

**Army Regulation 700-15  
NAVSUPINST 4030.28E  
AFJMAN 24-206  
MCO 4030.33E  
DLAR 4145.7**

**Logistics**

# **Packaging of Materiel**

**Departments of the Army,  
The Navy  
The Air Force  
The Marine Corps  
and The Defense Logistics Agency  
Washington, DC  
12 January 2004**

**UNCLASSIFIED**

# ***SUMMARY of CHANGE***

AR 700-15/NAVSUPINST 4030.28E/AFJMAN 24-206/MCO 4030.33E/DLAR 4145.7

Packaging of Materiel

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- o This revision dated 12 January 2004--
- o Replaces reference to MIL-STD-2073 B and MIL-STD-2073-2C to MIL-STD-2073-1, throughout the document.
- o Removes reference to Integrated Logistics Support.
- o Removes all references to Defense Logistics Studies Information Exchange.
- o Removes reference to NAVSUPINST 4030.47.
- o Removes reference to fire-retardant packaging throughout the document.
- o Removes the requirement to provide a copy of hazardous materiel container compliance verification reports to Defense Technical Information Center.
- o Mandates that a copy of hazardous materiel container compliance verification test reports be provided to Defense Logistics Agency, Defense Distribution Center, New Cumberland, PA.
- o Requires Material Safety Data Sheet with hazardous materiel returns only if the changed portions have not been highlighted.
- o Prescribes responsibility for compliance with Department of Defense Hazardous Materials Packaging and Transportation requirements and removes references to individual regulatory documents (para 2-1p).
- o Removes level C as an authorized level of military packing (para 2-2).
- o Redefines levels of protection identifying military preservation and packing (paras 2-2 and 2-3).
- o Changes the matrix that provides general guidelines for selection of levels of protection (para 3-2a).
- o Establishes a requirement for receiving activities to verify conformance with contractual packaging requirements for materiel destination acceptance (para 3-2e).
- o Designates Integrated Materiel Managers as responsible to screen reusable containers used with their items. (para 3-2d).
- o Removes reference to MIL-STD-1510 and replaces it with MIL-STD-2073-1 (paras 3-2c(6), 5-3b, 5-3d, and 5-4b (2)).

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\*NAVSUPINST 4030.28E  
\*AFJMAN 24–206  
\*MCO 4030.33E  
\*DLAR 4145.7

Effective 12 February 2004

## Logistics

### Packaging of Materiel

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the Acting Deputy Commandant of the Marine Corps; and the Director, Defense Logistics Agency:

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**History.** This publication is a major revision.

**Summary.** This regulation implements DOD 4140.1–R, chapter 8, and covers packaging requirements, specifications, levels of protection, and project information exchange requirements.

**Applicability.** This regulation applies to all (Active and Reserve) Department of Defense components (U.S. Army, U.S. Navy, U.S. Air Force, U.S. Marine Corps, and the Defense Logistics Agency) responsible for the packaging of materiel throughout its life cycle. This regulation is applicable during full mobilization.

**Proponent and exception authority.** The proponent of this regulation is the U.S. Army Deputy Chief of Staff, G–4. The proponent has the authority to approve exceptions to this publication that are consistent with controlling law and regulation. The proponent may delegate

this approval authority, in writing, to a colonel or civilian equivalent within the proponent agency.

**Army management control process.** This joint regulation does not contain management control provisions.

**Supplementation.** Commands and agencies may supplement this regulation according to applicable Service and Defense Logistics Agency directives. For Army, supplementation of this regulation and establishment of command and local forms are prohibited without prior approval from Headquarters, Department of the Army (DALO–SMP), Washington, DC 20310–1546.

**Suggested improvements.** Users are invited to submit comments and suggested improvements to this regulation. Internet users can submit their comments and suggested improvements through the electronic DA Form 2028 (Recommended Changes to Publications and Blank

Forms) found within the individual DCS, G–4, regulation and pamphlet. Anyone without internet access should submit their comments and suggested improvements on a DA Form 2028 directly to HQDA, ODCS, G–4, ATTN: DALO–SMP, 500 Army Pentagon, Washington, DC 20310–5000.

**Distribution.** This publication is available in electronic media only and is intended for command levels A, B, C, D, and E for the Active Army, the Army National Guard of the United States, and the U.S. Army Reserve; Distribution for Navy: Special. Air Force: F. Marine Corps: MARCORPS PCN 10204130000.

\*This regulation supersedes AR 700–15, NAVSUPINST 4030.28D, AFJMAN 24–206, MCO 4030–33E, DLAR.4145.7 Packaging of Materiel, dated 31 March 1998.

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**Glossary**

## Chapter 1 Introduction

### 1-1. Purpose

This regulation—

- a.* Implements DOD 4140.1-R, chapter 8, which establishes the Defense Packaging Policy Group (DPPG) to assure a uniform DOD approach to implementing packaging policies and packaging training programs. The DPPG is a permanent forum established to develop and recommend changes to policy, guidance, and standardization of packaging throughout the Military Services and the Defense Logistics Agency (DLA).
- b.* Establishes joint policies for all Department of Defense (DOD) components in developing uniform requirements for packaging of materiel.
- c.* Provides uniform criteria for selecting and prescribing packaging.
- d.* Provides detailed guidance on the organization and function of the DOD Container Design Retrieval System (CDRS).
- e.* Establishes lead service activities for testing and evaluation (T&E) of packaging materials and processes.

### 1-2. References

Required and referenced publications and prescribed and referenced forms are listed in appendix A.

### 1-3. Explanation of abbreviations and terms

- a.* Abbreviations and special terms used in this joint regulation are explained in the glossary.
- b.* The United States is a signatory to the North Atlantic Treaty organization (NATO) standardized agreement (STANAG) 4279, which ratifies Allied Administration Publication (AAP) (short title: AAP-23), and provides for the provisions of STANAG 4279, AAP-23. Other NATO related packaging terms and definitions are listed in DOD Joint Pub 1-02 and DOD Dictionary of Military and Associated Terms. Packaging terms and definitions are listed in DOD Joint Pub 1-02 and DOD Dictionary of Military and Associated Terms.

### 1-4. Responsibilities

- a.* The heads of DOD components and acquiring activities will—
  - (1) Comply with policies, objectives, and guidelines in this joint regulation.
  - (2) Ensure compliance with the requirements of MIL-STD-2073-1.
  - (3) Ensure project information is made available for exchange according to chapter 4 of this joint regulation.
- b.* Comply with occupational safety and health program guidelines in paragraph 3-9.
- c.* Shipping activities will—
  - (1) Comply with policies, objectives, and guidelines in this joint regulation.
  - (2) Comply with paragraph 3-2 when selecting and applying levels of protection.
  - (3) Protect retrograde and returned materiel per paragraph 3-8.

## Chapter 2 Packaging Requirements, Specifications, and Levels of Protection

### 2-1. Requirements and specifications

- a.* Materiel will be packaged to prevent damage and deterioration and to provide for efficient and economical handling.
- b.* Use of commercial packaging should be considered before a contract is awarded. Commercial packaging will be used when such packaging is cost effective, and it can be determined that the materiel will not enter the military distribution system. Packaging personnel at the buying activity will make these decisions.
- c.* Requirements for packaging will be developed for all DOD items to meet conditions described in this joint regulation.
  - (1) The requirements of MIL-STD-2073-1 will be used by all DOD components in the development, documentation, dissemination, and acquisition of packaging data.
  - (2) Packaging requirements will be documented uniformly as directed under the DOD Standardization Program. Packaging specifications will be reviewed to validate cost effectiveness, eliminate redundancy, and incorporate changes. DOD components will provide necessary resources for timely standardization.
- d.* DOD packaging will be designed with minimum unit pack weight and cube necessary to protect the packed item. Each item's unit pack weight and cube data will be entered into each component's packaging database.
- e.* A DOD project information exchange system, with retrieval capability, will be maintained among packaging activities engaged in research, design, development, testing, and evaluation of packaging materials. This system will

ensure the exchange and availability of information on proposed, in-process, and completed packaging projects. Details for accomplishment of this effort are in chapter 4.

*f.* Requirements for packaging in contracts will be detailed, cost effective, and reflect the approved levels of protection. Each DOD component will develop procedures to measure and document packaging savings and cost avoidance actions.

*g.* DOD standardization documents prescribing packaging requirements will be coordinated with a representative cross section of the private sector as prescribed in DOD 4120.24-M.

*h.* Packaging required to maintain the item from the time of acquisition throughout its anticipated life-cycle will be provided at the time of acquisition. This protection may be obtained from the prime contractor, subcontractor, manufacturer, or a packaging contractor. A Government facility will be used only—

(1) After the inventory control point (ICP) and the facility commander approve the request.

(2) When it is established as cost beneficial.

(3) When available commercial sources cannot or will not provide the service within the required timeframe.

*i.* When logistics requirements, to include fragility, are revised, packaging data will be reviewed to determine compatibility with the new requirements.

*j.* Materiel packaged at a level lower than that required for a particular shipment or storage will be repackaged to upgrade it to the appropriate level and funded by the owner of the materiel.

*k.* Unitized loads will be used when the items or packs being shipped are compatible and the unitization results in overall economy, or when the requisitioning activity requests a unitized load. The requirement for unitization will be specified in acquisition actions.

*l.* DOD activities will keep abreast of current commercial packaging technology.

*m.* DOD activities will encourage vendors to submit new or advanced commercial packaging methods, procedures, equipment, and materials for testing and approval per chapter 6 of this regulation. Before introducing a new material for use, consideration will be given to availability before establishing its use as a requirement.

*n.* Standard sized modular units, intermediate, and exterior packs will be compatible with established pallet, containerization, and air cargo transport system sizes approved by the International Organization for Standardization (ISO) and the American National Standards Institute (ANSI).

*o.* This joint regulation will not be construed as authorizing any compromise with established safety standards when selecting levels of protection for hazardous materials (HAZMAT).

*p.* DOD policies for packaging of HAZMAT are found in DLAD 4145.41/AR 700-143/AFJI 24-210/NAV-SUPINST 4030.55B/MCO 4030.40B. DOD policies for the transportation of HAZMAT are in DOD 4500.9-R, part II, chapter 204.

*q.* Design and function data on all specialized reusable containers will be furnished according to MIL-STD-2073-1. Details for accomplishment of this effort are in chapter 5 of this regulation.

*r.* Packaging required to protect electrostatic discharge sensitive (ESDS) items against damage and deterioration from the time of acquisition to anticipated use will be provided at the time of acquisition. MIL-HDBK-773 will be used as guidelines in the identification, packaging, handling, and storing of ESDS items.

*s.* Use of plastic packaging materials to protect supply items destined for stowage aboard Navy ships, and for void fill materials, will be kept to an absolute minimum, per NAVSUP Pub 485.

*t.* Ensure that packaging functional management objectives are part of the packing, handling, storage and transportation (PHS&T) Acquisition Logistics Element, and that support considerations are an integral part of the system's design requirements. The system must be cost effectively supported through its life-cycle, and the packaging necessary to the initial fielding and operational support of the system must be identified, developed, and acquired. Packaging engineering/logistics activities are most effective when integrated into the contractor's and Government's system engineering technical data management processes.

*u.* DOD materiel procured under the Secretary of Defense's acquisition reform, single process initiative (SPI) packaging pilot must reflect packaging performance criteria equal to or better than the MIL-STD-2073-1 military requirements specified. Direct vendor delivery programs or item packaging requirements, which specify vendor, supplier, or manufacturer's commercial practices, must reflect packaging performance criteria equal to or better than the requirements specified in ASTM-D 3951. Shippers of material, packed as described above, will be liable for item damage, and will be reported under the DOD supply discrepancy reporting (SDR).

## **2-2. Military levels of protection**

Military levels of protection will be specified in chapter 3 table 3-1 of this regulation and MIL-STD 2073-1. The provisions of this publication (AR 700-15, NAVSUPINST 4030.28E, AFJMAN 24-206, MCO 4030.28E, DLAR 4145.7) are also the subject of STANAG 4280. When amendment, revision, or cancellation of this publication is proposed that will affect or violate the agreement concerned, the preparing activity or responsible agency will advise the U.S. representative to NATO to ensure that the U.S. position is revised accordingly.

## 2-3. Marking

All items of supply packaged in accordance with MIL-STD-2073-1 and entering the military distribution system will be marked in accordance with MIL-STD-129. For materiel entering the military distribution system not packed in accordance with MIL-STD-2073-1 and military markings are deemed essential, then MIL-STD-129 markings shall be specified in procurement contracts.

## Chapter 3 Procedures for Determining Packaging Requirements

### 3-1. Determination of packaging requirements

The nature of an item determines the type and extent of protection needed to prevent its deterioration. Shipping, and handling, as well as the length and type of storage considerations, dictate materials selected for preservation and packing (P&P). This determination as applied to P&P will be made in accordance with the requirements of paragraph 2-2 and figure 1 of MIL-STD-2073-1.

### 3-2. Selection of levels of protection

Acquiring commands, components, and storage activities will develop procedures for selecting and applying packaging protection. Table 3-1 provides general guidelines for selection of levels of packing. When a higher level of pack is prescribed, the higher level will have preference over the matrix.

**Table 3-1**  
**General guidelines for selection of levels of packing**

Distribution Pattern	Military level of pack*
SECURITY ASSISTANCE/FOREIGN MILITARY SALES/GRANT AID (unless otherwise directed by country)	B
WAR READINESS/RESERVE	A
WAR READINESS/RESERVE (<25 LBS. AND <= 1 cubic ft)	B
DELIVERY OF SERVICEABLE DLRS TO WHOLESALE DEPOT STOCK	B
OVERSEAS (surface transportation and/or outdoor storage)	A
OVERSEAS (air transportation and covered storage)	B

Notes:

<sup>1</sup> \*This table defines the level of pack.

<sup>2</sup> (NOTE: Commercial packaging may be used in lieu of level A or B where it can meet the logistical requirements. This determination must be made by the procuring activity.)

a. Selection and management of long-life reusable containers will be as follows:

(1) Reusable containers will be evaluated for use based on level of repair/overhaul of the item, anticipated waste stream of the packaging, performance and anticipated number of trips for the container, and total life-cycle costs.

(2) Long-life reusable containers will be specified for materiel subject to retrograde for repair/overhaul unless life cycle costs are clearly prohibitive.

(3) Reusable containers will be provisioned so that both the item and the container have separate identities to permit recovery of the container upon consumption/disposal of the item.

(4) When a long-life reusable container is specified for an item, it is the only authorized method of packaging without specific deviation authorized by the integrated materiel manager (IMM) packaging office.

(5) When long-life reusable containers are determined to be excess, the following will be accomplished:

(a) At the installation/activity/depot level, notify the IMM of the item for which the container was designed. If the item IMM cannot be determined, contact the container IMM.

(b) When the container is determined to be excess to the needs of the IMM, it will be referred to the CDRS/Management Office (MO) as required by paragraph 5-3g to determine if the container can be used to support any other packaging program. If the CDRS determines no use for the container, the container IMM will be notified, and disposal of the container will be initiated.

b. Acquiring commands and components will—

(1) Maintain and apply data to determine level of protection requirements for materiel scheduled for delivery to DOD or service storage activities. This will reduce upgrading/repackaging work loads prior to storage and/or redistribution.

(2) Order the required packaging at time of acquisition. Packaging requirements will be stated clearly and in enough detail to acquire the required packaging of supplies and equipment.

(3) Select the level of protection based on anticipated shipping, handling, transportation, storage, and environmental conditions, and the duration of required protection.

(4) Advise storage activities of the packaging needed for mobilization or contingency reserve stocks.

c. When necessary, procedures for selecting and applying packaging protection will be developed by shipping activities as follows:

(1) Provide the required packaging for materiel being shipped, transshipped, or placed in storage.

(2) Establish internal controls to ensure that, during the selection of materiel for shipment, consideration is given to previously packaged stock that meets the level of protection required for the shipment. Selection of the appropriate P&P, when available, will eliminate unnecessary upgrading, or furnishing of levels that exceed anticipated requirements.

(3) Provide for and ensure availability of necessary materials and resources for packaging of rotational stocks upon demand to support mobilization or contingency operations.

(4) Establish functional packaging areas in well-illuminated, ventilated facilities that can be heated and can provide a work environment conducive to providing cost-effective preservation and packing protection to military materiel.

(5) Establish internal procedures to ensure maximum use and reuse of containers. Procedures will include provisions to provide the managing IMM with container status upon removal of an item from a long-life reusable container, and a statement to the effect that reusable containers will not accompany condemned contents to the Defense Reutilization and Marketing Office (DRMO).

(6) Report reusable containers for which no requirement exists to integrated materiel or inventory managers, according to individual service or agency procedures. Disposal of these containers will not be initiated until guidance is received from the IMM. If disposition instructions are not provided by the IMM within 45 working days of notification, shipping activities will use local procedures to determine container disposition actions.

d. Receiving activities will ensure that packing complies with contract requirements for materiel accepted at destination (first delivery point).

e. When a combination of conditions used for determining the level of protection falls within both levels, the higher level will be applied. If packaging requirements at the requested level are not established, the next higher level will be applied or the lead service packaging office will be contacted for instructions. Packaging requirements specified by the packaging personnel at the buying activity will be utilized when prescribed.

### **3-3. Marking**

The marking for shipment and storage will be according to MIL-STD-129. When appropriate, detailed marking instructions will be included in the contract or order. Ammunition items will also be marked in accordance with instructions provided by the procuring office.

### **3-4. Use of options**

When standards, specifications, purchase descriptions, special packaging instructions (SPI), drawings, or other authorized instructions contain options for selecting packaging methods, materials, and/or procedures for the required level of protection, the option that provides the required protection at the lowest overall cost will be selected. The choice is the prerogative of the DOD shipper.

### **3-5. Compatibility of requirements**

Packaging data for repair parts will be compatible with maintenance, packaging, handling, storage, transportation, supply, and acquisition needs. The requirements will include pack quantities and intermediate containers, shipping containers, and unit load quantities in agreement with issue, handling, and shipping requirements, as appropriate.

### **3-6. Establishing pack quantities**

The development and ordering of quantities to be placed in the unit, intermediate, and exterior pack require coordination with the managing packaging activity. These quantities will be established in accordance with the requirements or MIL-STD-2073-1.

### **3-7. Packaging of materiel in storage**

To ensure protection of materiel and to facilitate return of retrograde materiel, serviceable materiel will be stored in the unopened vendor pack until use. To the greatest extent possible, packaging material, including reusable containers, will be reused for the return of unserviceable repairable materiel.



### **3-8. Protecting retrograde cargo or returned materiel**

Retrograde materiel will be protected consistent with the provisions of the commodity grouping. The shipper will be responsible for adequate packaging of materiel returns. The materiel will be protected as follows:

*a.* To prevent deterioration and damage, consumable, serviceable returns will be returned in the original vendor or depot unit pack or in a unit pack that is the equivalent of the original unit pack.

(1) Failure to follow the above procedures for serviceable returns could result in the loss of credit. To minimize the possibility of credit loss, it is imperative that the item not be removed from the original unit pack until ready for use.

(2) Ensure item serviceability/condition warrants return and that the return has been authorized by the ICP in accordance with DOD 4140.1-R, chapter 6, and chapter 9 of DOD 4000.25-1-M. If not warranted, dispose of locally, as appropriate, through the servicing DRMO.

*b.* Materiel will be preserved and packed for shipment and storage in accordance with IMM packaging requirements. Shippers of these assets are accountable for resources expended for repackaging of inadequately packed returns. IMMs have the authority to bill shippers for repackaging of discrepant shipments.

*c.* Materiel whose packaging prescription dictates the use of reusable containers will be afforded that protection throughout their life cycle. If an item's reusable container is damaged, destroyed, or lost, the last accountable activity will be responsible for repairs or replacement.

*d.* All items will be identified with the national stock number/part number (NSN/PN) and quantity. Labels and markings will be applied as required by MIL-STD-129 and the DOD component.

*e.* HAZMAT returns will be packaged according to regulations identified in paragraph 2-1p. Materiel will be marked according to the applicable regulations and MIL-STD-129. If the material safety data sheets (MSDS) are not available in the Hazardous Materials Information Resource System (HMIRS), the MSDS received with the HAZMAT will accompany the materiel returned. Information relative to the MSDS can also be found in DODI 6050.5

### **3-9. Occupational safety and health**

An effective and comprehensive occupational safety and health program will be maintained in accordance with DODI 6055.1. This program establishes safety and health goals for DOD and incorporates the general requirements of Title 29, Code of Federal Regulations Part 1960-Basic Program Element for Federal Employee Occupational Safety and Health Programs and Related Matters (29 CFR 1960), and Executive Order 12196, Occupational Safety and Health Programs for Federal Employees, 26 February 1980. There will be no compromise with the provisions of the Occupational Safety and Health Program for Federal employees who package materiel.

### **3-10. Ecology**

*a.* Pollution of the environment due to packaging operations at DOD activities will be controlled and held to a minimum. Environmental quality standards prescribed by Federal, State, and local authorities will be used in determining measures to control pollution. During design and selection of packaging materials, primary consideration will be given to reusability to promote environmental quality through conservation of resources and reduction/elimination of the waste stream. When reusability is not feasible, the ability to recycle should be given consideration. Before introducing a new material for use, consideration will be given to environmental consequences. Environmental pollution preventive measures will be incorporated into applicable standards, specifications, and instructions covering materials and processes used in packaging.

*b.* The use of plastic packaging materials for the protection of supplies forwarded to Navy ships will be kept to an absolute minimum. This will enhance efforts to prevent the discharge of plastic packaging materials into the ocean in compliance with the International Convention for the Prevention of Pollution from Ships, and to support the Plastics Removal in Marine Environment (PRIME) and the Waste Reduction Afloat Protects the Sea (WRAPS) programs.

*c.* When evaluating a potential "biodegradable" material for use, the following will be determined:

- (1) Is the material degradable via soil, composting, or marine environment?
- (2) Is the materiel mixed with plastic materials and/or additives?
- (3) What disposal procedure does the manufacturer offer/recommend?
- (4) Does the manufacturer have procedures in place to retrieve and recycle the materials?
- (5) What are the cost differences between the existing material and the new material?
- (6) Is the material military-service unique?

*d.* Following evaluation, all packaging material determined/assumed to be biodegradable must be tested for biodegradability and toxicity by the U. S. Army Soldier Chemical and Biological Command, Natick, MA 01760.

### **3-11. Reporting discrepancies**

DOD activities will use SF Form 364 (Report of Discrepancy (ROD)), or electronic media, including all pertinent

information, to report shipping-type (item) and packaging discrepancies attributable to the shipper, including contractors/manufacturers or vendors. (see DLAI 4140.55/AR 735-11-2/SECNAVINST 4355.18A/AFJMAN 23-215).

## **Chapter 4**

### **Project Information Exchange**

#### **4-1. Project requirements**

- a.* Packaging project information will be maintained and exchanged as outlined in this regulation.
- b.* For the purpose of packaging project information exchange, a project is any planned workload involving 160 or more man-hours including all support functions. This entails research, development, testing, or evaluation that may result in new or improved packaging concepts, methods, procedures, or materials. Excluded are internal procedures, suggestions, briefings, and presentations.

#### **4-2. Reporting requirements**

- a.* Completed packaging project reports will be submitted to the Director, Defense Technical Information Center (DTIC), ATTN: DTIC-ODR, Suite 0944, 8725 John J. Kingman Road, Fort Belvoir, VA 22060-6218, for inclusion in their files using SF Form 298 (Report Documentation Page). Reports of a classified nature are exempt from this requirement.
- b.* Packaging test activities will submit UN PACKAGING TEST Reports for HAZMAT, documenting container compliance with UN requirements, in accordance with DLAD 4145.41/AR 700-143/AFJI 24-210/NAVSUPINST 4030.55B/MCO 4030.40B. This requirement includes test reports for ammunition and explosives.

## **Chapter 5**

### **DOD Container Design Retrieval System**

#### **5-1. CDRS theory**

- a.* The DOD Container Design Retrieval System (CDRS) provides a centralized, automated system for storing, retrieving, and analyzing designs and related test information of existing reusable shipping and storage containers. These design assets are checked for reuse in new programs. The CDRS Management Office (MO) has personnel, facilities and authority to provide CDRS service to all DOD development or procurement activities. The CDRS/MO is located at the Aeronautical Systems Center (ASC), Precision Strike Systems Program Office (SPO). The address is ASC/WMGC, 102 West D Avenue, Suite 168, Eglin AFB, FL 32542-6807.
- b.* The purpose of CDRS is to avoid duplication in container designs, minimize the number of new container designs are being developed, and promote reuse of existing DOD reusable containers for new item development and procurement. A reusable container is designed to support and protect its contents while in transportation, storage, and/or handling or to protect personnel from hazardous contents. Its design may also incorporate features that facilitate more effective transportation, storage, or handling. Other characteristics of these containers include—
  - (1) Energy-damping systems, temperature control systems, and humidity or pressure control capability.
  - (2) Engineering drawings that define materials, dimensions, form, fit, function, fabrication, or assembly.
  - (3) An original design effort for the modification of an existing or standard container design.
  - (4) A service life equaling the life of the item it is designed to protect.
  - (5) Exterior materials made of metal, plastic, synthetics, or composite materials.
- c.* Reusable containers also include containers whose drawings are prepared in SPI format as in MIL-STD-2073-1 and other packaging systems described by illustrations, sketches, figures, or drawings in specifications or technical orders. Containers described by narrative SPIs are not included in this description.

#### **5-2. CDRS objectives**

- a.* Provide a uniform means of identifying, recording, and retaining technical and management information on reusable containers.
- b.* Provide in-depth review of technical data on existing container designs and surplus availability to determine their reusability in new defense systems acquisitions or existing programs.
- c.* Prevent reusable containers from being disposed of as excess property before determining their possible use in new or existing programs.
- d.* Promote and support competitive use of DOD design, engineering, prototyping, and development capabilities. These capabilities will serve as a preferred source for container development or modification.

### 5-3. CDRS policy

a. Design data extracted from various sources, to include engineering drawings, will be stored in the CDRS database.

b. All DOD activities engaged in the development or procurement of specialized containers will send a search request using the format prescribed in MIL-STD-2073-1 to CDRS/MO before initiating a new design or production program. A search request should be submitted for items that can be packed to meet stated protection requirements in wood, plywood, fiberboard, or fast pack containers.

c. Any new design, development, or procurement of specialized packaging and containers for Army-developed ammunition will be coordinated with the Army's Defense Logistics Activity (SALA, AMSTA-AR-AL, Picatinny Arsenal, NJ 07806-5000). This coordination should take place after CDRS search described in paragraph b, above.

d. All DOD activities that acquire a new container design will forward a dimensional drawing and/or design data of the container to CDRS/MO using the format prescribed in MIL-STD-2073-1. This data will be entered into the CDRS database files.

e. Designs of excess and surplus containers that meet technical packaging requirements specified by the development activity will be used whenever it is cost-effective.

f. Cost savings achieved from the reuse of existing containers or container designs will be documented by the development of procurement activity. A copy of the documentation will be sent to CDRS/MO not later than 30 days after validation.

g. All DOD IMMs must contact CDRS/MO before disposing of excess or obsolete specialized containers. CDRS/MO will evaluate and determine their potential use in other programs.

h. CDRS will ensure that an in-house container design and development capability exists.

### 5-4. CDRS administration

a. The Air Force is responsible for providing the resources and instructions necessary to ensure effective operation of CDRS.

(1) The Air Force Aeronautical Systems Center (ASC/YJA) executes all functions of CDRS/MO and operates the CDRS to provide a DOD-wide container documentation retrieval and container development capability.

(2) The CDRS/MO maintains a computerized data record of existing reusable containers, corresponding design drawings, and information. These are used for technical analysis and container reuse applications, thus reducing acquisition costs and increasing the options available to the procurement activity. Additionally, it acts as a central focal point for DOD container.

b. Development and packaging activities will ensure that—

(1) CDRS use is part of the acquisition management process, and its use is reflected in appropriate program management documents.

(2) MIL-STD-2073-1 requirements are included in appropriate contracts.

(3) CDRS search requests will be submitted early enough to permit adequate search and evaluation by the CDRS/MO. The DID pertaining to CDRS/MO search request is DI-PACK-80683.

(4) Savings that are attained as a result of CDRS are documented and the CDRS/MO is informed (see para 5-3f).

c. DOD activities having responsibility for maintaining reusable container drawings and related technical data must send a copy of the complete drawing package to CDRS/MO for inclusion in the CDRS database file. Test reports completed per ANSI Z39.18 need not be included in the data package unless specifically requested. The DID pertaining to CDRS data input is DI-PACK 80684.

## Chapter 6

### Lead Activities for Packaging Testing

#### 6-1. Lead services objectives

Lead services for testing and evaluating packaging materials and processes are established to attain the following objectives:

a. Eliminate duplication of effort in testing and evaluating packaging materials and processes.

b. Provide package testing focal points.

c. Improve skills and increase productivity through specialization.

d. Standardize test equipment.

#### 6-2. Lead service designations

Lead activities are shown below along with their designated areas of responsibility for testing and evaluating materials and processes:

a. The U.S. Army Soldier Chemical and Biological Command (SCBC), AMSBC-I-SPS, Integrated Material Management Center, Kansas Street, Natick, Massachusetts 01760-5052, is assigned as lead activity for personal support materiel (that is, clothing, textiles, and subsistence) and is the lead for testing biodegradable packaging materials.

b. The U.S. Air Force Packaging Technology and Engineering Facility (AFPTEF), AFMC LSO/LOP, 5215 Thurlow Street, Wright-Patterson AFB, Ohio 45433-5540, is assigned as lead activity for the materials and processes listed in table 6-1.

**Table 6-1.**

**AFPTEF lead service responsibilities**

Materials	Processes
Containers, metal, and plastic	Foam-In-Place Systems
Shock indicators	Fast-pack Container Systems
Crates, wood and metal	Cushioning Systems
Cushioning materials	Strippable Coating Systems
Humidity indicators	Computer Aided Design System and Computer Aided Finite Element Structural Analysis
Foam (pre-foamed or foam-in-place)	
Pallets, metal	

c. The U.S. Army Materiel Command, LOGSA Packaging, Storage, and Containerization Center (AMC LOGSA PSCC), 11 Hap Arnold Blvd, Tobyhanna, PA 18466-5097, is assigned as the lead activity for the materials and processes listed in table 6-2.

**Table 6-2**

**AMC LOGSA PSCC lead service responsibilities**

Materials	Processes
Adhesives	Unitization Systems (MIL-HDBK-773)
Preservation materials	Stretch Wrap Systems
Barrier materials	Shrink Wrap Systems
Boxes, wood and wire bound	Marking and Labeling Systems
Boxes and sheet stock, fiberboard	Vacuum Formed Thermoplastic Systems
Pallets, other than metal	Cold-seal Packaging Systems
Tapes	Dehumidification Systems
Marking and labeling materials	Plastic Wrap System
Desiccant materials	Plastic Bag/Package Forming Systems
Tags, document protectors, packing lists	
Bags and Sacks	

d. The U.S. Army Defense Ammunition Center, (USADAC), SIOAC-DEV, 1 C Tree Road, McAlester, Oklahoma, 74501, is designated as the lead activity for processes related to automatic banding systems.

e. The Naval Packaging, Handling Storage, and Transportability Center, U.S. Naval Weapons Station Earle, Code 5014, Colts Neck, New Jersey 07722-5023, is designated as the lead activity for strapping materials (metal and nonmetal).

f. The Naval Air Systems Command, Research and Engineering Group, AIR 4.3.5E, Buildings 562-3, Lakehurst, NJ 08733-5049, is the lead activity for processes related to equipment, and methodologies.

g. Under the lead activity concept for testing and evaluating packaging materials and processes, the following categories of material are excluded:

- (1) Materials and processes related to specific end items or weapons systems or subsystems.
- (2) Testing and evaluation of packaging equipment related to specific operational requirements.

- (3) Compliance testing of contractor products unless specifically justified and not covered by contract requirements.
- (4) Medical items regulated by the U.S. Food and Drug Administration.
- (5) HAZMAT package certification testing to document conformance with UN standard package performance requirements.

### **6-3. Administration**

#### *a. Requesting activities.*

(1) Activities who submit materials or processes for testing and evaluation must specify the tests to be conducted. The number of samples for testing will be determined by the lead service activity based on the requirements of the test program. If field-testing is required, the requesting service is responsible for making the necessary arrangements. If multi-service field tests are required, the requesting activity coordinates with the other affected services. All pertinent data from commercial sources, Government agencies, or contractors must be furnished.

(2) Activities will submit recommended changes to MIL-STD-2073-1 codes for materials tested and approved for use to the Naval Air Systems Command, Research and Engineering Group, Air 4.3.5E, Building 562-3, Lakehurst, NJ 08733-5049. New materials should be added to existing codes whenever possible.

*b. Testing activities.* Activities will request the preparing activity provide the applicable specification to determine if testing has been previously accomplished. All testing must be done according to appropriate testing methods. The testing activity submits a final report to the requesting activity and to the preparing activity of the applicable specification.

*c. Preparing activities.* Any testing accomplished by the preparing activity in conjunction with specification maintenance must be coordinated with the lead activity, and a copy of all test results must be furnished to that activity.

*d. Technical information.* A uniform means of identifying, recording, and retaining technical and management information will be provided on specialized containers.

*e. In-depth activities.* An in-depth review of technical data will be provided on existing container designs and surplus assets to determine their reusability in new defense systems acquisitions or existing programs.

*f. Container activities.* Specialized containers will be prevented from being disposed of as excess property before determining their possible use in new or existing programs.

*g. DOD activities.* Containers will be standardized among similar items and among the various DOD components.

*h. Development activities.* Competitive use will be promoted and supported for DOD design, engineering, prototyping, and development capabilities. These capabilities will serve as a preferred source for container development or modification when existing container resources are not sufficient to satisfy technical, cost, or schedule requirements or to facilitate standardization and quality.

## Appendix A References

### Section I

#### Required Publications

This section contains no entries.

### Section II

#### Related Publications

A related publication is merely a source of additional information. The user does not have to read it to understand this publication.

#### **AAP-23**

NATO Glossary of Packaging Terms and Definitions (English and French). <http://otan.w3sites.net>

#### **ANSI 239.18**

Format Requirements for Scientific and Technical Reports Prepared By and For the Department of Defense. [www.ansi.org](http://www.ansi.org)

#### **Code of Federal Regulations, Title 29**

Labor [www.access.gpo.gov](http://www.access.gpo.gov)

#### **DI-PACK-80683**

Container Design Retrieval System Search Request. <http://farsite.hill.af.mil>

#### **DI-PACK-80684**

Container Design Retrieval System Data Input. <http://farsite.hill.af.mil>

#### **DLAD 4145.41/AR 700-143/AFJI 24-210/NAVSUPINST 4030.55B/MCO 4030.40B**

Packaging of Hazardous Materials. <http://farsite/hill.af.mil>

#### **DLAI 4140.55/AR 735-11-2/SECNAVINST 4355.18A/AFJMAN 23-215**

Reporting Supply Discrepancies

#### **DOD 4120.24-M**

Defense Standardization Program, Policies and Procedures. [www.dtic.mil/whs/directives](http://www.dtic.mil/whs/directives)

#### **DOD 4140.1-R**

DOD Supply Chain Materiel Management Regulation. [www.dtic.mil/whs/directives](http://www.dtic.mil/whs/directives)

#### **DOD 4500.9-R, part II**

Cargo Movement. [www.dtic.mil/whs/directives](http://www.dtic.mil/whs/directives)

#### **DOD 6050.5-G**

Hazardous Materials Information System User's Guide. [www.dtic.mil/whs/directives](http://www.dtic.mil/whs/directives)

#### **DODI 6055.1**

DOD Safety and Occupational and Health (SOH) Program. [www.dtic.mil/whs/directives](http://www.dtic.mil/whs/directives)

#### **DOD Joint Pub 1-02**

DOD Dictionary of Military and Associated Terms. [www.defenselink.mil](http://www.defenselink.mil)

#### **Executive Order 12196**

Occupational Safety and Health Programs for Federal Employees. [www.nara.gov/fedreg](http://www.nara.gov/fedreg)

#### **MIL-HDBK 773**

Electrostatic Discharge Protective Packaging. <http://assist1.daps.dla.mil/quicksearch>

#### **MIL-HDBK-774**

Palletized Unit Loads. <http://assist1.daps.dla.mil/quicksearch>

**MIL-STD-129**

Standard Practice for Military Marking. <http://assist1.daps.dla.mil/quicksearch>

**MIL-STD-2073-1D**

Standard Practice for Military Packaging. <http://assist1.daps.dla.mil/quicksearch>

**NAVSUP Pub 485**

Ashore Supply. <http://www.nll.navsup.navy.mil/>

**STANAG 4279**

NATO Glossary of Packaging Terms and Definitions. <http://otan.w3sites.net>

**STANAG 4280**

NATO Levels of Requirements for Packaging. <http://otan.w3sites.net>

**Section III**

**Prescribed Forms**

This section contains no entries.

**Section IV**

**Referenced Forms**

Except where otherwise indicated below, the following forms are available on the on the AKO, AHP, and APD Web sites.

**SF 298**

Report Documentation Page

**SF 364**

Report of Discrepancy (ROD)

## **Glossary**

### **Section I Abbreviations**

**AAP**

allied administrative publication

**CONEX**

container express

**CONUS**

continental United States

**DID**

data item description

**DOD**

Department of Defense

**DRMO**

Defense Reutilization and Marketing Office

**HAZMAT**

hazardous materials

**ICP**

inventory control point

**IMM**

integrated materials manager

**MILSTRIP**

Military Standard Requisitioning and Issue Procedures

**NATO**

North Atlantic Treaty Organization

**NSN**

national stock number

**OCONUS**

outside continental United States

**PM**

Program Manager

**RO/RO**

roll on/roll off

**STANAG**

standardization agreement

**T&E**

testing & evaluation

**UN**

United Nations



## Section II

### Terms

#### Commercial packaging

The methods and materials employed by the supplier to satisfy the requirements of that supplier's distribution system.

#### Containerization

The use of transport containers (that is, CONEX, MILVAN, SEAVAN, RO/RO trailers) to unitize cargo for transportation, supply, and storage. Containerization aids carriage of goods by one or more modes of transportation without the need for intermediate handling of the contents.

#### Defense Packaging Policy Group

An OASD/military services/DLA group established as a permanent forum to provide policy, guidance, and standardization of packaging throughout the military services and DLA.

#### Exterior pack

A container, bundle, or assembly that is sufficient by design and construction to protect unit and intermediate packs and contents during shipment and storage. This can be a unit pack or a container with any combination of unit or intermediate packs.

#### General purpose reusable container

A container designed to maintain a number of items within certain limits of size, weight, and fragility. A general purpose reusable container can be reused a number of times and may be identified by military or Federal specifications.

#### Intermediate pack

A wrap, box, or bundle that contains two or more unit packs of identical items.

#### Levels of protection

A means of specifying the level of military preservation and packing that a given item requires to assure that is not degraded during shipment and storage. Specific levels of protection are as follows: *a. Military level of Preservation.* Preservation designed to protect an item during shipment, handling, indeterminate storage, and distribution to consignees worldwide. *b. Military Levels of Packing. (1) Level A.* Protection required 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 that indicate a need for use of a level A pack are: War Reserve Material, mobilization, strategic and theater deployment and employment, open storage, and deck loading. Examples of containers used for level A packing requirements include, but are not limited to, overseas type wood boxes, and plastic and metal reusable containers. *(2) Level B.* Protection required to meet moderate worldwide shipment, handling, and storage conditions. A Level B pack must, in tandem with applied preservation, be capable of protecting material not directly exposed to extremes of climate, terrain, and operational and transportation environments. Examples of situations that indicate a need for use of a level B pack are: Security Assistance (that is, Foreign Military Sales (FMS)) and containerized overseas shipment. Examples of containers used for level B packing requirements include, but are not limited to, domestic wood crates, weather-resistant fiberboard containers, fast pack containers, weather-resistant fiber drums, and weather-resistant paper and multi-wall shipping sacks.

#### Marking

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

#### Military packaging

The methods and materials described in Federal or military specifications, standards, drawings, or other authorized documents or systems designed to prevent damage or deterioration during distribution or storage of materiel.

#### Packaging

An all-encompassing term describing the methods and materials used to protect materiel from deterioration or damage. Packaging includes the processes of preservation, cleaning, drying, packing, marking, and unitization.

#### Packing

The assembling of materiel into an exterior pack, consisting of a container, bundle, or assembly, with the necessary blocking, bracing, cushioning, weatherproofing, reinforcement, and marking.

### **Plastics removal in marine environment**

The removal of plastic packaging materials from supply items forwarded to Navy ships for the purpose of preventing the discharge of plastics into the ocean.

### **Preservation**

The processes and procedures used to protect materiel against corrosion, deterioration, and physical damage during shipment, handling, and storage. As applicable, preservation includes cleaning, drying, application of preservative, wrapping, cushioning, containers (unit and intermediate) and complete identification markings up to but not including the exterior shipping container.

### **Reusable container**

A shipping and storage container that is designed for reuse without impairment of its protective function. A shipping and storage container that can be repaired, refitted, or both, to prolong its life or to adapt it for shipment of items other than that for which it was originally intended.

### **Specialized reusable container**

A container designed to maintain a specific item, or many items, while being transported, stored, or handled. A specialized reusable container has an expected service life equal to or greater than that of the item it is designed to protect. Engineering specifications are used to define form, fit, function, materials, tolerances, and manufacturing techniques. These containers are accountable according to service or agency requirements.

### **Unit pack**

The first tie, wrap, or container applied to a single item, or a quantity thereof, or to a group of items of a single stock number, preserved or unpreserved, that constitutes a complete or identifiable package.

### **Unitization**

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

## **Section III**

### **Special Abbreviations and Terms**

#### **ANSI**

American National Standards Institute

#### **ASC**

Aeronautical Systems Center

#### **CDRS**

Container Design Retrieval System

#### **DLR**

depot level repairable

#### **DPPG**

Defense Packaging Policy Group

#### **DTIC**

Defense Technical Information Center

#### **ES**

Executive Secretary

#### **ESDS**

Electrostatic Discharge Sensitive

#### **ISO**

International Organization for Standardization

**LD**

logistics document

**LSA**

logistics support analysis

**MO**

management office

**MSDS**

material safety data sheet

**P&P**

preservation & packing

**PHS&T**

packing, handling, storage and transportation

**PRIME**

Plastics Removal in Marine Environment

**SPI**

special packaging instruction

**WRAPS**

Waste Reduction Afloat Protects the Sea

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