

UNITED STATES MARINE CORPS

Supply School
Marine Corps Combat Service Support Schools
Training Command
PSC 20041
Camp Lejeune, North Carolina 28542-0041

STUDENT OUTLINE

EMBARKATION

GSOC 0603

GROUND SUPPLY OFFICER'S COURSE

M03C061

REVISED 2004/06/15

APPROVED BY _____

DATE _____

1. LEARNING OBJECTIVES.

a. TERMINAL LEARNING OBJECTIVES.

(1) Given a deployment, mobilization and/or embarkation order, local Standing Operating Procedures (SOP), access to an automated system with applicable software, and the references, monitor preparation of all classes of supplies for deployment, per the references. (3002.05.04)

(2) Given mission objectives, sufficient buildings/tents and area to establish the field warehouse, an operation plan, appropriate Materiel Handling Equipment (MHE), access to an automated system with appropriate software, and the references, supervise the establishment of a field warehouse to properly locate and construct a field warehouse in support of the units mission objective and in accordance with the references. (3002.05.06)

b. ENABLING LEARNING OBJECTIVES.

(1) Without the aid of references and given a list of duties, select from a list the Embarkation Officer who is responsible for an associated task, per the reference(s). (3002.05.04b)

(2) Without the aid of references, describe in writing, the use of the three stowage designator colors, per the reference(s). (3002.05.04g)

(3) Without the aid of references, list in writing, the sequence of the basic operations in packing, per the reference(s). (3002.05.04a)

(4) Without the aid of references, and given a list of choices, match the corresponding markings found on the outside of embark containers, per the reference(s). (3002.05.04i)

(5) Without the aid of references, list in writing, five factors that are considered when selecting a field warehouse area, per the reference(s). (3002.05.06c)

(6) Without the aid of references, list in writing, the three principles that must be considered in protecting supplies and equipment, per the reference(s). (3002.05.06d)

BODY

1. EMBARKATION.

a. Embarkation. Embarkation is defined in Joint Pub 1002, Department of Defense Dictionary of Military and Associated Terms, as **“The process of putting personnel and/or vehicles and their associated stores and equipment into ships and/or**

aircraft.” In the Marine Corps, this is where the rubber meets the road, how long will it take us to get out of town and into the Area of Operations with all of our gear.

(1). Importance of Proper Embarkation. A characteristic of successful amphibious operation is the rapid and effective manner in which assault troops establish themselves ashore. The power and size of the Landing Force (LF) must be expanded to the maximum extent necessary to carry out its mission in the shortest possible time. This expansion requires a rapid, yet orderly, build-up of men and materiel, which depends in large measure on the manner in which the ships have been loaded. Proper loading increases the inherent flexibility of the Amphibious Task Force (ATF) and is key for ensuring success. Conversely, improper loading can seriously jeopardize an operation.

b. Mobilization. Webster’s II New Riverside University Dictionary defines mobilization “as to assemble, prepare, or put into operation, as for war or other emergency.” Preparation of supplies and equipment includes packing, crating, unitizing and marking supplies and equipment and preparing vehicles for loading. Higher headquarters publishes Standing Operating Procedures (SOP’s) or regulations, which prescribe how to prepare supplies and equipment for embarkation.

2. KEY EMBARKATION BILLETS.

a. General. Planning and supervising the loading of ships for amphibious operations are assigned to the landing force organization and naval staff within the amphibious force. In the landing force the individual responsible for the planning and supervising is the Embarkation Officer. They have the status as special staff officers in the Headquarters Element. **You can find the Levels of Embarkation in LFM 03 starting on page 4-2.**

SLIDE (LEVELS)

b. Embarkation Officers. There are five levels of Embarkation Officers.

(1) Landing Force Embarkation Officer. Determines shipping requirements, recommendations of space, and recommends scheduling of assault and follow up shipping.

(2) Group Embarkation Officer. Maintains embarkation data, obtains names and types of ships for operations, and maintains copies of USMC Landing Force Operation Reserve Materiel (LFORM) loading plans.

(3) Unit Embarkation Officer. Assigns and assembles cargo assembly areas, completes unit embarkation plan, and coordinates all loading activities of subordinate echelons.

(4) Element Embarkation Officer. Duties are parallel to the unit Embarkation Officer.

(5) Team Embarkation Officer. Prepares detailed loading plans, personally supervises the loading of ships, and maintains liaison between embarkation team and the commanding officer of the ship.

c. Combat Cargo Officers. There are two levels of Combat Cargo Officers.

(1) Staff Combat Cargo Officers. This is normally a Naval Officer.

(a) Amphibious Task Force Combat Cargo Officer.

(b) Transport Group Combat Cargo Officer.

(c) Transport Element Combat Cargo Officer.

(2) Ship Combat Cargo Officer. Each major ship of the amphibious force normally has a trained Marine Officer assigned to this duty. Normally a Trained Marine Officer. Some of the duties include, but is not limited to:

(a) Advising the ships commanding officer on loading and off loading of troops.

(b) Ensures that the loading plan is being followed

(c) Keeps a record of boat requirements.

d. Supply Officer. As a Supply Officer it is important to recognize the duties of the Embarkation and Combat Cargo Officer's. This will allow for successful loading and unloading of equipment and supplies when preparing for deployment.

3. EMBARKATION PLANNING. Amphibious embarkation planning involves all those measures necessary to ensure timely and effective loading of the ATF. These measures range from a determination of overall shipping requirements and embarkation schedules at high levels to detailed loading plans for individual ships at the embarkation team level. Embarkation planning must begin early and proceed **concurrently** with all other planning. It requires **constant coordination** between all troop and naval command levels and a mutual understanding of the problems of each. This process also requires detailed knowledge of the characteristics, capabilities and limitations of ships and their relationship to troops, supplies and equipment to be embarked.

4. PACKING.

a. General. The military concept of economy in packing is to obtain maximum output of adequately protected items at a minimum cost. The Embarkation Officer will determine the space available for all supplies and equipment. It is up to the Preservation Packaging, and Packing team to pack materials accordingly.

b. Purpose. The Preservation, Packing and Packing (PP&P) unit's main function is to provide the necessary support to Marine units to ensure all gear reaches its final destination intact, regardless of where the destination may be (i.e., CONUS, OCONUS, etc...).

c. Documentation. PP&P uses four different types of documents to assist you in processing the gear for shipment or storage.

- (1) 1348-1/1A - Shipping/Receiving document.
- (2) DD Form 1149 – Requisition and Invoice/Shipping document.
- (3) NAVFAC 9-11014/20 Work Request (Maintenance Management).
- (4) NAVMC 10579 Care in Storage Inspection Record.

5. LEVELS OF PACKING

a. General. Different levels of packing have been established in order to meet an adequate protection of materiel during shipment depending on the requirement. There are three levels of packaging:

1. Level "A" Packaging. Level "A" provides maximum protection. This level of Preservation and Packing protects materiel against the most severe conditions, known or anticipated, during shipment and storage.

2. Level "B" Packaging. Level "B" is an intermediate level of Preservation and Packing. This level serves as protection against known favorable conditions.

3. Level "C" Packaging. Level "C" offers a minimum degree of Preservation and Packing when the requirement is minimal.

6. METHOD OF PRESERVATION

a. General. The preservation method was renamed in 1996, and is covered on page 14 of MIL-STD-2073-1C. These preservation methods are approved protective measures to prevent deterioration of military supplies and equipment.

1. Method 10 - Mechanical or Physical Protection (No Preservation).
2. Method 20 – Preservative, Grease Wrap.
3. Method 30 – Preservative, Grease Wrap, Water Proof Wrap.
4. Method 33 – Preservative, Grease Wrap, Water Proof Wrap, Sealed.

b. Sequence of Packing. Military packing is divided into a series of basic operations, whether the packing takes place at PP&P or in a unit's warehouse. These basic operations include but are not limited to the following: **You can find the sequence of packing in MCO P4030.21_ page 1-1.**

1. Determine the packing requirement.
2. Select the container, which provides adequate protection at a minimum cost.
3. Prepare Protective Barriers (**Weatherproofing**).
4. Insert and secure the item to the container. Control movement using blocking, bracing and cushioning.
5. Secure the barrier if used (**Seal barrier material**).
6. Close the container.
7. Reinforce the container. (**STRAPPING OR REONFORCED TAPE**)
8. Mark the shipping container. (**IDENTIFY CONTENTS**)

7. MARKED CONTAINERS

a. General. The following information is normally found on the outside of containers:

- (1) NSN
- (2) NOMENCLATURE
- (3) QUANTITY
- (4) PP&P/CL M-10 12/00
- (5) WEIGHT/CUBE
- (6) PART/SERIAL NUMBER
- (7) DOCUMENT NUMBER
- (8) RUC
- (9) PRIORITY

b. Markings.

1. Whether the deploying unit is going by way of sea, land or air. The Navy Embarkation Officer and the Load Master have to be able to identify the items, so they can be loaded aboard the ship or aircraft. Determining which containers will be loaded first and where they will be stored maximizes the available space and increases safety. The owning unit marks every container that will be stowed aboard ship or transported by aircraft. The markings indicates organizational ownership, contents, stowage location, size, weight and cube, and when required, source and destination of containers.

c. Tactical Markings. These markings indicate organizational ownership of the supplies and equipment. They are centered on the top, and on at least on one side and on one end of each container. Organizational tactical markings can be either symbolic or alpha - numerical characters (i.e. unit's RUC). **You can find the tactical markings in LFM 03 page 5-8.**

d. Stowage Designators. These indicate whether cargo is to be stowed in troop spaces or in hold storage. They are disks that are painted on the cargo and serve as an aid in warehousing procedures. Only cargo (containers) painted with these disks will be transported for loading. The three different colored disks are as follows.

- (1) Yellow Disk – Cargo must be assessable to unit personnel during voyage.
- (2) White Disk – Identifies equipment and supplies that must be on the same ship as the unit. The equipment and supplies does not have to be assessable during voyage.
- (3) Red Disk – Equipment and supplies must accompany the unit, but not necessarily on the same ship.

e. Content Markings. These markings identify the individual box and its contents. They consist of a box number, which is made up of two parts:

1. Unit Personnel and Tonnage (UP&TT) Line Number. You can find an example of this Table in LFM 03 starting on page 7-6.

2. Consecutive Number Assigned to specific box or container. This number can be either a consecutive number given to the container as the unit's cargo is manifested, or Marine Corps Unit's presently required to use the Marine Corps Field Warehousing numbering system may use the fifth through eight digits of the warehouse number as the box number. Local SOP will dictate the numbering system used. You can find the numbering system in DOD 4145.19-R page 1-4.

f. Cubic Feet and Weight. The volume in cubic feet and weight in pounds are placed on each box, crate and container. Cubic feet is calculated by Length (in inches) multiplied by Width (in inches) multiplied by Height (in inches) and divided by 1728 or $L \times W \times H$ rounded to the nearest tenth = CF.

g. Administrative Markings. Local SOP may require Administrative Markings. They supply data such as source, content and destination of the container.

h. Security. May be required for classified material. This may be accomplished by covering the tactical markings so unauthorized personnel will not have knowledge of the container contents.

8. SHIPPING PRIORITIES

a. General. The shipping priorities are established by the military to give a time frame in which to move material from one place to another. An example is, starting with a stored item, sending it to PP&P for packing and finally to the Traffic Management Office (TMO) to be shipped to the customer. The following is an example of some priorities and their corresponding time frames:

<u>PRIORITY</u>	<u>TIME</u>	<u>TRANSPORTATION PRIORITY</u>
01, 02, 9999	4 HOURS	TP – 0
02 – 04	1-DAY	TP – 1
05 – 09	2 DAYS	TP – 2
10 – 19	7 DAYS	TP – 3
CIS	21 DAYS	TP – 4

9. AMPHIBIOUS SHIPS

a. Amphibious Ships

1. LCC- Amphibious Command Ship
2. LCC's Mission
3. Command ship of the amphibious forces
4. CATF Commander Amphibious Task Force
5. CLF Commander Landing Force
- 6 Command and control ship for the land, air, and sea elements
7. One helicopter landing spot. **Contains many advance computer and communication systems.**

b. LSD- Dock Landing Ship – The assigned mission of the amphibious assault ship landing ship dock (LSD) is to transport elements of the amphibious task force to the objective area and launch preloaded landing craft and/or amphibious vehicles, together with their crews and embarked landing force personnel. These ships also provide limited docking and repair service to small boats and landing craft.

c. LPD Amphibious Transport Dock

1. LPD's Mission is to transport personnel and equipment and land them by means of preloaded landing craft or amphibious vehicles carried in the ships well deck or by landing craft/helicopters embarked on other ships.
2. Has two Helo Spots
3. Well deck supports one LCU or one LCAC
4. Newer versions have a telescoping hanger.
5. Equipped with a 30 Ton Boat and Aircraft Crane (B&A), which can be used for over the side loading of landing craft or aircraft repair.

d. LPD 17. A new ship that is expected to be delivered to the fleet in 2004 is the LPD 17, the San Antonio Class. The main purpose of this ship is to accommodate the Marine Corps' mobility triad which is The Advanced Amphibious Assault Vehicles (AAAV), Landing Craft Air Cushion (LCAC), and the Marine Corps new tilt rotor MV-22 Osprey for high speed, long-range tactical-lift operations.

e. LHA

1. LHA- Amphibious Assault Ship. (General Purpose)
2. LHA's Characteristics- Transport personnel and their equipment and act as a Launching Platform so they may land in the objective area by means of embarked aircraft, landing craft, and amphibious vehicles. The LHA has a flight deck with 9 spots, which can accommodate the AV-8B, CH-53E, CH-46, AH-1 and UH-1.
3. Store 4 LCU's or 1 LCAC
4. May be used as a command and control ship
5. 40-ton aircraft elevator aft and 20-ton aircraft elevator portside
6. Stores deployments air assets and commands air assault

f. LHD

1. LHD- Amphibious Assault Ship. (Multipurpose)
2. The mission of the LHD is to embark, deploy, and land elements of a Marine Landing force in an amphibious assault by helicopters, landing craft, and amphibious vehicles and/or by combination of these methods. The LHD is assigned a secondary mission of sea control and power projection in which additional fixed-wing vertical/short takeoff and landing (VSTOL) aircraft and helicopters are deployed.

10. DEBARKATION

a. General. The Commanding Officer of each ship is responsible for the unloading of troops and cargo once reaching the objective. This task is usually delegated to the Team Embarkation Officer (TEO).

1. Deployment Planning. During deployment planning, decisions are made to provide for a time-phased movement of troops, equipment and supplies into the objective area. This time-phased movement is required not only because of limited availability of aircraft and sealift, but also control purposes and to ensure the orderly buildup of forces and supplies. Normally, three separate transportation echelons are required for the amphibious assault (i.e., Assault Echelon (AE), Assault Follow-on Echelon (AFOE) and follow up.

b. Assault Echelon. The element of a force that is scheduled for initial assault of the objective area is the assault echelon. The Landing Force Assault Echelon consists of those assault troops, vehicles, aircraft, equipment, and supplies required to initiate the assault landing. The Landing Force Assault Echelon includes those elements which arrive in the Amphibious Objective Area (AOA), on or in some cases, before D-Day,

amphibious assault shipping air transported units such as airborne factors that are scheduled for the initial assault; and self-deployed aircraft and air transported supported units required for the initial assault.

c. Assault follow up Echelon. In order to accomplish its purpose, the assault follow-on echelon (AFOE) is normally required in the objective area no later than 5 days after commencement of the assault landing. The AFOE may arrive on a time schedule with some elements required in the objective area as early as D-Day to facilitate ship to shore movement or remain in a specified area until called forward by CTAF as requested by CLF. Planning for the AFOE must be done concurrently with planning for the assault echelon and the follow up.

1. That portion of the AFOE that arrives by surface is carried in assault shipping. When sufficient amphibious assault shipping is not available, MSC or commercial shipping may be assigned.

2. That portion of the AFOE that arrives by air is delivered to an airfield for subsequent introduction into the operation. Since an airfield may not be available in the objective area, these units, vehicles, aircraft, equipment, and supplies may be required to fly in at any time; e.g. pre D-Day, or post D-Day.

d. Follow Up. The follow up personnel, supplies and equipment are transported to the objective area in follow-up shipping. The follow-up echelon may also provide forces for base development and subsequent operations ashore.

e. Unloading Plan. The debarkation officer prepares the detailed unloading plan within the framework established by the embarkation team officer. The unloading of cargo is normally sequenced in reverse of the loading of the ship. The unloading plan should include the following:

1. Unloading Priorities.
2. List of Ships Platoon Personnel.
3. Special Instructions.
4. Types of Cargo.
5. Special equipment required for unloading and reporting sequence.

11. FIELD WAREHOUSE AREA

a. General. Once supplies and equipment are ashore, establishment of a field warehouse area is essential for continual supply support.

b. Area Selection. Advance knowledge of the landing area can minimize problems when selecting a field warehouse location. Factors to consider are as follows: **You can find the factors in MCO P4450.7_ page 3-3.**

1. **Terrain**. An ideal location is one that is level, adequate drainage, and accessible.
2. **Cover**. When possible natural cover and concealment should be used.
3. **Access Roads**. These roads should be capable of supporting heavy traffic regardless of weather conditions.
4. **Fire Protection**. Fire extinguishers, buckets, barrels, and other fire fighting tools should be available and easily accessible.
5. **Size and Security**. The size of the warehouse area should be large enough to provide support and still be able to be defended.

c. Supply Officer. Ideal situations do not always exist; therefore, engineer support may be required to level ground, establish barriers and create access roads.

12. SUPPLY DUMP LAYOUTS

a. General. A supply dump layout is an overlay (plan) of the storage area to be used. It identifies the location of all supply containers, supply facilities, and traffic patterns. The uses of such layouts are based on factors such as that units mission, terrain, road accessibility and climate.

b. Types. There are basically two types of Supply Dump Layouts. **You can find the types of Supply Dumps in MCO P4450.7_ page 3-4**

1. Roadside Dump Layout. **Refer to MCO P4450.7_ page 3-6.**
2. Depth Storage Layout.

13. PROTECTION OF SUPPLIES

a. General. The protection of supplies and equipment in a field environment is essential not only for mission accomplishment, but for safety of personnel. **You can find protection of supplies in MCO P4450.7_ page 3-4.**

b. Principles. There are three principles that must be considered when protecting supplies and equipment.

1. Adequate Shelter. This can be accomplished by using existing buildings or caves. This can also be accomplished with the use of tents and tarpaulins.

2. Dunnage. The use of wooded planks or concrete blocks can be used to elevate supplies and equipment. The type of soil and drainage also has to be considered.

3. Ventilation. Adequate ventilation (2 feet of air space) must be maintained if supplies and equipment are covered.

c. Supply Officer. **SAFETY!** Safety must be considered during the planning of the field warehouse. Keep in mind that the Marines have to navigate in the warehouse with Material Handling Equipment (MHE) in order to provide supply support for the operation.

(SUMMARY)

1. Definitions
2. Embarkation Key Billets
3. Embarkation Planning
4. Packing
5. Marking Containers
6. Shipping Priorities
7. Amphibious Ships
8. Debarkation
9. Field Warehouse Area
10. Supply Dump Layouts
11. Protection of Supplies

REFERENCES:

**JOINT PUBLICATION 1002
LANDING FORCE MANUAL 03
MIL-STD-2073-1C
MCO P4030.21_
DOD 4145.19-R
MCO P4450.7_**