

060503. Criteria for selecting levels of protection are contained in Chapter 2. Operational guidance for inspections, exercising, tests, and accomplishing protection required is contained in the following publications and other applicable specifications and standards listed in the ASSIST database:

- A. MCO P4030.31D, Packaging of Material: Preservation, Vol I (reference (g)).
- B. MIL-STD-1916, DoD Preferred Methods for Acceptance of Product.
- C. MIL-STD-2073-1E, Standard Practice for Military Packaging (reference (t)).
- D. MIL--STD-3003A, Vehicles, Wheeled: Preparation for Shipment and Storage.

0606 PRIORITY PROCESSING

060601. For effectiveness and efficiency of operations, priorities for reprocessing of technical items in storage (items requiring preservation/packing) should be established. Preference will be given to specific instructions which may be applicable to certain groups, categories, or types of items. Other priorities for reprocessing will be developed in consideration of the following criteria:

- A. Priority 1. Serviceable material which will deteriorate to an unserviceable state if processing is deferred.
- B. Priority 2. Material in support of known shipping demands.
- C. Priority 3. Material administratively or physically earmarked for contingency plans.
- D. Priority 4. Material received from depot maintenance.
- E. Priority 5. New material received from procurement sources, the serviceability of which may be jeopardized by current status of preservation.
- F. Priority 6. Other material in storage which is coded as serviceable, except for preservation required.
- G. Priority 7. Unserviceable, economically repairable material, pending repair action.

0607 RECORDS OF INSPECTION AND RE-PROCESSING

060701. Major Items (Operational Test Code (OTC) 1). Records will be maintained to reflect the processing and reprocessing history for major end items of equipment and vehicles. Appropriate forms for annotating initial processing performed, inspection results, and reprocessing are prescribed in the documents and criteria set forth in paragraph 060501 and may be supplemented as deemed necessary by local instructions. Such records should provide for the accumulation of data which will indicate the reliability of specific packaging methods, materials, and processes. This data will serve as a basis for adjustments in inspection/exercising cycles and updating of processing documents.

060702. Secondary Items (OTC 2). Storage quality control records reflecting the packaging maintenance history for items other than those referred to in paragraph 060701 above shall be maintained on a NAVMC 10579 "Care-in-Storage Inspection Record." A separate form shall be used for each line item inspected. The multiple-copy set will facilitate work process planning, control, accountability, and movement of material to be reprocessed.

0608 IMPLEMENTING INSTRUCTIONS

060801. Activity commanders shall issue instructions to ensure that all items are afforded adequate protection throughout the term of storage. Implementing instructions should also create an awareness throughout each command of the need for adequate protection to the extent that deficiencies in item protection will be noted (and corrective action taken) in conjunction with but not limited to the following:

- A. Receiving operations.
- B. Physical inventory.
- C. Stock selection.
- D. Care-in-storage.

VOLUME 14: CHAPTER 7

“GENERAL PACKAGING INSTRUCTIONS FOR SMALL ARMS WEAPONS”

SUMMARY OF SUBSTANTIVE CHANGES

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CHAPTER 7

GENERAL PACKAGING INSTRUCTIONS FOR SMALL ARMS WEAPONS

0701 DISASSEMBLY

070101. Weapons will be disassembled as necessary to accomplish complete and thorough cleaning, but not beyond that allowed by the unit's authorized echelon of maintenance.

0702 CLEANING

070201. Thorough cleaning is the first essential procedure in any effective preservation cycle. No method of preservation will protect a weapon if contaminants are present on the surface of the item when the preservative is applied. Improper cleaning will render all subsequent packaging operations ineffective. Reference (g) establishes the cleaning process for small arms/light weight weapons. This is normally a "two step" process, unless accomplished by pressure spray. The weapon is initially cleaned in petroleum solvent and drained. The initial cleaning will be followed by a secondary cleaning using another container or cloth.

070202. All metallic surfaces/parts will be cleaned by dipping, scrubbing, or wiping in accordance with processes outlined in Chapter 5 of references (t) and reference (j). These guidelines also apply to nonmetallic parts.

A. Parts that have been exposed to burned powder residues (i.e., the bolt, bolt carrier assembly, firing pin, barrel bore and chamber, tip of the operating rod, etc.) require special cleaning. These parts must be scrubbed clean with bristle brushes and/or swabs saturated with rifle bore cleaner conforming to practices set forth in reference (r).

B. Additionally, three complete passes through the bore using the appropriate brush saturated with bore cleaner must be accomplished to meet minimum bore cleaning requirements. Flush all scrubbed surfaces with solvent.

070203. Cleaned parts shall then be wiped with clean dry patches, or cloths until no discoloration appears. Repeat cleaning with bore brush, if required.

070204. All metal parts will be rinsed with clean solvent.

0703 DRYING

Immediately after cleaning, all parts will be thoroughly dried prior to application of the preservative. Drying will be accomplished by blowing with dry compressed air on all areas except the barrel bore, chamber and flash suppressor which will be dried by wiping with clean, dry, lint free swabs and/or clothes.

0704 PRESERVING

16 MAR 2017

070401. Immediately after drying, all metallic surfaces/parts will be coated with a thin coating of preservative in accordance with reference (s). Operating and mating parts will be actuated to ensure all surfaces are coated with the preservative. Excess preservative shall be thoroughly drained from the coated surfaces. Wipe metal surfaces of stock and handgrip with a clean cloth moistened with the same preservative oil. The preserved weapon shall be allowed to drain for a minimum of one hour prior to continuing with the packaging process.

0705 PACKAGING

If a manual is provided with the weapon, it will also be encapsulated in barrier material. Assemble all parts of the weapon that were disassembled for cleaning. Examine the lower receiver to assure that the hammer is in the fired position (against the bolt catch). Insert a volatile corrosion inhibitor (VCI) bore tube into the barrel. Any sharp and/or protruding areas on the weapon must be cushioned with a noncorrosive material (i.e., barrier material, grease proofed, waterproofed, flexible, cushioning material, resilient, low density, unicellular, polypropylene foam to prevent puncture of the barrier material). Per reference (g), the assembled weapon will then be sandwiched between layers of barrier materials, transparent, flexible, able to be sealed, VCI treated, Type II, pressure cold sealable. The barrier material must be completely sealed around the weapon with no visible channels through the seal. The encapsulated weapon will be immobilized with the serial number facing up in the fiberboard box. Place the magazine, sling, and manual in the box and secure to the bottom with standard ASTM D5486 tape. Close the container and seal all seams and joints with tape per reference (w). Fiberboard containers will conform to standards as outlined in reference (t) and Part II, Chapter 204 of reference (j). For shipment and storage, small arms weapons packaged as prescribed herein will be packed in triple-wall fiberboard per reference (x), and cleated-plywood boxes per reference (t) for 'Level A' packaging, based on quantity, content weight, and shipment destination, type of storage anticipated and/or mode of transportation.

0706 MARKING

The requirements established in reference (k) will be adhered to when marking unit and exterior containers. Packing lists are required.

0707 SPECIAL MARKING REQUIREMENTS

070701. Serial number marking is required and will be listed on the packing list.

070702. The marking of sensitive items will be in accordance with the established standards contained within reference (k).

0708 SAFETY PRECAUTIONS

Appropriate safety precautions must be established and observed at all times to protect personnel when handling hazardous materials as directed in reference (y) through (aa), and Enclosure (3), Section 11 of reference (c).

070801. Personnel performing PP&P operations must adhere to the following additional protective measures when handling material that may present fire hazard or cause skin irritation:

A. Rubber gloves will be used during the cleaning and preserving process to prevent possible skin burns or irritation by the solvents and to avoid contaminating the metal surfaces of the weapons with fingerprints.

B. Solvents will only be used in a well ventilated room or area and appropriate precautions must be taken to prevent personnel from inhaling solvent vapors.

C. Appropriate firefighting equipment will be readily accessible, in working order, and located near the work areas. Individuals will be instructed and trained in its proper use.

D. Volatile liquids (i.e., gasoline) with low flash points will not be used for cleaning purposes. Dry cleaning solvent and bore cleaning compound, as prescribed herein, are recommended.

E. Personnel handling VCI materials must wash their hands thoroughly with soap and water before eating and handling food.

VOLUME 14: CHAPTER 8

“MARKING”

SUMMARY OF SUBSTANTIVE CHANGES

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CHAPTER 8

MARKING

0801 GENERAL

080101. Marking is the application of numbers, letters, labels, tags, symbols, or color for handling or identification of material during shipment and/or storage.

080102. Proper markings are essential to ensure positive identification of preserved items and to facilitate efficient and effective storage, issue, and inventory operations. Markings are applied either to labels or directly to surfaces of barriers or containers. In addition to item identity, markings give other necessary supply management information concerning the item.

080103. Inadequate/improper markings are the principal cause of frustrated cargo at material receiving and supply processing sites. Improper markings also cause excessive work hours to be devoted to technical research to establish proper identification.

0802 GUIDELINES

080201. Required markings will be complete, accurate, and legible. Materials used for marking and methods of application will be per the requirements set forth in reference (k).

080202. Standard markings for unit and intermediate packs include the following:

- A. NSN.
- B. Item description.
- C. Quantity and unit of issue.
- D. Contract or purchase order number (when applicable).
- E. Level of preservation and packing, and date.
- F. Serial number.

080203. Guidance concerning the placement of markings and labels for unit and intermediate packs is contained in Chapter 3, Table 3-11 of reference (g) and reference (k). These procedures conform to the requirement of reference (o) for specified methods and sub-methods of protection.

080204. The color of all markings shall be black, except for applications to surfaces on which black would not be legible. The color used in those cases shall provide a distinct contrast with the surface to be marked.

080205. Hand lettering of markings is not permitted, except as specified in reference (k).

080206. Labels used for interior packs shall be printed, typed, or reproduced. The size of labels shall be consistent or proportionate with the size of the pack or surface for marking, and the size of lettering must permit ready identification. Labels for 'Level A' shall be securely affixed with water-resistant label adhesive applied to the complete underside of the label. Paper labels for 'Level A' and 'Level B' packs shall be waterproofed by coating the outer surface of the label with a waterproof lacquer, varnish, or acrylic coating compound.

080207. The item manager sponsoring agency will ensure that specifications, standards, requests for procurement action, and contractual documents specify that markings for shipment and storage shall be per reference (k), unless otherwise specified.

0803 SPECIAL MARKINGS

080301. Special and precautionary markings are often required to indicate peculiar characteristics of an item and/or method of preservation and to specify and facilitate proper handling. Examples include: subsistence packs, shelf-life, fragile or electrostatic discharge sensitive items, hazardous material, method II preservation, etc. Requirements for special markings are detailed in reference (k).

080302. Markings for packaged radioactive material shall be in accordance with reference (k).

080303. Marking requirements and special handling data/certification for hazardous materials shipped by military aircraft are prescribed by reference (f).

0804 EXTERIOR MARKINGS

080401. Markings applied to exterior containers, pallet loads, multipack containers, bales, bundles, or other configurations offered for shipment will be adequate to assure movement of the cargo without confusion and delay during shipment. Markings will also permit ready identification throughout the distribution cycle and facilitate proper handling.

080402. Exterior markings will also conform to the applicable provisions of Volume 2, Chapter 13, Section 2 of reference (u), Chapter 6, Section 12, Appendix 2 and Appendix 3 of reference (l), and Part II, Chapter 204 of reference (j).

0805 MIL-STD-129P

Previous paragraphs of this chapter bear out the importance of adequate markings for interior and exterior packs and should create awareness for special markings that may be required to facilitate proper storage, safety, and efficiency in handling. Reference (k) contains uniform requirements for marking which are mandatory for use throughout the DoD. This standard is the fundamental document for marking procedures and materials for all classes of supply and will be followed in marking items for storage and shipment.

VOLUME 14: CHAPTER 9

“PACKAGING DISCREPANCY REPORTING”

SUMMARY OF SUBSTANTIVE CHANGES

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CHAPTER 9

PACKAGING DISCREPANCY REPORTING

0901 GENERAL

090101. Procedures are presented herein to provide for analysis of packaging throughout the Marine Corps distribution system and to establish procedures for the reporting of packaging discrepancies, excessive packaging, and recommendations for corrective action.

0902 PURPOSE

090201. This chapter establishes information requirements for reporting and processing of discrepancy reports under the Supply Discrepancy Report (SDR) program. The SDR is a tool used to report shipping or packaging discrepancies attributable to the shipper, (including government sources, contractors/manufacturers or vendors) and to provide appropriate responses and resolution. The purpose of the SDR exchange is to determine the cause of such discrepancies, effect corrective action, and prevent recurrence.

0903 PACKAGING DISCREPANCY

090301. A packaging discrepancy is any unsatisfactory condition due to improper or inadequate packaging (including preservation, packing, marking, or utilization) which causes the item, shipment, or package to become vulnerable to loss, delay, damage, or unnecessary expense to the U. S. Government, such as excessive packing. Discrepancies involving passive radio frequency identification (pRFID) are reportable under packaging discrepancy criteria.

0904 SCOPE AND APPLICABILITY

090401. The procedures for reporting discrepancies in preservation, packing, unitization, marking, and handling are contained in reference (l) and are reportable on Standard Form (SF) 364. These procedures are applicable to DoD components, participating Federal Agencies, and other external organization elements as defined in reference (u) for the reporting of all obvious or concealed defects, including damage attributable to inadequate preservation, packing, unitization, marking, handling, and excessive packaging. Shipments covered by these procedures may originate at a commercial vendor's facility, another Marine Corps installation, other military installations, or other government agencies/activities.

0905 REPORTABLE PACKAGING DISCREPANCIES

090501. All discrepancies shall be reported using the SDR as the DoD WebSDR application automates the SF 364 paper form facilitating the DoD standard transactional exchange. The WebSDR provides an automated process for tracking SDR response information and is an effective means to report, resolve, and measure discrepancies related to supply chain performance. Data collected enables the DoD to identify trends, establish volume and dollar values of SDRs, bring management attention to problems with shipping activities as necessary, and improve the requisitioning and distribution process within logistics operations. Photographs, although not

required, are very beneficial in support of the discrepancy being reported. Photographs are also beneficial for the shipping activity's use in evaluating the cause of the discrepancy and providing corrective action to prevent recurrence.

090502. Packaging discrepancies to be reported are defined in detail in Section 3, Paragraph 1.1.2, Volume 2, Chapter 17, of reference (u) and reference (v).

A. Examples of packaging discrepancies to be reported are:

1. Improper Packaging. Report any unsatisfactory condition resulting from improper packaging that causes the item, shipment, or package to be vulnerable to any loss, delay, or damage according to the specific conditions cited. Unless otherwise indicated, the minimum dollar value reporting criteria are when the estimated/actual cost of correction exceeds \$100; or the value of the item, shipment, or package is \$2,500 or over, regardless of the estimated or actual cost to correct the packaging discrepancy. This may include loss or damage to the item, shipment, or package except when a report is otherwise required by reference (j). Where encoded information on the SDR is not sufficient, the submitter should provide detailed descriptions of how the material was packaged, as well as the actual damages incurred to the material. The submitter should also include, when available, the estimated cost of correction of packaging on the initial SDR.

2. Packaging Discrepancies Noted at Defense Logistics Agency (DLA) Distribution Centers. To ensure proper billing, indicate if the material is a major item, (i.e., ships, aircraft, missiles, ammunition, vehicles, etc.), or secondary item, (i.e., any item that supports a major item such as reparable, consumables, assemblies, etc.) Distribution Centers will include projected or actual costs for labor and repackaging material. If actual, indicate the date corrective action was completed.

3. Mission or Life Endangering. Report packaging discrepancies, regardless of dollar value, resulting in damaged material that may endanger life, impair combat or deployment operations, or affect other material. Report immediately to the shipping activity, contracting office, or control point by the quickest communication medium to enable the shipper to take immediate corrective action. Submit an SDR within 24 hours of the initial report.

4. Hazardous Material (includes Ammunition and Explosives). Report any packaging discrepancy, regardless of dollar value, if a potentially hazardous condition could result or if damage or an unsatisfactory condition has occurred involving any hazardous material. This includes improper identification markings of items and packaging and/or unitized loads. Use hazardous material discrepancy codes when applicable.

5. Excessive Packaging. Report excessive packaging by contractors that result in additional costs to the U.S. Government, regardless of dollar value.

6. Improper Packing. Report any type of inadequate or improper packing to include incorrect blocking or bracing, oversized or incorrect container, and inadequate closure, resulting in an unsatisfactory condition or damage. Report when material is not packed in a required reusable container regardless of dollar value. Report inadequate or improper cushioning, blocking, and bracing per reference (ab).

7. Delay or Additional Costs. Report packaging discrepancies resulting in delay or additional packaging costs at aerial or water terminals or at consolidation and containerization points. The activity responsible for operating the terminal or port of embarkation/debarkation will be responsible for the preparation and submission of an SDR on discrepancies noted on shipments moving through the activity. These SDRs will be prepared using Discrepancy Document Type Code W.

8. Improper Packaging of Customer Returned Material. Distribution Centers will send an SDR to the material owner for packaging discrepancies related to customer returned material or inter-depot transferred material. The material owner is responsible for funding packaging costs associated with preparing material for storage and reissue. Packaging discrepancies occurring in material returns are subject to recoupment action at the discretion of the material owner. If the packaging is so bad that the item must be disposed of, the shipper may be required to reimburse the receiver for any packing required to effect the shipment and the cost of turn-in to DLA Disposition Services. The Distribution Center will always include the estimate of the costs of repackaging or disposal on the initial SDR submission, in the remarks section and complete the appropriate data element entries for electronic submission.

9. Wood Packaging Material. Report wood packaging material that is not consistent with the international standards for the regulation of wood packaging material transiting international borders, and Department of Agriculture regulations governing importation of regulated wood packaging material. Compliant wood packaging material must display appropriate certification marking. Use Discrepancy Code P215 and provide remarks as applicable.

10. Repetitive Packaging Discrepancies. Include Discrepancy Code Z2, Repetitive Discrepancy, with the other specific packaging discrepancy code(s) to report repetitive packaging discrepancies that impose a significant burden on receiving or transshipment activities. Total costs to correct packaging will be included in the SDR.

11. Improper Preservation. Report any type of inadequate or improper preservation or physical protection resulting in an unsatisfactory condition or damage. Report improper preservation of any material identified as being electrostatic/electromagnetic sensitive, regardless of the dollar value.

12. Improper Marking. Prepare an SDR to report any omitted, incomplete, illegible, or misplaced markings. Report improper identification of containers, or items that require opening the container, or result in improper storage of the material, regardless of cost. Improper marking includes discrepancies related to pRFID tags as follows:

13. Report all missing, damaged, or unreadable pRFID tags when such tags are required by contract provision, DoD policy, or specified by prior shipment notice/status reflecting pRFID content. Report duplication of tag identification associated with a previously processed receipt.

14. SDRs may be used to report a tag read formatted for DoD use, but which does relate to an advance shipment notification containing pRFID content when such advance shipment notification is required by contract provisions or DoD policy.

15. Improper Unitization. Report improper unitization that includes inadequate wrapping/strapping or lack of unitization, where appropriate, resulting in an unsatisfactory condition or damage. Report multiple consignees in a single consignee consolidation container as improper unitization.

16. Latent Packaging Discrepancies. Prepare a late SDR for material found in storage with latent preservation and packaging discrepancies. Confine these reports to stocks that constitute a problem resulting from a particular specification, preservation, or packaging method. Reports relative to packaging discrepancies found in storage will be annotated "not incident to shipment."

17. Discrepancies in the preparation of dangerous materials for shipment by military aircraft warrant special attention. Applicable instructions are contained in reference (f).

B. See Approved DLMS Change (ADC) 1059, "Mandatory Use of Four Character Packaging Discrepancy Codes on Supply Discrepancy Reports (SDRs) and Storage Quality Control Reports (SQCRs)" for a comprehensive listing. Storage activities report packaging discrepancies identified while materiel is in storage using the DD 1225 SQDR.

VOLUME 14: CHAPTER 10

“EXPEDIENCIES IN PRESERVATION AND PACKING”

SUMMARY OF SUBSTANTIVE CHANGES

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CHAPTER 10

EXPEDIENCIES IN PRESERVATION AND PACKING

1001 GENERAL

100101. Many Marine Corps activities in some CONUS, OCONUS, or overseas areas lack the capability to effectively perform preservation and packing. Notwithstanding, most activities have material in their custody for a considerable length of time for which proper care must be given and preserved.

100102. Unserviceable repairable assets to be evacuated to maintenance sources are of prime concern. These assets must be afforded protection to prevent deterioration to a state of being uneconomical to repair. Adequate protection must also be afforded excess material being returned to stores.

1002 PURPOSE

100201. To establish procedures for preservation and packing of unserviceable repairable material being evacuated to repair facilities, serviceable repairable-type items being returned as activity or command excess, and activity or command excess serviceable non repairable-type items being returned to supply elements or to the stores system, and to prescribe procedures for accomplishing preservation and packing.

1003 GUIDELINES

100301. Consistent with command capability and the availability of required materials and equipment, protection will be applied to all material being evacuated to repair facilities and/or supply support elements.

100302. Prior to or in conjunction with preparing material for shipment, a limited technical inspection shall be performed on the following categories of equipment:

- A. Major ordnance end items.
- B. Major motor transport items.
- C. Major engineer end items.
- D. All Class II, Type I Communication-Electronic items.
- E. All Class VII, Type I Communication-Electronic items.

100303. When all actions required by this publication and shipment instructions peculiar to the equipment itself have been taken to prepare the equipment for shipment, the following certificate shall be prepared and signed by the proper authority: "I certify that this equipment has been prepared for shipment per Marine Corps Order 4400.201, Volume 14; MCO 4030.36B and/or

other applicable regulations." The certification shall be made on the applicable limited technical inspection form or affixed to it. This certificate, and a copy of the limited technical inspection form, shall accompany the equipment.

100304. Each organization receiving equipment for transfer, evacuation, or shipment shall verify its condition against the inspection form. When the capability of an organization limits the preparation set forth in paragraph 100303 above, then the receiving activity shall be notified prior to shipment to facilitate processing of the item(s) upon receipt. Notification shall include the following:

- A. Item identification (nomenclature and NSN).
- B. Anticipated date of shipment.
- C. Estimated date of arrival at the receiving activity.
- D. Mode of transportation and Government Bill of Lading number.

100305. Compliance with applicable instructions pertaining to decontamination of equipment and containers, and pest and rodent control, are of prime importance for personnel safety and to prevent importation of disease to the United States.

100306. Department of the Army Technical Manual TM 746-10 (General Packaging Instructions for Field Units) contains valuable information applicable to the preservation and packing of all classes of serviceable material for retrograde shipment. TM 746-10 also includes criteria for quarantine inspection and appendices that list packaging materials and equipment required for processing material. TM 746-10 is authorized for use by Marine Corps activities for guidance. It can be obtained through normal publication channels.

VOLUME 14: CHAPTER 11

“PRESERVATION AND PACKING EVACUATED ITEMS OF EQUIPMENT”

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CHAPTER 11

PRESERVATION AND PACKING EVACUATED ITEMS OF EQUIPMENT

1101 GENERAL

110101. Prior to any preservation or packing effort, the item to be processed should be cleaned of mud, dirt, debris, and other foreign matter both inside and outside. Openings into the interior of vehicles or vehicle components should be sealed with barrier material and/or taped, or by other material suitable to prevent the entry of water, rodents, etc. Rusted surface areas normally protected by paint should be cleaned and spot-painted with any available paint or primer.

110102. Reference (g) and item packaging specifications and standards for processing specific items should be used as guides in accomplishing cleaning and preservation/packing of items being evacuated. Instructions for fabricating boxes and crates for boxed shipments are contained in reference (w).

110103. References (w) and (g) and packaging process documents give preference to cleaning and preservation/packing materials which are manufactured for this purpose and conform to federal and military specifications. Efforts should be made to obtain these materials through normal supply channels and to utilize them in affording protection to recoverable assets. In the absence of preferred materials or in conjunction therewith, prudence will dictate the use of substitute materials recommended in paragraph 120301.

1102 MOTOR TRANSPORT EQUIPMENT

110201. Particular attention shall be given to the protection of assemblies, subassemblies, and components. They should be complete and assembled to the degree possible prior to packing.

110202. Vehicles, assemblies, subassemblies, and components which are in Condition Code A, B, or C will be preserved and packed per the instructions contained in the operator and organizational maintenance manual or the item specification, if available.

110203. Vehicles, assemblies, subassemblies, and components which are being returned to stock in Condition Code D through Z shall be preserved and packed, to the degree necessary (minimum protection), to prevent further deterioration and physical damage during shipment and/or storage pending repair.

110204. All collateral equipment should be packaged per the instructions contained in the operators and organizational maintenance manual for the item or the specification which applies to the equipment, if available, and secured to the vehicle in a manner to prevent pilferage and loss.

1103 ELECTRICAL/ELECTRONIC EQUIPMENT, VEHICLE MOUNTED

110301. Mounted equipment which is in Condition Code A, B, or C should be preserved per the instructions contained in the operations and organizational maintenance manual or the item specification, if available.

110302. Electrical/electronic equipment in Condition Code D through Z, which requires inspection and repair prior to return to stock, should be protected to the degree necessary to prevent further corrosion and/or damage while in transit or awaiting inspection and/or repair.

110303. The vehicle on which the electrical/electronic equipment is mounted will be protected per the instructions contained in paragraph 1102.

1104 ELECTRICAL/ELECTRONIC EQUIPMENT, NOT MOUNTED

Electronic equipment which is not mounted on a vehicle should be protected per the instructions contained in paragraph 110301 and paragraph 110302.

1105 ORDNANCE EQUIPMENT (SELF-PROPELLED AND TOWED)

110501. In addition to the instructions contained in the operators and organizational maintenance manual, the following packaging instructions apply to ordnance equipment in Condition Code A, B, or C:

A. The basic vehicle and vehicle accessories should be cleaned, lubricated, and preserved as specified for motor transport equipment in paragraph 1102.

B. Communication equipment should be treated as specified for electronic equipment in paragraph 110301 and paragraph 110302.

C. Ordnance equipment which requires repair prior to return to storage should be protected to the degree necessary to prevent further corrosion and/or damage while in transit or awaiting repair.

D. Polished metal surfaces and mating surfaces shall be cleaned to remove all corrosion and contaminants; then, coated with the appropriate preservative and wrapped with a greaseproof, waterproof barrier material.

E. Gun tube bores shall be cleaned with a solvent which will dissolve powder residue and remove corrosion and contaminants. After cleaning, the bores shall be coated with type MIL-PRF-32033 preservative; and a VCI treated tube shall be placed inside the gun tube and plugged. The plug shall be sealed in the bore with waterproof, greaseproof tape conforming to or equal to standards found in ASTM-D5486.

F. Equipment which is normally removed for shipment should be packaged per the specification or other applicable documents. It should then be attached to the equipment in such a manner as to discourage pilferage and prevent loss while in transit.

G. Lenses of optical equipment (vision blocks) should be wiped clean with surgical cotton or lens tissue to remove contamination. The lenses should then be covered with cotton or lens tissue secured with ASTM-D5486 tape, PPP-C-1797 cushioning material, further protected by unit padding in a MIL-PRF-131K barrier bag, and then packed in a ASTM-D1974/D5118 fiberboard container.

110502. Ordnance equipment in Condition Code D through Z, which requires inspection and repair prior to return to stock, will be packaged to the degree necessary to prevent further corrosion and/or damage while in transit and/or storage pending repair.

1106 SHELTER (VAN) MOUNTED EQUIPMENT

110601. In addition to the instructions in the operator's and organizational maintenance manual and the item specification, the following packing instructions apply to shelter-mounted equipment in Condition Code A, B, and C:

110602. Empty space in drawers or cabinets partially filled with tools or test equipment should be filled with cushioning material, such as rubberized hair, shredded paper, etc. Reclaimed cushioning materials may be used for this purpose. Latches or drawer catches should be securely fastened and safety-wired, when applicable. All heavy items should be removed from drawers/cabinets and packaged separately and properly secured within the shelter.

110603. Mounted electronic components require special handling. Electron tube hold-down clamps shall be secured in place. Module hold-down screws should be checked for tightness. Shock mounts, when used, should be inspected for condition, completeness of mounting screws, and tightness. Strapping should be applied to suspended equipment. Mounting racks shall be inspected for tightness and completeness of mounting bolts or retainers. Floor stowed material should be strapped or bolted in place. Crush skids shall be inspected prior to shipment. If damaged, wooden skids shall be strapped in place to serve as dunnage and to prevent additional damage.

110604. Mating surfaces and machined surfaces on the exterior of the shelter shall be cleaned of all contamination and coated with the appropriate preservative; then, covered with waterproof, greaseproof barrier material secured with waterproof, greaseproof (ASTM-D5486 compliant) tape.

110605. Shelter doors shall be securely fastened and safety-wired through the locking hasp. Wide waterproof tape shall be used to seal all doors, ports, windows, power entrances, and cable entrances to prevent the entry of water or other contaminants.

110606. Items in Condition Code D through Z shall be processed to the degree necessary to prevent further deterioration or damage while in transit or awaiting repair.

1107 GENERAL PROPERTY EQUIPMENT (SELF-PROPELLED AND TOWED) IN CONDITION CODE A, B, OR C

110701. The basic vehicle must be processed as outlined in this chapter. Furthermore, vehicle equipment such as; truck-mounted firefighting equipment, valves, and nozzles, should be

drained of water and sealed against the entry of moisture and dirt and all applicable pumping systems should be flushed with type P-3 preservative.

1108 MARKING

In addition to the marking instructions contained in Chapter 8, the following special markings are required:

110801. Appropriate warning labels will be attached in conspicuous places, such as the operator's compartments, as precautionary measures to prevent damage to equipment or injury to personnel.

110802. Warning labels will contain instructions as to what preservation steps must be taken prior to operation. They may also contain information regarding any unusual measures taken in the preservation cycle (such as overfilling the crankcases of engines) and instructions on methods for removing the preservation materials.

1109 PROCESSING CRITERIA

In addition to the general instructions providing in this chapter, the following documents specify detailed processing criteria for major items of self-propelled equipment, skid-mounted powered equipment, and secondary technical items:

- A. ATPD 2232: Preparation for Shipment and Storage of Engine.
- B. MIL-STD-3003B: Preparation for Shipment and Storage of Wheeled Vehicle.
- C. ATPD 2240: Processing for Shipment and Storage of Full-Track, Tank, Combat, M1.

VOLUME 14: CHAPTER 12

“FIELD EXPEDIENCIES IN PRESERVATION AND PACKING”

SUMMARY OF SUBSTANTIVE CHANGES

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CHAPTER 12

FIELD EXPEDIENCIES IN PRESERVATION AND PACKING

1201 GENERAL

Field expediencies, as related to packaging, are any processes wherein the using unit prepares material for shipment from one location to another location, using improvised equipment and methods. It is not implied that improvised preservation methods will meet the workmanship and performance requirements of specifications for the packaging of new equipment. Nevertheless, field applied preservation will serve to maintain the material in the same condition as when shipped.

1202 DISASSEMBLY AND MATCH MARKING

When it becomes necessary to disassemble equipment for shipment, all nuts, bolts, screws, pins, etc., shall be cleaned, preserved, bagged, and attached to the mating parts. All mating parts shall be marked in such a manner that they may be easily reassembled.

1203 CLEANING PROCESS

Rust should be removed from all items prior to applying a preservative coating or packing. This can be accomplished by portable sanders or sanding by hand, scraping, or the use of impact tools. Contaminants, such as accumulated road dirt, mud, and grease, should be removed by steam-cleaning and by solvents. Recommended substitute solvents are paint thinners, diesel fuel, alcohol, and hot water.

1204 RINSING

After the item has been cleaned, the next step is rinsing. This is done in another tank or receptacle containing clean solvent of the same kind used in the cleaning operation or hot water, depending on the method and cleaning materials used. The solvent or water used for rinsing should be changed frequently to maintain it as clean as possible and to avoid too much contamination due to carryover from the cleaning tank.

1205 DRYING

Several methods of drying, which can be employed in the field, are prepared compressed air, ovens, spotlights, and ordinary light bulbs. If none of these methods are available, drain and wipe with clean, dry cloths. It is important that the items not be contaminated by handling or exposure to contaminants after they have been cleaned and dried.

1206 APPLICATION OF PRESERVATIVES

Preservative coatings, when required, should be applied as soon as possible after drying. If the preservatives specified by reference (g) and reference (t) are available, Type P-1 preservative will be adequate for most noncritical surfaces. Military Specification Type [MIL-PRF-21260E \(notice 1\)](#), [MIL-PRF-23827C \(w/amendment 2\)](#) and [MIL-PRF-32033 \(w/amendment 2\)](#) preservatives may be

used for most machined surfaces. If the aforementioned P-type preservatives are unavailable, normal operating oils and greases will be used.

1207 FIELD-CONSTRUCTED EQUIPMENT

120701. The following applies to field-constructed equipment:

A. Hot-Dip Tank. A hot-dip tank may be constructed by cutting a 55-gallon drum girth wise to make a round tank and adding a heating element from a range unit or other improvised manner.

B. Cold-Solvent Tank. A cold-solvent tank may be constructed by cutting a 55-gallon drum lengthwise and placing it on stands. A cover should be made to fit the tank as tightly as possible.

C. Drying Oven. A drying oven may be constructed from a 55-gallon drum with the gasoline heating element from a field kitchen stove used to supply the heat required.

D. Hot Water and Alkaline Cleaning Tank. A 55-gallon drum, with the top removed to make a vat, may be used as a hot water or an alkaline cleaning tank. Steam from a steam-cleaning unit may be used to provide the heat, and kitchen lye may be used as an alkaline cleaning material.

E. Small Parts Dipping Baskets. Small parts dipping baskets may be constructed from cans with holes punched in the sides and bottom so as not to trap solvent. A wire bail should be attached for handling of the baskets. The local mess hall or dining facility may be one source where cans of various sizes may be obtained. These baskets can also be made from screen wire, hardware, or cloth.

F. Two-Compartment Container for Engine Preservation. The two-compartment container required to process the engine can be fabricated from two 5-gallon military-designed gas cans banded together. Suitable connections and flexible tubing connected to each container coupled into a single line by a regulator valve and a quick-disconnect coupling at the end of the single line will complete the assembly. One compartment shall be clearly marked "fuel" and the other marked "oil."

120702. Buildings where packaging operations are performed shall be well ventilated and the areas well marked. Firefighting equipment should be provided, and all personnel involved in the packaging operations instructed on its use. The firefighting equipment shall be easily accessible and its location well marked.

120703. Outside areas that are set aside for packaging operations shall be well marked. Signs shall be located in such a manner as to warn personnel of the hazards within the area. Firefighting equipment shall be located within the area, and all personnel who are involved in the packaging operation shall be instructed in its use and location. Care should be taken to prevent the spillage of solvents within the area, thereby avoiding a fire hazard.

120704. The packaging operation should be located near an area where materials can be protected from pilferage and contamination. It is desirable to locate the packaging facility as near the shipping point as possible to prevent recontamination of the material and to avoid unnecessary handling.

120705. Personnel should be cautioned against smoking or carrying an open flame in areas where flammable materials are used or stored. Personnel should also be instructed to use proper protective clothing (gloves, goggles, aprons, and breathing masks, as appropriate) for protection against skin irritations and the possible toxic/allergic effects of cleaning and preserving materials.

1208 SALVAGE OF MATERIALS

120801. Packaging materials can often be salvaged from material receipts and reused for shipments. Care must be taken during the opening of a container and removal of the contents to preserve the packaging materials as much as possible. These materials may be reused to wrap, cushion, package, and pack unserviceable repairable items for return shipment. Examples of materials which can be salvaged and reused are as follows:

- A. Barrier materials.
- B. Cushioning materials.
- C. Wood cleated fiberboard containers.
- D. Metal and plastic containers.
- E. Fiberboard die cuts and wood blocking and bracing.
- F. Wooden containers.
- G. Fiberboard containers (single, double, triple-wall, and fastpack containers).

1209 INTERIOR CONTAINERS

Any small containers available shall serve to segregate fragile items from other material or to keep the parts of a disassembled item together. Containers may be made from salvaged fiberboard material, cut to the appropriate size, and fastened at the joints with wire or tape.

1210 CUSHIONING

121001. Cushioning is an essential part of packaging. Items must be cushioned within the unit package and cushioned again when the unit packages are packed into consolidation containers. Reclaimed cushioning materials may be used to protect the items from damage caused by environments within the container. The cushioning material should be dry and noncorrosive. Items which are coated with a preservative should be wrapped with a greaseproof barrier material. Space

between the item and the interior of the container must be sufficient to allow for cushioning, as necessary to protect the item.

121002. Articles which do not completely fill the unit container should be blocked, braced, fastened, or otherwise secured within the container. Items having protruding parts which may be broken or may puncture the container or barrier should be supported or suspended and cushioned.

1211 CONSOLIDATION CONTAINERS

A savings in space and handling can be realized by the use of containers to consolidate items. Containers may be those in which shipments were received or may be fabricated from materials on hand. Care should be taken to ensure that the items within are immobilized, by use of blocking and bracing or cushioning. Weight of the container's contents should be limited to that which will facilitate handling and not overload containers.

1212 REUSABLE CONTAINERS

Material returned to overhaul rebuild points (logistics bases or contractor facilities) will, whenever possible, be shipped in the reusable container in which the item was received. Use of the designed container is required, if available, since the interior is specifically designed to permit easy repositioning of the failed item and provides necessary blocking, bracing, and cushioning.

1213 MARKING

All packages and exterior containers shall be afforded proper identification and shipment markings. Marking instructions are contained in reference (k) and Chapter 8 of this Volume. In the absence of required marking materials (stencil boards and waterproof marking inks), marking shall be applied by use of paints and shall be legible.

VOLUME 14: APPENDIX A

“RESOURCES”

SUMMARY OF SUBSTANTIVE CHANGES

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APPENDIX A

RESOURCES

The resources listed below are a partial listing of basic packaging documents and related resources (e.g. technical, administrative, operational, training and procedural) beyond the references cited in the body of this Volume. These items will prove helpful to personnel involved in other elements of supply and distribution on which packaging has an impact or interface (i.e., procurement, technical, stock management, transportation, storage, and warehousing):

<u>Issuance</u>	<u>Issuance Title</u>
MCO 4030.40B	Packaging of Hazardous Materials
MCO P4400.105	Radioactive Commodities in the DoD Supply System
MCO P4030.30C	Preparation of Freight for Airlift Transportation
MCO 4030.33E	Packaging of Material
SECNAV M-5210.1	Department of the Navy Records Management Program
MCO 4030.16G	Marine Corps Packaging and Packaging Maintenance of Small Arms Weapons Using Volatile Corrosion Inhibitor (VCI) Treated Materials
MCO 5000.14D	Marine Corps Administrative Procedures

Military Performance Specifications and Standards

ANSI/AIM BC1	Linear and Two-Dimensional Bar Code Symbologies
ASTM-D1974/D5118	Boxes, Shipping, Fiberboard
ASTM-D3950	Standard Specification for Strapping, Nonmetallic (and Joining Methods)
ASTM-D3953	Standard Specification for Strapping, Flat Steel And Seals
ASTM-D4649, D5331, D5415, D5416, D5458, D5459	Waste Disposal for Military Packaging Materials
ASTM-D5486/D5489M	Tape, Packaging, Waterproof
ASTM-D6251	Boxes, Wood, Cleated-Plywood
ASTM-D6256	Boxes, Wood-Cleated, Skidded, Load-Bearing Base
ASTM-D6880	Boxes, Wood, Nailed and Lock Corner
MIL-B-197F (w/amendment 1)	Bearings, Antifriction; Associated Parts and Subassemblies; Preparation for Delivery of
MIL-C-11264C (w/amendment 1)	Containers, Wood, Shipping, Reusable-for Tank–Automotive Engines, Transmissions, Differentials, Transfers, Final Drives, and Similar Assemblies
MIL-E-75H	Packaging of Electron Tubes
MIL-HDBK-304C	Package Cushioning Design
MIL-HDBK-773A	Electrostatic Discharge Protective Packaging

MIL-I-8574E	Utilization Of Inhibitors, Corrosion, Volatile
MIL-L-10547E (notice 2)	Liner, Case, and Sheet, Overwrap, Water Vaporproof or Waterproof, Flexible
MIL-P-130F	Paper, Wrapping, Laminated and Creped
MIL-PRF-121G	Barrier Materials, Greaseproof, Waterproof, Flexible
MIL-PRF-131K	Barrier Materials, Water Vapor proof, Greaseproof, Flexible, Heat-Sealable
MIL-PRF-680C	Degreasing Solvent
MIL-PRF-21260E (notice 1)	Internal Combustion Engine Preservative and Break-in Lubrication Oil
MIL-PRF-23827C (w/amendment 2)	Grease Aircraft and Instrument, Gear and Actuator Screw
MIL-PRF-32033 (w/amendment 2)	Lubricating Oil, General Purpose Preservative
MIL-PRF-22019E (w/amendment 1)	Barrier Materials, Transparent, Flexible, Sealable, Volatile Corrosion Inhibitor Treated
MIL-PRF-22191F	Barrier Materials, Transparent, Flexible, Heat Sealable
MIL-PRF-46002D	Preservative Oil, Contact, and Volatile Corrosion Inhibited
MIL-STD-101C	Color Code for Pipelines and for Compressed Gas Cylinders
MIL-STD-130	Identification Marking of U.S. Military Property
MIL-STD-147E w/ch 1	Palletized Unit Loads
MIL-STD-162E (notice 3)	Materials Handling Practices, Shipment, Storage, Cyclic Maintenance Routing Testing and Processing
MIL-STD-290H	Packaging and Marking of Petroleum and Related Products
MIL-STD-1916	DoD Preferred Methods for Acceptance of Product
MIL-STD-3003B	Vehicles, Wheeled: Preparation for Shipment And Storage of
MIL-STD-3010B (notice 1)	Test Procedures for Packaging Materials
PPP-B-1055B (notice 2)	Barrier Material, Waterproof, Flexible
PPP-B-1672D (w/amendment 1)	Box, Shipping, Reusable with Cushioning
PPP-C-1797A (notice 2)	Cushioning Material, Resilient, Low Density, Unicellular, Polypropylene Foam
Technical Manual (TM) 746-10 P700	Packaging: The Basics Marine Corps Packaging Data

[Note: See Standards.Gov for a comprehensive database of Federal Specifications Standards and Test Methods.](#)