Joint Pub 4-01.5

Joint Tactics, Techniques, and Procedures for Water Terminal Operations

21 June 1996

PREFACE

1. Scope

This publication addresses the requirements and responsibilities and provides guidelines for operation of water terminal facilities in support of a US joint force.

2. Purpose

This publication has been prepared under the direction of the Chairman of the Joint Chiefs of Staff. It sets forth doctrine and selected tactics, techniques, and procedures (JTTP) to govern the joint activities and performance of the Armed Forces of the United States in joint operations and provides the doctrinal basis for US military involvement in multinational and interagency operations. It provides military guidance for the exercise of authority by combatant commanders and other joint force commanders and prescribes doctrine and selected tactics, techniques, and procedures for joint operations and training. It provides military guidance for use by the Armed Forces in preparing their appropriate plans. It is not the intent of this publication to restrict the authority of the joint force commander (JFC) from organizing the force and executing the mission in a manner the JFC deems most appropriate to ensure unity of effort in the accomplishment of the overall mission.

3. Application

a. Doctrine and selected tactics, techniques, and procedures and guidance established in this publication apply to the commanders of combatant commands, subunified commands, joint task forces, and subordinate components of these commands. These principles and guidance also may apply when significant forces of one Service are attached to forces of another Service or when significant forces of one Service support forces of another Service.

b. The guidance in this publication is authoritative; as such, this doctrine (or JTTP) will be followed except when, in the judgment of the commander, exceptional circumstances dictate otherwise. If conflicts arise between the contents of this publication and the contents of Service publications, this publication will take precedence for the activities of joint forces unless the Chairman of the Joint Chiefs of Staff, normally in coordination with the other members of the Joint Chiefs of Staff, has provided more current and specific guidance. Commanders of forces operating as part of a multinational (alliance or coalition) military command should follow multinational doctrine and procedures ratified by the United States. For doctrine and procedures not ratified by the United States, commanders should evaluate and follow the multinational command's doctrine and procedures, where applicable.

For the Chairman of the Joint Chiefs of Staff:

WALTER KROSS
Lieutenant General, USAF
Director, Joint Staff

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Water Terminals

The establishment and employment of water terminals is key in supporting joint operations.

Water terminals are key nodes in the total distribution system that must be established to ensure the success of a military operation. Water terminal selection must consider all relevant factors, because sustainment will hinge heavily on the water terminal's effectiveness. **Geographic combatant commanders are responsible for maintaining an effective distribution network** throughout the range of military operations and for prescribing policies and procedures relating to that distribution network within their theaters. The selection and operation of water terminals within the continental United States is the responsibility of the Commander in Chief, US Transportation Command (USCINCTRANS).

Water terminals can be categorized based on three main characteristics; physical facilities, commodity handled, and methods for cargo handling.

The three types of water terminals are: fixed water terminals, which are highly sophisticated in facilities, equipment, and organization; **unimproved water terminals,** those which lack sufficient water depth or materials handling equipment (MHE), or berthing space or any combination thereof; **and unprepared beach operations (bare beaches),** which is the least desirable terminal to operate. Individual water terminals are categorized by the commodities handled at a specific terminal. **Constant coordination is needed between terminal commanders and receiving units** concerning inspections, unloading, clearance, courier service, safety, and special security requirements to deal with ammunition and other hazardous cargo. **Methods of cargo handling include containerization** (the transport of goods in standardized boxes meeting international standards), breakbulk/crater/palletized or in original item configuration such as with rolling stock. The loading or discharge of these items can be accomplished by cranes, MHE (forklifts) or lighters or a combination of those pieces of equipment depending on the situation.

The Commander in Chief, US Transportation Command is responsible for providing designated geographic combatant commanders with strategic transportation support to deploy and sustain their forces.

The responsibilities of the USCINCTRANS also include developing a system to assist the combatant commander in tracking the movement of units and supplies into the theater. The United States Transportation Command's (USTRANSCOM's) Global Transportation Network, as it interfaces with the Joint Operation Planning and Execution System, will provide the combatant commander with force tracking and in-transit visibility support capability. USCINCTRANS uses its transportation component commands, Air Mobility Command, Military Sealift Command (MSC), and Military Traffic Management Command to execute these tasks.

Water Terminal Operations Planning

Water terminal operations must be planned and coordinated to consider cargo flow from origins to destinations in the theater.

Planning would typically involve the joint force staff and Service components, in coordination with USTRANSCOM and its Transportation Component Commands. **The general considerations for water terminal planning are geophysical characteristics of theater, steps in water terminal planning, and basic factors in planning discharge operations.** Different phases are needed to reflect changes in type and volume of cargo that are more efficiently handled by different types of water terminals. **The four deployment phases are initial or surge, tactical resupply, sustained resupply, and build-down or redeployment.** Terminal throughput capacity estimation encompasses a careful evaluation of several factors: reception, discharge, transfer, storage, and clearance.

Ship arrival planning schedules must be coordinated in order to be efficient and timely while handling supplies.

The single most important factor in the efficient loading or discharge of a ship is possession of an accurate hold arrangement or capacity plan and cargo stowage plan for the vessel in question. In addition to documentation required by existing regulations, the water terminal commander will normally require the following: passenger manifests, cargo reports, ship traffic, workload projections, and personnel and equipment summaries.

Water Terminal Operations

Strategic sealift is the principal means of delivering equipment and logistic support for land, air, and sea forces in a major conflict.

Water terminal operations can include MSC common-user vessels, maritime prepositioning ships, commercial vessels on charter to MSC or vessels provided by a host or coalition nation. In off-loading these vessels where port facilities are less than adequate lighterage or watercraft may be used. The three sources of capabilities in an overseas area are: military assets assigned to the combatant commander, host-nation support negotiated through bilateral or multilateral agreements, or by

commercial hire of or charter service from a third nation. Strategic lift ships will require support upon their arrival in theater. The Port Commander and/or the Military Sealift Representative needs to ensure berths, anchorages, ship arrival meetings, ship chandler services, and ship support services are coordinated for strategic sealift vessels.

Cargo off-load of strategic sealift may be conducted by Navy, Marine, Army, or joint terminal forces and be augmented by host-nation support, civilian ship crews, and stevedores, depending on the scenario.

Based on the vessel manifest and cargo disposition instructions received at the discharge terminal the Water Terminal Commander plans for the discharge of individual ships. This planning is done in advance working closely with the transportation movement team, terminal cargo transfer companies and commercial stevedoring companies. An assessment of MHE requirements is made and the port clearance capability is evaluated. Prior to a ship's discharge, the Water Terminal Commander will conduct a ship's meeting with the vessel master and his staff as necessary, having a number of individuals from different organizations attend this meeting, usually calling this the boarding party.

The water terminal commander establishes reception and clearance procedures to achieve the combatant commander's objectives. A key to efficient terminal reception and clearance operations is marshalling yards.

Efficient loading and discharging of vessels requires rapid and controlled movement of cargo between ship and shore. Improvements in cargo packaging, particularly containerization, increase ship and cargo-handling productivity. **The cargo marshalling yard is an essential part of this shoreside operation**, providing a place to hold and process cargo pending further movement. Pier space nearest the discharging vessel must be kept clear of discharging cargo to execute an efficient download, marshalling areas provide a quick means of clearing the immediate pier areas. Marshalling yards are organized to meet operational requirements with available space and are located as near the vessel, rail, air, truck cargo transfer site as practicable. **The objective of ship discharge operations is to maximize the onward movement of cargo while minimizing the turnaround time of the ship**. One way to achieve this is to have the terminal tractors available and positioned properly at the cranes working the ship. Cargo movement by rail, marshalling yard procedures, and security all help control, maximize, and secure the movement of cargo.

CONCLUSION

Water terminals are key nodes in the total distribution system that must be established to ensure the success of a military operation. Historically, approximately 85 to 95 percent of the unit equipment and sustainment cargo is moved into a theater using sealift and is off-loaded through existing seaports or water terminals. **Water terminals are absolutely**

vital to deploying and sustaining a joint force and could be among the initial key objectives seized during a forcible entry. Water terminal selection must consider all relevant factors, because sustainment will hinge heavily on the water terminal's effectiveness. Without adequate water terminals, a geographic combatant commander's deployment, employment, and sustainment concepts may become insupportable.

CHAPTER I
WATER TERMINALS OVERVIEW

"Ships. . .must have secure ports to which to return, and must be followed by the protection of their country throughout the voyage."

Alfred Thayer Mahan
The Influence of Sea Power Upon History, 1890

1. Purpose

This chapter contains an overview of the establishment and employment of water terminals in support of joint operations. It defines command relationships and discusses key definitions to facilitate an understanding of the doctrinal concepts presented in subsequent chapters. The chapter also presents the responsibilities of supporting and supported geographic combatant commanders. It concludes by summarizing the responsibilities of component commanders and the Service capabilities to operate water terminals.

2. General

Water terminals are key nodes in the total distribution system that must be established to ensure the success of a military operation. Historically, approximately 85 to 95 percent of the unit equipment and sustainment cargo is moved into a theater using sealift and is off-loaded through existing seaports or water terminals. **Water terminals are absolutely vital to deploying and sustaining a joint force** and could be among the initial key objectives seized during a forcible entry. Water terminal selection must consider all relevant factors, because sustainment will hinge heavily on the water terminal's effectiveness. Without adequate water terminals a geographic combatant commander's deployment, employment, and sustainment concepts may become insupportable.

3. Command Authority

The provisions of Joint Pub 0-2, "Unified Action Armed Forces (UNAAF)," will be

In joint operations, the vast majority of equipment and sustainment cargo is moved via sealift and is off-loaded through existing seaports or water terminals.

followed when establishing command authority relationships relating to the operation of water terminals. Geographic combatant commanders exercise combatant command (command authority) (COCOM) over assigned forces. COCOM includes the authority to give direction over all aspects of military operations, joint training, and logistics necessary to accomplish the missions assigned to the command. **Geographic combatant commanders are responsible for maintaining an effective distribution network across the range of military operations** and for prescribing policies and procedures relating to that distribution network. Thus, **geographic combatant commanders have overall responsibility for water terminal operations within their theaters.** The geographic combatant commander may delegate this responsibility to subunified commanders or joint task force (JTF) commanders in the conduct of their assigned missions.

4. Selection and Operation of Water Terminals

The selection and operation of water terminals **within the continental United States (CONUS)** is the responsibility of the Commander in Chief, US Transportation Command (USCINCTRANS). The selection and operation of water terminals **in an overseas theater** is the responsibility of the geographic combatant commander. However, the geographic combatant commander may opt to enter into command arrangement agreements (CAA) with USCINCTRANS to allow the US Transportation Command (USTRANSCOM) to operate some or all water terminals in the theater.

5. Categories of Water Terminals

Water terminals can be categorized based on three main characteristics: **physical facility, commodity handled, and methods for cargo handling**. See Figure I-1.

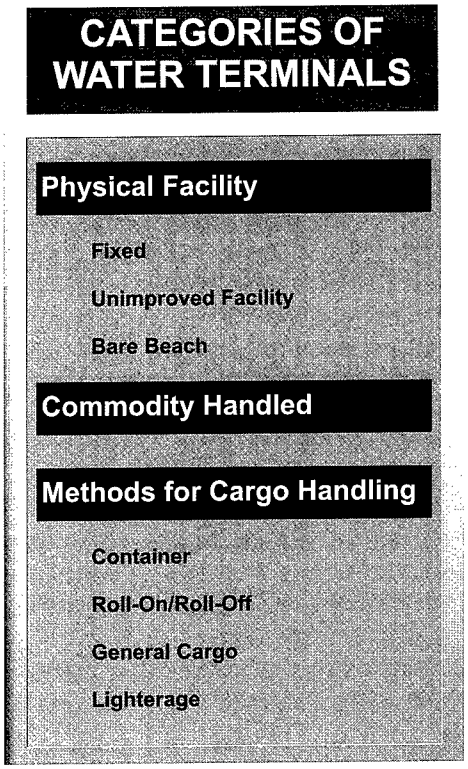


Figure I-1. Categories of Water Terminals

a. **Physical Facility.** The three types of terminals based on the physical facility are fixed, unimproved facility, and bare beach.

- **Fixed.** Fixed water terminals are **where deep-draft vessels come alongside for berthing and discharge cargo directly onto a wharf, pier, or quay**. The cargo is then moved to in-transit storage areas to await terminal clearance or loaded directly onto surface transport for onward movement. Fixed terminals are generally characterized by a high degree of sophistication in facilities, equipment, and organization to support cargo handling and port clearance operations. They are the most capable terminals for handling large volumes of equipment and

containerized cargo. In any military operation of meaningful size, **the geographic combatant commander must strive to acquire or develop fixed facilities for mission accomplishment.**

- **Unimproved Facility.** An unimproved water terminal is **a site not specifically designed for cargo discharge**. It does not have the facilities, equipment, or infrastructure of a fixed water terminal. An unimproved water terminal facility may lack sufficient water depth, materials handling equipment (MHE), and berthing space to accommodate strategic sealift vessels with deep draft. Vessels may anchor in the harbor having shallow draft watercraft lighter loads to or from the vessel. This type of operation is normally established when fixed water terminals are not available or to increase throughput to meet increasing requirements of the joint force.

- **Bare Beach.** For this type of operation, **lighterage is used to off-load ships at anchor, and cargo is moved over a beach or to the shore**. Beach facilities require specifically selected sites to enable lighterage to move cargo to or across the beach into marshalling yards or onto clearance transportation. Bare beach operations are conducted under less than desirable conditions, and their establishment requires significant engineer support to prepare access routes to and from the beach. **Bare beach facilities should be established only when no other terminal facilities are available** and should not be relied upon to support major military operations for significant periods of time (in excess of 60 days). This type of operation is discussed in detail in Joint Pub 4-01.6, "Joint Tactics, Techniques, and Procedures for Joint Logistics Over-the-Shore (JLOTS)."

b. **Commodities Handled.** Individual water terminals are categorized by the types of cargo handled at a specific terminal. **The special requirements for handling ammunition, explosives, bulk fuel, and other hazardous cargo must be carefully planned.** Constant coordination is needed between terminal commanders and receiving units concerning inspections, unloading, clearance, courier service, safety, and special security requirements to deal with ammunition and other hazardous cargo. **Provisions must be made for classified storage facilities**, and personnel must be

SEA PORTS OF DEBARKATION IN THE PERSIAN GULF

The Coalition was fortunate that Saudi Arabia has an excellent port infrastructure, with seven major ports capable of handling large quantities of material daily. Four of the major ports are on the Persian Gulf coast; three are on the Red Sea coast. The two principal theater seaports, Ad-Dammam and Al-Jubayl, had heavy lift equipment, warehouses, outdoor hardstand storage and staging areas, and good road networks around the port facilities. The warehouses generally were full, though, and there was not enough storage capacity at these port facilities to handle the large amount of equipment and supplies that arrived in such a short period. Saudi Arabia cooperated fully in making the port facilities available, and allocated more than 70 percent of the throughput capability in the theater to support Coalition forces.

SOURCE: Final Report to Congress
Conduct of the Persian Gulf War, April 1992

properly cleared for handling classified cargo. Additionally, bulk fuel ships will normally dock at special fuel unloading facilities; however, they may also be discharged at offshore anchorages using specialized equipment.

c. **Methods for Cargo Handling.** Water terminals are categorized by the type of cargo-handling capability being employed. These handling capabilities are listed below.

- **Container.** Containerization is the term used to describe the transportation of goods in standardized boxes or containers (usually 8-feet wide by 8-feet high by either 20- or 40-feet long) so that shipments may be unitized and thereby reduce handling costs and increase cargo security during movement. **In general, a significant infrastructure (cranes, specialized MHE and secure open storage space) is required in the container terminal** to receive, handle, store, and dispatch containerized cargo. The most significant infrastructure element is the large gantry-type container-handling crane used to load and discharge ships. Because of this extensive infrastructure requirement, **container terminals are usually fixed facilities**. However, containers may be moved using a vessel's organic cranes (e.g., from a self-sustaining container ship or by a auxiliary crane ship). In these cases, shore cranes are not required. When using container-handling cranes at a fixed-terminal facility, loading or discharge rate can approach 600 containers per crane per day per berth. Ships loading or discharging cargo frequently employ two or more container gantry cranes simultaneously. These terminals can handle all types of nonbulk dry cargo and some dry and liquid bulk cargos in specially configured containers. When operationally feasible and the tactical situation allows, **container operations are the preferred method for handling cargo through a water terminal**, especially when large volumes are required for sustainment operations. Container management and onward movement may have negative impact on operations and must be balanced with other logistic considerations (See Joint Pub 4-01.7, "JTTP for Use of Intermodal Containers in Joint Operations").

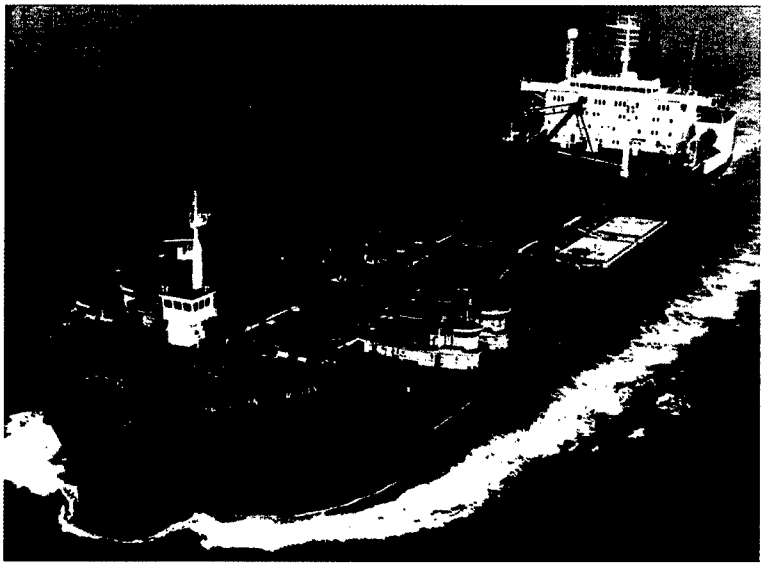
Containerized cargo may be handled adequately using either ships gear or unit cranes at water terminals without an extensive infrastructure.

- **Roll-On/Roll-Off.** Roll-on/roll-off (RO/RO) operations use ships designed to carry vehicles. Vehicles may either be driven or towed on and off ships. **RO/ROs are the preferred method of transporting vehicular unit equipment overseas.** Because of the requirement for parking large numbers of vehicles, RO/RO terminals should ideally have sufficient open hard surface storage space

as well as wharfs, piers, or quays with wide aprons and fixed facilities. A RO/RO discharge rate of approximately 4,000 square feet or 55 pieces of rolling stock per hour is normal. For an equivalent square footage, heavy tracked vehicles take longer to load or discharge than light nontactical vehicles. Loading operations at a RO/RO terminal may take up to twice as long as the discharge operation, depending on the familiarity of terminal personnel with the characteristics and operation of military vehicles. Many RO/RO terminals can handle containerized cargo.

- **General Cargo. General cargo (breakbulk) are those items loaded aboard a ship and handled in their basic shipping package or configuration.** Individual packages or shipping units may be palletized or otherwise unitized for ease in handling but not loaded into a standard shipping container as described above. On the average, breakbulk terminals can handle up to 2,500 MTONs of cargo each day per ship. As a minimum, the berth should (a) have an apron for the full length of the ship, (b) be sufficiently wide to support MHE operations, and (c) provide sufficient covered storage to protect the cargo until it is loaded aboard ship or until surface transportation is available for onward movement to its destination. **General cargo (breakbulk) is a time-consuming, MHE-dependent, and manpower-intensive method of handling cargo.**

- **Lighterage.** This cargo handling method involves using self-propelled and towed floating craft to carry cargo between a ship at anchor and a fixed, unimproved, or bare beach facility. **Lighterage operations are inherently hazardous, complex, time consuming, manpower intense, and may involve cargo in containers, RO/ROs, or breakbulk configurations.** This method should be used only when no other capability is available, when moving cargo through inland waterways to inland terminals, or to augment other ongoing cargo-handling operations. Some equipment used to perform these operations include lighter aboard ship (LASH) and seabee barge



Water terminal equipment can be moved to locations where it is required using heavy lift sealift capabilities.

(SEABEE) barges, commercial self-propelled and towed barges, and Army and Navy landing craft.

6. Responsibilities of USCINCTRANS

USCINCTRANS is responsible for **providing designated geographic combatant commanders with strategic transportation support to deploy and sustain their forces.** This support is normally developed while following the deliberate or crisis action planning process of the Joint Operation Planning and Execution System (JOPES). Part of this planning involves the routing of units and cargo to USCINCTRANS-designated ports of embarkation (POEs). The POEs are selected by USCINCTRANS in coordination with the supported and supporting combatant commanders and the Chairman of the Joint Chiefs of Staff. The responsibilities of USCINCTRANS also include **developing a system to assist the combatant commander in tracking the movement of units and supplies into the theater.** USTRANSCOM's Global Transportation Network, as it interfaces with JOPES, will provide the combatant commander with the force tracking and in-transit visibility support capability. USTRANSCOM uses its transportation component commands (TCCs), Air Mobility Command, Military Sealift Command (MSC), and Military Traffic Management Command (MTMC) to execute these tasks. MSC and MTMC are the USTRANSCOM TCCs directly involved with sealift and water terminal operations.

a. **Military Sealift Command.** MSC is the Navy component command of USTRANSCOM and **is responsible for common-user ocean transportation operations.** MSC is responsible for the preparation of employment plans for and the expansion of MSC common-user sealift transportation in time of war and/or national emergency. MSC has Military Sealift Command Offices (MSCO) at many CONUS and some overseas POEs. Other MSCOs may be established in time of conflict both in CONUS and overseas, as directed by USCINCTRANS. Each MSCO is responsible for coordinating the arrival, loading or discharge and departure of vessels under the operational control (OPCON) of MSC and the water terminal commander. Joint Pub 4-01.2, "JTTP for Sealift Support of Joint Operations," contains more information on the operations of MSC.

b. **Military Traffic Management Command.** MTMC is the USTRANSCOM Army component command and also a major Army command. **MTMC provides traffic management, CONUS-based surface transportation, strategic seaports, designates the sea ports of embarkation (SPOE) for all CONUS terminals, and mandates unit cargo arrival times at SPOEs.** Additionally, MTMC serves as the point of contact for obtaining and contracting commercial containers. MTMC may establish a memorandum of understanding (MOU) with Service component commanders to identify port support activities (PSAs) or augment Service-unique water terminal organizations.

7. Responsibilities of the Supported Joint Force Commander

a. The supported combatant commander is responsible for **identifying the deployment and sustainment requirements of the joint force** to accomplish the tasks assigned by the National Command Authorities (NCA). These requirements are usually identified through the joint planning process. As a part of this process, the combatant commander develops a theater total distribution system for the reception, staging, onward movement, and integration, and sustainment of the force. **In coordination with component commanders and USTRANSCOM, the combatant**

SINGLE MANAGER FOR WATER TERMINALS

Military Traffic Management Command (MTMC) is the DOD single manager for military traffic management, CONUS land transportation, common-user worldwide water terminals, and intermodal movement. MTMC relies upon its active and Reserve Component personnel to support deployments by air and sea. During Operations DESERT SHIELD and DESERT STORM, MTMC was responsible for loading 560 ships, carrying 945,000 vehicles and other cargo, and for arranging the transport of 37,000 containers.

SOURCE: Multiple sources

commander selects the water terminals and units to operate these facilities. Water terminal operations forces are normally organized along Service functional lines. **The Army component is normally responsible for water terminal operations in theater,** and its transportation units are specially designed to provide command and control of operating units responsible for terminal services. The size of the designated seaport of debarkation (SPOD), the combatant commander's (CINC's) deployment flow requirement, and the availability of host-nation support (HNS) will normally determine the port commander and subordinate terminal units required. Where host nation (HN) or contract labor is assured, the combatant or subordinate joint force commander may direct the establishment of a CAA with USCINCTRANS for MTMC to open and operate a port in theater. However, **the selection of a water terminal commander is a prerogative of the combatant or subordinate joint force commander,** and is normally based on the capabilities of a component to operate water terminals together with the deployment and sustainment requirements of the entire force. Finally, the combatant commander may augment water terminal operations with personnel through coordination with USTRANSCOM.

b. The integration of the total theater transportation system can be maintained through a designated joint movement center (JMC) or activity. **The JMC will coordinate the employment of all means of theater transportation in support of the combatant or subordinate joint force commander's concept of operations.** This coordination is accomplished through the establishment of transportation policies within the assigned area of responsibility and/or joint operations area, consistent with relative urgency of need, port and terminal capabilities, transportation asset availability, and priorities set by a joint force commander. The JMC will ensure that the transportation network is adequately established in the communications zone and readied for expansion throughout the combat zone as the theater matures. The JMC commander will be responsible to the subordinate joint force commander (JFC) or logistics officer (J-4) as directed by the combatant commander. The JMC will prioritize movements among the different intratheater modes in accordance with the combatant commander's requirements and will advise the commander on the types and flow of logistic units into the theater. Detailed organization and responsibilities of the JMC are delineated in Joint Pub 4-01.3, "Joint Tactics, Techniques, and Procedures for Movement Control."

c. **Designation of PSAs or Service-unique water terminal organizations are elements to be considered by the combatant commander.** For example, PSAs are ad hoc organizations, usually established by the deploying and receiving force in coordination with the water terminal

commander at the SPOE or SPOD. The PSA performs limited maintenance on deployable equipment and provides operators for unique equipment. The PSA is usually placed under the OPCON of the water terminal commander. Detailed information on how PSAs are used can be found in subparagraph 12b of Chapter II, "Water Terminal Operations Planning."

d. **The combatant commander must also ensure that an Ocean Cargo Clearance Authority (OCCA) is established for the theater.** The OCCA, working with the component movement control activities, is responsible for the required coordination to effect the movement of cargo destined for retrograde or redeployment sealift to CONUS or other overseas areas. If the combatant commander opts for USTRANSCOM to operate the ports in the theater, MTMC will perform the OCCA functions at each terminal for which it has responsibility.

8. Responsibilities of the Supporting Combatant Commander

A requirement may develop for **one combatant commander to support another**. Usually, this support involves assistance in deployment and sustainment. The supporting combatant commander follows the procedures explained above when establishing and operating water terminals outside the continental United States (OCONUS).

9. Responsibilities of the Service Component Commanders

The Service component commanders **develop supporting plans to achieve the objectives of the combatant commanders.** When developing these plans, Service component commanders recommend concepts of operation for water terminals to support the overall strategy. These recommendations establish how these terminals are to be staffed and operated. Normally, Service component commanders provide the resources to staff PSAs or Service-unique water terminal organizations. Appendix A, "Terminal Units," contains details on unit capabilities, by Service, to support water terminal operations.

CHAPTER II
WATER TERMINAL OPERATIONS PLANNING

"When we speak of command of the seas, it does not mean command of every part of the sea at the same moment, or at every moment. It only means that we can make our will prevail ultimately in any part of the seas which may be selected for operations, and thus indirectly make our will prevail in every part of the seas."

Winston Churchill
(to the House of Commons), 11 Oct 1940

1. Purpose

This chapter addresses planning for the operation of water terminals during joint operations. It begins at the strategic level and concludes with considerations applicable at the terminal unit level.

2. General

To efficiently accomplish the mission of placing personnel and materiel where and when needed, **water terminal operations must be planned and coordinated to consider cargo flow from origins to destinations in the theater**. Water terminal operations have a major impact on the transportation system because movements go through the SPOE to the theater SPOD terminals. The reverse is true during redeployments. Vessel discharge and port clearance are key elements in planning to ensure the smooth flow of cargo and passengers. **When rapid off-load and harbor clearance are critical operational factors, cargo should be containerized** or, at a minimum, palletized to the maximum extent possible to speed up handling and consolidation for direct movement to the ultimate receiving activity. Water terminal operators must be alert to these capabilities and their fluctuations when planning terminal operations.

3. Joint Operation Planning at the Strategic Level

Joint operation planning is conducted within the chain of command that extends from the NCA to the combatant commanders and is primarily the responsibility of the Chairman of the Joint Chiefs of Staff and the combatant commanders. **Joint operation planning is accomplished using deliberate and crisis action procedures** and includes the preparation of joint operation plans (OPLANs) by the combatant commanders, as well as those joint planning activities that support the preparation of OPLANs by providing for strategic direction and integration with the functions of the Military Departments and Services. The Joint Pub 5 series establishes the joint planning process. Joint Pub 5-0, "Doctrine for Planning of Joint Operations," establishes doctrine and general principles. The Joint Pub 5-03 series explains the JOPES. Specific applications for transportation at this level are found in Joint Pub 4-01, "Joint Doctrine for the Defense Transportation System." The strategic level of planning establishes the context in which the combatant commander identifies requirements for seaports where water terminals will need to be operated.

SEALIFT

Strategic sealift was crucial both for deploying forces to Saudi Arabia and for their sustainment. Although personnel usually were flown to the Gulf, most equipment and supplies were sent by sea. Because of the huge amounts of heavy equipment requiring transport, and the limited strategic assets available to lift this equipment within the time CENTCOM specified, TRANSCOM had to manage sealift assets carefully and put sealift elements in motion immediately. Close coordination among the entire transportation network was necessary to ensure that airlifted personnel reached the theater near the date their equipment was scheduled to arrive. Arrival of personnel before their equipment would increase the burden on the Saudi infrastructure. It also would expose troop concentrations in the port areas to possible enemy attack by ballistic missiles, aircraft and terrorists.

SOURCE: Final Report to Congress, Conduct of the Persian Gulf War, April 1992

4. Joint Force Staff Planning

A determination as to numbers, types, and locations of terminals within the theater or joint operations area results from staff planning at several levels. Planning would typically involve the joint force staff and Service components in coordination with USTRANSCOM and its TCCs. **Terminal planning normally includes** the following processes.

a. **Computation of the time-phased terminal workload required to support the operation** can be expressed in cargo tonnage (short tons [STONs] per day) or square footage or pieces per day depending on the type of cargo being discharged or loaded.

b. **Estimation of time-phased terminal throughput capacity**, which is the tonnage that can be received, processed, or cleared through the terminal per day.

c. **Estimation of time-phased construction requirements** for both repair and rehabilitation of facilities and construction of new facilities to increase terminal capacity to the required terminal workload. It should be noted that major repair, maintenance, and construction of water terminals is an extremely time- and resource-intensive process that may not be responsive to a rapidly developing crisis. The combatant commander should evaluate carefully the time required to perform rapid repair, rehabilitation, or upgrade of water terminal facilities to achieve significant water terminal throughput capability.

d. **Estimation of time-phased equipment requirements** to ensure sufficient equipment availability to process the required workload through the terminal with maximum efficiency.

e. **Estimation of time-phased personnel requirements** for units and individuals needed for administration and operation in processing the required workload through the terminal.

5. Water Terminal Planning

a. **General Considerations.** General considerations for water terminal planning are listed below.

- **Geophysical Characteristics of the Theater.** Water terminal planning requires a study of the geophysical characteristics of the theater. Factors to

be considered include the physical characteristics and layout of the port and/or beach, the logistic support requirements as determined by the overall concept of operations, the relative locations of highway and inland waterway networks, and the locations of supported and supporting units.

- **Steps in Water Terminal Planning.** As shown in Figure II-1, water terminal planning involves **six basic steps**, with each step developing logically from the preceding one.

- **Basic Factors in Planning Discharge Operations.** Ship type and transfer unit discharge rates determine the personnel requirements in Figure II-1.

b. **Operational Planning.** During this planning stage, **the combatant commander decides** the concept that the joint force will use to staff and operate the water terminals. This decision usually involves **not only the location of the water ports, but how and who will operate the water terminals**; i.e., joint, single-Service, combination, or USTRANSCOM. The campaign plan, developed by the combatant commander, guides this decision. Once selected, terminal units begin their detailed planning effort. Appendix B, "Water Terminal Planning Considerations," contains a list of considerations that should be followed by the terminal commanders to ensure a well-executed discharge operation. These considerations are applicable regardless of the method used by the combatant commander to exercise command and control of the water terminals.

6. Deployment Phases

The different phases reflect changes in type and volume of cargo that are more efficiently handled by different types of water terminals. The four deployment phases are shown in Figure II-2 and discussed below.

a. **Initial or Surge Phase.** This phase is almost entirely dedicated to **the movement of deploying units with their unit equipment, vehicles, and accompanying supplies. This phase will rely predominantly on RO/RO and breakbulk cargo terminals.** A very important factor during this phase is that deploying units require a high level of unit integrity of their personnel, unit equipment, and accompanying supplies. A key consideration during this phase is that the military terminal organization will also be in its early stages of development and will be unable to handle large volumes of cargo by itself. This development stage may be shortened by the early activation and employment of Reserve component water terminal operation units. Significant reliance will be placed on the existing commercial water terminal infrastructure and HNS to handle cargo during this phase. Unimproved or bare beach and/or logistics over-the-shore (LOTS) facilities may be used during this phase as operational circumstances require, but fixed water terminal facilities are greatly preferred, even where they are only marginally operational.

b. **Tactical Resupply.** This phase occurs when the **water terminals must support the minimum-essential materiel levels (readiness) as well as the ability to initiate combat operations**. During this phase, the combatant commander may begin to operate and develop existing water terminal facilities and land transportation nets in a dedicated mode. However, early in this phase, the theater will not be able to support large volumes of cargo (either containerized or noncontainerized) without significant HNS. **This phase's level of deploying unit moves normally decreases with an associated reduction in the number of vehicles being handled.** Some use of unimproved facilities

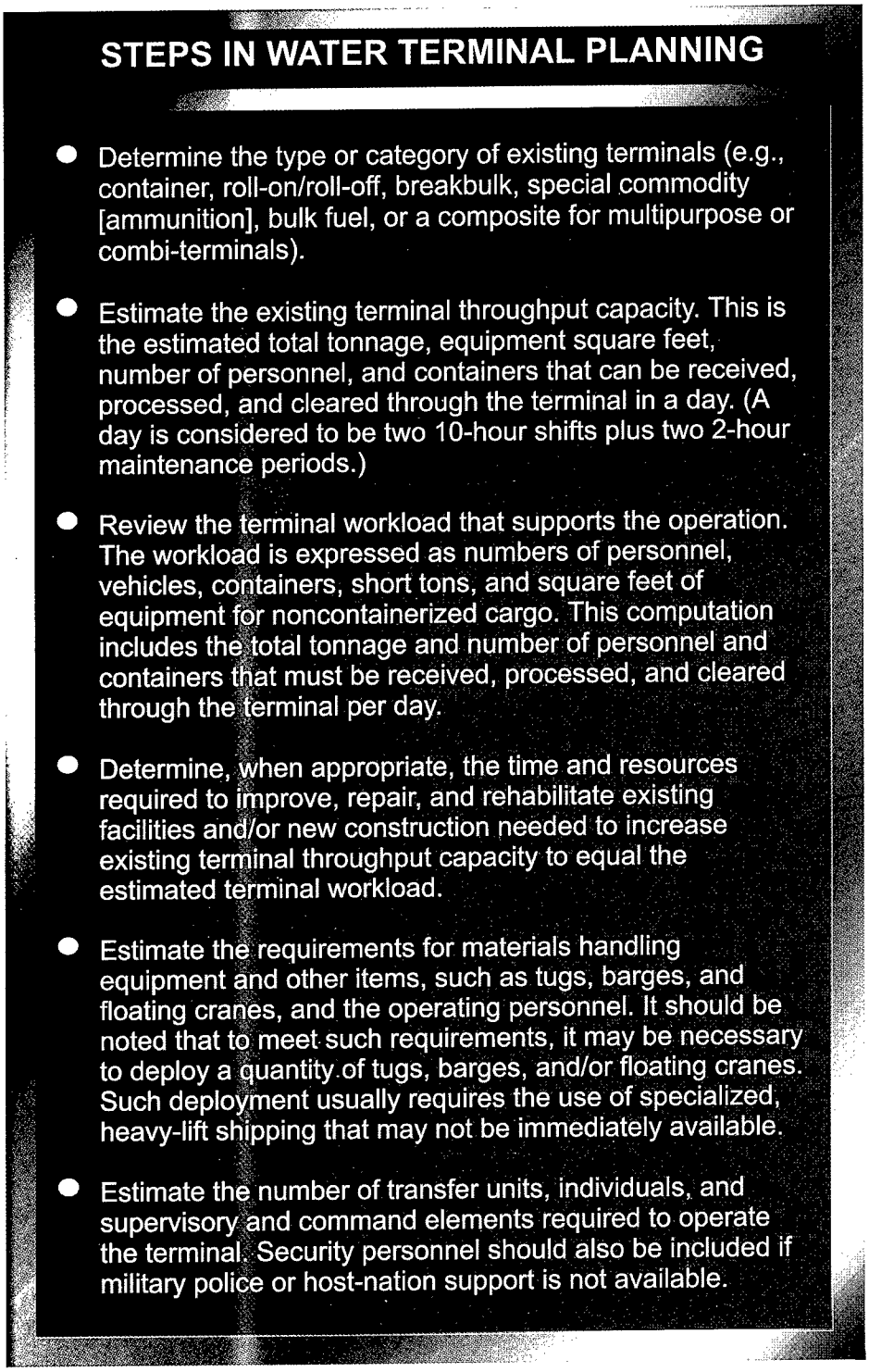


Figure II-1. Steps in Water Terminal Planning

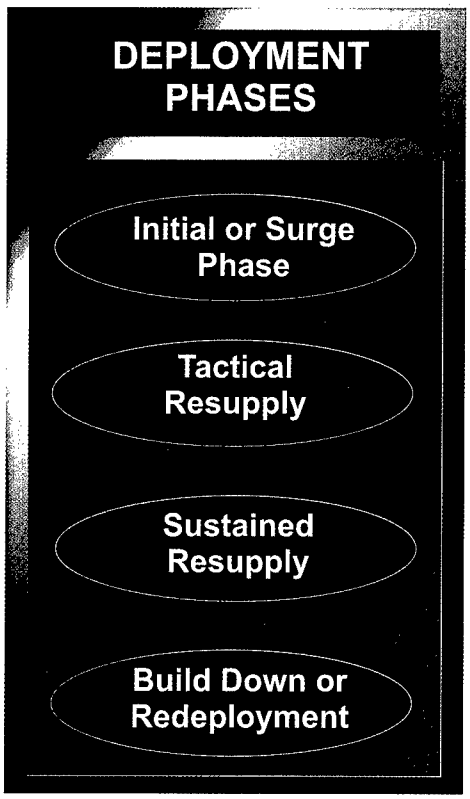


Figure II-2. Deployment Phases

and limited use of bare beach and/or LOTS facilities may be required, based on operational circumstances. To avoid discharge bottlenecks or constraints on operational reach of combat forces, bare beach and/or LOTS use must be minimized, with a strong emphasis by the combatant commander on the use of fixed water terminal facilities.

c. **Sustained Resupply.** This phase occurs when **the water terminals must support the materiel levels necessary to sustain those forces engaged in combat operations**, while building a theater war reserve supply level. Bottlenecks occur when a combatant commander's water terminals and theater transportation net are not able to receive and process large volumes of cargo (both containerized and noncontainerized) for onward movement to their final destination. During this phase, reliance on unimproved or bare beach and/or LOTS facilities must be avoided because they will seriously reduce overall theater cargo throughput capacity and, thereby, the ability to support major land, air, and naval forces.

d. **Build Down or Redeployment.** This phase includes **the transfer of units, personnel, or supplies deployed to one theater to another theater or back to CONUS.** During the tactical and sustained resupply phases, planning for terminal operations to support this phase must be conducted. These plans must consider the prevention of port congestion, means to minimize the effects of port congestion on terminal throughput should it occur, and

HEAVY LIFT SUBMERSIBLE SHIPS

During Operations DESERT SHIELD and DESERT STORM, Afloat Prepositioning Ships (APS) sailed from forward bases in Diego Garcia to the Middle East. The war reserve cargo on board these ships included subsistence, general supplies and equipment, packaged fuel, construction and barrier material, ammunition, and medical supplies. One semi-submersible heavy lift vessel carried port operating equipment (e.g., tugboats, floating cranes, utility landing craft, rough terrain forklifts, containers, and support parts). These ships proved to be indispensable during the operation's first days, providing a readily available source of supplies and the capability to begin water terminal operations immediately upon the arrival of follow-on sealift.

SOURCE: Final Report to Congress Conduct of the Persian Gulf War, April 1992

efficient scheduling to enable simultaneous inbound and outbound cargo operations to be conducted, if required.

7. Cargo Considerations

The amount of containerized, breakbulk, and vehicular cargo greatly influences the transportation plan. In peacetime, the estimated ratio of containerized to noncontainerized cargo is four to one. Return of empty containers within detention-free time allowances must be considered as well as storage of empty containers. In wartime, the large volume of unit equipment to be deployed will initially reverse this ratio; however, as the theater matures, the original ratio will return. Packaging dictates a need for specialized equipment and trained personnel. Cargo handlers may be required to load or off-load heavy, outsized, or special cargo. Some cargo requires covered storage sites. Dangerous or hazardous cargo requires careful handling, segregation, or possibly a separate and isolated terminal. **A great amount of ammunition will be transported through water terminals**, and the transportation planner must evaluate the terminal operation plan and project which areas will handle shipments of ammunition and other hazardous cargo. Appropriate quantity-distance arcs must be computed based on the net explosive weight of ammunition moving through the port. Ammunition requires special equipment (explosion-proof or spark-proof MHE) and must be processed in a segregated area. Waivers may have to be considered, based upon the requirement and the local situation.

8. Water Terminal Throughput Capacity Estimation

Terminal throughput capacity estimation encompasses **a careful evaluation of several factors: reception, discharge, transfer, storage, and clearance**. Factors to be considered include channel depth, channel width, length of berths, type of berths (such as quay, pier), diameter of anchorages, depth of water at berth, type of terminal at berth, and height restrictions on channels (see Figure II-3).

a. **Terminal Reception Capacity.** This capacity is **based on the number of ships, by type, length, and draft, that can be berthed or anchored in a harbor or at a terminal**.

The water throughput capacity of a terminal determines the number or type of vessel that can be scheduled to transit that terminal.

- **Wharves at Fixed Terminals**

  •• The best type of berth for any given ship is one in which the terminal type (container, RO/RO, breakbulk and/or petroleum, oils, and lubricants [POL]) matches the vessel type. For example, containers may be handled from a container ship at a breakbulk terminal, but the highest throughput for a container ship would be at a container terminal.

  •• Vessels require additional berthing space over the overall length. This length is dependent on the type of vessel and the required mooring and working requirements. Some ships such as LASH or SEABEE may require increased berthing space to work barges astern.

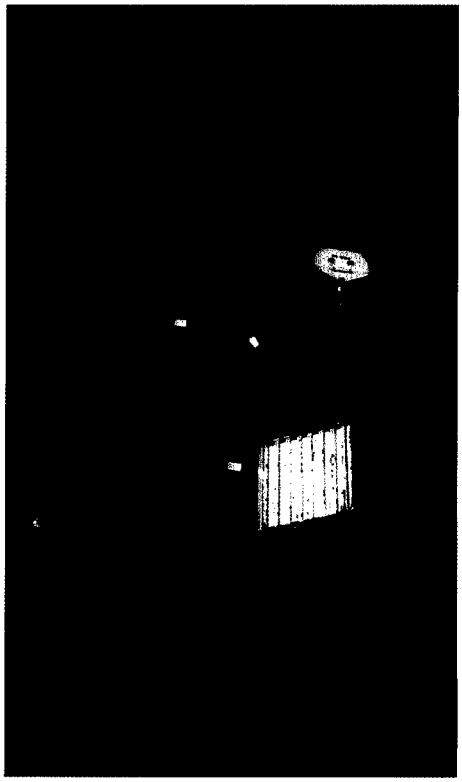
  •• The minimum water depth alongside the berth at mean low tide will determine the maximum allowable draft for vessels at that berth. At maximum load or draft, a ship should have at least 2 feet of water depth under its keel.

- **Petroleum Wharves.** Where available, these berths will be part of a fully developed theater distribution system that includes ship discharge facilities (with tanker moorings, piers, docks, and piping manifolds at the ports), port and inland tank farms, pump stations, and pipelines.

- **Anchorages.** Anchorage capacity may be added to berth capacity to determine the total reception capacity if there is sufficient lighterage, tugs, and pierside reception space to accomplish offshore discharge. The rate of discharge depends upon the distance from shore, the number of hatches or container cranes operating, number and types of lighterage, the type of ship being off-loaded, and the expected weather conditions. More detailed discussion of offshore discharge considerations is found in Joint Pub 4-01.6, "Joint Tactics, Techniques, and Procedures for Joint Logistics Over-the-Shore (JLOTS)."

- **Ammunition Wharves.** Ammunition discharge operations must be located in separate areas of the terminal facility and/or at anchorages, when using in stream discharging, away from other vessels, transportation nodes, and populated areas.

b. **Terminal Discharge Capacity. The cumulative amount of cargo that can be discharged from each of the berths and anchorages is known as terminal discharge capacity.** This is an evaluation of discharge facilities and equipment found on the berths and of the type of ship to be docked on the berths. This capacity is expressed in 20-foot equivalent units (TEU) or 40-foot equivalent units (FEU) for containers, STONs, MTONs,



Terminal discharge capacity is expressed in terms of 20-foot or 40-foot equivalent units.

square feet, net explosive weight (NEW), barrels, or other appropriate unit of measure for specific cargos, and in numbers of personnel per hour or day for passengers. Factors to be considered include discharge equipment onboard, discharge equipment ashore, width of apron, special lift equipment, and number of discharge equipment (see Figure II-3).

c. **Terminal Transfer Capacity.** This is the **total capability to transfer from shipside to storage, measured in cargo units per unit of time**. For example, if a pallet is one MTON and the cycle time is 10 minutes for a single transfer vehicle such as a forklift, the contribution to the transfer capacity of that vehicle is one MTON per 10 minutes, or 120 MTONs per 20-hour day. Ten forklifts operating without space constraints would produce a transfer capacity of 1,200 MTONs per day. Transfer capacity is computed twice when discharging ships at LOTS sites or from anchorage, once for the transfer to lighterage and once for the MHE operations on the beach. Factors to be considered include type of cargo, type of cargo handling equipment, round-trip distance, and number of cargo handling equipment (see Figure II-3).

d. **Terminal Storage Capacity.** This is a measure of **the amount of cargo that can be stored at any one time**. It can be expressed in square feet, MTONs, or number of TEU, FEU, or NEW. The physical space available is determined by the dimensions of the storage area. Some space must be left empty to maintain access to and movement of cargo. Operational experience shows that congestion starts at about 60-percent fill, becoming critical at about 89-percent usage of the physical space. The effect of storage space limitations on terminal throughput capacity is determined by the average dwell time (time-in-storage) of the cargo. The average rate of flow into the storage facility must equal the average outflow rate, and this common value cannot exceed the quantity calculated by dividing the operational storage capacity by the dwell time. Factors to be considered include intrinsic capacity, average dwell time, operating capacity, terminal facilities, stacking methods, and equipment used (see Figure II-3).

e. **Terminal Clearance Capacity.** This measures **the ability to move cargo away from the terminal** in terms of tonnage per unit of time. Factors to be considered include clearance conveyance by mode, terminal equipment and personnel, and gate capacity (see Figure II-3).

f. **Terminal Throughput Capacity.** In every instance, **the lowest value of the reception, discharge, or the clearance capacity will be the terminal's throughput capacity**. All five capacities must be estimated carefully, considering all operational aspects, even if the limiting capacity is obvious. These estimates will make it possible to determine where improvements can generate the greatest increase in throughput capacity. **The threat, weather, labor, and other factors not a function of the estimating process must also be taken into account.** One of these may even become the dominating factor. Figure II-3 shows the terminal capacity estimation process.

9. Ship Arrival Planning and Scheduling

a. **Surface Shipping Destined for a Theater.** In a hostile environment, **surface shipping destined for a theater may transit the hostile area using Navy-controlled convoys, unescorted, or under Navy supervision**. This may result in wide fluctuations in terminal workloads, because ships could arrive in groups rather than individually. Careful advance planning and constant coordination are required to

TERMINAL CAPACITY ESTIMATION CHECKLIST

Collect these data:	Compute these factors:	Evaluate to determine:
Channel depth Channel width Length of berths Type of berths (such as quay, pier) Diameter of anchorages Depth of water at berth Type of terminal at berth Height restrictions on channels Distance to berth	(1) Ref Ch II, subpara 8a	Water terminal reception capacity and availability of local pilots/tugs
Discharge equipment onboard Discharge equipment ashore Width of apron Special lift equipment Number of discharge equipment	(2) Ref Ch II, subpara 8b	Water terminal discharge capacity
Type of cargo Type of cargo handling equipment Round-trip distance Number of cargo handling equipment	(3) Ref Ch II, subpara 8c	Water terminal transfer capacity
Intrinsic capacity Average dwell time Operating capacity Terminal facilities Stacking methods Equipment used	(4) Ref Ch II, subpara 8d	Water terminal storage capacity
Clearance conveyance by mode Terminal equipment and personnel Gate capacity	(5) Ref Ch II, subpara 8e	Water terminal clearance capacity
NOTE: Once all of the above evaluations are completed, apply threat assessment, the effects of weather and oceanographic conditions, and training level of labor.		

Figure II-3. Terminal Capacity Estimation Checklist

determine where each ship should be discharged and where its passengers and cargo should be sent.

b. **Ship Destination Meetings. The theater J-4 will designate a representative to conduct periodic meetings where detailed ship destination decisions are made.** These meetings should be held as early as possible before the arrival of the ship so that planning at operating echelons may be completed before the vessels arrive. Normally represented at these meetings are the JMC, USTRANSCOM, component representatives, HN, and other concerned multinational forces. Additionally, a representative of the Naval Control of Shipping Organization (NCSORG) attends these meetings. The NCSORG carries out responsibilities for the control of movement, routing, reporting, convoy organization, and tactical diversion of multinational merchant shipping. It does not include the employment or active protection of such shipping.

- **Directing Incoming Ships.** Incoming ships are **directed to specific terminals for discharge** based on the overall operational necessity, final cargo destination(s), workloads of theater terminals, relative location of depots for inbound cargo, terminal throughput capacity, and capabilities of all segments of the transportation system. Cargo destination information is furnished by an inventory control center, the Service component's center providing theater materiel management. These centers issue cargo disposition and transportation mode instructions through their JMC representatives, if a JMC is established.

- **Planning Ship Arrival.** The above information, along with vessel manifest information, is relayed to the water terminal commander responsible for the discharge. Extracts are furnished to the consignee (authorized receiving agent) and to the JMC or interested transportation movement control activities so that they can plan for the onward movement of the cargo. Based on cargo disposition instructions, **the water terminal commander makes plans and gives specific assignments to terminal units for discharge of vessels and terminal clearance.**

c. **Coordination.** After deciding on the disposition of the incoming cargo, **the water terminal commander must coordinate a number of actions with other agencies** before ship discharge and port clearance operations can begin. Basic among these are the following:

- **Detailed disposition instructions** for military and civilian aid cargo, including diversions and detailed routing instructions.

- **Arrangements for clearance of personnel and cargo** to be moved directly forward, bypassing rear area facilities (water or air interface) when required.

- **Individual ship berth assignments.**

d. **Ship Berth Assignments.** Ship berth assignments **require coordination with local MSC representatives and HN authorities.** Berthing assignments are made by the terminal commander, designated by the geographical combatant commander. Terminal commanders belong to either Navy units or Army units depending on the situation. Additional details on each unit are included in Appendix A, "Terminal Units." Detailed disposition and routing instructions for personnel, multinational military cargo, and military aid cargo require coordination with Service component agencies and the recipient nation or multinational command (the latter through the liaison officers attached to the water terminal headquarters). Disposition of civilian aid cargoes will require

liaison with government representatives of the recipient nation. Foreign liaison officers and US civil affairs (CA) personnel may give assistance in this matter. Area movement control teams will arrange for local and line-haul transport equipment to be available to the terminal operators and will coordinate with transportation mode operators.

10. Personnel and Equipment Requirements

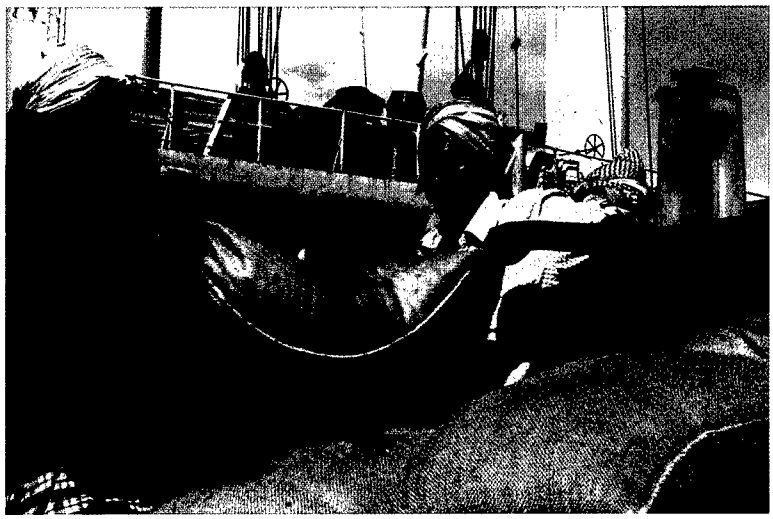
Time studies of cargo-handling operations indicate that the following are valid for long-range planning purposes.

a. **Cargo Handled by Hand.** When general breakbulk cargo (excluding ammunition) must be handled entirely by hand, personnel requirements can be computed on the average of 1/2 ton per manhour for a 10-hour shift. This is valid only for the normal 10-hour shift where the daily tonnage requirement is expected to remain constant. It includes the working supervisors but does not provide for documentation of the cargo. Generally, there are several cargo checkers per shift, to include checkers on the pier, under the hook, and in the hold.

b. **Materials Handling Equipment.** Cargo should be transferred mechanically when supplies are unitized and MHE is compatible with the carriers. For planning purposes, personnel requirements for mechanical handling of cargo by such equipment as rough terrain forklifts, cranes, and/or tractor-trailers are usually limited to an operator for each piece of MHE, a checker, and appropriate supervisory personnel per shift.

11. Ship Characteristics

The single most important factor in the efficient loading or discharge of a ship **is possession of an accurate hold arrangement or capacity plan and cargo stowage plan for the vessel in question.** In the case of ship loading, a preliminary stowage plan based on available information must be developed prior to ship arrival. Sources of this information include the vessel owner or operator, MSC Ship's Loading Characteristics Pamphlets, MTMC-TEA documents such as "Vessel Characteristics for Shiploading" (PAM 700-4), and pertinent automated data processing (ADP) systems fielded by MTMC for this purpose. However not all ships, particularly



When cargo must be handled by hand, planning must be modified for the adjusted throughput capability.

foreign flag ships, are covered by these sources. **The only sure source of this information for loading is from the ship itself and its master. In discharging, the "as loaded" stowage plan is extremely important for the water terminal commander** to have in advance of the ship's arrival at the SPOD. If this proves impractical, this information should be carried aboard the ship and must be obtained by the terminal commander as soon as possible upon ship arrival. A properly filled out stowage plan will show the precise location of every piece of cargo aboard the vessel and is, therefore, the basis of any executable discharge plan. Strategic characteristics are available in Joint Pub 4-01.6, "Joint Tactics, Techniques, and Procedures for Joint Logistics Over-the-Shore (JLOTS)," Appendix C.

12. Logistic Support

a. **General.** Under crisis action or wartime conditions, and where critical situations make diversion of the normal logistic process necessary, the logistic authority of the combatant commanders is expanded to authorize them to use all facilities and supplies of all forces assigned to their commands, as necessary, for the accomplishment of their missions. The geographic combatant commanders may delegate directive authority for a common support capability to the subunified commanders or JTF commanders in the conduct of their missions. The combatant commander's directive authority over logistic operations does not release the Services from their responsibility to staff, equip, train, and sustain their components. **Combatant commanders will ensure that proper authority is obtained for negotiations with the HN through appropriate channels.** HNS assistance can include air, sea, and ground transportation; POL; telecommunications; civilian labor; rear area operations; facilities; contracting; acquisition of equipment; supplies; services; and health service support.

b. **Deploying Force Requirements. Organic support elements of deploying forces normally form a PSA or Service-unique water terminal organization to assist with the deployment.** This element must precede its main body of equipment and troops to the terminal. A PSA will arrive at the water terminal in advance of its parent organization to provide support for terminal operations. Its organization and capabilities are tailored to the specific deployment or reception operation and are developed in coordination with the terminal commander. **PSA support requirements are provided under an MOU between the deploying or arriving unit and the appropriate terminal commander.** When the parent organization has passed through the terminal, the PSA will be disestablished. The PSA may be responsible for performing maintenance and providing repair parts, correcting deficiencies in the shipping configuration, providing equipment operators for unique equipment, and providing security for sensitive equipment and classified cargo.

13. Other Documentation

In addition to documentation required by existing regulations, **the water terminal commander will normally require each operating terminal organization to prepare a daily operations report**. This report will usually include the following:

a. **Passenger Manifests.** Number of passengers moved and awaiting movement; also, the number of passengers to be processed during the next 24 hours.

b. **Cargo Reports.** Number of tons (STONs and MTONs) or square feet of cargo by major category (general, vehicles, POL, hazardous materials) that have been discharged or loaded; the number of pieces of unit equipment by type on each ship, cleared by either lift-on/lift-off or RO/RO and

awaiting discharge; and number of tons booked and expected in the next 24 hours. An example of operations data is shown in Figure II-4 for loading.

c. **Ship Traffic.** Number of ships that have arrived, departed, remain in port, or are expected to arrive and depart during the next 72 hours. The status of ships in port, such as discharging, backlog of ships to unload, loading, awaiting orders, or under repair, should also be included.

d. **Workload Projections.** Workload for the month to date and anticipated for the remainder of the month.

e. **Personnel and Equipment Summaries.** Summaries of available ship berths, number and capacity of lighters and trucks, number of gangs for ship and pier work, available covered and open storage space, number of railroad cars that can be accommodated and cleared, and MHE availability.

14. Area Defense Threats

Water terminals are critical logistic installations that are high-value targets and must be safeguarded by both active and passive means. **Water terminals are vulnerable to air and missile attack**, especially if US and multinational forces have not established air and sea superiority. Joint Pub 3-10, "Doctrine for Joint Rear Area Operations," provides guidance on the subject of joint rear area defense. Joint Pub 3-10.1, "JTTP for Base Defense," provides specific guidance on base defense and the integration of naval areas of operations and the joint rear area. **Terminal units, which are normally located in a naval area of operations, are also vulnerable to hostile unconventional forces.** Water terminals are particularly susceptible to threats and must expect and prepare for sabotage, terrorism, mining, and espionage. Prevention of these threats depends to a large extent on the support of

EXAMPLE OF OPERATIONS DATA

Ship Data

- Ship name and/or type
- Scheduled and/or actual time in berth
- Vessel ready for load
- Scheduled and/or actual start loading
- Scheduled and/or actual finish
- Scheduled and/or actual time of departure

Barge Ship Data

- Barges to load
- Barges loaded
- Measurement tons loaded

Cargo Data

- Major units
- Pieces loaded
- Actual square footage loaded
- Supercargoes
- Measurement tons loaded

Cargo Summary

- Pieces of cargo marshalled
- Pieces of cargo lifted

Figure II-4. Examples of Operations Data

the local population and on the effectiveness of local administrative, police, and security organizations.

15. News Media Considerations

Operations at water terminals during any contingency are certain to draw significant attention from national and international news media. Sometimes increased activity at water terminals or the notification of civilian ship crew members may be the first indications reporters have that joint operations are underway. **It is Department of Defense policy to provide as much information to news media as possible consistent with the constraints of security and personnel safety.** During joint operations, detailed public affairs guidance will be issued by the supported CINC. This guidance establishes basic rules for the release of information after initial release at the seat of government and sets the parameters within which personnel can discuss the ongoing operation. Planners should consider the potential for news media interest and its possible impact on water terminal operations.

CHAPTER III
WATER TERMINAL OPERATIONS EXECUTION

"We speak glibly of 'sea power' and forget that its true value lies in its influence on the operations of armies. . ."

Sir Julian Corbett
The Successors of Drake, 1900

SECTION A. OCEAN TRANSPORT RECEPTION

1. General

Strategic sealift is the principal means of delivering equipment and logistic support for land, air, and sea forces in a major conflict. Water terminal operations could include MSC common-user ships, maritime prepositioning ships (MPS) capable of over-the-shore and port operations from anchorage, multipurpose ships, and other ships that may be chartered or provided by HNS as required. This chapter addresses elements essential to the reception of strategic sealift ships and the handling and onward movement of cargo.

2. Overseas Resources

Key to planning the reception of sealift assets is an understanding of the theater's reception and onward movement capabilities. **Knowing the true capabilities of ports of embarkation and the resources available within the theater to provide harbor support for the arriving ships is critical.** There are **three sources of lighterage and watercraft resources in an overseas area. The first are military assets** assigned to the combatant commander for common transportation service. Army harbor support vessels (i.e., tugs and landing craft such as Logistic Support Vessels) are prime examples (see Appendix A, "Terminal Units"). **The second is HNS negotiated** through bilateral or multilateral agreements. Under HN agreements, a nation may either accept responsibility for a particular function within its borders (e.g., water terminal cargo clearance), or it may designate civilian resources to be used under military control. **The third source is commercial hire or charter service** from a third nation.

3. Assigning Berths and Anchorages

A combination of factors will dictate where a ship is berthed or anchored at a given water terminal.

a. **Oceanographic Conditions.** Harbor channel depth and width, currents, tidal fluctuations, prevailing winds, sea states, and seasonal storms contribute to assignment of berths and anchorages.

b. **Cargo Types.** The type or category of cargo (e.g., container, RO/RO, breakbulk, special commodity [ammunition], bulk fuel) will dictate berths at existing terminals.

c. **Routing Scheme.** The routing scheme is the plan by which ships are scheduled through the terminal. The terminal throughput capacity, ship type, and quantity and priority of the cargo will determine the routing scheme developed by the terminal commander.

d. **Anchorages.** MSC or Navy representatives, if available, will advise on anchorage areas and the naval support required. If the naval representative has indicated that the anchorage areas are acceptable, an examination must determine if lighterage can traverse between anchorage areas. Sandbars, reefs, and other underwater

obstructions may prevent using certain landing craft in certain areas. Vessel masters, harbor masters, pilots, and others with "local knowledge" should be consulted by MSC, Navy, or other Service personnel when establishing anchorage areas.

4. Ship Arrival Meeting Boarding Party

The first communications between a vessel master and water terminal operators should include plans for **a ship's arrival meeting. This meeting will establish how and when the vessel will load or discharge and set a target sailing date.** The ship's master and mates, the commander of the water terminal and his or her representatives, the deploying military unit commander or representatives, the stevedore supervisor, the MSC representative, and the security and safety officer should attend the meeting. The group of individuals attending this meeting is normally called the boarding party.

5. Ship Chandler Services (Hotel Services)

a. **General.** Chandler services include **reprovisioning a ship with all classes of supply necessary for the vessel to continue its voyage**. Commercial steamship lines coordinate chandler services through commercial chandlers located at ports on their vessels' trade routes. MSC handles chartered vessels in the same manner. Navy vessels coordinate chandler services through the nearest naval or diplomatic activity. MSC representatives will assist in coordinating routine chandler services at the port. When there is no Navy or MSC presence at the port, terminal commanders may be asked to provide or coordinate for chandler services.

b. **Limited Resources in a Theater.** When commercial resources are nonexistent or in limited supply, vessels will maximize chandler services outside of the theater. The combatant commander, through the logistic staff, will prioritize the use of all limited resources to include chandler services.

6. Ship Support Services

For MSC ships, the ship's agent will arrange for support services related to pilots, tugs, line handlers, and payment of dues and port charges.

SECTION B. SHIP DISCHARGE OPERATIONS

7. General

Cargo off-load of strategic sealift may be conducted by Navy, Marine, Army, or joint terminal forces, which are augmented by HNS, civilian ship crews, and stevedores, depending on the scenario. This section addresses those ship discharge operations pertaining to preparation, cargo type, and off-load system limitations.

8. Preparation

See Figure III-1.

a. **Advanced Planning.** Based on the vessel manifest and cargo disposition instructions received, **the terminal unit plans the discharge of individual ships in advance of their arrival**. This planning is applicable regardless of the Service component operating the terminal. The plans include the following items.

- **Berthing/Anchorage Site.** The specific location to be used within the terminal.
- **Discharge Method.** The method of discharge (e.g., floating or shoreside cranes, alongside or offshore discharge, and order of hatches and cargo within the hatches to be worked).

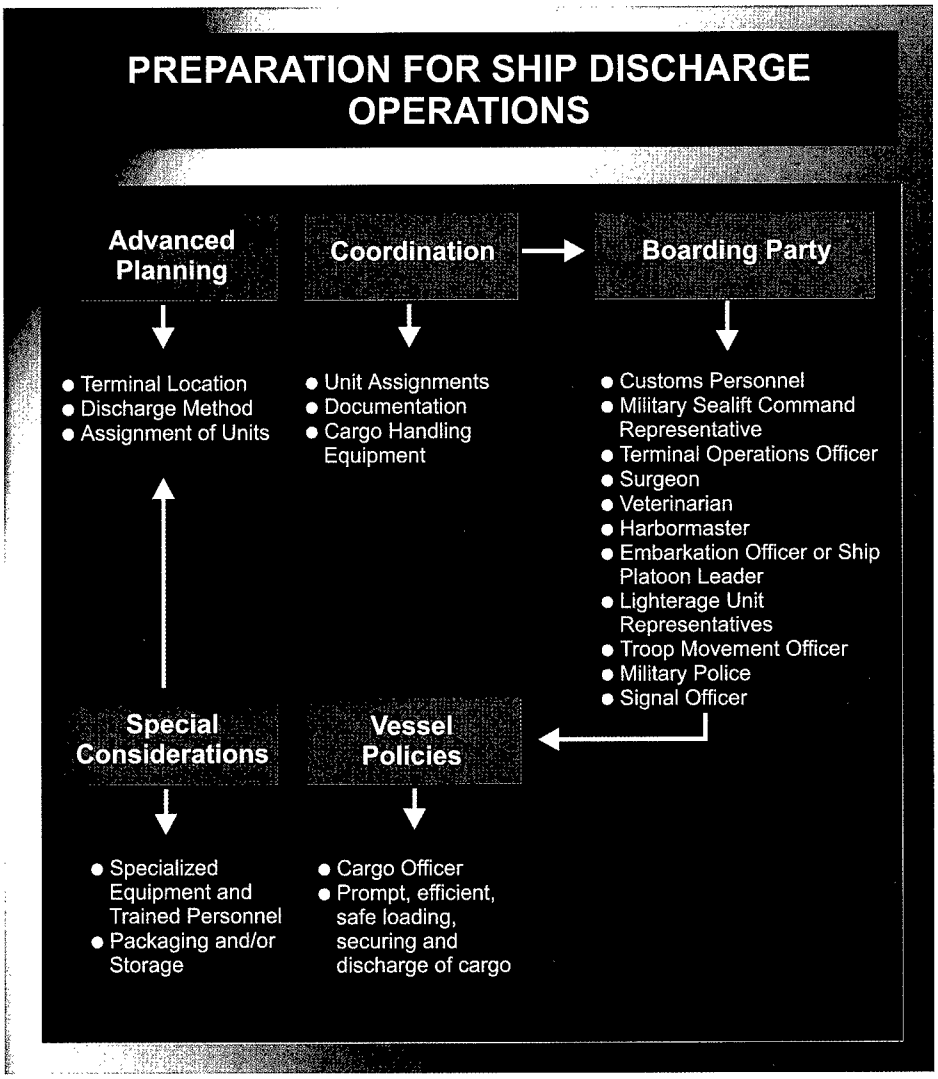


Figure III-1. Preparation for Ship Discharge Operations

- **Assignment of Units.** The designation of specific stevedore units to work each vessel.

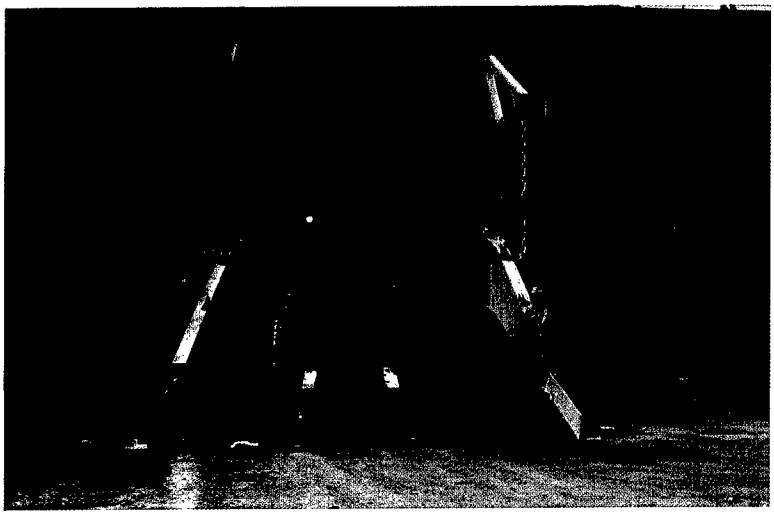
b. **Coordination.** The operating terminal units **work closely with the local transportation movement team.** The terminal unit ensures that variations from the vessel discharge plan are coordinated with clearance mode operators. Proper procedures and coordination in the following areas will prevent unnecessary delays in port clearance.

- **Unit Assignments.** Assigning terminal unit(s) the mission of unloading cargo from a vessel.

- **Documentation.** Ensure that all documentation, manifest, stowage plans, hatch lists, and cargo disposition instructions are in order.

- **Cargo Handling Equipment.** Ensuring that all cargo handling equipment needed for the job is available.

c. **Boarding Party.** Before moving or unloading cargo, **a boarding party goes aboard to coordinate with the vessel's master and chief mate or first officer**. The chief mate or first officer is the expert on the arrangement of the ship's holds and is responsible for ensuring that the ship loads or discharges the maximum possible quantity of cargo in the shortest possible period of time. This individual is also responsible for the calculations on vessel stability and will have the ultimate and only valid recommendation to the vessel's master regarding the overall safety to the ship of the stowage plan proposed by the water terminal commander. During this visit and inspection of ship and cargo, the boarding party may decide to alter the initial discharge plan. Normally, MSC provides a prearrival message giving the ship's operational status and capacity of all lifting gear. Unforeseen conditions, such as damage to ship's gear, unexpected priority cargo, or oversized or heavy lifts not noted on advanced stow plans may cause changes to the initial discharge plan. The boarding party is normally composed of the MSC representative and the port terminal representative. However, in more complex operations, or when the ship calls at the port infrequently, the boarding party may be composed of all or a number of the following persons or their representatives:



Cargo handling equipment is not part of a water terminal's infrastructure and should be moved along with the cargo.

- **Terminal Operations Officer.** Determines and reports the general condition of ship equipment and facilities. This officer delivers pertinent terminal regulations and orders of the terminal commander to the vessel master and to the commanding officer of troops. The terminal operations officer obtains copies of ship papers when advance copies have not been received and determines major damage to or pilferage of cargo by having the holds inspected before commencing discharge. This inspection also helps to identify any special unloading problems that may be caused by cargo becoming adrift in the hold and is critical when chartered civilian shipping is used. The terminal operations officer also obtains other information pertinent to unloading the vessel's cargo.

- **Customs Personnel.** These representatives check for clearances, narcotics, weapons, and other potential contraband cargo. They also may perform other necessary

customs activities according to theater directives and HN laws.

- **MSC Representative.** MSC representatives will support all of the ship's requirements. These requirements may include repairs, fuel, and stores. In addition, the MSC representative delivers instructions to the vessel master.

- **Surgeon.** Checks for communicable diseases, sanitary conditions of troop spaces and facilities.

- **Veterinarian.** Inspects the condition of perishable cargo.

- **Harbor Master.** Coordinates matters pertaining to berthing, tug assistance, and employment of floating cranes and other harbor craft under his or her control.

- **Embarkation Officer and/or Ship Platoon Leader.** Coordinates the detailed plans for cargo loading and unloading.

- **Lighterage Unit Representatives.** Coordinate plans for employing lighters for unloading vessels at anchorage berths.

- **Troop Movement Officer.** Coordinates plans for movement of troop units through the terminal.

- **Military Police.** Determine needs and provide support required during unloading and debarkation operations.

- **Signal Officer.** Coordinates all signalling and other communication methods to be used during ship discharge operations.

d. **Vessel Policies.** Although the boarding party coordinates with the vessel's master when the ship first arrives, **the vessel's chief mate or first officer will be the cargo officer for every merchant vessel**. As such, the chief mate is responsible to the master for the prompt, efficient, and safe loading, securing, and discharge of the vessel's cargo. The chief mate will require notification of changes in stow or off-load plans, when ship's gear is rigged or spotted, when hatches are opened or closed, when heavy lifts are rigged, or when the vessel sustains any damage. **It is not unusual for the chief mate to insist that ship personnel rig the ship's gear, open and close hatches, or even operate winches.** These requirements should be coordinated early in operational planning, and special requirements should be noted in the ship files to facilitate planning for subsequent discharge operations.

e. **Special Considerations.** Packaging dictates a need for specialized equipment and trained personnel. **Cargo handlers may be required to construct special slings and bridles to move heavy, outsized, or special cargo.** Some cargo requires covered storage sites. Cargo that is dangerous or hazardous will require careful handling, segregation, or possibly a separate and isolated terminal.

9. Productivity

a. **Terminal Service Units.** Capabilities of terminal service units (breakbulk or container) are in Appendix A, "Terminal Units."

b. **Production Capabilities.** The capabilities cited are based on the production achieved by working five-hatch breakbulk cargo ships and commercial container vessels. In an austere water terminal, operations might entail discharging varied watercraft, such as barges and tank landing ships, in addition to general cargo, RO/RO, and container ships. Production figures for these smaller carriers will vary significantly from those of large vessels and must therefore be developed locally.

RO/RO AND WATER TERMINAL OPERATIONS

The advantages of RO/RO and container vessels were clear in this deployment. Most of the Ready Reserve Force consists of breakbulk ships which generally have a smaller cargo capacity and take two to three days longer than RO/ROs to load and unload.

SOURCE: Multiple sources

c. **Production Factors. Many factors affect production during discharge operations.** The threat, weather, sea conditions, visibility (fog, darkness, sandstorm), crew experience, type of lifting gear (shore crane or ship's gear), cargo stow, tactical situation, type of cargo, packaging, and PSA availability all impact on discharge production. The combined positive and negative influences of these factors result in the number of lifts that can be obtained per hour. This average can be computed by hatch or for the entire vessel and can be obtained from historical data by timing the lifts for a specified period or from computations using information from tally sheets at the end of a shift. Forecasts of unit productivity are adequate for general planning purposes, but should not be applied as a yardstick for measuring unit efficiency. **Unit efficiency must be judged on the basis of factors and conditions as they affect a specific discharge operation.** Attainment of a lesser tonnage production might be considered exceptional if accomplished under less than ideal circumstances. Personnel responsible for management of cargo discharge and port clearance operations must constantly evaluate those operations to improve efficiency and productivity.

10. Petroleum Doctrine and Tankers

a. **Joint Bulk Petroleum Doctrine.** Joint doctrine for bulk petroleum is contained in Joint Pub 4-03, "Joint Bulk Petroleum Doctrine." **Each Service is responsible for providing retail bulk petroleum support to its forces.** Retail bulk petroleum support is coordinated by each Service control point with the Defense Fuel Supply Center (DFSC). This requires the Services to compute requirements, establish delivery plans, and maintain contracts and budget programs. **In joint force operations, the J-4 and the Joint Petroleum Office will develop the petroleum logistic support plan.** A key consideration is the compatibility between interfaces of fuel transfer systems. The Joint Petroleum Office will coordinate fuel resupply within the theater between Navy and commercial tankers, delivering petroleum to and through specialized Navy-operated and joint water terminals to Army, Navy, and Marine units for retail use by themselves and other Services.

b. **Developed Theater.** DFSC contracts with CONUS or OCONUS commercial suppliers to deliver the required petroleum to the appropriate Service in the theater. DFSC may also be responsible for the operation of all or part of the storage, handling, and distribution systems that move petroleum through the theater to the point of sale to the Service. **Actual procedures for delivering bulk petroleum products to the end user will depend on conditions in the theater.** A fully developed theater distribution system includes ship discharge facilities (with tanker moorings, piers, docks, and piping manifolds at the ports), port and inland tank farms, pump stations, and pipelines.

c. **Undeveloped Theater.** Coastal tankers or barges may be used to move products from deep-draft tankers to moorings in water too

shallow for the larger ships. **Bulk petroleum is transferred using the amphibious assault bulk fuel system (AABFS), flexible hoselines to tank farms made up of collapsible storage tanks.** The petroleum supply system in an undeveloped theater may include limited tanker mooring facilities, floating hoselines, submarine pipelines, inland tank farms and terminals, collapsible tanks, and any available bolted steel tanks. It may also include pump stations, flexible hoselines, coupled pipelines, and tank vehicles. **Bulk petroleum is received in the undeveloped theater in JLOTS using the AABFS or Navy Offshore Petroleum Discharge System (OPDS).** The Navy OPDS delivers fuel to bulk fuel storage located in either the Marine Corps bulk fuel company, Army pipeline and terminal operating units, or Army petroleum supply units near the shoreline.

d. **Army Responsibilities.** The Army will provide management of overland petroleum support, including inland waterways, to US land-based forces of all the DOD components. To ensure wartime support, the Army will fund and maintain tactical storage and distribution systems to supplement existing fixed facilities. The Army will be responsible for inland distribution during wartime to include providing the necessary force structure to construct, operate, and maintain inland petroleum distribution systems. In an undeveloped theater, this also includes providing a system that transports bulk petroleum inland from the high-water mark of the designated ocean beach.

e. **Air Force Responsibilities.** The Air Force will provide distribution of bulk petroleum products by air within a theater where immediate support is needed at remote locations. It will maintain the capability to provide tactical support to Air Force units at improved and austere locations.

f. **Navy Responsibilities.** The Navy will provide seaward and over-water bulk petroleum shipments to the high-water mark for US sea- and land-based forces of all DOD components. It will maintain the capability to provide bulk petroleum support to the Navy's afloat and ashore forces.

g. **Marine Corps Responsibilities.** The Marine Corps will maintain a capability to provide bulk petroleum support to Marine Corps units.

11. Lighterage Use

The basic JTTP stated in Joint Pub 4-01.6, "Joint Tactics, Techniques, and Procedures for Joint Logistics Over-the-Shore (JLOTS)," are applicable to the discharge of ships in ports using lighterage. This situation may occur when lighters are available to discharge ships over the pier as opposed to over the shore. The water terminal commander will coordinate fixed terminal discharge operations using lighterage with JLOTS occurring in the area.

SECTION C. TERMINAL RECEPTION AND CLEARANCE

12. Introduction

The water terminal commander establishes reception and clearance procedures to achieve the combatant commander's objectives. **A key to efficient terminal reception and clearance operations is marshalling yards**, which are discussed in this section and Appendix B, "Water Terminal Planning Considerations."

a. **General.** Efficient loading and discharging of vessels require rapid and controlled movement of cargo between ship and shore. Improvements in cargo packaging, particularly containerization, increase ship and cargo-handling productivity. **The cargo marshalling yard is an essential part of this shoreside operation**, providing a place to

hold and process cargo pending further movement.

b. **Rapid Clearance. Use of a marshalling yard allows rapid clearing of the water terminal facilities.** It makes vessel working space available for its primary purpose of loading or off-loading cargos. It reduces pier congestion, thus reducing the potential for work slowdowns or stoppages in discharge operations. With proper management of MHE, chassis, tractors and trailers, and flatcars, most containerized and RO/RO cargo can go directly onto the inland mode of transportation. Checking and other documentation can be done during discharge, allowing cargo to be cleared rapidly. Conceptually, all cargo should move through the terminal without delay. However, this is not always possible because of the reasons shown in Figure III-2.

c. **Cargo Marshalling Yard.** This yard **provides temporary in-transit storage and permits fast discharge operations with rapid and continuous movement of cargo to or from the pier**. Marshalling cargo allows leveling of line-haul peak workloads that result from discharge operations. Concurrently, marshalling cargo allows selective, controlled, and flexible phasing of container or cargo movement to destination or vessel. In container operations, the yard provides an area for cargo and/or container:

- Maintenance, repair, servicing, and inspection;
- Stuffing or stripping;
- Documentation;
- Cleaning and decontamination;
- Marshalling for retrograde movement;
- Staging; and
- Security.

13. Organization and Functions

No set organization or physical layout for a marshalling yard exists. It is organized to meet operational requirements within available space. By grouping related functions, marshalling yard design should

REASONS FOR WATER TERMINAL DELAY

(1) Consignee's reception capacity may be limited

(2) Movement plan (e.g., lack of rail cars) may cause some delay in clearance

(3) Damaged cargo may require repairing or restowing of contents before further movement

(4) Containers may require segregation by destination or priority. Some cargo may need reassembly or removal of packaging

(5) Cargo may require redocumentation before further movement

(6) Where required, retrograde cargo must be cleaned and fumigated to pass both US Customs and Department of Argriculture import requirements

(7) Containers found with broken seals or apparent pilferage must be inventoried and a new seal applied before further movement

(8) The threat situation may cause battle damage or disruption to the transportation system

Figure III-2. Reasons for Water Terminal Delay

eliminate lost motion, reduce container and cargo handling requirements, and permit a logical flow of containers and cargo through the terminal.

a. Cargo can be subdivided into any number of categories. The most widely used are general (breakbulk); containerized (general, vehicle, or refrigerated); RO/RO (vehicles, containers on chassis); and special (oversized, heavy lift, hazardous, or security) cargo. These categories and the volume in each play a significant role in marshalling yard organization.

b. All marshalling yards should provide for the activities and functions listed in Appendix B, "Water Terminal Planning Considerations."

c. The organization of and traffic flow through a fixed-port container transfer facility is shown in Figure III-3.

14. Location of the Marshalling Area

The marshalling area (general cargo, container, or both) is located as near the vessel, rail, air, truck discharge, or load site as practicable. Enemy capabilities and activities may require dispersion of activities or may otherwise affect selection of marshalling yard location. The marshalling yard in an existing terminal is normally next to the pier area, with sufficient pier apron (100 to 500 feet) between the yard and shipside. These distances will accommodate container discharge and clearance activities and will be more than adequate for general cargo operations. Rail spurs, warehouses, and similar facilities usually exist, but may require rehabilitation. Construction of the marshalling yard should encompass any existing hardstand, structures, and rail lines.

15. Container Stacking Configuration

a. **Chassis.** Containers may be stored in the marshalling yard either on or off trailers (chassis). Retaining containers on chassis reduces container handling and accelerates operations, but requires a one-for-one matching of chassis to containers. Storing or staging containers on chassis also increases space requirements in the marshalling area. When containers do not remain on chassis throughout the system, one chassis for every two to three containers is needed.

b. **Concept.** Loaded containers are stacked, after removal from their chassis, to a maximum of two high using the turret stacking method. Empty retrograde containers can be stacked five high if this height is within the capability of container handling equipment. Another space consideration is stacking collapsed flat racks. Flat racks should be stacked as high as possible by available container handling equipment to ease retrograde backloading. Although stacking containers increases handling, it also requires fewer chassis and reduces requirements for marshalling yard space.

16. Terminal Activities

a. **Off-load or Backload Operation.** The objective of ship discharge operations is to **maximize the onward movement of cargo while minimizing the turnaround time of the ship**. One way to achieve this is to have the terminal tractors available and positioned properly at the cranes working the ship. To do this efficiently with a minimum of congestion, the tractors should travel the least distance possible. Each stacking area should be divided for import and export breakbulk and container cargo to make it easier to drop

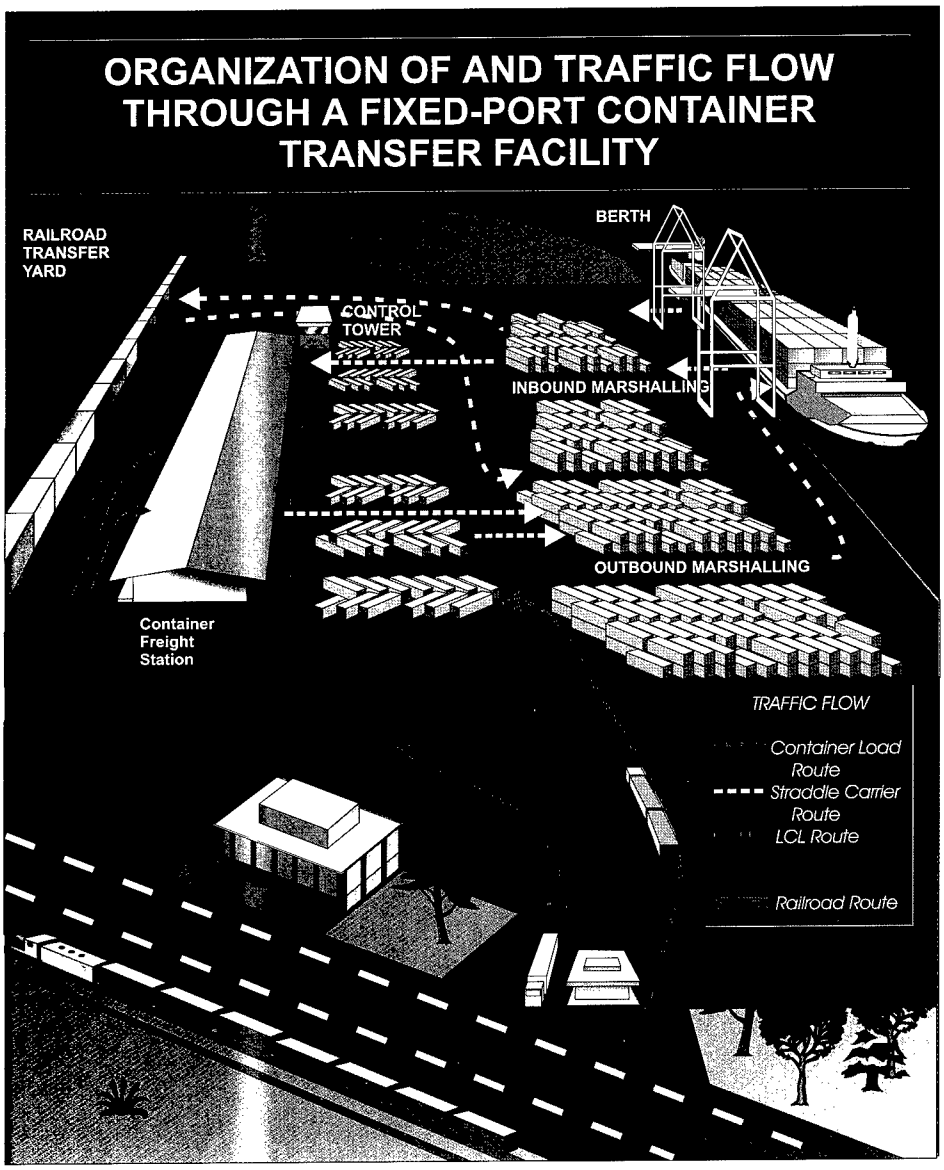


Figure III-3. Organization of and Traffic Flow Through a Fixed-Port Container Transfer Facility (Schematic courtesy of Matson Navigation Company)

off imports and pick up exports in one circular trip.

b. **Potential Bottlenecks.** Potential bottlenecks are shown in Figure III-4.

c. **Marshalling Yard Clearance Operation.** To ensure rapid and uniform flow of cargo from dockside to the consignee (and vice versa) and to minimize terminal congestion and work stoppages, **marshalling yard clearance operations are tailored to port unload or backload output. An inbound container should not remain in the marshalling yard longer than 24 hours.** This also holds true for retrograde cargo, provided a ship is available for backloading. The normal procedure in clearance operations

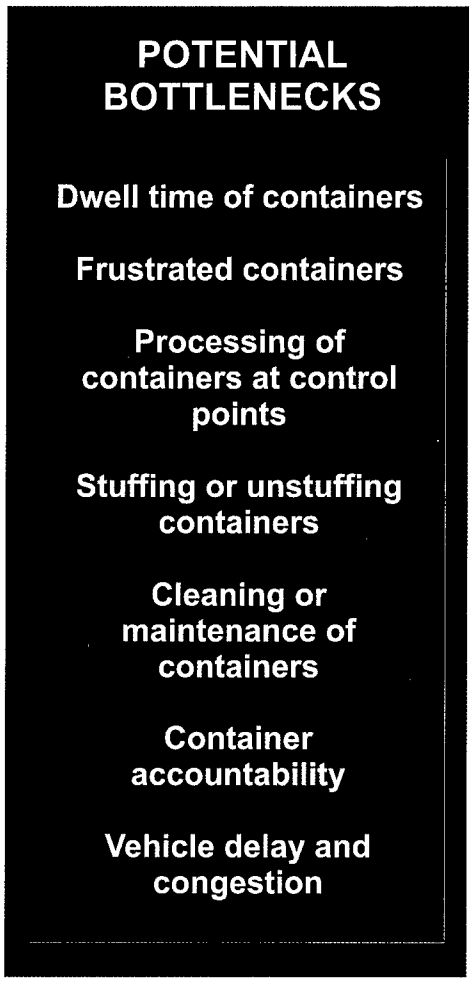


Figure III-4. Potential Bottlenecks

is to designate specific truck units to support a specific unload or backload operation.

17. Cargo Movement by Rail

Cargo movement by rail is used wherever possible, because rail presents a mass movement capability with little interference from weather or refugee traffic. Unless inland waterway and barges or barge MHE are available, **rail is the most economical mode for moving cargo**.

18. Marshalling Yard Procedures

a. **Operations Responsibility. The water terminal commander is responsible,** through the operations officer, **for operation of the marshalling yard.** The operation may use automated documentation or, if automated data processing equipment is not available, manual procedures.

b. **Import Cargo.** The shipping water terminal transmits an advance manifest to the receiving water terminal (theater). **Upon receipt of the advance manifest, the water terminal sets up files to be used for preparing documentation.** These files include hatch summaries, cargo disposition instructions (CDIs), and transportation control and movement documents (TCMDs). Hatch summaries, preprinted from the advance manifest, provide the operator with advance notice of types (e.g., cargo, refrigerated) by size and quantity of incoming containers and cargo, movement priorities, and ultimate destination. This information permits the operations officer to preplan marshalling yard space requirements and predetermine where off-loaded cargo will be placed or stacked in the yard. This is particularly important when planning onward movement of outsized and/or overweight cargo.

c. **Communications.** The cargo checker can direct the yard transporter to the designated stacking location using information from a cargo tally printout. Radio communication, where feasible, between the cargo checker and the marshalling yard is the best way to ensure adequate operational control, especially in a large yard or in a highly fluid situation. If computer equipment is not available, operations should display a visual status board of the stacking area to identify

and locate containers. A manual display system requires appropriate internal communications.

d. **Cargo Disposition Instruction. CDIs are used as a consignee advance notification document.** Based on the CDIs, the port's movement control team coordinates with the consignee's movement control team to ensure that the consignee can receive the shipment, arrange for delivery dates, and transport cargo from the marshalling area to its final destination.

e. **Logistics Application of Automated Marking and Reading Symbols (LOGMARS) Documentation.** When cargo enters the marshalling yard, the cargo or container transporter driver inspects the container. **Terminal documentation personnel use the LOGMARS to document the cargo and then direct the driver to the point where the cargo is to be unloaded.** A LOGMARS check is required each time cargo is moved from the area of last report. No container can be moved from the marshalling yard exit or entry point without proper documentation and inspection. Where numbers are present, the cargo or container, the cargo or container transporter, and the cargo or container seal numbers all must agree with those shown on LOGMARS. If they do not agree, the cargo or container becomes frustrated (cannot be moved) until proper documentation is prepared. When the cargo or container departs the marshalling yard, LOGMARS documentation is retained for entry into the central processing unit to show that the cargo has been shipped to the consignee and to update the computerized inventory. Similar procedures are used for cargo being retrograded. LOGMARS documentation can also be used to develop a ship's manifest.

19. Marshalling Yard Security

a. **Cargo Theft and Pilferage.** Reducing cargo theft and pilferage is a significant benefit of containerization. Compared with losses suffered in breakbulk operations, the reduction is indeed noteworthy. Nonetheless, containerization losses happen, and terminal commanders must take actions to eliminate this situation.

b. **Control of Inbound and/or Outbound Traffic. Strict control of incoming and outgoing traffic is a key factor in marshalling yard security.** Restriction of vehicular traffic entering or exiting the container stacking area to container transport equipment, MHE, and mobile scanning equipment is essential. Establishment of a single control point (gate) for vehicular traffic entering or exiting cargo areas is also essential. This point should be staffed and operated by US military personnel who are assisted, as necessary, by foreign national police or interpreters. Finally, a separate control point for pedestrian traffic is needed, operated by US military personnel and assisted, as necessary, by foreign national police or interpreters.

- Surveillance and control functions of the vehicular control point include the following.

  •• Preventing entry of unauthorized vehicles.

  •• Inspecting inbound and outbound containers. This is a thorough physical inspection including cargo condition, presence and condition of seals and/or locks, evidence of illegal entry (such as tampering with or removal of door hinges) and, particularly for outbound cargo, a check for stolen items by looking on top of and under containers and inspecting transporter cabs.

  •• Verifying documentation for correctness, completeness, and legibility. (Ensuring that transporter, container, and container seal numbers match those shown on the TCMD.)

•• Operating scanning equipment. (If there is no scanning capability, cargo numbers are reported manually to operations to update the yard inventory.)

•• Signing one copy of the TCMD for retention by transporter operator as a delivery receipt (inbound cargo).

- Surveillance and control functions of the pedestrian control point include:

•• Permitting only authorized personnel to enter marshalling areas; and

•• Maintaining, controlling, and safeguarding the pass system for foreign national personnel authorized to be in the area.

c. **Perimeter Security.** Security of the marshalling yard perimeter backs up control point security in keeping unauthorized persons out of the area. Such persons may engage in sabotage, petty and large-scale theft operations, and in establishing inside contacts with foreign nationals or other persons working in the yard. Although it may not be possible to fence the entire yard perimeter, the security (sensitive, classified, high-dollar-value cargo) area should be fenced with its own military-guarded control point and military police (MP) control. Perimeter defense measures may include one or a combination of the following:

- Chain-type fencing topped by three strands of barbed wire. (Inspect fence daily to ensure no holes or breaks exist).
- Concertina wire.
- Sensors and television video monitors.
- Patrols.

d. **Container Transporter Operator.** Drivers of line- and local-haul container transporters are required to remain in the cabs of their trucks when operating within cargo areas.

e. **Security Cargo.** Security cargo should be stored separately in its own secured area. Whenever possible, security cargo should be unloaded from the ship during daylight hours. If possible, MP security personnel should observe unloading operations.

f. **Verification of Container Arrival at Destination.** Upon receipt of the cargo or container, the consignee returns a copy of the TCMD to the shipping terminal activity with the consignee signature, date of receipt, and condition of cargo, container, and container seal.

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APPENDIX A
TERMINAL UNITS

Army elements of a Transportation Group, Navy elements of a Cargo Handling Battalion (CHB), Marine elements of the Landing Support Battalion (LSB), and Air Force liaison offices are included in Annexes A through D. Specifics on the Maritime Administration (National Shipping Authority) are located in Joint Pub 4-01.2, "JTTP for Sealift Support to Joint Operations."

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ANNEX A TO APPENDIX A
ARMY UNITS

1. US Army Transportation Group (Composite)

a. **Mission and Assignment.** The transportation group provides command and staff planning for Army units employed in terminals. The group is assigned to the transportation command of the theater Army (TA).

b. **Capabilities.** The group provides command, control, staff planning, coordination, and supervision of operations, training, and administration of up to six transportation battalions. It depends on appropriate elements of the TA for motor transport, health services, signal, finance, legal, and personnel administrative service support.

c. **Functions.** The transportation group is responsible for the following tasks.

- Managing both military and civilian personnel, administering or executing labor management policies with respect to non-US civilians and employees, and maintaining coordination with appropriate CA elements.
- Preparing standing operating procedures (SOPs), directives, and plans for installation and area security and area damage control within assigned areas; coordinating these plans with subordinate commanders and area support commands.
- Preparing current and long-range plans, procedures, policies, and programs pertaining to terminal operations and functions; selecting or allocating units, by types and numbers required, to support the mission of the transportation terminal brigade.
- Inspecting units, installations, and activities and supervising or planning the training of subordinate units.
- Developing plans for moving personnel and cargo through subordinate terminals as well as coordinating with the movement control center for terminal clearance.
- Developing requirements for communications and automatic data processing systems required for supporting the transportation group and subordinate units and coordinating these requirements with the water terminal signal officer.
- Procuring materiel and services locally, particularly stevedore contract services, for support of the group and subordinate units.
- Providing limited field services, including food service supervision.
- Developing SOPs, directives, current and long-range plans, procedures, policies, and programs in the logistic field pertaining to subordinate units and coordinating with direct support elements to supply materiel and equipment used in operating terminals.
- Managing maintenance, to include development of appropriate policies, procedures, and operational instructions related to maintenance and safety activities for issuance to subordinate units.

2. Transportation Terminal Battalion

a. **Mission and Assignment.** The transportation terminal battalion acts as the command element in operating intermediate staging areas for airborne units and for units employed in water terminals. It is the key terminal organization in support of Army amphibious operations, and it acts as the command element in operating inland waterways. While assigned to the Theater Army Transportation Command, it is normally attached to a transportation group; however, it may be attached to a terminal brigade or operate separately.

b. **Capabilities.** The transportation terminal battalion can command up to seven transportation terminal units. Examples of the various types of units are terminal service, transfer, boat, amphibian, hovercraft, harbor craft, truck, cargo documentation, security, and PSAs. It can support the operation of the equivalent of a four-ship terminal in an established port facility or a two-ship terminal in a beach operation. This unit must be supported by a personnel service company for personnel and financial support and by area health services for medical support.

c. **Functions.** The transportation terminal battalion is responsible for the following tasks.

- Providing command and control of water terminal operating units.
- Controlling loading, unloading, and cargo transfer operations.
- Supervising documentation activities.
- Determining the estimated workload and transportation requirements and ensuring the availability of necessary equipment.
- Advising subordinate operating units concerning identification, segregation, and documentation of shipboard or onshore cargo.
- Consolidating requisitions and procuring supplies and equipment for supported units.
- Conducting maintenance inspections of assigned vehicles and equipment.
- Supervising all maintenance, supply, equipment, evacuation, real estate, safety policies, and food service activities of assigned units.
- Providing communication between higher headquarters and supported units under the direction of the water terminal signal officer.
- Supervising contract operations.
- Reviewing intelligence data to assess impact on operations and to allow for defensive measures.
- Obtaining from the Command Surgeon military quarantine inspection documentation on retrograde cargo, if required.
- Coordination of harbor master, security, HN activities, and movement of marine assets.

3. Transportation Terminal Service Company (Breakbulk)

a. **Mission and Assignment.** The Transportation Terminal Service Company (Breakbulk) is the basic working unit in Army water terminal operations for breakbulk cargo. The company may operate separately or may be integrated with units of other terminal service and lighterage units commanded by a single battalion. Its responsibilities include discharging cargo from a ship to a pier or a

lighter, or a temporary holding or marshalling area; or loading cargo aboard clearance transport. The company prepares all documentation needed to forward the cargo to its depot or user destination in accordance with cargo disposition instructions.

b. **Capabilities.** The company can work one ship on a two-shift basis, or two ships on a one-shift basis. At piers or over beaches, with 75-percent availability of equipment, the company can discharge or load 600 STONs during LOTS operations or 2,500 STONs at fixed facilities. Discharging includes sorting by destination and loading cargo on transportation at the pier or waterline. Loading includes receiving cargo from land transportation at the pier or waterline and providing in-transit storage, as required. Both functions include accounting for all cargo handled and preparing necessary military standard transportation and movement procedures transportation documentation.

4. Transportation Terminal Service Company (Breakbulk/Container)

a. **Mission and Assignment.** The transportation terminal service company handles breakbulk and containers in a theater water terminal operation. If augmented with personnel and equipment for command and control, port security, and cargo documentation capabilities, the unit can work a container or breakbulk port or a port capable of handling both breakbulk and containerized cargo. The unit is normally attached to a terminal battalion for command and control, but may be assigned to a theater transportation command or a Corps Support Command (COSCOM) when supporting independent corps operations.

b. **Capabilities.** Operating on a two-shift basis, the company is capable of handling 200 containers per day or discharging 1,600 STONs of breakbulk cargo per day in a LOTS environment. In a fixed port, the company is able to handle 400 containers or 2,500 STONs of breakbulk cargo in a two-shift operation with 75-percent operational equipment availability. The company must be augmented by a heavy crane platoon to handle containers.

c. **Functions.** The breakbulk or container terminal service company can operate independently, or may be integrated with other water terminal units commanded by a single battalion. Centralizing equipment, maintenance, and documentation at battalion level is also possible within the constraints imposed by container-peculiar equipment and equipment operators.

5. Transportation Cargo Transfer Company

a. **Mission and Assignment.** The transportation cargo transfer company transships cargo at air, rail, and motor terminals. This includes unloading, segregating, repairing, temporary holding, documenting, and cargo loading responsibilities whenever a change in carrier occurs. The company may also operate in-transit cargo areas to provide a breakbulk facility for consolidated shipments or operate a small retrograde cargo shipment consolidation point. The company is normally assigned to either a Theater Army Area Command or COSCOM and attached to a theater transportation command, transportation group, or corps support group. The company or its elements may also be attached to a terminal battalion to support terminal service company shore platoons by loading backlogged cargo into clearance transportation. The company is not normally assigned to operate at distribution points. However, the company or its elements may be committed to support supply units at distribution points if excessive cargo backlog or similar conditions create a need for temporary support.

b. **Capabilities.** A company can transship an average of 3,000 STONs of breakbulk cargo or 450 containers per day when container handling equipment is available, based on a 20-hour day. This capability considers all functions incident to cargo movement. It can operate three separate terminals on a round-the-clock basis and transship 300 STON of breakbulk cargo or 200 containers a day. The unit can redocument transshipped cargo or containers as required, and stuff or unstuff containers on a limited basis.

6. MTMC Transportation Terminal Brigade or Battalion

a. **Mission and Assignment.** MTMC transportation brigades or battalions are US Army Reserve organizations established to provide an expanded capability to direct water terminal operations. They are designed to conduct water terminal operations at established commercial CONUS ports in which the equipment and manpower are available to perform the actual terminal operations. When operating terminals within the United States, they operate under OPCON of USTRANSCOM and MTMC using existing terminal equipment and union labor. However they may, if required, be deployed OCONUS to provide the combatant commander with the capability to expand the number or capabilities of ports for sustainment or redeployment purposes. When operating in support of a geographic combatant commander, terminal equipment and labor must be made available through HNS agreements. Command arrangements for OCONUS operations will be as determined by MOU between the supported combatant commander and USCINCTRANS. The organization of a transportation terminal batallion or brigade will vary depending on the terminals they are assigned to operate. As a minimum, each has a commander and staff elements to supervise movement operations, contracts, cargo documentation, physical security, and the flow of information.

b. **Capabilities.** The capabilities of the transporation terminal battalions or brigades depend on the size of the organization deployed, the sophistication of the fixed-port facility they are tasked to operate, and the availability of contract stevedores or HNS. As a result, capabilities determinations must be made on a case-by-case basis.

7. Water Transport

a. **Mission and Assignment.** Normally, water transport operations will be confined to a logistic support role in the theater or operational area rear area. Army water transport units normally operate as part of a terminal service organization. There are two major types of water transport company-sized units in the Army. These are the medium-boat company (Landing Craft, Mechanized, or LCM) and the heavy-boat company (Landing Craft, Utility, or LCU). Also, several separate watercraft teams are designed to perform special marine service support in operating coastal, harbor, and inland waterway vessels.

b. **Capabilities.** The following lists the various water transport units available for use by the water terminal commander.

- **Medium Boat Company.** The LCM provides and operates landing craft for moving personnel and cargo. It also augments Navy craft in conducting joint amphibious operations. The medium-boat company can transport an average of 1,600 STONs of noncontainerized cargo or 240 containers daily. The company can, using all 16 LCMs, transport 3,200 troops at one time.

- **Heavy Boat Company.** The LCU provides and operates landing craft for

transporting personnel, containers, vehicles, and outsized cargo in offshore discharge operations. It may be attached to the Navy in support of a joint amphibious operation. There are two classes of LCUs (the 1600 and 2000 classes).

- **LCU-1600 Class.** This class has dual screws, four rudders (including two flanking rudders), and a drive-through capability. It can carry 202 STONs of general cargo, 10 TEU containers, 1,600 square feet of vehicles, or three combat-loaded M-1 tanks.

- **LCU-2000 Class.** This class has dual screws with rudders and bow thruster and has no drive-through capability. It can carry 343 STONs of general cargo, 30 TEU, 2,200 square feet of vehicles, or four combat-loaded M-1 tanks.

c. **Watercraft.** Watercraft detachments provide crews required to perform specialized functions in operating coastal and inland waterway vessels. Each detachment must be fully supported by the unit to which it is attached.

- **LA Detachment.** The LA detachment provides the crew for nonpropelled dry cargo barges. The barges are in various sizes, from 45.5 to 120 feet long, with capacity ranging from 22 to 636 STONs. The larger barges can carry bulk liquid or deck cargo.

- **LB Detachment.** The LB detachment operates picketboats — coastal or harbor inland boats 65 feet and smaller. Picketboats provide water transportation, water patrols, command, inspection, and general utility services in support of water terminal operations.

- **LC Detachment.** The LC detachment consists of marine engineer and deck personnel required to operate the pumps and to crew the 120-foot, non-self-propelled liquid cargo barge to transport deck or bulk-liquid cargo. The barge can transport 4,160 barrels of liquid cargo or 655 STONs of dry cargo.

- **LD Detachment.** The LD detachment has the necessary personnel to operate the 70-foot tug (small tug) rated as a 65-foot tug by the Army. Its operational missions include firefighting, shifting and towing barges, and assisting in docking and undocking large vessels.

- **LE Detachment.** The LE detachment loads and discharges heavy-lift cargo that is beyond the capability of a ship's gear. It provides crews for the 60-STON non-self-propelled floating crane and the 100-STON floating crane.

- **Team FJ.** Team FJ provides the operating capability for the 107-foot tug rated as a 100-foot large tug (LT) by the Army. It is capable of heavy tows within a harbor area or limited offshore towing between terminals, berthing, and unberthing deep-draft vessels.

- **LI Detachment.** The LI detachment provides the operating capability for the 128-foot LT. It can dock and undock vessels and conduct barge-towing operations and limited salvage services.

- **LJ Detachment.** The LJ detachment operates the logistics support vessel (LSV). It provides the capability to carry cargo and/or equipment throughout the theater or on intratheater routes not otherwise serviced by MSC. The 272-foot self-propelled vessel can carry up to 1,963 STONs of cargo along inland waterways, intracoastal, inter-island, and on open seas. The LSV will also assist in RO/RO or LOTS operations, particularly with container handling

equipment, vehicular and other oversized or overweight cargo.

- **LH Detachment.** The LH detachment provides amphibious lighterage service primarily for items of heavy, outsized, or bulky equipment. The daily capacity of LARC-60s in this detachment is 450 STONs of heavy, outsized, or bulky noncontainerized cargo, or 21 TEU.

8. Army Port Construction Companies

Port construction support companies provide technical personnel for the construction and restoration of ports, JLOTS facilities, inland waterways, and POL water terminals. Engineer teams, such as diving teams, support the construction effort.

ANNEX B TO APPENDIX A
NAVY UNITS

1. Mission and Assignment

Each Navy Cargo Handling Battalion (NCHB) is a quick response, multi-mission tasked unit comprised of 9 officers and 145 enlisted personnel, plus basic organic unit equipment required to provide technical and supervisory cargo handling capability. NCHBs operate most effectively when employed solely on ship loading and discharge operations and when each of its 16 seven-man hatch teams is augmented by 7 unskilled or stevedore personnel provided by the supported unit or activity. When augmented with 112 personnel (7 per hatch team), a NCHB can achieve a ship discharge rate of approximately 2880 MTONs per day pier-side, and approximately 1920 MTONs per day discharge rate in-stream. If the NCHB is not augmented, then the discharge rate must be reduced by fifty percent (1440 MTONs pier-side and 960 MTONs in-stream). Cargo documentation is an organic capability of the CHB. If assigned to an Army-operated water terminal, a CHB would operate automated documentation support equipment. Cargo documentation support is also available in a Navy Freight Terminal Unit (FTU). A mission capability of the FTU is the control and automated documentation of material receipts and issues and the capability to interface with multiple military units and local activities. At a site where multiple CHBs are operating or operate for extended periods, a FTU detachment may be assigned for documentation support.

2. Capability

The specific tasks of a NCHB include, but are not limited to the following.

a. MPS and/or assault follow-on echelon Cargo handling Operations

b. Heavy Lift (Marine) Crane Operators

c. Port Cargo Operations and/or Total Cargo Class Responsibility

d. Expeditionary (Limited) Ocean Terminal Operations

e. Expeditionary (Limited) Air Cargo Terminal Operations

f. Self Support Services

3. Component Package

NCHBs may bring a variety of equipment packages tailored to support specific missions. Cargo handling equipment and vehicles (both civil engineering support equipment [CESE] and MHE) may be obtained by utilizing advanced base functional components (ABFC). Some examples of the ABFC component packages follow.

a. The Personnel and Basic Personnel Equipment component provides the personnel and basic organic personnel support gear required to perform all cargo handling missions. Supplemental equipment packages may be added to this component, as necessary, to meet specific environmental and/or mission requirements.

b. An Expanded Core and/or Hatch Box Equipment component provides the basic organic cargo handling hatch box equipment and consumables necessary to provide one NCHB with the capability to work two shifts or eight hatches at one location. This component is air deployable and requires two 463L pallet positions. This component also provides the necessary ADP equipment for the computer-aided load manifesting system

and LOGMARS material tracking and documentation.

c. A Cargo Handling CESE Large General Purpose component provides the vehicles to establish a limited ocean terminal and/or augment a port operation. Due to its size and scope, this component is not designed to be air deployable. This component contains the following ABFC components.

- Troop Transportation Vehicle component (1).
- Truck Tractor Equipment components (3).
- Trailer Equipment components (3).
- Vehicle Service Equipment component (1).
- Additional pieces of CESE and equipment facilities for organizational level repair and maintenance of organic CESE.

d. The MHE-Large General Purpose component provides electric forklifts, rough terrain forklifts, and other equipment to support a NCHB in establishing a limited ocean terminal and/or augmenting a port cargo operation for all categories of cargo including hazardous material and munitions. This component, due to its size and scope, is not designed to be air deployable. This component contains the following ABFC components.

- MHE-Austere Detachment components (3).
- MHE-Electric component (1).
- MHE-Air Cargo component (1).
- Additional pieces of MHE and equipment and/or facilities for organizational-level repair and maintenance of organic MHE.

e. The Heavy Lift MHE-General Purpose component provides 30- and 90-ton mobile multiple cranes and heavy container handling capability to support a NCHB in establishing or augmenting a limited ocean terminal. This component contains the following sub-components.

- MHE-Heavy Containers component (1).
- Weight Handling Equipment-30 Ton Crane component (1).
- Weight Handling Equipment-90 Ton Crane component (1).

The Weight Handling Equipment-90 ton Crane component should be provided to a NCHB in ports where mobile cranes and heavy-lift materials handling equipment for containers are not locally available.

f. The Austere Expeditionary Tent Camp component provides tents, cots, sleeping gear, and a 30-day supply of Meals, Ready to Eat (MREs) to allow a NCHB to establish an austere expeditionary tent camp without a field mess during the first 30 days of employment. This component is air deployable and should be provided to each NCHB in all scenarios where there is an anticipated delay in establishing an Expeditionary Tent Camp facility. A smaller component version of this component package is the 55-Man Tent Camp, three of which would support an entire NCHB. This is complemented by the 55-Man/30-Day Supply of MREs component and is air deployable. This component should be provided to detachments or battalions when a field kitchen or other messing facilities are not available.

g. The Expanded Expeditionary Tent Camp Facility component provides a complete field kitchen, commodities, and food supplies to support long term operations of a NCHB living in an Austere Expeditionary Tent Camp. The materials, equipment, and supplies are of such a quantity and weight that this component is not reasonably air deployable. This component should be provided to each NCHB when the battalion must operate an Expeditionary Tent Camp Facility for more than 30 days.

h. Other available component packages which could be employed under various contingency conditions are as follows.

- Passenger and/or Troop Transportation Bus.
- Communications Equipment-Air Cargo Terminal.
- Extreme Cold Weather Clothing.
- Ammo Magazine Sheathing Equipment.
- Large Fuel Package (Greater than 32 degrees F).
- Small Fuel Package (Greater than 32 degrees F).
- Large Fuel Package (Less than 32 degrees F).
- Small Fuel Package (Less than 32 degrees F).
- Lighting Equipment.
- Power Distribution Equipment-Basic.
- Power Distribution Equipment-Expanded.

4. Advanced Logistic Support Site/Forward Logistic Site Concepts of Operations

Tied to the Navy's concept for ship off-load is the establishment of naval advanced logistic support sites (ALSSs) and forward logistic sites (FLSs).

a. An ALSS is a location that is used as the primary transshipment point for material and personnel destined for deployed units within a theater of operations. An ALSS is established at a secure location readily accessible to seaport and airfield facilities, but may not be in proximity to main operating areas. ALSSs possess a full capability for handling reception, storage, consolidation, and forwarding of supplies, munitions, petroleum, and personnel required to support deployed units operating in the area. The ALSS is a throughput operation handling all airlift and sealift coming into and out of the theater. An ALSS may also possess the requisite medical capability to accept battle casualties and to hold such casualties until they can be returned to duty or evacuated by national medical evacuation systems. When fully stood up, an ALSS is generally a blend of host-nation support and logistic support augmentation personnel.

b. An FLS is the most forward transshipment point that provides the bridge between an ALSS and units at sea. An FLS is established at a site located near a port and/or airfield, but close to the main battle area. It provides for the reception and forwarding of selected high priority material and personnel from the ALSS to units operating at sea in the area by either rotary vertical onboard delivery and/or fixed-wing carrier onboard delivery aircraft. FLSs are linked to ALSSs by intratheater airlift and sealift, if practicable. An FLS may be expanded to include advanced

maintenance and battle damage repair. In providing maritime logistic support, FLS capabilities range from very austere to near those of an ALSS, including a supporting seaport.

c. **ALSS and/or FLS Concept of Operation.** In a crisis response scenario, the ALSS would direct and coordinate the flow of passengers, mail, and cargo through an area of responsibility. The ALSS would have full capability for temporary storage, consolidation, and transfer of supplies, as well as messing and berthing for personnel transiting into and out of the theater. In times of heightened logistics requirements, the ALSS could coordinate various FLS operations and their direct freight forwarding activity, as well as provide support for shore-based aviation units, Fleet Hospitals, Naval Mobile Construction Battalions, and other shore-based logistics units.

ANNEX C TO APPENDIX A
MARINE CORPS UNITS

1. General

The Marine LSB is organized into six separate companies to provide landing, terminal service, materials handling, and air delivery support for the landing force (LF) in the amphibious operation and subsequent operations ashore.

2. Mission and Assignment

An LSB provides a nucleus of personnel and equipment to which other elements of the Marine air-ground task force (MAGTF) may be assigned to form a task-organized LF support party in order to provide initial combat service support to units up to Marine Expeditionary Force (MEF) size. The LSB provides the command and control structure, administrative and operational personnel, and equipment to support LF, shore party, and helicopter support team operations. It provides specialized MHE and personnel for management of passengers and breakbulk or container cargo during terminal operations at seaports, airports, railheads, and beaches. It also provides air delivery support equipment and personnel during extended operations ashore. The LSB is responsible for performing engineer tasks required for landing operations, to include austere site preparation, construction or removal of obstacles and barriers, and establishment of routes from the beach.

3. Capabilities

a. **Landing Support Company.** The landing support company provides landing and throughput support to the MEF and smaller MAGTFs during amphibious and helicopterborne operations requiring logistic support in excess of the supported unit's organic capabilities. The company will be reinforced with assets from beach and terminal operations company and/or landing support equipment company when special equipment is required. When augmented by elements of the naval beach group, it provides coordination of initial throughput and sustainment support for the MEF. The company provides, as required, shore party and/or helicopter support teams that are capable of preparing, marking, and controlling landing beaches or zones. The company can establish temporary multiclass supply storage sites; coordinate the unloading of supplies from landing craft, ships, and helicopters; and coordinate transportation support for the evacuation of casualties and enemy prisoners of war.

b. **Beach and Terminal Operations Company.** The beach and terminal operations company provides general transportation support in coordinating throughput operations of the MEF. The company provides personnel and equipment for the loading, unloading, and movement of supplies of designated ports, beaches, rail heads, air heads, cargo terminals, dumps, and depots. The company can also provide air delivery support and air freight operational capabilities.

c. **Landing Support Equipment Company.** The landing support equipment company provides centralized general support, landing support, and maintenance support to facilitate and expedite throughput operations in support of the MEF. It is equipped with tactical engineering cranes, buckets, graders, forklifts, and lighting sets to facilitate throughput operations. The landing support equipment company provides MHE support to the MEF and provides specialized MHE and container handling support for the management of breakbulk or

container throughput operations at ports, beaches, rail heads, air heads, and cargo terminals.

d. **Headquarters and Service Company.** Headquarters and service company provides the command and control, administration, and command support functions for the battalion. This includes internal communications, supply, ordnance, security, and food service support for the battalion.

ANNEX D TO APPENDIX A
AIR FORCE UNITS

The Air Force establishes a Water Terminal Logistic Office (WTLO) at selected water terminals in CONUS and OCONUS for processing bulk or containerized Air Force-sponsored cargo transported under cognizance of USTRANSCOM. The WTLO provides assistance to the water terminal commander for expediting and tracking Air Force-sponsored shipments and to ensure that Air Force cargo flows in accordance with the supported combatant commander priorities. The WTLO also resolves problem areas between the Air Force shipper and consignee; provides the terminal command disposition instructions to ensure prompt movement of Air Force cargo that is frustrated, found, or damaged; acts as liaison at the port with other Service components; and assists the terminal command for diverting cargo from surface to air.

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APPENDIX B
WATER TERMINAL PLANNING CONSIDERATIONS

This appendix identifies the terminal commander's responsibilities and lists data normally required to understand operational considerations of potential water terminals. These lists are also for use by JFCs and their staffs in planning joint water terminal operations.

1. Terminal Commander's Responsibilities

The terminal commander is normally responsible for the overall operation of the terminal, to include the following.

a. Water terminal planning and operations:

- Notification of consignees.
- Port clearances.
- Vessel scheduling.
- Availability of local pilots.

b. Statutory and regulatory constraints.

c. Military construction.

d. Environment and natural resources preservation.

e. Energy conservation.

f. Terminal readiness.

g. Terminal performance measurement and reporting.

h. Safety management.

i. Terminal security.

j. Terminal and warehouse operations.

k. Railcar and truck unloading and loading operations.

l. Container freight station operations (receiving, stuffing, and unstuffing).

m. Pier operations.

n. Cargo movement control and documentation.

o. Contract management.

p. Stevedores and related terminal services.

q. Performance work statements.

r. Ship stowing.

s. Ship scheduling, on and off berth.

t. Proper handling of hazardous material and cargo.

u. Crisis response and/or clean-up facilities for POL or hazardous material accident or spills.

v. Manifesting of retrograde cargo or transshipments.

2. General Water Ports Data

General information on water ports includes the following.

a. Map sheet number (series, sheet, edition, date).

b. Nautical chart number.

c. Grid coordinates and longitude and/or latitude.

d. Military water terminal capacity and method of estimation.

e. Dangerous or endangered marine or land animals in the area.

f. Names, titles, and addresses of port authority and agent personnel.

g. Nearest US consul.

h. Port regulations.

i. Current tariffs.

j. Frequencies, channels, and call signs of the port's harbor control.

k. Complete description of the terrain within 25 miles of the port.

l. Location of nearest towns (see community information [Para 16]), airports, and military installations.

m. Maintenance of navigational aids.

3. Specific Port Data

Specific port data includes the following.

a. Types of ports.

b. Lengths and locations of breakwaters.

c. Depth, length, and width in the fairway.

d. Current speed and direction in the fairway.

e. Size and depth of the turning basin.

f. Location and description of navigational aids.

g. Pilotage procedures required.

h. Location and degree of silting.

i. Size, frequency, and effectiveness of dredging operations.

j. Description of the port's dredger.

k. Description of sandbars or reefs in the area.

l. Identity of any marine plants that could inhibit movement of ships or lighterage.

m. Composition of the harbor bottom (percentage).

n. Description of approach to harbor.

4. Weather and Hydrography

Weather and hydrography information includes the following.

a. Types of weather conditions encountered in the area.

b. Time of year these conditions occur.

c. Prevailing wind direction per calendar quarter.

d. Per calendar quarter, percentage of time for wind speed within 1 to 6 knots, 7 to 16 knots, and over 17 knots.

e. Maximum, minimum, and average precipitation per month to the nearest tenth of an inch.

f. Maximum, minimum, and average surface air temperature per month.

g. Frequency, duration, and density of fog and dust.

h. Effects of weather on the terrain.

i. Effects of weather on sea vessel travel.

j. Effects of weather on logistic operations (off-loading materials on vehicle or rail).

k. Seasonal climatic conditions that would inhibit port operations for prolonged periods (24 hours or more).

l. Type and mean range of the tide.

m. Direction and speed of the current.

n. Minimum and maximum water temperature.

o. Per calendar quarter, percentage of time that surf is within 0 to 4 feet, 4 to 6 feet, 6 to 9 feet, and over 9 feet.

p. Per calendar quarter, percentage of time that swells are within 0 to 4 feet, 4 to 6 feet, 6 to 9 feet, and over 9 feet.

q. Daylight charts.

5. Anchorages

Essential information on anchorages includes the following.

a. Distance and true bearing from release point of all anchorages.

b. Maximum and minimum depth for each anchorage.

c. Speed and direction of the current at each anchorage.

d. Radius of each anchorage.

e. Bottom material and holding characteristic of each anchorage.

f. Exposure condition of each anchorage.

g. Offshore or nearshore obstacles, what they are, and their distance and true bearing from the port.

6. Wharves

Essential information on wharves includes the following.

a. Types of quays and piers (e.g., wooden, concrete) located along shoreline.

b. Length and width of quays and piers along shoreline.

c. Present condition of quays and piers along shoreline.

d. Type and location of equipment on quays and piers that may be used by personnel to off-load cargo.

e. Number and types of vessels that quays and piers can accommodate at one time.

f. Safe working load level of the quays and piers (capable of supporting 60-, 130-, 150-ton vehicles or equipment).

g. Water depth alongside and leading to the quays and piers.

h. Services available (water, fuel, electricity).

i. Available storage.

j. Specialized facilities available for the discharge of RO/RO vessels (e.g., ramps).

k. Height of wharves above mean water level.

l. Current use of wharves.

m. Type of fender system the terminal has on its wharves.

n. Trackage (if any), length and gauge.

o. Special considerations for handling ammunition and hazardous cargo.

7. Cranes

Essential information on cranes includes the following.

a. Number and location of cranes.

b. Characteristics for each crane:

- Lift capability.
- Type of power.
- Dimensions (maximum or minimum radii, outreach beyond wharf face, and above or below wharf hoist).
- Speed (lifting, luffing, and revolutions).
- Height and width of terminal clearance.
- Track length and gauge.
- Make, model, and manufacturer.
- Age and condition.
- Emergency power availability.
- Certification and characteristics for handling explosive and hazardous cargo.

8. Materials Handling Equipment

Essential information on materials handling equipment includes the following.

a. Number, location, and type of MHE.

b. Characteristics for other MHE (other than cranes):

- Type of power.
- Lift capability.
- Dimensions.
- Make, model, and condition.
- Age.
- Compatibility with military equipment lifting or handling points.
- Certification and characteristics for handling explosive and hazardous cargo.

9. Stevedores

Essential information on stevedores includes:

a. Number and size of gangs.

b. Efficiency of each gang.

c. Working hours of gangs.

d. Availability and condition of stevedore gear and local vendor to replace or purchase damaged gear.

e. Arrangements for gangs.

f. Availability of other local, national, or third country labor.

g. HNS.

10. Watercraft

Essential information on watercraft includes the following.

a. Number, type, and location of small craft (e.g., tug, pusher, ferry, fishing, pipe laying, barges, fire, patrol, salvage, hazardous spill control) located in or near the port.

b. Characteristics for each craft:

- Size and capacity.
- Number of crew.

- Berthing spaces.
- Types of engines.
- Number of engines and number of propellers.
- Types of generators.
- Number of generators.
- Number of kilowatts for each generator.
- Types and number of air compressors.
- Cubic feet per minute of air compressors.
- Types of engine control (e.g., hydro, air).
- Location of engine control (wheelhouse or engine room).
- Normal working hours per day of crew.
- Telegraph engine signal, if any.
- Engine manufacturers (e.g., Fairbanks, Morse, Detroit Cooper-Bessemer); types of hull (e.g., modified V or round).
- Materials of construction (e.g., wood, steel, cement, or fiberglass).
- Number of rudders and types of rudder (e.g., steering or flanking).
- Number of propellers (e.g., single or twin).
- Type of radio and frequency range.
- Layout of the rail and road network in the terminal.

11. Storage Facilities

Essential information on storage facilities includes the following.

a. Number and location of storage facilities.

b. Characteristics of each:

- Product stored.
- Type of storage (e.g., open, covered, or refrigerated).
- Capacity and/or dimensions.
- Floor material.
- Wall material.
- Roof material.
- State of repair.
- Special facilities.
- Security facilities.
- Map of storage facilities.
- Hazardous materials facilities.

12. Terminal Equipment Repair Facilities

Essential information on terminal equipment repair facilities includes the following.

a. Location, size, and capabilities of repair facilities.

b. Type of equipment.

c. Number and ability of repairmen.

d. Availability and system of procuring repair parts.

13. Ship Repair Facilities

Essential information on ship repair facilities includes the following.

a. Number and type of dry dock and repair facilities.

b. Quality of work and level of repairs that can be made.

c. Capacity of dry dock(s).

d. Location, size, and use of other buildings in the terminal.

e. Method for obtaining potable and boiler water in the terminal.

f. Method for obtaining fuel, lube, and diesel oil in the port.

g. Medical personnel in port.

h. Electrical generating facilities in port or provisions for obtaining electricity from an external source.

i. Ship-handling services available in the port.

14. Lines of Communications Availability

Essential information on lines of communications (LOC) includes the following.

a. **Primary and Secondary Roads**

- Type of primary roads (e.g., concrete, asphalt).
- Primary and secondary roads that allow north-south and east-west movement.
- Capacity of intraterminal road networks.
- Present condition of these roads.
- Bridges constructed along these roads.
- Bridge construction materials along these routes.
- Width and weight allowance of these bridges.
- Overpasses and tunnels located along these routes.
- Width and height allowances of the overpasses and tunnels.
- Major cities that roads enter and exit.
- Names, addresses, and telephone numbers of highway authorities, if any.
- Tolls or user fees for use of port area roads and bridges.

b. **Rail**

- Rail capacity.
- Type of rail line.
- Type of rail network.
- Location of rail bridges.
- Weight allowance of rail bridges.
- Location and restriction of overpasses and tunnels that pass over rail lines.
- Gauges.
- Equipment available; e.g., locomotives (steam or diesel), flatcars, and boxcars.
- Ownership of rail network (private or government).
- Address and telephone number of rail network authorities.

c. **Inland Waterway**

- **Width of the waterway.**
- Average depth, speed of the water, and shallow point.
- With a given cargo weight, how close to the shore will water depth allow vessels.
- Capacity to conduct clearance operations by inland waterway.
- Points at which tugs will be needed to support travel of vessel.
- Points along the coast that are most suitable for different types of sea and/or land operations.
- Types of channel markers.
- Points that are most suitable for mining of waterway.
- Effect that mining would have on ship passage.
- Locations at which waterways narrow into choke points.
- Other than choke points, locations where vessels are vulnerable to shore fire.
- Security that is available for vessels (underway, at anchor, or tied up).
- Type of hostile special operations units that can threaten vessels.
- Local shore security available to protect vessels once they are docked.
- Type and number of local watercraft available to move cargo.
- Maintenance capability that exists for these vessels.
- Docks along the waterway.
- Local regulations that govern inland waterway operations.
- Addresses and telephone numbers of the waterway authorities, if any.

15. Threat

Essential information on threat includes the following.

a. Enemy threat and capability in the operational area (e.g., air; naval; ground; or nuclear, biological, and chemical).

b. Description of local overt or covert organizations from which hostile action can be expected.

c. Availability of local assets for rear area security operations.

d. In addition to port and/or LOTS operations, other primary targets in the area (e.g., military bases, key industrial activities, political and/or cultural center, satellite communications facilities).

e. Physical security characteristics of port area.

16. Community Information

Community information should include the following.

a. **General**

- Name of town(s) within a 25-mile radius.
- Grid coordinates and longitude and latitude of the town.
- Size and significance of the town.
- Primary means of livelihood for the town.

- Form of government that exists.
- Description of the local police and/or militia.
- Description of the local fire department and equipment.
- Local laws or customs that will impact on operations in this area.
- Availability of billeting.

b. **Population**

- Size of the population.
- Racial breakdown of the population.
- Religious breakdown of the population.
- Languages spoken.
- Political or activist parties that exist in the town.
- If population is considered friendly or hostile.

c. **Labor.** Names, addresses, and telephone numbers of contracting agents available with services that may be needed during operations (e.g., husbanding agents, potable or boiler water, ship repair, coastal vessels, lighterage, machinists, and skilled and unskilled labor).

d. **Water**

- Availability of potable and boiler water.
- Size, location, and condition of water purification or desalinization plants.
- Other sources of water, if any.
- Quantity, quality, method, and rates of water delivery.
- Special size connections required, if any.
- Water barges available, if any.
- Water requiring special treatment before use, if any.

e. **Health Service Support**

- Locations, size, capabilities, and standards of local hospitals and other medical treatment facilities.
- Availability of physicians (specialized), nurses, hospital beds, medical evacuation assets, medical, supplies, and potable water.
- Any local diseases that require special attention or preventive action.
- Overall health and sanitary standards of the town and surrounding area.
- Method of reimbursement for health service support.
- Health service support requirements if HNS is not available.

f. **Electricity**

- Location, size (kilowatts), and condition of the power station servicing the area.
- How power station is fueled.
- Location and size of transformer stations.
- Voltage and cycles of the electricity.
- Other significant sources of electricity (e.g., large generators) in the area.

g. **POL**

- Locations and size of wholesale fuel distributors in the area (including type of fuel).
- Location and size of POL storage areas or tanks in the area (including type of fuel).

h. **Communications**

- Address of telephone or telex office.
- Description of domestic telephone service in the area (e.g., type, condition, number of lines, switching equipment, and use of landlines or microwave).
- Description of required US military and Government communications services. Refer to Appendix G, "J-6, Communication" in Joint Pub 5-00.2, "Joint Task Force Planning Guidance and Procedures," for a comprehensive description and checklists on JTF communications planning.

17. Marshalling Yard Provisions and Considerations

a. A central control and inspection point with multiple lanes for cargo and containers entering or exiting the marshalling yard.

b. Auxiliary internal checkpoints for containers and cargo entering the yard from a beach or rail spur, or by helicopter to a landing pad within the yard.

c. A traffic circulation plan showing movement flow into, through, and out of the marshalling yard.

d. Segregation of inbound containers and cargo by size and type and, within these groupings, further segregation by priority, destination, and special handling (security, mail, hazardous cargo).

e. Segregation of retrograde cargo and containers by type and size, with empty and loaded containers further segregated.

f. Running inventory of containers by location and status within the yard.

g. Security area for breakbulk or containerized sensitive and high-dollar-value cargo.

h. External power source for refrigerated containers. (In an unimproved or bare beach LOTS environment, self-contained refrigeration units may be needed. This will mandate separate propane or diesel refueling areas.) Refrigeration maintenance must also be provided.

i. Sheltered facilities for inventory and control, documentation, and movement control elements.

j. Covered facilities for stuffing and stripping containers and coopering cargo.

k. Cleaning and/or decontamination of retrograde containers, equipment, supplies, and vehicles.

l. Minor repair of damaged containers.

m. Equipment parking.

n. Unit maintenance of equipment.

o. Messing and comfort facilities.

18. Terminal Units Operational Planning Determinations

a. Point of discharge (wharf or anchorage).

b. Piloting services (MSC coordinated).

c. Types of terminal units required.

d. Tugboat requirements (MSC-coordinated).

e. Equipment required for special or heavy lifts, and priorities of discharge, if any.

f. Arrangements for terminal clearance, including transportation.

g. Requirements for temporary holding or further segregation of cargo.

h. Security and safety requirements.

i. Estimates of hatch or vessel completion times.

j. Considerations of specific ship characteristics; e.g., shore cranes may be used to load flatracks or seasheds on fast sealift ships.

APPENDIX C
HOST-NATION SUPPORT

1. Host-Nation Support

Use of HNS for US forces will assist the combatant commander in accomplishing the mission while reducing the requirement for US personnel, materiel, and services. HNS applies to military operations other than war and war, and to the peacetime operations support that contributes to the preparation for war, and conduct of exercises. Except for rear area operations, combat operations are not conducted under HNS agreements.

a. **Procedures.** The combatant commander will ensure that proper authority is obtained for negotiations with HN. The combatant commander and the Service component commanders will establish procedures for the following.

- Determining specific combat support, combat service support, and rear operations requirements that can be met through the use of HN resources.
- Assessing and identifying, in conjunction with the HN, which HN assets are available and what quantities can be provided.
- Integrating support requirements into the overall command and control systems.
- Designating points of contact at each required command level to coordinate activities related to HNS in peacetime, transition, and wartime.

b. **The Role of CA.** CA assists and coordinates efforts to identify and acquire HNS. CA personnel in a friendly country aid civil-military cooperation by providing interface with local authorities or military forces. In peacetime, CA personnel conduct area studies and review HN agreements to assist in planning for the optimal use of HNS. Joint Pub 3-57, "Doctrine for Joint Civil Affairs," provides doctrine for joint CA.

c. **HNS Planning Considerations**

- In a theater where forces are in forward-deployed positions, the commander has extensive knowledge of HNS capabilities. The commander can analyze the mission and determine what functions and tasks can be performed by HNS elements.
- For contingency operations, the commander may have limited information regarding the availability of HNS. Hopefully, some degree of HNS may be expected.

d. **HNS Suitability Factors.** Factors in determining the suitability of using HN resources to accomplish specific missions and functions include the following.

- Capability, dependability, and willingness of the HN to provide and sustain identified resource needs.
- Shortfalls in US force structure, as well as areas in which US force structure requirements could be reduced by using HNS resources.
- Effect of HNS on the morale of US soldiers.
- Operational security and reliability.
- Capability of US forces to accept and manage HNS resources.

- The risk associated with HNS being available in the type and quantity agreed upon.

e. **Support Agreements**

- HNS is normally based on agreements that commit the HN to provide specific support under prescribed conditions. Agreements may occur at various levels, including nation-to-nation, between component commanders, between major commands, and at lower command levels. Peacetime support arrangements are considered viable sources of wartime HNS when authorized by some type of formal agreement. A formal agreement, although preferred, is not an absolute prerequisite for obtaining HNS.

- The use of HNS in contingencies requires broad planning for the various situations that may arise and the different countries that may become involved. Some nations may not sign, or are incapable of administering, support agreements with the United States. In such instances, peacetime planning for and use of local HN resources may still be required to successfully accomplish missions assigned to US forces, but this becomes a major factor when considering risk.

- The major uncertainty associated with contingency operations is identifying those areas in which conflicts are likely to occur. Once those areas and nations are identified, CA area studies are requested. Other studies are available from the Department of State, Department of Defense, the Agency for International Development, and agencies such as the Defense Intelligence Agency.

- In contingency situations where neither planning nor agreements are concluded, CA personnel should be among the earliest arrivals in the area. They must rapidly identify the support that the HN can provide, then assist in coordinating and integrating that support into the logistics plan. Once HNS agreements have been concluded, CA personnel can continue to serve as the single point of contact between the HN activity and the supported units.

2. Types of HNS

a. **Government Agencies.** HN government agencies build, operate, and maintain facilities and systems such as utilities and telephone networks that may provide services in support of US requirements. Police, fire companies, and border patrols may be available to support US forces.

b. **Civilian Contractors.** Host-country, third-country, or US contractors located in the theater employing HN or third-country personnel may provide supplies and services such as laundry, bath, bakery, transportation, labor, and construction.

c. **HN Civilians.** US manpower needs range from low-skilled laborers, stevedores, truck drivers, and supply handlers to more highly skilled equipment operators, mechanics, computer operators, and managers. The HN labor pool may provide personnel having these skills.

d. **Type B US Units.** Type B units may be assigned to assist in performing HNS-type functions. These units are configured to conserve Service manpower by substituting non-US personnel in specified positions. An example of a Type B unit is the Korean Augmentation to the United States Army program.

e. **HN Military Units.** HN military or paramilitary units support US requirements during wartime in functions such as traffic

control, convoy escort, installation security, or cargo and troop transport and rear operations.

f. **HN Facilities.** US forces may use HN buildings or facilities for such things as hospitals, headquarters, billets, maintenance shops, or supply activities. HN facilities may be nationalized, come under HN control, or be provided by contractual agreement.

g. **Selected Functions.** A HN performs particular functions in a designated area or for a particular organization within national boundaries. Some examples are rail operations, convoy scheduling, air traffic control, and harbor pilot services. These services will normally operate under host government control by authority of national power acts.

h. **Supplies and Equipment.** Supplies and equipment needed for mission accomplishment may be acquired locally, precluding or reducing materiel shipments from the United States.

3. Employment and Supervision

The degree of command and control exercised by US forces over HNS depends on the type of support, location, tactical situation, political environment, and provisions of technical agreements. Some HNS functions may be performed by HN military personnel because of the closeness of combat operations.

4. Activities Inappropriate for HNS

Some functions and services are inappropriate for a HN to provide. Usually, the decision is based on security reasons and the need for national control. Listed below are some functions and services (not all-inclusive) identified as inappropriate for HNS. Therefore, the user country will provide these functions and services from its national assets.

a. Command and control of health service support, supply, service, maintenance, replacement, and communications.

b. Triage, treatment, and hospitalization of the sick, injured, and wounded.

c. Veterinary subsistence inspection.

d. Law and order operations (US forces).

e. Control and maintenance of nuclear and chemical ammunition.

f. US prisoner confinement operations.

g. Accountability and security of enemy prisoners of war retained in US custody.

h. Medical supply accountability.

i. Identification and burial of the US dead.

j. Repair of nuclear weapons delivery sites.

k. Patient administration.

5. Training

US personnel, in particular CA personnel, must be trained in the proper procedures for HNS. Additional language training may be required. US personnel should be familiar with status-of-forces agreements and other agreements, as well as command directives regarding behavior and relationships in the host country. They should also be aware of activities and behaviors that will enhance and encourage HNS and be cautioned against those activities and behaviors that detract from a positive relationship. The CA area study is essential in developing these guidelines.

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APPENDIX D
REFERENCES

The development of Joint Pub 4-01.5 is based upon the following primary references.

1. Miscellaneous

a. Title 10, United States Code, as amended by the DOD Reorganization Act of 1986.

2. DOD Directives

a. DOD Directive 4000.25, "Administration of Defense Logistics Standard System."

b. DOD Directive 5100.1, "Functions of the Department of Defense and Its Major Components."

c. DOD 5160.53, "Single Manager Assignment For Military Traffic, Land Transportation, and Common User Terminals."

3. Joint Publications

a. Joint Pub 0-2, "Unified Action Armed Forces (UNAAF)."

b. Joint Pub 1-01, "Joint Publication System, Joint Doctrine and Joint Tactics, Techniques, and Procedures Development Program."

c. Joint Pub 1-02, "DOD Dictionary of Military and Associated Terms."

d. Joint Pub 1-03.16, "Joint Reporting Structure, Joint Operations Planning System."

e. Joint Pub 3-02.2, "Joint Doctrine for Amphibious Embarkation."

f. Joint Pub 3-10, "Doctrine for Joint Rear Area Operations."

g. Joint Pub 3-10.1, "Joint Tactics, Techniques, and Procedures for Base Defense."

h. Joint Pub 3-57, "Doctrine for Joint Civil Affairs."

i. Joint Pub 4-0, "Doctrine for Logistic Support of Joint Operations."

j. Joint Pub 4-01, "Joint Doctrine for the Defense Transportation System."

k. Joint Pub 4-01.1, "Joint Tactics, Techniques, and Procedures for Airlift Support to Joint Operations."

l. Joint Pub 4-01.2, "Joint Tactics, Techniques, and Procedures for Sealift Support to Joint Operations."

m. Joint Pub 4-01.3, "Joint Tactics, Techniques, and Procedures for Movement Control."

n. Joint Pub 4-01.6, "Joint Tactics, Techniques, and Procedures for Joint Logistics Over-the-Shore (JLOTS)."

o. Joint Pub 4-03, "Joint Bulk Petroleum Doctrine."

p. Joint Pub 5-0, "Doctrine for Planning Joint Operations."

q. Joint Pub 5-00.2, "Joint Task Force Planning Guidance and Procedures."

r. Joint Pub 6-0, "Doctrine for Command, Control, Communications, and Computer (C4) Systems Support to Joint Operations."

4. Army Publications

a. AR 40-12/SECNAVINST 6210.2/AFR 161-4, "Medical and Agricultural Foreign and Domestic Quarantine Regulations for Vessels, Aircraft, and Other Transports of the Armed Forces."

b. FM 55-10, "Movement Control in a Theater of Operations."

c. FM 55-50, "Army Water Transport Operations."

d. FM 55-60, "Coordinating Draft, Army Terminal Operations."

e. FM 100-5, "Operations."

f. FM 101-10-1/2, "Staff Officers Field Manual, Organizational, Technical and Logistical Data Planning Factors."

5. Navy Publications

a. NWP 1, "Strategic Concepts of the Navy."

b. NWP 8, "Command and Control."

c. NWP 39, "Naval Coastal Warfare Doctrine."

d. NWP 80, "Strategic Sealift Planning and Operations Doctrine of the US Navy."

e. TAC MEMO PZ 005700-1-88/OH 7-8, "Deployment of the Assault Follow-on Echelon (AFOE)."

f. TAC MEMO PZ 0022-1-90/OH 1-5, "Maritime Prepositioning Force (MPF) Operations."

6. Combatant Commander Publications

a. FORSCOM Regulation 55-1, "Transportation and Travel (Unit Movement Planning)."

b. MTMC Regulation 55-69, "Surface Transportation Terminal Operations."

c. Military Traffic Management Command Transportation Engineering Agency (MTMCTEA) Report, SE 90-3d-50, "Port Operational Performance Simulator (POPS) Version 2.0, Users Manual."

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APPENDIX E
ADMINISTRATIVE INSTRUCTIONS

1. User Comments

Users in the field are highly encouraged to submit comments on this publication to the Joint Warfighting Center, Attn: Doctrine Division, Fenwick Road, Bldg 96, Fort Monroe, VA 23651-5000. These comments should address content (accuracy, usefulness, consistency, and organization), writing, and appearance.

2. Authorship

The lead agent for this publication is the US Transportation Command. The Joint Staff doctrine sponsor for this publication is the Director for Logistics (J-4).

3. Supersession

This publication supersedes Joint Pub 4-01.5, 16 June 1993, "Joint Tactics, Techniques, and Procedures for Water Terminal Operations."

4. Change Recommendations

a. Recommendations for urgent changes to this publication should be submitted:

TO: USCINCTRANS SCOTT AFB IL//TCJ3/J-4-L//
INFO: JOINT STAFF WASHINGTON DC//J7-JDD//

Routine changes should be submitted to the Director for Operational Plans and Interoperability (J-7), JDD, 7000 Joint Staff Pentagon, Washington, D.C. 20318-7000.

b. When a Joint Staff directorate submits a proposal to the Chairman of the Joint Chiefs of Staff that would change source document information reflected in this publication, that directorate will include a proposed change to this publication as an enclosure to its proposal. The Military Services and other organizations are requested to notify the Director, J-7, Joint Staff, when changes to source documents reflected in this publication are initiated.

c. Record of Changes:

CHANGE NUMBER	COPY NUMBER	DATE OF CHANGE	DATE ENTERED	POSTED BY	REMARKS

5. Distribution

a. Additional copies of this publication can be obtained through Service publication centers.

b. Only approved pubs and test pubs are releasable outside the combatant commands, Services, and Joint Staff. Release of any classified joint publication to foreign governments or foreign nationals must be requested through the local embassy (Defense Attache Office) to DIA Foreign Liaison Office, PSS, Room 1A674, Pentagon, Washington D.C. 20301-7400.

c. Additional copies should be obtained from the Military Service assigned administrative support responsibility by DOD Directive 5100.3, 1 November 1988, "Support of the Headquarters of Unified, Specified, and Subordinate Joint Commands."

By Military Services:

Army:	US Army AG Publication Center 2800 Eastern Boulevard Baltimore, MD 21220-2898
Air Force:	Air Force Publications Distribution Center 2800 Eastern Boulevard Baltimore, MD 21220-2896
Navy:	CO, Naval Inventory Control Point 700 Robbins Avenue Bldg 1, Customer Service Philadelphia, PA 19111-5099
Marine Corps:	Marine Corps Logistics Base Albany, GA 31704-5000
Coast Guard:	Coast Guard Headquarters, COMDT (G-OPD) 2100 2nd Street, SW Washington, D.C. 20593-0001

d. Local reproduction is authorized and access to unclassified publications is unrestricted. However, access to and reproduction authorization for classified joint publications must be in accordance with DOD Regulation 5200.1-R.

GLOSSARY

PART I—ABBREVIATIONS AND ACRONYMS

AABFS	amphibious assault bulk fuel system
ABFC	advanced base functional component
ADP	automatic data processing
ALSS	advanced logistic support site
CA	civil affairs
CAA	command arrangement agreements
CDI	cargo disposition instructions
CESE	civil engineering support equipment
CHB	cargo handling battalion
CINC	combatant commander or Commander in Chief
COCOM	combatant command (command authority)
CONUS	continental United States
COSCOM	Corps Support Command
DFSC	Defense Fuel Supply Center
FEU	forty-foot equivalent unit
FLS	forward logistic site
FTU	freight terminal unit
HN	host nation
HNS	host-nation support
J-4	logistics officer
JFC	joint force commander
JLOTS	joint logistics over-the-shore
JMC	Joint Movement Center
JOPES	Joint Operation Planning and Execution System
JTF	joint task force
JTTP	joint tactics, techniques, and procedures
LASH	lighter aboard ship
LCM	landing craft, mechanized
LCU	landing craft, utility
LOC	lines of communications
LOGMARS	logistics application of automated marking and reading symbols
LOTS	logistics over-the-shore
LSB	Landing Support Battalion
LSV	logistics support vessel
LT	large tug
MAGTF	Marine air-ground task force
MEF	Marine expeditionary force

MHE	materials handling equipment
MOU	memorandum of understanding
MP	military police
MPS	maritime prepositioning ships
MRE	meals-ready-to-eat
MSC	Military Sealift Command
MSCO	Military Sealift Command Office
MTMC	Military Traffic Management Command
MTON	measurement ton
NCA	National Command Authorities
NCHB	Navy Cargo Handling Battalion
NCSORG	naval control of shipping organization
NEW	net explosive weight
OCCA	Ocean Cargo Clearance Authority
OCONUS	outside continental United States
OPCON	operational control
OPDS	Offshore Petroleum Discharge System
OPLAN	operation plan
POE	port of embarkation
POL	petroleum, oils, and lubricants
PSA	Port Support Activity
RO/RO	roll-on/roll-off
SEABEE	sea barge
SOP	standing operating procedure
SPOD	seaport of debarkation
SPOE	seaport of embarkation
STON	short ton
TA	theater Army
TCC	Transportation Component Command
TCMD	Transportation Control and Movement Document
TEU	twenty-foot equivalent unit (containers)
TTB	transportation terminal battalion
USCINCTRANS	US Commander in Chief, Transportation Command
USTRANSCOM	United States Transportation Command
WTLO	water terminal logistic office

PART II—TERMS AND DEFINITIONS

area of responsibility. 1. The geographical area associated with a combatant command within which a combatant commander has authority to plan and conduct operations. 2. In naval usage, a predefined area of enemy terrain for which supporting ships are responsible for covering by fire on known targets or targets of opportunity and by observation. Also called AOR. (Joint Pub 1-02)

coordinating authority. A commander or individual assigned responsibility for coordinating specific functions or activities involving forces of two or more Military Departments or two or more forces of the same Service. The commander or individual has the authority to require consultation between the agencies involved, but does not have the authority to compel agreement. In the event that essential agreement cannot be obtained, the matter shall be referred to the appointing authority. Coordinating authority is a consultation relationship, not an authority through which command may be exercised. Coordinating authority is more applicable to planning and similar activities than to operations. (Joint Pub 1-02)

deployment data base. The JOPES (Joint Operation Planning and Execution System) data base containing the necessary information on forces, materiel, and filler and replacement personnel movement requirements to support execution. The data base reflects information contained in the refined time-phased force and deployment data from the deliberate planning process or developed during the various phases of the crisis action planning process, and the movement schedules or tables developed by the transportation component commands to support the deployment of required forces, personnel, and materiel. (Joint Pub 1-02)

fixed port. Water terminals with an improved network of cargo-handling facilities designed for the transfer of oceangoing freight. (Joint Pub 1-02)

frustrated cargo. Any shipment of supplies and/or equipment which while en route to destination is stopped prior to receipt and for which further disposition instructions must be obtained. (Joint Pub 1-02)

harbor. A restricted body of water, an anchorage, or other limited coastal water area and its mineable water approaches, from which shipping operations are projected or supported. Generally, a harbor is part of a base, in which case the harbor defense force forms a component element of the base defense force established for the local defense of the base and its included harbor. (Joint Pub 1-02)

host nation. A nation which receives the forces and/or supplies of allied nations and/or NATO organizations to be located on, to operate in, or to transit through its territory. (Joint Pub 1-02)

host-nation support. Civil and/or military assistance rendered by a nation to foreign forces within its territory during peacetime, crisis or emergencies, or war based on agreements mutually concluded between nations. (Joint Pub 1-02)

joint force commander. A general term applied to a combatant commander, subunified commander, or joint task force commander authorized to exercise combatant command (command authority) or operational control over a joint force. Also called JFC. (Joint Pub 1-02)

joint task force. A joint force that is constituted and so designated by the Secretary of Defense, a combatant

commander, a subordinate unified command commander, or an existing joint task force commander. (Joint Pub 1-02)

logistics-over-the-shore operations. The loading and unloading of ships without the benefit of fixed port facilities, in friendly or nondefended territory, and, in time of war, during phases of theater development in which there is no opposition by the enemy. (Joint Pub 1-02)

Military Sealift Command. The US Transportation Command's component command responsible for designated sealift service. Also called MSC. (Joint Pub 1-02)

Military Traffic Management Command. The US Transportation Command's component command responsible for military traffic, continental United States air and land transportation, and common-user water terminals. Also called MTMC. (Joint Pub 1-02)

operational control. Transferable command authority that may be exercised by commanders at any echelon at or below the level of combatant command. Operational control is inherent in combatant command (command authority). Operational control may be delegated and is the authority to perform those functions of command over subordinate forces involving organizing and employing commands and forces, assigning tasks, designating objectives, and giving authoritative direction necessary to accomplish the mission. Operational control includes authoritative direction over all aspects of military operations and joint training necessary to accomplish missions assigned to the command. Operational control should be exercised through the commanders of subordinate organizations. Normally this authority is exercised through subordinate joint force commanders and Service and/or functional component commanders. Operational control normally provides full authority to organize commands and forces and to employ those forces as the commander in operational control considers necessary to accomplish assigned missions. Operational control does not, in and of itself, include authoritative direction for logistics or matters of administration, discipline, internal organization, or unit training. Also called OPCON. (Joint Pub 1-02)

pier. 1. A structure extending into the water approximately perpendicular to a shore or a bank and providing berthing for ships and which may also provide cargo-handling facilities. 2. A structure extending into the water approximately perpendicular to a shore or bank and providing a promenade or place for other use, as a fishing pier. 3. A support for the spans of a bridge. See also wharf. (Joint Pub 1-02)

port. A place at which ships may discharge or receive their cargoes. It includes any port accessible to ships on the seacoast, navigable rivers or inland waterways. The term "ports" should not be used in conjunction with air facilities which are designated as aerial ports, airports, etc. (Joint Pub 1-02)

quay. A structure of solid construction along a shore or bank which provides berthing and which generally provides cargo-handling facilities. A similar facility of open construction is called a wharf. (Joint Pub 1-02)

Service component command. A command consisting of the Service component commander and all those Service forces, such as individuals, units, detachments, organizations and installations under the command including the support forces, that have been assigned to a combatant

command, or further assigned to a subordinate unified command or joint task force. (Joint Pub 1-02)

strategic sealift. The afloat prepositioning and ocean movement of military material in support of US and allied forces. Sealift forces include organic and commercially acquired shipping and shipping services, including chartered foreign-flag vessels. (Joint Pub 1-02)

supporting forces. Forces stationed in, or to be deployed to, an area of operations to provide support for the execution of an operation order. Combatant command (command authority) of supporting forces is not passed to the supported commander. (Joint Pub 1-02)

time-phased force and deployment data. The Joint Operation Planning and Execution System data base portion of an operation plan; it contains time-phased force data, non-unit-related cargo and personnel data, and movement data for the operation plan, including: a. In-place units. b. Units to be deployed to support the operation plan with a priority indicating the desired sequence for their arrival at the port or debarkation. c. Routing of forces to be deployed. d. Movement data associated with deploying forces. e. Estimates of non-unit-related cargo and personnel movements to be conducted concurrently with the deployment of forces. f. Estimate of transportation requirements that must be fulfilled by common-user lift resources as well as those requirements that can be fulfilled by assigned or attached transportation resources. Also called TPFDD. (Joint Pub 1-02)

transportation component command. The three component commands of USTRANSCOM: Air Force Air Mobility Command, Navy Military Sealift Command, and Army Military Traffic Management Command. Each transportation component command remains a major command of its parent Service and continues to organize, train, and equip its forces as specified by law. Each transportation component command also continues to perform Service-unique missions. Also called TCC. (Joint Pub 1-02)

water terminal. A facility for berthing ships simultaneously at piers, quays, and/or working anchorages, normally located within sheltered coastal waters adjacent to rail, highway, air, and/or inland water transportation networks. (Joint Pub 1-02)

wharf. A structure built of open rather than solid construction along a shore or a bank which provides cargo-handling facilities. A similar facility of solid construction is called quay. See also pier. (Joint Pub 1-02)

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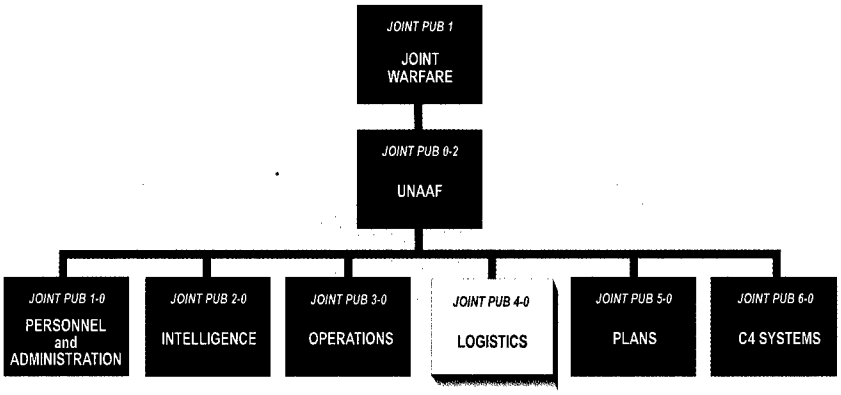
JOINT DOCTRINE PUBLICATIONS HIERARCHY



All joint doctrine and tactics, techniques, and procedures are organized into a comprehensive hierarchy as shown in the chart above. **Joint Pub 4-01.5** is in the **Logistics** series of joint doctrine publications. The diagram below illustrates an overview of the development process: