

II. USAF HAZARDOUS MATERIALS TRAINING
A. TECHNICAL SPECIALIST CERTIFICATION

M.S.D.S. Acquisition

- Material Safety Data Sheet:
 - Critical to determining packaging requirements.
 - Usually two pages with predictable data blocks of information.
 - Name and description.
 - Physical data.
 - Fire and explosion hazard data.
 - Reactivity data.
 - Health hazard data.
 - Emergency and first aid procedures.
 - Control measures and personal protective equipment.
 - Precautions for safety handling and use.
 - Regulatory information.

- How do you obtain the M.S.D.S.:
 - Handout M.S.D.S. library: 90% of what you will need.
 - Request from distributor or manufacturer.
 - Verbal/touch tone fax phone systems.
 - Stipulate on POs that items ordered must be shipped. with M.S.D.S. as part of condition of sale.
 - Internet.www

Military Haz Mat Load Certification

- Training requirements and authorizations:
 - Two week all mode certification.
 - Recertify every 24 months AFJMAN 24-204, 1.17.4, if primary job.
 - Really don't need any training to be a technical specialist.
 - For US&R needs: 16 hour technical specialist allow you to certify your own load under authorization (AFJMAN 24-204 1.17.4.2) of your Task Force Leader.
 - Must have written letter from commander (Task Force Leader) AFJMAN 24-204 1.17.4

<p>FEMA US&R RESPONSE SYSTEM</p> <p>LOGISTICS SPECIALIST TRAINING 10/98</p> <p>USAF HAZARDOUS MATERIALS TRAINING</p> <p>M.S.D.S.</p> <ul style="list-style-type: none"> ■ Determine packaging requirements. ■ Usually two pages. ■ Name and description. ■ Physical data. ■ Fire and explosion hazard data. 	<ul style="list-style-type: none"> ■ Reactivity data. <p>FEMA US&R RESPONSE SYSTEM</p> <p>LOGISTICS SPECIALIST TRAINING 10/98</p> <ul style="list-style-type: none"> ■ Emergency and first aid procedures. <p>USAF HAZARDOUS MATERIALS TRAINING</p> <ul style="list-style-type: none"> ■ Control measures and PPE. <p>OBTAINING M.S.D.S.</p> <ul style="list-style-type: none"> ■ Precautions for handling and use. <p>Regulatory information:</p> <ul style="list-style-type: none"> 90% of what you will need. <p>Request from distributor or manufacturer.</p>
<p>FEMA US&R RESPONSE SYSTEM</p> <p>LOGISTICS SPECIALIST TRAINING 10/98</p> <p>USAF HAZARDOUS MATERIALS TRAINING</p> <ul style="list-style-type: none"> ■ Verbal/touch tone fax phone systems. 	<p>USAF HAZARDOUS MATERIALS TRAINING</p> <ul style="list-style-type: none"> ■ Stipulate on POs that items ordered must be shipped. with M.S.D.S. CERTIFICATION as part of condition of sale. <ul style="list-style-type: none"> ■ Internet.www <p>Training requirements and authorizations:</p> <ul style="list-style-type: none"> • Two week all mode certification. • Recertify every 24 months AFJMAN 24-204, 1.17.4, if primary job. <p>VIEW GRAPH II A - 2</p>
<p>FEMA US&R RESPONSE SYSTEM</p> <p>LOGISTICS SPECIALIST TRAINING 10/98</p> <p>USAF HAZARDOUS MATERIALS TRAINING</p> <ul style="list-style-type: none"> ■ Really don't need any training to be a technical specialist. ■ For US&R needs: 16 hour technical specialist allow you to certify load. ■ Must have written letter from commander (Task Force Leader) AFJMAN 24-204 1.17.4 	<p>VIEW GRAPH II A - 2</p> <ul style="list-style-type: none"> • Really don't need any training to be a technical specialist. • For US&R needs: 16 hour technical specialist allow you to certify load. • Must have written letter from commander (Task Force Leader) AFJMAN 24-204 1.17.4

II. USAF HAZARDOUS MATERIALS TRAINING
A. TECHNICAL SPECIALIST CERTIFICATION

Military Haz Mat Load Certification (continued)

- Certification and packing reference:
 - Civilian: International Air Transport Association IATA.
 - Military: AFJMAN 24-204 [version 1 March, 1997]
 - Complete revision of AFR 71-4 incorporating changes in CFR Title 49 DOT and International Civil Aviation Organization (ICAO) Technical Instructions.
 - Converts DOT and Federal/Military specification packaging to Performance Oriented Packaging (POP)
 - Amends table A4.1 to reflect international hazard classification
 - Replaces military Special Handling Data/Certification form with commercial form Shipper's Declaration for Dangerous Goods: red striped boarder.
 - AFJMAN 24-204 is less stringent than the IATA manual.

- Haz Mat classes and divisions: US vs. International (Figure A4.1.)
 - 1 Explosives
 - 2 Compressed gases
 - 3 Flammable liquids
 - 4 Flammable solids
 - 5 Oxidizers
 - 6 Poisons
 - 7 Radiological
 - 8 Corrosives
 - 9 Other regulated materials: ORM

- International Labels: AFJMAN 24-204, attachment 15:
 - Must label for primary hazard.
 - Hazard precedence: Figure A4.1.
 - Must designate division and comparability on label IATA Table 3.1.4.
 - Secondary label(subsidiary hazard) does not have the class number.

<p style="font-size: small;">FEMA US&R RESPONSE SYSTEM</p> <hr/> <p style="font-size: small;">LOGISTICS SPECIALIST TRAINING 10/98</p> <p style="text-align: center; font-size: small;"><u>USAF HAZARDOUS MATERIALS TRAINING</u></p> <p style="text-align: center; font-weight: bold; font-size: small;">CERTIFICATION</p> <ul style="list-style-type: none"> ■ Certification and packing reference: <ul style="list-style-type: none"> • Civilian: International Air Transport Association IATA. • Military: AFJMAN 24-204 received February 1995
<p style="font-size: small;">FEMA US&R RESPONSE SYSTEM</p> <hr/> <p style="font-size: small;">LOGISTICS SPECIALIST TRAINING 10/98</p> <ul style="list-style-type: none"> • AFJMAN 24-204 is less stringent than the IATA manual. <p style="text-align: center; font-size: small;"><u>USAF HAZARDOUS MATERIALS TRAINING</u></p> <p style="text-align: center; font-weight: bold; font-size: small;">CERTIFICATION</p> <ul style="list-style-type: none"> ■ Haz Mat classes and divisions: US vs. International: <p style="text-align: center; font-size: x-small;">VIEW GRAPH II A - 4</p> <ul style="list-style-type: none"> • 1 Explosives • 2 Compressed gases
<p style="font-size: small;">FEMA US&R RESPONSE SYSTEM</p> <hr/> <p style="font-size: small;">LOGISTICS SPECIALIST TRAINING 10/98</p> <p style="font-size: x-small;">3 Flammable liquids</p> <ul style="list-style-type: none"> • 4 Flammable solids • 5 Oxidizers <p style="text-align: center; font-weight: bold; font-size: small;">CERTIFICATION</p> <ul style="list-style-type: none"> • 6 Poisons • 7 Radiological ■ International Labels: AFJMAN 24-204: <ul style="list-style-type: none"> • 8 Corrosives • 9 Other regulated materials: ORM • Hazard precedence: Figure A4.1. <p style="text-align: center; font-size: x-small;">VIEW GRAPH II A - 5</p> <ul style="list-style-type: none"> • Must designate division and comparability on label IATA Table 3.1.4. • Secondary label(subsidiary hazard) does not have the class number.

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Military Haz Mat Load Certification (continued)

- Packing groups:
 - Used to aid shipper in handling material.
 - Classes that use packing groups: 3,4,5,1,6,1,8, some class 9.
 - AFJMAN 24-204, Attachment 4, table A4.1.
- DOT exemptions: AFJMAN 24-204 chapter 2.5:
 - Allows the use of old DOT certified containers in a system that needs POP certified containers.
 - Authority to deviate from requirements of 49CFR 100-185.
 - Use for military shipments only.
 - Copy of exemption must accompany the shipment.
 - Exemptions are dated and have an expiration date.
 - Do not use for international shipments unless item is exempted from POP requirements.
- POP marking system:
 - After October 1996, POP markings will be required for all domestic flights.
 - AFJMAN 24-204, attachment 14.
- Segregation of Hazardous:
 - AFJMAN 24-204, attachment 18, table A18.1.
- Special provision: table A4.2:
 - Column 7 of table A4.1 references.
- Filling out Shipper's Declaration of Dangerous Goods
- Filling out Shipper's Certification Program (SCP) data base:
 - Transport control number (TCN): 17 characters that is provided by the POD persons.

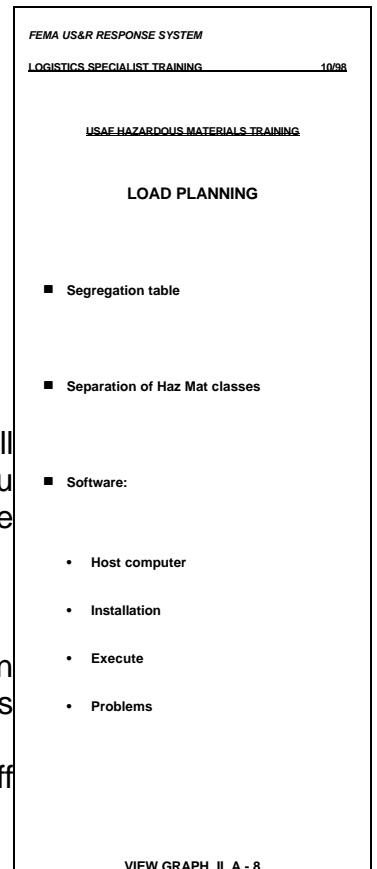
<small>FEMA US&R RESPONSE SYSTEM</small>	
<small>LOGISTICS SPECIALIST TRAINING</small>	<small>10/98</small>
USAF HAZARDOUS MATERIALS TRAINING	
CERTIFICATION	
■ Packing groups	
■ DOT exemptions	
■ POP marking system	
■ Segregation of Hazardous	
■ Special provision: table A4.2	
■ Filling out Shipper's Declaration of Dangerous Goods	
■ Filling out Shipper's Certification Program (SCP) data base	
<small>VIEW GRAPH II A - 7</small>	

II. USAF HAZARDOUS MATERIALS TRAINING

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Haz Mat Load Planning Issues

- Segregation table:
 - AFJMAN 24-204, attachment 18 & table A18.1.
- Separation of Haz Mat classes:
 - Rule of thumb: separate yellow labels.
- Installation Of Shipper's Certification Program Software — Host computer:
 - IBM clone. No MACs here please!
 - 2 MB free disk space.
 - DOS 3.2 or later.
 - Windows 3.1 or Windows 95 will work.
- Installation:
 - At the "C:\>" prompt place the distribution disk in your floppy drive
 - If in the A: drive type: "A:INSTALL A:"
 - If in the B: drive type: "B:INSTALL B:"
 - It will copy itself to the C: drive in a subdirectory called "C:\SCP"
- Execute:
 - Move to the C:\SCP directory
 - Type SCP to execute the program.
 - This program will run in Windows 95, both windowed or full screen. However the exe. file does not have an icon in it. You will have to assign one yourself or simply execute by double clicking the file SCP.EXE from the Explorer.
- Problems:
 - This program must be run from the C: drive and it also must be run from the subdirectory called "C:\SCP". This is where it puts itself. DO NOT MOVE IT!
 - You can possibly corrupt your data if you turn your computer off while the SCP program is running.
 - Keep backup copies of the data files: *.DBF.

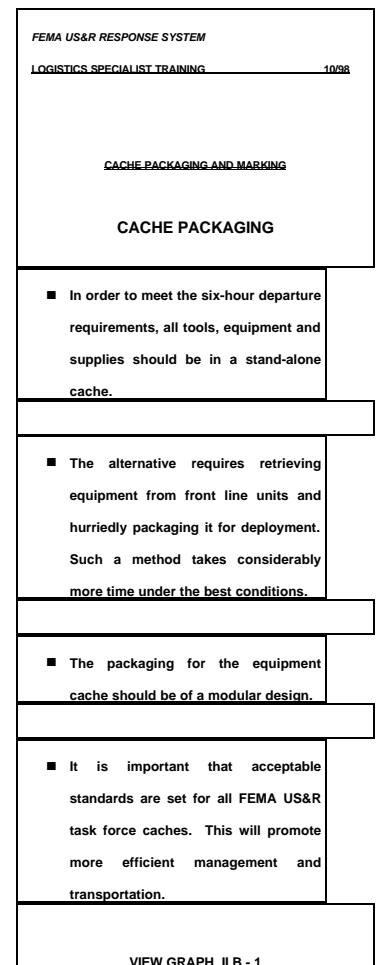


II. USAF HAZARDOUS MATERIALS TRAINING
B. CACHE PACKAGING AND MARKING

Introduction

Urban Search and Rescue (US&R) operations constitute one of the most complex activities emergency responders may encounter. The task force search, rescue, medical and technical disciplines require suitably trained personnel, coupled with appropriate tools and equipment, to function effectively in the disaster environment. The organization and management of a comprehensive equipment cache must not only meet the needs of on-scene operations, but promote efficient packaging, handling and transportation both to and from the disaster location.

- Efficient packaging, handling and transportation of cache tools, equipment and supplies is fundamental to meeting the time constraints of response to disaster situations. In order to meet the six-hour departure requirements, all tools, equipment and supplies should be prepackaged into a stand-alone cache.
- The alternative to this arrangement would require retrieving equipment from front line units and hurriedly packaging it for deployment. Such a method takes considerably more time under the best conditions. Moreover, it inevitably results in errors and deletions which in turn hamper on-site operations. The lack of a standing cache jeopardies the local response capability to meet the six-hour departure requirement.
- The packaging for the task force equipment cache should be of a modular design to provide the task force and transporters (either military or civilian) options for the handling of the equipment, either manually or mechanically. Palletizing the cache will facilitate easier movement by mechanical means without compromising the alternative of manually loading or unloading the equipment cache when necessary.
- It is important that acceptable standards are set for all FEMA US&R task force caches. This standardization will promote more efficient management and transportation of any or all task force caches during large scale disaster mobilizations.



II. USAF HAZARDOUS MATERIALS TRAINING
B. CACHE PACKAGING AND MARKING

Modular Packaging Design

- Shipping containers should be of modular design because the standardized dimensions allow for flexible use and ease of stacking.
- Moreover, by choosing dimensions wisely, the containers will allow the pallet build-up to be constructed in a square or pyramid shape whenever possible. This makes the load stable, easy to handle, and easy to secure on the pallet.
- Modular design of cache containers also allows for standardization among the US&R task forces, resulting in more efficient management of all caches during a large-scale disaster mobilization.

Cache Packaging Standards

The following general standards are required for FEMA US&R Task Force caches:

- The cache is essentially divided into five separate elements. Color-coding and labeling will expedite the sorting of containers during mobilization and on-site activities.
- To ensure uniformity in marking containers, the following label and colors will be used to denote the various elements:
 - RESCUE red
 - MEDICAL blue
 - TECHNICAL yellow
 - COMMUNICATIONS green
 - LOGISTICS white

FEMA US&R RESPONSE SYSTEM LOGISTICS SPECIALIST TRAINING 10/98	
CACHE PACKAGING AND MARKING CACHE PACKAGING	
■ Modular Packaging Design	
<ul style="list-style-type: none"> • Shipping containers should be of modular design to allow for flexible use and ease of stacking. 	
<hr/>	
<ul style="list-style-type: none"> • The containers will allow the pallet build-up to be constructed in a square or pyramid shape whenever possible. 	
<hr/>	
<ul style="list-style-type: none"> • This allows for standardization among the US&R task forces. 	
FEMA US&R RESPONSE SYSTEM LOGISTICS SPECIALIST TRAINING 10/98	more efficient management of all caches during a large-scale disaster mobilization.
CACHE PACKAGING AND MARKING CACHE PACKAGING	
■ To ensure uniformity in marking containers, the following label and colors will be used to denote the various elements:	
<ul style="list-style-type: none"> • RESCUE red • MEDICAL blue • TECHNICAL yellow • COMMUNICATIONS green • LOGISTICS white 	

II. USAF HAZARDOUS MATERIALS TRAINING
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Cache Packaging Standards (continued)

- In order to ensure security, expedite palletizing and avoid unnecessary damage to cache items, all containers should meet the following construction criteria:
 - High-impact material.
 - Weather proof.
 - Inset retractable handles.
 - Stackable corners.
 - Inset locking fasteners.
 - Gross weight 150 lbs with four handles each rated at 50 lbs.
 - Containers should not have permanent wheels affixed to them.
 - Container size approx. 36-3/4 X 20-3/4 X 17-3/4 inches.
 - No rolling stock (vehicles).

- Various packaging options available:
 - Commercially made packing containers (Anvil, Wilson-type cases).
 - GSA containers.
 - Federal Excess Property containers.
 - Task force made containers (plywood).
 - Western Shelter racks

- The ability to rapidly identify and package tools and equipment is necessary to efficiently deploy and track cache items during all stages of a deployment. This process is facilitated by stenciling the information as follows:
 - Task force name and identifier on the lid and all four sides.
 - Inventory container number and weight on all four sides.
 - Equipment category on all four sides of lid.
 - Color-code with paint or reflective tape (3-M) each equipment category.

FEMA US&R RESPONSE SYSTEM LOGISTICS SPECIALIST TRAINING 10/98 CACHE PACKAGING AND MARKING CACHE PACKAGING	
■ In order to ensure security, expedite palletizing and avoid unnecessary damage to cache items, all containers should meet the following construction criteria:	<ul style="list-style-type: none"> • High-impact material. • Weather proof.
FEMA US&R RESPONSE SYSTEM LOGISTICS SPECIALIST TRAINING 10/98 Inset retractable handles.	<ul style="list-style-type: none"> • Stackable corners. • Inset locking fasteners. • Gross weight 150 lbs with four handles. • Containers should not have wheels.
FEMA US&R RESPONSE SYSTEM LOGISTICS SPECIALIST TRAINING 10/98 (Anvil, Wilson-type cases).	<ul style="list-style-type: none"> • Size: 36-3/4 X 20-3/4 X 17-3/4 inches. ■ Various packaging options available: <ul style="list-style-type: none"> • No rolling stock (vehicles). • Commercially made packing containers (Anvil, Wilson-type cases).
FEMA US&R RESPONSE SYSTEM LOGISTICS SPECIALIST TRAINING 10/98	<ul style="list-style-type: none"> • GSA containers. • Federal Excess Property containers.
■ The ability to rapidly identify and package tools and equipment is essential. This process is facilitated by stenciling the information as follows:	<ul style="list-style-type: none"> • Western Shelter racks
■ Task force name and identifier on the lid and all four sides.	<ul style="list-style-type: none"> • Task force name and identifier on the lid and all four sides.
■ Inventory container number and weight on all four sides.	<ul style="list-style-type: none"> • Inventory container number and weight on all four sides.
■ Equipment category on all four sides of lid.	<ul style="list-style-type: none"> • Equipment category on all four sides of lid.
■ Color-code with paint or reflective tape (3-M) each equipment category.	<ul style="list-style-type: none"> • Color-code with paint or reflective tape (3-M) each equipment category.

II. USAF HAZARDOUS MATERIALS TRAINING
B. CACHE PACKAGING AND MARKING

Cache Packaging Standards (continued)

- Operational “kit concept” for container packing:
 - The packaging of tools and equipment into containers should be done not only for ease of handling during transport, but also with operational considerations in mind.
 - For example, Chain Saw Kit, Logistics Specialist should package two chain saws in a container or series of containers.
 - These kits would include all the necessary components to operate, make minor maintenance repairs during the operational period.
 - This “operational kit concept” should be applied to all categories whenever possible.
 NOTE: The operational period will either dictate or modify the need for these kits.

CACHE MOVEMENT

- The sponsoring organization is responsible for the assembly, management and movement of the cache with personal gear from its home jurisdiction to the Point of Departure during mobilization. Logistic Specialists must plan for ground and air transportation requirements according to the cubic space available and gross weight allowed for the movement of the cache.
- This requirement should be fully defined, preplanned and exercised prior to any actual mobilization. The following issues, as a minimum, should be addressed:
 - Process for assembling/packaging all cache tools, equipment and supplies (should the items not be maintained as a “stand alone” cache).
 - Process for identifying, procuring and packaging perishable or short shelf-life items (i.e. batteries, food supplies, water, fuels etc).
 - Process for generating a cache and hazardous cargo inventory of all items during the assembling process.

FEMA US&R RESPONSE SYSTEM LOGISTICS SPECIALIST TRAINING 10/98	
CACHE PACKAGING AND MARKING CACHE PACKAGING	
■ “Kit concept” for container packing:	
<ul style="list-style-type: none"> • Packaging should be done not only for ease of handling during transport, but also with operational considerations in mind. 	
<hr/>	
<ul style="list-style-type: none"> • These kits would include all the necessary components to operate, make minor maintenance repairs during the operational period. 	
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FEMA US&R RESPONSE SYSTEM LOGISTICS SPECIALIST TRAINING 10/98 ■ This “operational kit concept” should be applied to all categories whenever possible.	
CACHE PACKAGING AND MARKING CACHE PACKAGING VIEW GRAPH II B - 7	
■ Cache movement should be fully defined, preplanned and exercised:	
<ul style="list-style-type: none"> • Process for assembling/packaging all cache tools, equipment and supplies (if not maintained as a “stand alone” cache). 	
<hr/>	
<ul style="list-style-type: none"> • Process for identifying, procuring and packaging perishable or short shelf-life items (i.e. batteries, food supplies, water, fuels etc). 	
<hr/>	
<ul style="list-style-type: none"> • Process for generating a cache and hazardous cargo inventory of all items during the assembling process. 	

II. USAF HAZARDOUS MATERIALS TRAINING
B. CACHE PACKAGING AND MARKING

Ground Movement

- Usually, ground transportation during mobilization and operating at the incident, will require manual or mechanical handling (i.e. manpower, carts, forklift, pickup and military vehicles) of cache containers. Adhering to the container weight, size limitations and properly palletized cache will ensure overall manageability of the cache.
- It is of paramount importance that consideration should be given to the prioritization and placement of the equipment, tools and supplies that will be needed at the beginning of the operational period (i.e., recon, etc.).

Air Movement

- The ESF-9 Urban Search and Rescue Cell of the EST (Emergency Support Team) under FEMA is responsible for coordinating air transportation from the Point of Departure to Mobilization Center and back, the actual aircraft used may be military or civilian contract aircraft.
 - Logistics Specialists will coordinate with military load masters or civilian cargo handlers during the loading of aircraft, helicopter sling loads and palletization of all cache containers and personal equipment on aircraft.
- The Logistics Specialist should identify the total weight and cube with the Shipper's Declaration for Dangerous Goods of all cache containers prior to a mobilization.
 - This information will help the Logistics Specialist develop the Timed-Phased Force Deployment Data List (TPFDDL).
 - This information will allow the Load Plan to be made for cache palletization and unit load devices. The information should be prepared, and updated as needed, prior to any mobilization.
 - This effort will result in tremendous time savings while loading and processing pallets and unit load devices.

FEMA US&R RESPONSE SYSTEM LOGISTICS SPECIALIST TRAINING 10/98 CACHE PACKAGING AND MARKING CACHE PACKAGING ■ Ground Movement	
• Usually, ground transportation during mobilization and operating at the incident, will require manual or mechanical handling.	
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FEMA US&R RESPONSE SYSTEM LOGISTICS SPECIALIST TRAINING 10/98 It is of paramount importance that consideration should be given to the prioritization and placement of the equipment.	
CACHE PACKAGING AND MARKING CACHE PACKAGING VIEW GRAPH II B - 9 ■ Air Movement	
• The EST is responsible for coordinating air transport from the POD to Mob Center and back.	
• Log Specialists will coordinate with load masters during the loading of aircraft, helicopter sling loads and palletization of all cache containers.	
• The Log Specialist should identify the total weight and cube with the Shipper's Declaration for Dangerous Goods of all cache containers	

II. USAF HAZARDOUS MATERIALS TRAINING
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Air Movement (continued)

- Logistic Specialist should make contact with the Transportation Squadron/Aerial Port Squadron AMC assigned to the Air Force Base (Point of Departure) for assistance in pertinent regulations and required forms.
 - Prior coordination with the military/civilian authorities enables the answering of any question regarding the regulations, provide instruction on how to load pallets or unit load devices and assist in conducting deployment training and exercises.

NOTE: A key byproduct of this process is a mutually supportive working relationship between task force members and the military or civilian authorities.

PRIORITY FOR MISSION INCEPTION

- The loading and placement of cache items on the aircraft, ground transportation or in Conex containers must be given consideration to prioritization and placement of cache tools, equipment and supplies (i.e. operational kits, recon etc) that will be needed at the beginning of a mission. As the cache is off-loaded, an effort should be made to segregate specific equipment and materials that would constitute the first priority shipment, along with appropriate personnel, into the operational area should the total cache be sent in waves instead of all together in a single movement.
- The following considerations should be given to meet the needs early in the mission inception:
 - Priority should be given to specific equipment and materials that are necessary to fully support a deployed search and recon team.
 - When a task force is being moved to an assigned location some elements of the communications section should be part of the first priority shipment into the disaster site to allow initial personnel to begin operations. This equipment plays a key role in initial search and reconnaissance operations.

FEMA US&R RESPONSE SYSTEM LOGISTICS SPECIALIST TRAINING 10/98	
CACHE PACKAGING AND MARKING CACHE PACKAGING	
■ The following considerations should be given early in the mission inception:	
	<ul style="list-style-type: none"> • Specific equipment and materials necessary to fully support a deployed search and recon team.
<hr/>	
	<ul style="list-style-type: none"> • When a task force is being moved to an assigned location some elements of the communications section should be part of the first priority shipment into the disaster.
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	<ul style="list-style-type: none"> • All personnel should maintain a small operational bag to keep essential personal and safety gear with them at all times.

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PRIORITY FOR MISSION INCEPTION

- It is felt that personal gear and supplies are not considered essential equipment during the first phases of a mission. All personnel should maintain a small operational bag to keep essential personal and safety gear with them at all times. The bulk of the personal gear will not be necessary for the first eight to twelve hours of a mission.

NOTE: It is important that, when the aircraft or ground transportation is originally loaded at the Point of Departure, the “operational or recon kits” should not be loaded on the last (hazardous materials) pallet on the aircraft. In the event of a pallet jettison, the “operational or recon kits” would not be lost.

Air Force Joint Manual 24-204

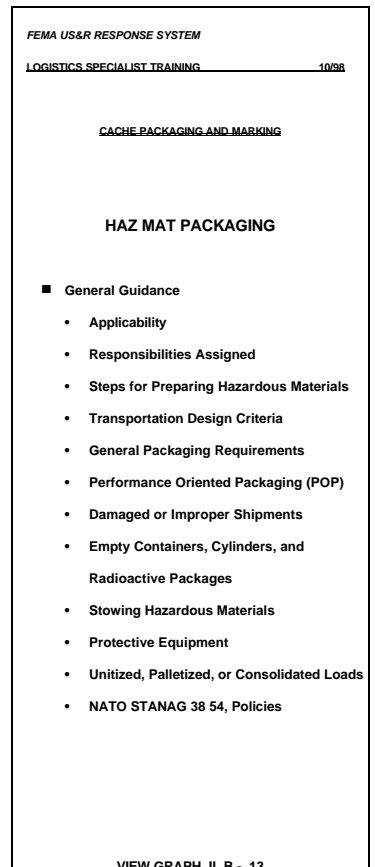
- Summary of Revisions
- Incorporation of Department of Transportation (DOT) Title 49, Code of Federal Regulations (CFR) and the International Civil Aviation Organization (ICAO) Technical Instructions.
- Civilian Aviation Organization (ICAO) technical instructions:
 - Amends policy statements in Chapters 1-3, hazards classification and communication information in Table A4.1 and packaging requirements in Attachment 5-13.
 - List of hazardous substances and corresponding reportable quantities is included in Table A4.3.
 - New passenger eligibility criteria (2.2).
 - Consolidation of passenger movement requirements (A22).
 - Expanded explanation of training standards (A25).
 - These changes clarify requirements and further standardize DoD packaging and shipping with the commercial sector.

FEMA US&R RESPONSE SYSTEM	
LOGISTICS SPECIALIST TRAINING	10/98
<u>CACHE PACKAGING AND MARKING</u>	
HAZ MAT PACKAGING	
Air Force Joint Manual 24-204	
■ Summary of Revisions	
■ DOT Title 49, Code of Federal Regulations (CFR)	
■ ICAO technical instructions:	
• Amends policy statements in Chapters 1-3	
• List of hazardous substances	
• New passenger eligibility criteria	
• Consolidation of passenger movement requirements	
• Expanded explanation of training standards	

II. USAF HAZARDOUS MATERIALS TRAINING
B. CACHE PACKAGING AND MARKING

Chapter 1— General Guidance and Training Requirements

- General Guidance
 - Applicability
 - Responsibilities Assigned
 - Hazardous materials training requirements
 - Steps for Preparing Hazardous Materials
 - Transportation Design Criteria
 - General Packaging Requirements
 - Performance Oriented Packaging (POP)
 - Fueled vehicles and equipment
 - Damaged or Improper Shipments
 - Empty Containers, Cylinders, and Radioactive Packages and Nonhazardous Materials
 - Stowing Hazardous Materials
 - Protective Equipment
 - Unitized, Palletized, Containerized, or Consolidated Loads
 - Air Standardization Coordinating Committee (ASCC) air standards
 - NATO STANAG 38 54, Policies and Procedures Governing the Air Transportation of Dangerous Materials



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Chapter 2 — Deviations, Waivers, and Special Requirements

- Deviations
 - Passenger Movement
- Packaging and Compatibility Waivers
 - DOT Exemptions
 - Competent Authority Approvals (CAA)
 - DOD Certification of Equivalency (COE)
 - Limited and Excepted Quantities
 - Emergency Response Information
- Complying with Special Cargo Requirements

Chapter 3 — Tactical, Contingency, or Emergency Airlift

- Purpose
- Applicability
- Use of Commercial Airlift
- Packaging Requirements
- Passenger Eligibility
- Load Configurations
- Fuel for Vehicles and Equipment
- Lithium Batteries
- Chemically Contaminated Cargo
- Marking, Labeling and Certification
- Diverting Hazardous Materials to Non-Tactical Airlift

FEMA US&R RESPONSE SYSTEM	
LOGISTICS SPECIALIST TRAINING	10/98
CACHE PACKAGING AND MARKING	
HAZ MAT PACKAGING	

■ Deviations	
• Passenger Movement	
■ Packaging and Compatibility Waivers	
• DOT Exemptions	
• Competent Authority Approvals	
• DOD Certification of Equivalency (COE)	
• Limited and Excepted Quantities	
• Emergency Response Information	

FEMA US&R RESPONSE SYSTEM	
LOGISTICS SPECIALIST TRAINING	10/98
CACHE PACKAGING AND MARKING	
VIEW GRAPH ILB 14	
HAZ MAT PACKAGING	

Tactical, Contingency, or Emergency Airlift	
■ Purpose	
■ Applicability	
■ Use of Commercial Airlift	
■ Packaging Requirements	
■ Passenger Eligibility	
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■ Marking, Labeling and Certification	
■ Diverting Haz Mats to Non-Tactical Airlift	

II. USAF HAZARDOUS MATERIALS TRAINING
B. CACHE PACKAGING AND MARKING

Attachments

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- Abbreviations and Acronyms, Attachment 2
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- Items Listing, Attachment 4

Classes of Hazards

- Class 1, Explosives and Ammunition, Attachment 5
- Class 2, Compressed Gases, Attachment 6
- Class 3, Flammable Liquids, Attachment 7
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- Class 5, Oxidizing Materials and Organic Peroxides, Attachment 9
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Classes of Hazards	

- Class 1, Explosives and Ammunition
- Class 2, Compressed Gases
- Class 3, Flammable Liquids
- Class 4, Flammable Solids
- Class 5, Oxidizing Materials
- Class 6, Poisonous (Toxic) Materials
- Class 7, Radioactive Materials
- Class 8, Corrosive Materials
- Class 9, Miscellaneous Haz Mats

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- Compatibility, Attachment 18
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- Inaccessible Containerized Materials, Attachment 21
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<p>FEMA US&R RESPONSE SYSTEM LOGISTICS SPECIALIST TRAINING 10/98</p> <p><u>CACHE PACKAGING AND MARKING</u></p> <p>HAZ MAT PACKAGING</p> <p>Other Pertinent Information</p> <ul style="list-style-type: none">■ Marking Hazardous Materials, Attachment 14■ Labeling Hazardous Materials, Attachment 15■ Area Placarding, Attachment 16■ Certifying Hazardous Materials, Attachment 17■ Compatibility, Attachment 18■ Excepted and Limited Quantities, Attachment 19
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II. USAF HAZARDOUS MATERIALS TRAINING
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Hazardous Materials Conversion Charts

After converting, round your answer off to the nearest tenth.

■ **Liquid Conversions**

- 1 Liter = 0.264 Gallons
1.057 Quarts
33.815 Fluid Ounces
- 1 Gallon = 3.785 Lbs.
- 1 Ounce = 29.57 ML
- 1 Pint = 0.4732 Liters

■ **Example: Converting Pints**

- $16 \times .4732 = 7.5712$ (7.6L)

■ **Weight Conversions**

- 1 Gram = 0.03527 Ounces
- 1 Ounce = 28.3495 Grams
- 1 Pound = 453.59 Grams or 0.4536 Kilos
- 1 Kilogram = 2.205 Lbs.

■ **Example: Pounds to Kilograms**

- $10 \times .4536 = 4.536$ (4.5 KG)

■ **AMMUNITION AND EXPLOSIVES**

- Ammunition is measured in kilograms
- Always express in net explosive weight (N.E.W.)
- 1 Pound = .4536 Kilograms

■ **Example**

- $100 \times .4536 = 45.36$ (45.4 KG)

■ **Temperature Conversions (Celsius and Fahrenheit)**

- Celsius (C) = $(F-32) \times 5/9$
- Fahrenheit (F) = $(C \times 5/9) + 32$