Joint Publication 4-01.5

Joint Tactics, Techniques, and Procedures for Transportation Terminal Operations

9 April 2002

PREFACE

1. Scope

This publication addresses the requirements and responsibilities and provides guidelines for the operation of terminal facilities in support of a US joint force. It describes the physical layout of water, land, and air terminals and describes operations at each type of facility. The focus of this publication is on the supported combatant command level.

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 joint 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 (JFCs) 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 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 and consistent with US law, regulations, and doctrine.

For the Chairman of the Joint Chiefs of Staff:



JOHN P. ABIZAID
Lieutenant General, USA
Director, Joint Staff

Intentionally Blank

TABLE OF CONTENTS

PAGE

EXECUTIVE SUMMARY vii

CHAPTER I
TERMINALS OVERVIEW

SECTION A. PURPOSE AND/OR BACKGROUND OF TRANSPORTATION TERMINAL OPERATIONS I-1
- Introduction I-1
- Criticality of Terminal Operations I-1
- The Defense Transportation System I-2
- Scope of Terminal Operations I-4

SECTION B. TRANSPORTATION AND TERMINAL INFRASTRUCTURE I-5
- Terminal Infrastructure Assessment I-5
- Terminal Throughput Capacity I-6
- Terminal Selection I-7
- Classification of Terminals I-7
- Categories of Terminals I-7

SECTION C. ROLES, RESPONSIBILITIES, AND INTERRELATIONSHIPS I-8
- Introduction I-8
- The Chairman of the Joint Chiefs of Staff I-9
- Military Departments I-10
- Commanders of Combatant Commands I-10
- Service Component Commands I-16
- Defense Logistics Agency I-19
- Other Agencies I-19
- Summary I-22

CHAPTER II
TERMINAL PLANNING CONSIDERATIONS

- Purpose II-1

SECTION A. TERMINAL OPERATIONS II-1
- Introduction II-1
- Joint Operation Planning II-2
- Joint Force Staff Planning II-3
- Transportation Infrastructure II-5
- Terminal Throughput Capacity II-6
- Deployment Terminal Workload Phases II-7
- Logistic Support II-9

- Force Protection II-11
- Cargo Considerations II-14
- Environmental Considerations II-16
- Safety Considerations II-17
- Contamination Considerations II-17
- News Media Considerations II-18
- Deployment II-18
- Joint Reception, Staging, Onward Movement, and Integration II-19
- Redeployment Operations II-21

SECTION B. AIR TERMINAL PLANNING II-22
- Responsibilities II-22
- Air Terminal Considerations II-23
- Cargo Considerations II-26
- Passenger Considerations II-27
- Airfield Command and Control Considerations II-27

SECTION C. WATER TERMINAL PLANNING II-27
- Responsibilities II-27
- Water Terminal Considerations II-29
- Terminal Workload Phases II-29
- Cargo Considerations II-31
- Passenger Considerations II-33

SECTION D. LAND TERMINAL PLANNING II-33
- Responsibilities II-33
- Land Terminal Considerations II-33
- Rail Terminal Considerations II-34
- Inland Waterway Terminal Considerations II-34
- Passenger and Cargo Considerations II-36

CHAPTER III
AIR TERMINAL OPERATIONS

- General III-1
- Joint Aerial Port Complex III-1
- Aerial Port and Air Terminal Organizational Considerations and Responsibilities .. III-2
- Aerial Port of Embarkation Transfer of Functions III-7
- Passenger Processing III-10
- Cargo Considerations III-10
- Aerial Ports of Debarkation, Reception, and Onward Movement III-12
- APOE and APOD Service Capabilities III-14
- 463L System Accountability III-14
- In-transit Visibility III-15

CHAPTER IV
WATER TERMINAL OPERATIONS

- Purpose IV-1
- Introduction IV-1
- Responsibilities IV-2
- Redeployment Operations IV-3
- Organizational Considerations IV-4
- Categories of Water Terminals IV-4
- Water Terminal Resources IV-10
- Ship Loading Operations IV-11
- Ship Discharge Operations IV-12
- Terminal Reception and Clearance IV-17
- Passenger Reception and Clearance IV-21
- Cargo Considerations IV-22
- Container and Reusable Item Accountability and Configuration Considerations ... IV-23
- In-transit Visibility IV-24

CHAPTER V
LAND TERMINAL OPERATIONS

- Purpose V-1
- Introduction V-1
- Responsibilities V-2
- Organizational Considerations V-4
- Land Terminal Resources V-4
- Rail Terminal Resources V-6
- Inland Waterway Resources V-6
- In-transit Visibility V-8
- Pipeline Terminal Resources V-9
- Cargo Considerations V-12

CHAPTER VI
DEFENSE TRANSPORTATION SYSTEM INFORMATION ENABLERS

- Introduction VI-1
- Global Command and Control System VI-1
- Global Transportation Network VI-3
- Global Combat Support System VI-4
- Automated Identification Technology VI-8
- Summary VI-8

APPENDIX

A Planning Checklists A-1
B Terminal Units B-1

C Host-Nation Support C-1
D References D-1
E Administrative Instructions E-1

GLOSSARY

Part I Abbreviations and Acronyms GL-1
Part II Terms and Definitions GL-7

FIGURE

I-1 The Interrelated Transportation Functions of the Defense Transportation System I-3
II-1 Terminal Planning Considerations II-8
II-2 Force Protection II-14
II-3 Requirements for Effective Aerial Port Operations II-24
II-4 Cargo Considerations II-26
II-5 A Notional Water Terminal Throughput Estimation Checklist II-29
II-6 Terminal Workload Phases II-30
III-1 Functions at an Aerial Port Terminal III-3
III-2 Notional Joint Aerial Port Complex III-4
III-3 Support Functions at Aerial Ports of Embarkation and Debarkation III-8
III-4 Departure Airfield Operations III-9
III-5 Notional Aerial Port of Debarkation III-12
IV-1 Organizations and Functions at Seaports of Debarkation IV-5
IV-2 Categories of Water Terminals IV-7
IV-3 Preparation for Ship Discharge Operations IV-13
IV-4 Reasons for Water Terminal Delay IV-17
IV-5 Organization of and Traffic Flow Through a Fixed-Port Container Transfer Facility IV-19
VI-1 Other Global Command and Control System Applications VI-2
VI-2 Global Transportation Network Interfaces VI-3
VI-3 Movement Information Resources for Global Transportation Network VI-5
A-E-1 Primary Responsibilities of the US Army in Joint Logistics Over-the-Shore A-E-2
A-E-2 Primary Responsibilities of the US Navy in Joint Logistics Over-the-Shore A-E-3
A-E-3 Primary Responsibilities of the US Marine Corps in Joint Logistics Over-the-Shore A-E-4
A-F-1 Potential Naval Coastal Warfare Resources A-F-1
B-D-1 Organizations and Functions at Joint Aerial Port Terminals B-D-3

EXECUTIVE SUMMARY
COMMANDER'S OVERVIEW

- **Provides an Overview of Air, Land, and Water Terminal Operations and Discusses General Responsibilities**
- **Discusses Planning Considerations for Establishing and Operating Terminals as an Integrated Part of the Defense Transportation System (DTS)**
- **Explains the Key Functions of and Operations at Air, Land, and Water Terminals**
- **Presents the DTS Information System as Enablers for Terminal Operations**

Terminals Overview

Terminals are essential facilities for efficient deployment, redeployment, and sustainment in support of the combatant commander's concept of operations.

Air, land, and water terminals are key nodes in the total distribution system that must be established to ensure the success of a military operation. Terminal selection must consider all relevant factors, because their associated organizations and functions are absolutely vital to deploying, sustaining, and redeploying the joint force. **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 management of strategic terminals is the responsibility of the US Transportation Command (USTRANSCOM). Terminals may be classified by the mode activities and are divided into three types. They are:

- Air;
- Land (truck, rail, pipeline, and inland waterway); and
- Water (fixed, unimproved, and bare beach).

Establishing and maintaining effective in-transit visibility is essential for controlling the movement of personnel and materiel through terminals.

Terminals provide a fully integrated resource that supports loading, unloading, and temporary storage and handling of cargo and personnel between various transportation modes. When linked by modes of transport, they define the transportation structure for the operation. **Transportation movement control facilitates the critical mode integration of terminal operations.** Paramount to movement control is the capability to provide within Defense Transportation System (DTS) a viable priority system and to support the warfighting commander with in-transit visibility (ITV) of personnel and materiel moving into and out of the theater through the terminals. ITV is the ability to track the identity, status, and location of Department of Defense (DOD) units, and non-unit cargo (excluding bulk petroleum, oils, and lubricants) and passengers; medical patients; and personal property from origin to consignee or destination across the range of military operations.

Efficient terminal operations support focused logistics — speed and timeliness of delivery versus stockpiling.

USTRANSCOM also has responsibility for developing a system to assist the geographic combatant commanders in tracking the movement of units and supplies into their theaters. The Global Transportation Network (GTN), as it interfaces with the Joint Operation Planning and Execution System (JOPES), provides the combatant commander with force tracking and ITV support capability. GTN is the designated DOD ITV system, and is the authoritative source of ITV data to JOPES, the Global Command and Control System (GCCS), and the Joint Total Asset Visibility (JTAV) System. USTRANSCOM uses its transportation component commands (TCCs), Air Mobility Command (AMC), Military Sealift Command, and Military Traffic Management Command (MTMC) to execute these tasks. Once full operational capability is reached, the Global Combat Support System (GCSS) will integrate JTAV and Global Status of Resources Training System and be accessible along with GTN and GCCS from a single workstation. The Department of Defense is moving from supply-based systems to direct vendor or prime depot delivery utilizing transportation-based systems enabled by the TCCs and the GTN. **This transportation-based system can best be described as a focused logistics supply system**. Focused logistics use high velocity, time-definite transportation to manage mission and logistic requirements while minimizing the reliance on stockpiles. The primary goal of focused logistics is a compression of the customer wait time pipeline segments. Because of this, terminals and their enabling systems are critical links in the lines of communications (LOCs) that make possible the global distribution system. These ensure the success of joint and multinational US military operations.

Terminals must be staffed and equipped to receive a wide range of commodities in a variety of shipping configurations.

The type of commodities handled can categorize terminals. **Constant coordination is necessary between terminal commanders, movement control organizations, and deploying units** concerning ITV, cargo documentation, scheduling, inspections, unloading, clearance, courier service, safety, and special security requirements to deal with ammunition or other hazardous cargo.

Planning Considerations for Terminal Operations

Terminal efficiency is measured in throughput capacity — the daily amount of cargo and personnel that can be received, processed, and moved out.

The capabilities of terminals for supporting various modes of transportation and for maximizing throughput are among the foremost considerations when planning terminal operations. **Operations at terminals normally fall into four workload phases: initial or surge; tactical resupply; sustained resupply; and build-down or redeployment.** All joint operation planning must be based on the types and amounts of cargo that will be throughput as it relates to the four workload phases. Commodities such as combat equipment, bulk petroleum, food, and ammunition all create their own unique shipping and terminal requirements. Terminal throughput capacity is a critical factor in determining the suitability of a terminal to support joint operations and encompasses a careful evaluation of several factors: reception, discharge, transfer, storage, and clearance. Terminal throughput capacity is the amount of cargo or personnel that can be received, processed, and moved out of a terminal on a daily basis. Terminal efficiency or throughput capacity is a function of the operational environment, capability of the terminal workforce (stevedores, cargo handlers, and terminal support activities), and the level of terminal infrastructure modernization (e.g., fully developed, marginally developed, or undeveloped). For deployment, terminal selection decisions made during planning determine the force closure timeline for execution. In some instances, the existence of no port facilities (e.g., bare beach, degraded port, or austere landing strip) will significantly hinder deployment and sustainment operations until temporary or fixed infrastructure can be constructed. Other important planning considerations for terminal operations are the competing needs of the host nation (HN) civilian population and multinational military forces. At the operational and tactical levels, the geographic combatant commander determines whether the theater transportation network is adequate for employment of assets, forces, facilities, and supporting systems. Environmental and environmental health management are important considerations, given the short- and long-term dangers associated with many materiel items and wastes and the domestic, international, and HN standards for

their controlled shipment, storage, use, and disposal. In cases where the geographic area's terminals are inadequate, options available to the combatant commander include increasing the infrastructure, reducing the deployment flow, or extending allowable force closure times.

Air, Water, and Land Terminal Operations

United States Transportation Command (USTRANSCOM), through its transportation component commands, usually functions as the single port manager (SPM) at terminals to centralize and streamline operations.

The Department of Defense uses the single port management approach for most aerial and seaport operations. USTRANSCOM has the mission to provide worldwide common-user aerial and seaport terminal management and may provide terminal services by HN agreement or contract. Thus, USTRANSCOM, through AMC and MTMC, normally manages most common-use aerial ports and seaports for the geographic combatant commander. In areas not serviced by a permanent USTRANSCOM presence, USTRANSCOM will deploy an augmentation force to manage the terminals in concert with a designated port commander. Normally, land terminals are managed and operated by the major using Service under the single port manager (SPM) concept.

Air Terminals

Air Mobility Command is USTRANSCOM's SPM for air terminal operations.

AMC operates air terminals at continental United States aerial ports and operates or arranges for the operation of fixed air terminals in theaters for all DOD components. An aerial port is an airfield that has been designated for the sustained air movement of personnel and materiel, and to serve as an authorized port of entrance into or departure from the country in which located. In theater, the Air Force component commander normally provides terminal facilities at all points served by AMC-controlled airlift aircraft. These terminal operations include supervising movement operations, contracting, cargo documentation, security operations, providing respective Service clearance and materials handling equipment (MHE), and the overall flow of information. As SPM, AMC is also responsible for providing strategic deployment status information to the supported combatant commander and to manage the terminal based on the combatant commander's priorities and guidance. The Service component commands may also provide personnel and equipment to participate in loading, unloading, and transshipping component personnel and materiel at Air Force-operated air terminals.

Water Terminals

Military Traffic Management Command (MTMC) serves as the SPM for water terminal operations.

MTMC will perform SPM functions necessary to support the strategic flow of the deploying forces' equipment and sustainment supply and hand-off to the geographic combatant commander in the sea terminal. MTMC has port terminal management responsibility through all phases of the theater water terminal operations continuum, from bare beach and degraded port operations to a commercial fixed-port operation in support of a deployment. In carrying out this responsibility, MTMC must work closely with specialized units from each of the Services. In areas where MTMC does not maintain a presence, a deployment support team will be established to direct water terminal operations, including supervising movement operations, contracts, cargo documentation, security operations, and the overall flow of information. As SPM, MTMC is also responsible for providing strategic deployment status information on all Services and DOD movements within the SPM area of concern to the supported combatant commanders and operate the sea terminal based on the combatant commander's priorities and guidance.

Land Terminals

In many cases, MTMC arranges for predominant user organizations to operate and control the land terminal facility.

Land terminal operations occur at locations including rail, inland waterway transfer terminals, and at interchange points along the LOCs and are also coincident with air and water terminals. MTMC will perform SPM functions necessary to support the strategic flow of the deploying forces' equipment and sustainment supply and hand-off to the geographic combatant commander at sea ports or designated staging or marshalling areas. Terminal operations include supervising movement operations, contracting, cargo documentation, security operations, and the overall flow of information, as well as providing respective Service clearance and MHE. As SPM, MTMC is also responsible for providing strategic deployment status information to the supported combatant commander and to workload the land terminal based on the combatant commander's priorities and guidance. Terminals serving rail and inland waterways are established along existing operable routes and, in the case of rail, with available and operable rolling stock and facilities. Land terminal operations are used to support the distribution system to the final delivery destination. At the strategic level, land terminals include activities such as military installations, depots, and air terminals.

Defense Transportation System Information System Enablers

Key automated systems provide timely information for managing the movement of personnel and materiel through terminals and the entire Defense Transportation System.

The DTS is the worldwide transportation infrastructure which supports DOD and US Government (USG) agencies' common-user transportation needs across the range of military operations. It consists of those common-user military and commercial assets, services, and systems organic to, contracted, or controlled by the Department of Defense. The DTS is an integral part of the whole US transportation system and involves the systems, resources, procedures, relationships, and interrelationships of the Department of Defense and the federal, commercial, and non-US activities that support DOD transportation needs across the range of military operations. Three automated functional systems provide focused logistics, thereby supporting DTS with the capability to access and employ near real time transportation and deployment information:

- GCCS;
- GTN; and
- GCSS

These elements comprise an automated command and control (C2) information system that supports the family of transportation users and providers such as USG agencies, the Department of Defense, and commercial enterprises, by furnishing an integrated system of ITV, information, and C2 capabilities. At terminals across the range of military operations, commanders and their staffs utilize these automated information elements to assist in the planning and operation of those terminals.

CONCLUSION

This publication provides the techniques and procedures for planning and operating air, water, and land terminals. Terminals are key nodes in the total distribution system that must be established to ensure the success of a military operation and are absolutely vital to deploying, sustaining, and redeploying a joint force. Terminals could be among the initial key objectives seized during a forcible entry. Without adequate terminals, a geographic combatant commander's mobilization, deployment, employment, sustainment, and redeployment concepts may become insupportable.

CHAPTER I
TERMINALS OVERVIEW

"Inadequate control of movement, whether into or within the theater, results in waste, reduced logistic efficiency and consequently, a loss of potential combat power."

JP 4-0, *Doctrine for Logistic Support of Joint Operations*

SECTION A. PURPOSE AND/OR BACKGROUND OF TRANSPORTATION TERMINAL OPERATIONS

1. Introduction

This chapter reviews Defense Transportation System (DTS) operations as related to the establishment and employment of terminals in support of joint, multinational, and interagency operations across the range of military operations. It discusses key relationships and definitions in order to facilitate an understanding of the doctrinal concepts presented in subsequent chapters. An overview is presented of the roles, responsibilities, and interrelationships of the joint planning and execution community (JPEC) and agencies that impact the execution of transportation functions within the Department of Defense (DOD) to include the integration of the commercial assets, host nation (HN) and multinational resources, and humanitarian and relief factors.

a. Certain conditions influence the nature of any US involvement. Three possible conditions are:

- The United States acting alone;
- The United States acting with one or more allies or coalition partners; and
- The United States acting as part of an international organization, such as the United Nations.

b. Each of the conditions has implications for the transportation system and terminal operations. Each condition requires the tailoring of transportation forces and, if required, the melding of support received from other nations, agencies, and organizations to operate continental United States (CONUS) and outside CONUS (OCONUS) terminals. Knowledge of the DTS enhances the ability to operate terminals efficiently and to flow forces and materiel to meet US commitments.

2. Criticality of Terminal Operations

Terminals are key nodes in the DTS that support the commander's concept of operations at all levels of war and throughout the full range of military operations. When linked by the surface and air modes of transport, they define the transportation structure for the operation. Force projection requirements necessitate the early identification and establishment of terminals. They may be among the initial key objectives seized by US forces during a forcible entry, or the focal point of activities for foreign humanitarian assistance (FHA) operations. Terminal selection is important because deployment and sustainment of the military operation will hinge heavily on the terminal's

effectiveness. Without adequate terminals, a geographic combatant commander's mobilization, deployment, employment, sustainment, and redeployment concepts may become unsupportable.

3. The Defense Transportation System

a. The DTS is the portion of the Nation's transportation infrastructure that supports DOD common-user transportation needs. DTS is an integrated transportation system supporting the full range of military operations to provide the most effective use of integrated mode transportation: airlift, sealift, rail, and road transportation systems from origin, through terminals (e.g., embarkation and/or debarkation and/or theater), to destination. The DTS consists of those common-user military and commercial assets, services, and systems that are organic, contracted, or controlled by the Department of Defense. The DTS provides a transportation network capable of integrating military, commercial, and HN resources in order to project military power. Operating the DTS involves the management of a complex number of interrelationships within the Department of Defense and among diverse federal agencies and commercial activities. All military transportation activities, regardless of function, must follow the programs and policies of the DTS.

b. When planning support for military operations, military transportation planners and operators at the joint and Service level must consider the diversity of the DTS and its accompanying coordination challenges. Planners must also understand that DOD policy allows government intervention into the private sector only to the degree necessary to ensure that the civil transportation system is responsive to military needs. This means that the Department of Defense activates private sector assets to augment DTS capabilities only to meet the shortfalls of the defense transportation capacity.

For more information on the DTS, see Joint Publication (JP) 4-01, Joint Doctrine for the Defense Transportation System, *and DOD Regulation (DODR) 4500.9,* The Defense Transportation Regulation, Volumes I through V.

c. The DTS is comprised of three interrelated transportation functions. The synchronized execution of the transportation functions reinforces the capability to conduct military operations. These functions are movement control (sometimes called traffic management), mode operations, and terminal operations. These functions are illustrated in Figure I-1 and further defined below.

- **Movement control** is the planning, routing, scheduling, and control of personnel and cargo over lines of communications (LOCs). It involves the commitment of allocated transportation assets and the acquisition of HN transportation services to support military operations. Its goal is to optimize common-user transportation modes and terminals. This effort links common-user assets with the organic transportation capabilities of the supported units. Common-user transportation assets support the whole force. Movement control is the linchpin of a transportation system.

  See JP 4-01.3, Joint Tactics, Techniques, and Procedures for Movement Control, *for more information.*

- **Mode operations** use transportation assets to link terminals into a continuous movement chain. The three mode operations are land, water, and air. For each mode, there are several means of transport. They include:

  •• Inland surface transportation — rail,

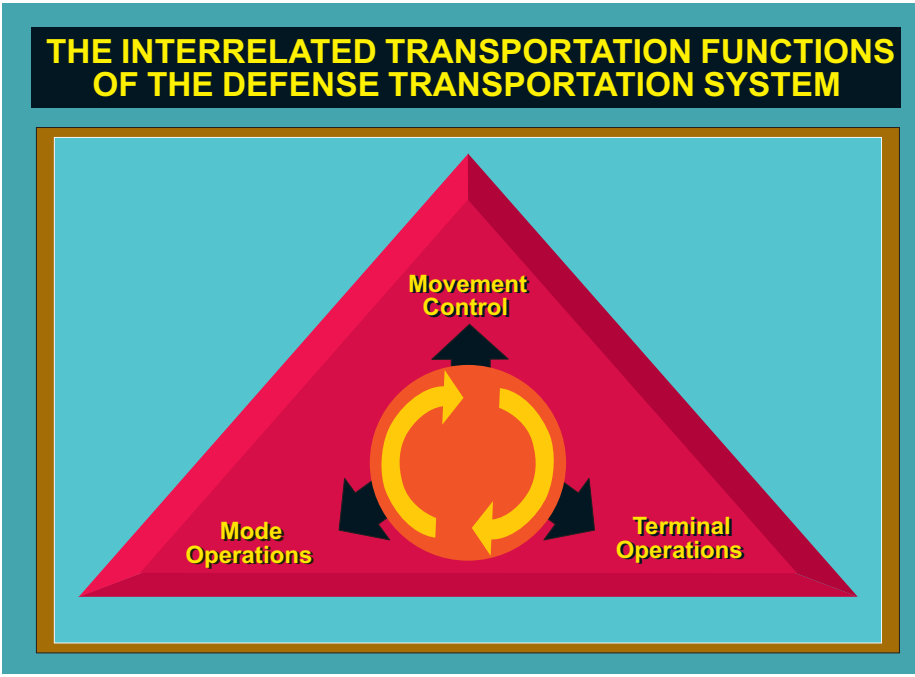


Figure I-1. The Interrelated Transportation Functions of the Defense Transportation System

road, and inland waterway;

•• Sea transportation — oceanic and coastal;

•• Air transportation; and

•• Pipelines.

- **Terminal operations** involve receiving, processing, and staging passengers. It also includes receiving, loading, transferring between modes, and discharging unit and non-unit equipment and cargo. The main activities executed at terminals are loading and unloading modes of transport, marshalling, manifesting, stow planning, and documenting movement through the terminal. The three main terminal operations are **water terminal**, **land terminal**, and **air terminal** operations. Water terminals consist of fixed ports, unimproved ports, or bare beaches. Land terminals consist of inland water, rail, highway, or petroleum terminals. Air terminals consist of those fixed and unimproved airfields, to include expeditionary airfields. Some terminals may provide in-transit storage.

d. Crucial to the execution of the operation is the assignment of organizations with personnel, unit equipment, materials handling equipment (MHE), and cargo handling equipment (CHE) sufficient to meet the workload requirements at each terminal. Staff planners at all levels must provide for the adequate manning of terminals. In cases where terminal facilities are insufficient for necessary throughput, they must plan for workable solutions**.** In addition to the above, automated information systems (AISs) capable of supporting in-transit visibility (ITV) requirements for the movement of the personnel, equipment, and materiel moving through the transportation system are important. These systems provide the

combatant commander with information such as throughput data pertaining to location and final destination of all cargo. Terminals may be managed and operated by the Military Traffic Management Command (MTMC), Air Mobility Command (AMC), the Services, geographic combatant commanders, HN authorities, or commercial enterprises. When linked by modes of transport, they define the transportation structure for the operation.

4. Scope of Terminal Operations

Military planners must identify and tailor transportation organizations, and thus terminal organizations, to fit the type of military operation. It is important for military planners to integrate and coordinate all plans to ensure mutually supporting strategic objectives. This is not an easy undertaking. Often, US involvement requires the military to work with HN, allies, international organizations (IOs), and nongovernmental organizations (NGOs), thus adding complexity to an already complex task. Further complexity is added by necessity to incorporate and expand domestic, international, and HN environmental and environmental health management requirements in port operations.

Specific details of multinational logistic support arrangements can be found in JP 4-08, Joint Doctrine for Logistic Support of Multinational Operations, *and JP 3-16,* Joint Doctrine for Multinational Operations.

Terminals operate on a peacetime basis and throughout all levels of war. Because of their importance, well-organized and efficient actions at terminals could have a significant impact at either the **strategic**, **operational**, or **tactical** levels, thus greatly contributing to the success of overall operations.

a. The Unified Command Plan (UCP) provides **strategic-level** guidance through programs and policies that the United States Transportation Command (USTRANSCOM) executes. USTRANSCOM maintains strategic movement control by providing worldwide air, land, and sea transportation and common-user port management at air and sea ports of embarkation (POEs) and/or ports of debarkation (PODs). USTRANSCOM, through AMC, operates strategic aerial ports in theaters where forces and infrastructure are permanent and in theaters where forces and infrastructure are temporary. Additionally USTRANSCOM, through MTMC, manages most seaports of embarkation and debarkation in any given theater. Geographic combatant commands and USTRANSCOM manage the deployment of forward-deployed units. USTRANSCOM works with the Joint Staff, the Services, and the combatant commands and their Service components in executing the strategic level functions of the transportation system. Service transportation personnel fill movement control staff positions in joint and Service component headquarters (HQ). Service transportation organizations also operate or help operate terminals designated as POEs or PODs, and operate or administer contracted or HN-acquired assets. The focus of transportation organizations is to assist US forces in meeting the joint force requirements in the following areas.

- Movement control
- Mobilization
- Deployment
- Joint reception, staging, onward movement, and integration (JRSOI)
- Sustainment
- Redeployment
- Reconstitution
- Demobilization

- Distribution
- Redeployment

b. The execution of **operational-level** transportation functions in theater is the responsibility of geographic combatant commanders. The geographic combatant commander normally retains overall movement control responsibilities through the creation of a theater-joint transportation board (T-JTB), a joint movement center (JMC), or both. However, the geographic combatant commander usually delegates the operation of terminals and modes to the applicable Service components, while retaining authority to establish priorities and ensuring unity of effort among the Service components. It is possible for joint task forces (JTFs) to perform intertheater level terminal operations, when tasked to deploy forces outside their operational area, if there is no USTRANSCOM presence to assist. The applicable Service component commander assumes responsibility for transportation and establishes an operational level transportation system. The system includes staff personnel, movement control organizations, and a capability to operate Service component terminals and modes. It also acquires and oversees the operation of HN or contracted assets and supports other Services or allies as necessary, or as directed by the joint force commander (JFC). Transportation personnel at this level direct their focus to assist the Service component commander in meeting the following movement control responsibilities.

- Deployment and repositioning of forces
- JRSOI
- Movement control
- ITV
- Distribution
- Reconstitution

c. At the **tactical level**, each Service normally directs transportation support efforts for their committed forces. However, as directed by the supported commander, a Service-operated terminal may provide support to other Services and allies. The tactical transportation system provides final distribution of personnel, equipment, and materiel.

d. Consistent with their title 10 US Code (USC) responsibilities, the Services organize, train, and equip their forces to execute the associated transportation missions. These organizations consist of military units that provide movement control, mode operations, and terminal operations. These organizations form a transportation system that spans the levels of war and operates on a daily peacetime basis. The system is designed to integrate its activities with the larger DTS. It is also expandable and tailorable to meet the increased surge requirements of a contingency. It relies on active duty and Reserve Component (RC) units and may use multinational, HN, or contract support.

SECTION B. TRANSPORTATION AND TERMINAL INFRASTRUCTURE

5. Terminal Infrastructure Assessment

a. Home station and en route airfields, ports, highways, railways, waterways, pipelines, and assembly areas are facilities through which deploying forces and sustaining materiel must flow. Short of total war, the combatant commanders responsible for transportation planning and execution should remember that there are varying amounts of competition from commercial

activities for use of these facilities during deployment terminal operations. In CONUS, the majority of the infrastructure is commercially owned and operated, and military requirements compete with commercial operations in non-mobilization contingencies. Overseas, the facilities forming the LOCs are normally owned by the HN and may support other requirements and service US military forces. The majority of US forces deploying from CONUS deploy through air and water terminals owned and operated by the commercial sector. Air terminals and water ports serving as PODs are normally owned and, in some cases, operated by the HN.

b. Sea and aerial ports should be viewed as "complexes." In addition to the terminal itself, the complex may include areas and functions such as driver holding areas, container holding and handling areas, staging and marshalling areas, frustrated cargo holding areas, assembly areas, and land explosive storage and handling areas. Activities might be conducted simultaneously in all of these areas, and all require valuable space on or near the port complex. Furthermore, the functions at the "supporting nodes" are not normally performed by terminal organizations. This necessitates that a clear chain of command be established to coordinate all the US activities with the HN and the various organizations operating within the port complex.

6. Terminal Throughput Capacity

Terminal throughput capacity is a critical factor in determining the capability of a terminal to support joint operations. Terminal throughput capacity is the amount of cargo or personnel that can be moved through and out of a terminal on a daily basis. Throughput capacity is a function of the operational environment and is based on the capability of the port workforce (e.g., stevedores, cargo handlers, port support activities [PSAs], port operations groups [POGs]) and the level of port modernization (e.g., fully developed, marginally developed, or undeveloped). For deployment, terminal selection decisions made during planning impact the force closure timeline for execution. In some instances, the lack of terminal facilities (e.g., bare beach and/or degraded port or austere landing strip) significantly hinders deployment and sustainment operations until a temporary or fixed infrastructure can be constructed. Chapter II, "Terminal Planning Considerations," contains details on terminal throughput capacity.

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 ports 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**

7. Terminal Selection

The selection, operation, and management of water terminals within CONUS are the responsibility of USTRANSCOM through MTMC. The OCONUS water terminals are selected in accordance with (IAW) command arrangement agreements (CAA) between the geographic combatant commander and Commander in Chief, United States Transportation Command (USCINCTRANS). Without adequate terminals, a geographic combatant commander's logistic support concepts may not be supportable. Terminals are key nodes that support the commander's concept of the operation at all levels of war and through the range of military operations. Terminal selection is based on classification factors of terminals and general categories of terminals. When linked by routes and modes of transportation, they define the transportation structure for the operation. Force projection missions require early identification and establishment of terminals. A well-conceived plan assures that terminals can support the deployment, reception, and onward movement of the force and its sustainment. Whatever the level of the operation, terminals remain a critical piece to ensure continuous movement of personnel and cargo. In instances where facilities are insufficient, logistic planners must plan and provide workable solutions.

8. Classification of Terminals

Terminals are classified based on the **physical facility, the general type of cargo they handle**, and the **methods used for cargo handling**. Classifying terminals aids in determining their cargo capacity. Knowing the cargo capacity of terminals helps to develop a plan to support the military operation.

a. Terminals classified by their **physical facility** fall into two categories: **fixed** and **unimproved**. Examples of fixed terminals are piers capable of working deep draft vessels, established paved transient facilities with warehouse space, and an existing airfield. Examples of unimproved terminals are bare beaches, inland terminals, and expeditionary airheads set up to operate from unpaved surfaces and without overhead cover. Transportation planners should seek to use fixed facilities for terminals. If time and the situation allow, the combatant command should also negotiate improvements of the terminal infrastructure in potential operational areas before the deployment of the force.

b. The **type of cargo handled** is another way to classify terminals. Examples of hazardous cargo include ammunition, explosives, and bulk fuel. Establishing hazardous cargo terminals usually requires the calculation of quantity and safety distance factors. The requirement to store classified materiel and personal and official mail is another important consideration.

c. Terminals are also classified by **method of cargo handling**. This classification includes container, roll-on/roll-off (RO/RO), lift-on/lift-off, and lighterage. By using the cargo handling criteria, planners can determine the units and MHE/CHE needed to operate a terminal.

9. Categories of Terminals

The three general categories of terminals are **water, land,** and **air terminals**. Water terminals are established at ports, beach sites, or degraded or unimproved facilities. Land terminals include facilities such as truck terminals, trailer transfer points (TTPs), railheads, pipeline, and inland water terminals. Commanders establish land terminals at points along air, rail, river and canal, pipeline, and motor transport LOCs to provide for the transshipment of cargo and personnel carried by these modes. Air terminals are airfields that contain aerial port facilities that accept,

process, and manifest passengers and cargo by airlift. Aerial ports provide for rapid force deployment and serve as a link to theater land transportation systems.

a. The availability and capabilities of **water terminals** are essential to the success of a military operation. Water terminals used as departing ports are called seaports of embarkation (SPOEs). Water terminals used as arriving ports are called seaports of debarkation (SPODs). Commanders consider distance, the operations security plan, and terminal capabilities when selecting a departure water terminal. The selection of arrival terminals is equally important to the success of a military operation. Destination water terminals are crucial to establishing a lodgment and to sustaining the deployed force. USTRANSCOM, through MTMC, operates and manages most US military OCONUS water terminals.

b. **Land terminals** complement water terminals to move cargo forward in the theater. They reduce congestion and the workload of the modes. Traditional examples of land terminals include inland terminals (e.g., container), motor transport terminals, pipeline terminals, and rail terminals. Facilities such as installations, depots, central receiving points, and supply support activities are also considered land terminals. Land terminals also provide facilities for connecting links of the same modes when the situation dictates a change in carrier. In emergency situations, in-transit storage is provided at origin, intermediate, destination terminals, or at trailer terminal points.

c. **An air terminal** is a facility on an airfield that functions as an air transportation hub and accommodates the loading and unloading of airlift aircraft and the in-transit processing of traffic. The airfield may or not be designated an aerial port. An **aerial port** is an airfield that has been designated for the sustained air movement of personnel and materiel, and to serve as an authorized port for entrance into or departure from the country in which it is located. Aerial ports provide the most expeditious method for rapid force deployment and normally serve as a link to theater land transportation systems in the theater. Air terminal personnel conduct cargo inspections to ensure that explosive, hazardous, and overall cargo safety specifications are met as prescribed by DODR 4500.9R, *Defense Transportation Regulation*, Part III. Air terminals provide air movement expertise to users of the airlift system. Strict adherence to guidelines and directives set forth by personnel within air terminals is vital to passenger, cargo, aircrew, and environmental safety during air shipment. Commanders need to consider capabilities of both the airfield and air terminal supporting operations to ensure that airfields can receive and deploy airframes during operations.

SECTION C. ROLES, RESPONSIBILITIES, AND INTERRELATIONSHIPS

10. Introduction

a. This section identifies the roles, responsibilities, and interrelationships for the planning and execution of transportation functions within and external to the Department of Defense. The Department of Defense, through the US military, executes many of these functions under the umbrella of the DTS. The Department of Defense includes the Office of the Secretary of Defense, the Joint Chiefs of Staff, the Joint Staff, Defense agencies, DOD field activities, Military Departments, and Military Services within those departments. Combatant commands and other organizations and activities that may be established or designated by law, the President, or the Secretary of Defense can also be considered extensions of the Department of Defense.

b. To add to the DOD organic global capability, many non-DOD organizations provide transportation support to the Armed Forces of the United States. These organizations include federal, state, and local agencies; the private sector within the United States under contract agreements; foreign governments under HN or multinational agreements; contracted foreign private industry; and humanitarian and relief agencies.

c. Within the Department of Defense, the Secretary of Defense is responsible for the assignment of forces and lift resources to the combatant commands to perform missions assigned to those commands and for strategic interagency coordination at the national level. In addition, the Secretary of Defense is responsible for transportation planning and operations within the Department of Defense. The Secretary of Defense has designated the Deputy Under Secretary of Defense (Logistics) to establish policies and provide guidance to DOD components concerning the effective and efficient use of the DTS.

11. The Chairman of the Joint Chiefs of Staff

a. The Chairman of the Joint Chiefs of Staff (CJCS) reviews and evaluates movement requirements and resources and allocates capability when required. The Chairman of the Joint Chiefs of Staff is responsible for the following.

- Establishes procedures for the submission of DOD user components' movement requirements, in coordination with the Assistant Deputy Under Secretary of Defense (Transportation Policy), the Secretaries of the Military Departments, and the Defense Logistics Agency (DLA). USTRANSCOM evaluates the submitted requirements and lift capabilities, and forwards them back to the Chairman for review.
- Prescribes a movement priority system in agreement with Uniform Materiel Movement and Issue Priority System that will ensure responsiveness to meet the requirements of the using forces.
- Monitors the capabilities of USTRANSCOM common-user transportation resources to provide airlift, sealift, CONUS land transportation, common-user ocean terminal service, and aerial port service based upon the requirements of DOD components.
- Assigns movement priorities in support of DOD components based upon capabilities reported by USTRANSCOM. Apportions strategic lift assets through the Chairman of the Joint Chiefs of Staff Instruction (CJCSI) 3110.01C, *Joint Strategic Capabilities Plan (JSCP)*, and CJCSI 3110.11C, *Mobility Supplement to the Joint Strategic Capabilities Plan.*
- Adjudicates competing lift requirements as requested by USTRANSCOM or the Joint Transportation Board (JTB).
- Apportions strategic lift assets through the execution order to the supported combatant command.
- Acts on the recommendations of the JTB with respect to the establishment of priorities and allocations for the use of airlift, sealift, and surface transportation capability. The JTB monitors the balance between DOD transportation requirements and capabilities through close liaison with the combatant commands. USCINCTRANS refers problems with recommended courses of action (COAs) to the JTB for resolution or adjudication if a balance of transportation requirements and capabilities cannot be maintained.

b. The JTB may be convened by the Chairman of the Joint Chiefs of Staff during wartime or contingencies for the purpose of ensuring that the Secretary of Defense's requirements for strategic common-user transportation resources assigned or available to the Department of Defense are apportioned to achieve the maximum benefit in meeting DOD objectives. The JTB acts for the Chairman of the Joint Chiefs of Staff in the performance of functions listed in JP 4-01, *Joint Doctrine for the Defense Transportation System*, Appendix B. JP 4-01 discusses in detail the missions, responsibilities, membership, and management concept of the JTB as well as its functions, procedures, and roles, to include specifying USTRANSCOM as a member of the JTB.

12. Military Departments

a. The Service Secretaries' single manager transportation responsibilities prescribed by title 10, USC, are:

- Secretary of the Army for land transportation;
- Secretary of the Navy for sea transportation; and
- Secretary of the Air Force for air transportation.

b. Each Military Department retains the responsibility for organizing, training, equipping, and providing the logistic support (including Service-unique transportation) to their respective forces. These forces and other DOD agencies depend on common-user military transportation services. In this role, the Army, Navy (including US Coast Guard when appropriate), Air Force, Marine Corps, DLA, and other DOD agencies are all generically called "shipper services." Each Service is responsible for establishing transportation policy for the movement of equipment and supplies funded by the applicable shipper service and for administrative support and performance of transportation operations assigned by combatant commanders at either their local shipping installations or throughout the theater. They are also responsible for maintaining trained personnel in joint operations planning that can participate in joint planning and provide Joint Operation Planning and Execution System (JOPES) inputs.

13. Commanders of Combatant Commands

a. **Commanders of Geographic Combatant Commands.** The Secretary of Defense allocates forces to geographic combatant commanders to meet assigned missions. These forces include transportation organizations. During peacetime operations, geographic combatant commanders follow the procedures contained in JP 4-01, *Joint Doctrine for the Defense Transportation System*, to use DTS assets. When a geographic combatant commander executes an assigned mission, the commander has the following transportation responsibilities.

- Exercising combatant command (command authority) (COCOM) over assigned forces; exercising or delegating operational control (OPCON) over assigned or attached forces; and exercising tactical control (TACON) for force protection purposes over all forces in the combatant commander's respective area of responsibility (AOR).
- Exercising directive authority over logistics to ensure the following: effective execution of approved operation plans (OPLANs); effectiveness and economy of operations; and prevention or elimination of unnecessary duplication

of facilities and overlapping of functions among the Service component commands.

- Coordinating with USTRANSCOM and supporting combatant commands in executing the time-phased force and deployment data (TPFDD) and assuring the availability of transportation resources to support the deployment of the force.

- Establishing a transportation system to support the forward presence or deployed force within the joint operations area (JOA).

- Establishing priorities to move deploying units and to provide for their sustainment.

- Validating strategic movements.

- Using JOPES to manage the development of plans, to include the deployment of the force.

- Establishing a T-JTB or JMC to act as the geographic combatant commander's executive agent for transportation.

- Ensuring that theater movement data capture processes and communications infrastructure supports the timely exchange of ITV data between theater field activities and command, control, communications, and computers (C4) systems.

- Ensuring that the departure and arrival of transportation organizations are sequenced to provide support to units that have yet to deploy and sustainment to those already forward.

- Providing adequate and assured communications to movement control organizations.

- Ensuring that appropriate agreements are available to support and obtain required services and facilities for the reception, staging, and onward movement of military personnel and materiel through common-user ports.

b. **Supported Combatant Commander.** The supported combatant commander is responsible for coordinating with USTRANSCOM and other supporting combatant commands to provide an integrated transportation system and supporting ITV capability from origin to destination. This system includes the effective use of theater military, allied, HN, and commercial transportation assets. The supported combatant commander is responsible for identifying the deployment and sustainment requirements of the joint force to accomplish the tasks assigned by either the President or Secretary of Defense. These requirements are usually identified through the joint planning process. As part of this process, the combatant commander develops within the theater a total distribution system for the JRSOI and sustainment of the force.

- The supported combatant commander selects the units to operate terminals in coordination with component commanders and USTRANSCOM. Terminal operations forces are normally organized along Service functional lines. For example, the Army component is normally responsible for land and water terminal operations in theater, and its transportation units are specially designed to provide command and control (C2) of operating units responsible for those terminal services. The size of the designated SPOD and aerial port of debarkation (APOD), the supported combatant commander's deployment flow requirement, and the availability of host-nation support (HNS) will normally determine the number and type of terminal units required.

- The supported combatant commander has a wide range of options for performing terminal operations and movement control. The supported combatant commander may direct subordinate JFC and Service components to perform their own terminal operations and movement control, or establish a T-JTB or a JMC, or both. However, to ensure a fully integrated and responsive transportation system, the combatant commander should consider assigning responsibility for theater transportation movement control and terminals to a single joint office, the JMC. This JMC must be equipped with sufficient communication and automation capability to ensure adequate interface between strategic and theater transportation systems and the supported combatant commander's staff. This organization must be skilled in coordinating and directing theater transportation and/or terminal operations in support of unit movements and/or logistic resupply operations. The supported combatant commander's logistics staff should form the nucleus of a movement control organization, but to properly execute a theater movement control mission, and by default terminal operations, an additional pre-designated, fully trained joint organization is required. Ideally, such an organization would be identified as a force deployment option and a critical enabler in an OPLAN and be established early in the theater to coordinate arrival, theater expansion, operations movement planning, and execution of the JRSOI mission.

- If a JMC is established by the supported combatant commander, it should coordinate the employment of all means of theater transportation (including that provided by allies or HNs) to support the concept of operations. The JMC should be responsible for planning movement operations and for monitoring the overall performance of the theater transportation system, including terminal operations. The commander should consider coordinating requirements for contracting with HN authorities for use of available civil transportation and land terminal facilities. **When expanding a JMC, the supported combatant commander must consider the structure of his or her dominant force and component-unique movement control requirements**. The supported combatant commander may also draw on RC personnel to augment the JMC. Reserve augmentation personnel should participate in exercises to ensure that they are familiar with the procedures of a joint force HQ. The supported combatant commander should ensure that reserve augmentation forces are properly sequenced in either an exercise or an actual TPFDD.

  For additional information on Reserve augmentation, see JP 4-05.1, Joint Tactics, Techniques, and Procedures for Manpower Mobilization and Demobilization Operations: Reserve Component (RC) Callup.

"An effective theater movement control option recommended to geographic combatant commander is the establishment of a JMC. The JMC is responsible for coordinating all modes of theater transportation to support the theater concept of operations."

JP 4-01, *Joint Doctrine for the Defense Transportation System*

- The JMC must plan, allocate, coordinate and deconflict transportation, as well as establish and operate an ITV system to assist in tracking theater movements of units, personnel, unit equipment, and materiel.

•• **Planning.** The JMC **develops the theater movement plan** that supports the combatant commander's priorities and concept of operations.

•• **Coordinating.** The JMC **coordinates all common-user theater air, land, and sea transportation**. The JMC initially coordinates common-user transportation through the movement plan. The JMC monitors the transportation system, analyzes movement performance, and prepares adjustments. The JMC also coordinates the accomplishment of unfulfilled requirements forwarded by component control elements. Implementation of adjustments occurs during the development of priorities or the scheduling of assets. The JMC must coordinate with a joint rear area coordinator (JRAC), if a JRAC is established. The JRAC is responsible for coordinating the overall security of the joint rear area so that all movements can take place. The JRAC may become involved in critical movement operations (movement of special weapons, critical cargo, reception and onward movement operations, and noncombatant evacuation services) to ensure that security and area damage control assets are adequate and prioritized, if necessary, to support the operation. The JMC approves all unit surface movements that use common-user assets and main supply routes (MSRs) and travel via the operating terminal system.

•• **Force Tracking.** The JMC provides to the supported combatant commander **the ability to locate units that are using common-user transport within the theate**r. The JMC can monitor the inland surface movement of forces during theater movements (such as documenting arrivals at strategic terminals [i.e., POD] and movements through the land terminals to intermediate staging areas or to final tactical assembly areas [TAAs]). The activities of force tracking normally occur at the terminals and when the modes of transportation change.

•• The JMC establishes the location, identity, and communications facilities of **nodes in the transportation system**. These nodes represent the strategic, operational, and tactical terminals. The JMC will verify the requirements, review the threat levels or threat assessments (see JP 3-10, *Doctrine for Joint Rear Area Operations*), and make recommendations in the determination of available and feasible modes of movement. Validation considers competing transportation requirements, the supported combatant commander's transportation priorities, and the availability of terminals to perform the movement operations.

For additional information on the JMC and theater movement control, refer to JP 4-01.3, Joint Tactics, Techniques, and Procedures for Movement Control.

c. **Supporting Combatant Commands Other Than USCINCTRANS.** A requirement may develop for one combatant commander to support another. This support may be in the form of provision of forces and materiel, much in the same way that the US European Command supported US Central Command during Operations DESERT SHIELD and DESERT STORM. Agreements between combatant commands may also influence the support. Examples are CAAs and memoranda of understanding (MOUs). In the area of transportation, supporting combatant commands have the following responsibilities.

- Exercising COCOM over assigned forces.

- Coordinating with the supported combatant command and USTRANSCOM to assure

the command provides support based on the priorities of the supported combatant command.

- Using JOPES to manage the development of plans to include the deployment of the force in coordination with the supported combatant command.
- Establishing or expanding the existing transportation system within the AOR.
- Establishing or expanding movement control operations to manage the execution of supporting transportation tasks.
- Operating the modes and the terminals used as POEs by the deploying organizations.
- Ensuring that movement data capture processes and communications infrastructure supports the timely exchange of ITV data between theater field activities and C4 systems.
- **US Space Command** provides selected satellite imagery and satellite communications (SATCOM) support to the Department of Defense and other end users. It provides a contingency pool of international maritime satellite terminals to users on a first-come, first-served basis. It also provides user training for space-based systems.

d. **USCINCTRANS** is responsible for providing combatant commanders with strategic transportation support to deploy and sustain their forces. USTRANSCOM is the worldwide manager for all common-user POEs and PODs. USTRANSCOM provides air transportation to numerous non-DOD agencies at the direction of either the President or Secretary of Defense through the Chairman of the Joint Chiefs of Staff. As outlined in the UCP, USTRANSCOM has the mission to provide worldwide common-user aerial and seaport terminal management and may provide terminal services by contract. USTRANSCOM, through COCOM over its transportation component commands (TCCs), is the DOD-designated single port manager (SPM) for all common-user seaports and aerial ports worldwide. The SPM performs those functions necessary to support the strategic flow of the deploying forces' equipment and sustainment supply at the SPOEs and aerial ports of embarkation (APOEs) and hand-off to the geographic combatant commander at SPODs and APODs. These services are provided through common-user airlift, sealift, surface transport, and terminal and traffic management activities to deploy, employ, sustain, and redeploy US forces at multiple common-user ports on a global basis within a combatant commander's AOR. USTRANSCOM, through AMC and MTMC, will manage strategic aerial ports and seaports for the combatant commander. In areas not served by a permanent USTRANSCOM presence, USTRANSCOM will deploy an AMC air mobility squadron or aerial port mobility flight and tanker airlift control element (TALCE) and an MTMC deployment support team (DST) to manage the ports in concert with a designated port operator. This support is normally developed while following the deliberate or crisis action planning process in JOPES. Part of this planning involves the routing of units and cargo to USTRANSCOM-designated POEs. The POEs and PODs are selected by USTRANSCOM in coordination with the supported and supporting combatant commanders and the Chairman of the Joint Chiefs of Staff. The responsibilities of USTRANSCOM also include providing a system to assist the combatant commander in tracking the movement of units and supplies into the theater. USTRANSCOM's Global Transportation Network (GTN) provides the combatant commander with the force tracking and ITV support capabilities. Combatant commanders coordinate their movement requirements and required delivery dates with USTRANSCOM, which provides a complete

movement system from origin to initial theater destination through its TCCs discussed below. To assist with movement operations, USTRANSCOM normally establishes forward elements within the theater to coordinate strategic transportation information with the supported combatant commander's agencies. Among its numerous support, planning, and liaison functions, USTRANSCOM exercises responsibility for global air, land, and sea transportation planning in support of the geographic combatant commander. This includes reviewing the Joint Strategic Capabilities Plan (JSCP) tasking, analyzing supported commanders' requirements for transportation feasibility, and providing advice on changes required to produce a sustainable force deployment concept.

For additional information on USTRANSCOM, see JP 4-01, Joint Doctrine for the Defense Transportation System.

- **Air Mobility Command. AMC** is a major command of the US Air Force. As a TCC of USTRANSCOM, AMC provides common-user airlift, air refueling, and strategic aeromedical evacuation transportation services to deploy, employ, sustain, and redeploy US forces on a global basis. Additionally, as one of USTRANSCOM's surface TCCs, AMC performs SPM functions necessary to support the strategic flow of the deploying forces' equipment and sustainment supply in the APOE and hand-off to the geographic combatant command in the APOD. AMC is the **single aerial port manager** and, where designated, **operator of common-user APOEs and/or APODs.**

  JP 3-17, Joint Doctrine and Joint Tactics, Techniques, and Procedures for Air Mobility Operations, *contains more information on the operations of AMC as they relate to the SPM function.*

- **Military Sealift Command (MSC).** MSC is a major command of the US Navy. It is the Navy TCC of USTRANSCOM, responsible for the preparation of wartime and national emergency employment plans, and the expansion of MSC common-user sealift transportation according to those plans. MSC has Military Sealift Command Offices (MSCOs) at many CONUS and some overseas seaports. Other MSCOs may be established in time of conflict both in CONUS and overseas, as directed by USTRANSCOM. Each MSCO is responsible for coordinating the arrival, loading or discharge, and departure of vessels under the OPCON of MSC with the terminal manager or SPM. MSC provides tug support to dock and undock strategic sealift ships at seaports when tug assets are commercially available. If tug assets are not available commercially or deemed inadequate (at austere ports), tugs may be acquired from Army afloat pre-positioning assets. Tug requirements must be established and provided to MSC well in advance so tugs can be acquired and positioned to support operations.

  JP 4-01.2, Joint Tactics, Techniques, and Procedures for Sealift Support of Joint Operations, *contains more information on the operation of MSC.*

- **Military Traffic Management Command.** MTMC is the USTRANSCOM Army TCC and is a major Army command. MTMC mandates traffic management and CONUS-based surface transportation for DTS shippers, arranges ocean transportation with MSC, recommends SPOEs, recommends the SPODs in coordination with the combatant command, and mandates unit cargo arrival times at SPOEs.

e. As one of USTRANSCOM's surface TCCs, MTMC will perform SPM functions necessary to support the strategic flow of the deploying forces' unit equipment, sustainment supplies, and resupply cargo in the SPOE and/or theater and JRSOI hand-off to the geographic combatant command in the SPOD. MTMC, as the SPM, has port management responsibility through all phases of the theater port operations continuum, from a bare beach (i.e., joint logistics over-the-shore [JLOTS]) deployment to a commercial contract fixed-port support deployment. In areas where MTMC does not maintain a manned presence, a DST will be established to direct water terminal operations, including supervising movement operations, contracts, cargo documentation, security operations, and the overall flow of information. As the SPM, MTMC is also responsible for providing management of all port operations within the port and/or area, coordination with and workloading of the port operator(s), providing MSC with vessel berthing guidance to meet the combatant command's priorities, coordination with the area support group and units responsible for providing port security and PSA support, and providing strategic deployment information and/or ITV to support theater JRSOI responsibilities.

f. Additionally, MTMC serves as the point of contact for obtaining and contracting commercial containers. MTMC ensures 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. MTMC may establish an MOU with Service component commanders to identify and coordinate the size and composition of PSAs and/or POGs or augment other Service-unique water terminal organizations.

14. Service Component Commands

Service component commands normally exercise OPCON of the Service forces assigned or attached to the combatant command. Each Service is responsible for the logistic support of its own forces, unless logistic support is otherwise provided for by agreements with national agencies, allies, or by assignments of common, joint, or cross-servicing agreements. 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 terminals to support the overall strategy. These recommendations establish how terminals are to be staffed and operated. Normally, Service component commanders provide the resources to staff PSAs and/or POGs or Service-unique terminal organizations.

a. **Air Force Component Command.** The commander, Air Force forces (COMAFFOR) is responsible for the preparation of the Air Force forces necessary for the effective prosecution of war and other military missions. The primary logistic-related functions of the COMAFFOR include the following.

- Organize, train, equip, and provide forces for air transport for the other Service and functional component commands as assigned.
- Operate air LOCs.
- Provide weather forecasting to other Service component commands.
- With respect to airborne operations, the COMAFFOR has specific responsibility to:
  - •• Provide Air Force assets for the air

movement of troops, supplies, and equipment in joint airborne operations, including airland and airdrop operations; and

•• Provide for intratheater airlift transportation, operating aerial ports, and MHE for air-to-land and land-to-air loading and unloading operations.

b. **Army Service Component Command (ASCC).** The ASCC is responsible for the preparation of Army forces necessary for the effective prosecution of war and other military operations, except as otherwise assigned and, IAW integrated joint mobilization plans, for the expansion of the peacetime components of the Army to meet the needs of war. The primary logistic-related functions of the ASCC are as follows.

- Perform Army Service component command responsibilities.

  •• Equip, train, and employ US Army units for logistic amphibious operations in coordination with US Marine Corps and Navy units.

  •• Provide management of overland petroleum support, including inland waterways, to US land-based forces of all DOD components.

  •• Provide common item and common service support to other components as required.

- Develop theater LOCs.

  •• Provide common-user land transportation (CULT) in theater, to include rail.

  •• Provide equipment load rigging support in conjunction with other Service component commands.

  •• Operate some or all water terminals in the theater in coordination with the MTMC port manager.

  •• Provide pipeline fuel support.

  •• Establish and operate watercraft along intratheater sea LOCs and inland waterways.

  •• Provide engineer support for inland distribution network (highways and bridges).

  •• Provide rotary-wing common-user support.

  •• Provide logistic support to allied and coalition commands or HNs for specific support as directed.

c. **Marine Component Command.** The Marine Corps force service support group (FSSG) is the principal Marine element for logistics. It functions as a major subordinate command under the Marine expeditionary force (MEF) and is organized to provide direct or general support in tactical, operational, and strategic type scenarios. The FSSG, through its transportation support battalion (TSBn), provides the nucleus for terminal organizations such as the POG, beach operations group, arrival/departure airfield control groups (A/DACGs), and the rail operations team(s).

d. **Navy Component Command (NCC).** The Navy component, through MSC, provides common-user sealift to the theater and, in concert with Army units, can provide the combatant commander with over-the-shore discharge and transfer capabilities where port facilities are not available or are inadequate. Navy Cargo Handling and Port Group (NAVCHAPGRU) is the Navy's first response air and sea cargo handling unit. Navy cargo handling battalions (NCHBs) are Naval Reserve units that can augment

NAVCHAPGRU or operate independently when theater cargo handling requirements exceed NAVCHAPGRU's capability. Both are capable of conducting limited common-user port operations. The Navy component performs its movement control operation through the NCC, naval advanced logistic support site (ALSS), naval forward logistic site (FLS), or a designated representative. The ALSS and FLS provide logistic support, to include movement management, to theater naval forces during major contingency and wartime periods. They coordinate Navy land transportation requirements with Army movement control organizations or the JMC. The NCC submits requirements for airlift to the JMC. Within the Navy component, ALSSs serve as the primary shore-based reception and transshipment points for personnel, equipment, and materiel. They also have full capability to receive, consolidate, transfer, and store supplies and equipment. The FLS in-theater receives personnel, equipment, and materiel transshipped through the ALSS for final delivery to the supported forces. The primary theater terminal and distribution capabilities of the Navy are as follows.

- NAVCHAPGRU provides personnel and equipment to off-load container, breakbulk, and maritime pre-positioning force (MPF) shipping.
- Freight terminal units that function as cargo forwarders at seaports.
- Personnel and equipment to off-load air cargo and passengers and operate an expeditionary air terminal.
- NCHBs, which are Naval Reserve units and, when mobilized, provide the same capability as NAVCHAPGRU.
- Navy supply support battalions that provide a full range of supply functions at theater distribution sites (warehousing, inventory management, asset visibility, messing, berthing, laundry, bath, barber, retail outlet, bulk fuel storage and distribution, tank trucks, fuel service station operations, limited pollution abatement and environmental clean up in support of aircraft and ground vehicles, and transportation).
- Fixed-wing assets for cargo and passenger theater distribution.
- Rotary-wing assets for cargo and passenger theater distribution.
- Mobile engineering and construction units for theater distribution network (support sites, bridges, and highways).
- Health service support for theater distribution support sites.
- Service support elements to provide other logistic support for theater distribution sites.
- Communication support for theater distribution sites.
- Contracting support for theater distribution sites.
- Mobile mail centers that provide postal support personnel and distribution equipment for theater distribution sites.

e. The **United States Coast Guard**, while a branch of the Armed Forces of the United States and a uniformed service, is a service in the Department of Transportation, except when operating as a service in the Navy (title 14, USC, section 1; title 10, USC, section 101(a)(4) and (5)). Upon declaration of war or when the President directs, the Coast Guard operates as a service in the Navy (title 14, USC, section 3). The Coast Guard, when operating as a Military Service within the Department of the Navy, includes naval

combat and service forces and organic aviation capability. The Coast Guard performs its military functions in times of limited war or defense contingencies, in support of the Navy Service component commanders, without transfer to the Department of the Navy. Even when it is not operating as a service in the Navy, the Coast Guard frequently operates with the Navy and provides port security units and a variety of cutters to the Navy component commander for the protection of SPODs and MSC ships. The specific national defense functions of the Coast Guard are:

- Provide an integrated port security and coastal defense force, in coordination with the other military Services, for the United States and designated overseas areas; and

- Organize, equip, train, and provide forces for ice breaking and servicing of maritime aids to navigation.

Coast Guard forces are not self-sufficient and must be supported by the receiving commander, particularly when deployed OCONUS. Therefore, Coast Guard forces must receive logistic support, including procurement, distribution, supply, equipment, and maintenance from the receiving command. One or more of the other Service component commands may be required to support Coast Guard forces.

15. Defense Logistics Agency

The DLA provides supplies common to all military Services. The DTS recognizes the DLA as a shipper. The DLA coordinates with the supported combatant command and Service components when the military operation requires the deployment of a DLA support team to the operational area. Through the Defense Energy Support Center (DESC), the DLA coordinates the movement of bulk fuels with the joint petroleum officers located within the logistics directorate (J-4) staff of the combatant commanders. DLA removes hazardous wastes from operational areas.

16. Other Agencies

There are numerous non-DOD agencies that have a stake in the transportation system. Additionally, many IOs and allied governments play a major role in transportation. This section describes some of those agencies and relates their responsibilities.

a. **Department of State** responsibilities that affect terminal operations include:

- Negotiating HNS agreements (including terminal leasing and use agreements);

- Coordinating the delivery of FHA in foreign areas (this coordination involves close working arrangements with the terminal commanders); and

- Coordinating country clearance and overflight and transit clearances for forces, vessels, and aircraft entering or transiting a nation.

b. The **National Imagery and Mapping Agency** (NIMA) provides tailored imagery, imagery intelligence, and geospatial information and services (formerly mapping, charting, and geodesy) support. NIMA produces a wide range of standard hardcopy maps and charts as well as digital data (i.e., compact disks, read-only memory, electronic databases) useful for terminal operations planning. In addition, NIMA produces tailored imagery and geospatial products to meet specific needs.

c. **Federal Emergency Management Agency** (FEMA) is responsible for coordinating federal responses to a domestic crisis. In this role, it orchestrates the support provided by the Department of Defense and

other federal departments when disasters such as earthquakes and enemy attacks occur within the United States. FEMA plays a key role in the management of CONUS transportation resources. However, this role is visible to the US military only when there is DOD involvement in response to a domestic emergency. FEMA is visible when the United States is mounting a response to a foreign military crisis concurrent with a domestic crisis, which results in a shortage of resources. FEMA's most important transportation role is the maintenance of contingency plans to respond to crises arising from resource availability (i.e., market disruptions, domestic transportation stoppages, and materiel shortages). The Federal Response Plan established a process and structure for the systematic, coordinated, and effective delivery of federal assistance to address the consequences of **any major disaster or emergency declared under the Robert T. Stafford Disaster Relief and Emergency Assistance Act**, as amended (title 42, USC, sections 5121 et seq). "Major disaster or emergency" includes a natural catastrophe; fire, flood, or explosion regardless of cause; or any other occasion or instance for which the President determines that federal assistance is needed to supplement state and local efforts and capabilities. Under the Stafford Act, FEMA serves as **the primary coordinating agency** for disaster response and recovery activities. The Department of Justice, through the Federal Bureau of Investigation, operates as Lead Federal Agency (LFA) in terrorism crisis response situations. FEMA, on the other hand, is LFA for consequence management activities related to chemical, biological, radiological, nuclear, or high-yield explosives incidents.

d. The **Department of Transportation (DOT)** is responsible for the executive management of the Nation's total civil domestic transportation resources during periods of crisis. The DOT is the Secretary of Transportation's (SECTRANS's) staff element responsible for emergency transportation planning for the United States. By Presidential direction, the SECTRANS implements control systems to govern the priority use of all civil transportation and the allocation of its capacity to meet essential civil and military needs. Federal transportation agencies carry out plans in consonance with overall policy direction of the SECTRANS. Service transportation personnel, at staff and command levels, must communicate requirements for favorable adjudication. The DOT executes its emergency programs through several agencies. These agencies include the following.

- The **Federal Aviation Administration** (FAA) is responsible for operating the national airspace systems and civil air and general aviation transportation facilities, including air traffic control. The President has authority to transfer responsibility for some elements of air traffic control functions to the Department of Defense in time of war. The FAA also administers the War Air Service Program to maintain essential civil and air service during times of national emergency and provides priority service orders to support DOD priority requirements.

- The **Maritime Administration** (MARAD) administers programs related to ocean and Great Lakes shipping and related deepwater activities including seaports, shipbuilding, and repair facilities. MARAD establishes the National Shipping Authority as the executive agency for management of national shipping and port operations and, in a North Atlantic Treaty Organization (NATO) contingency, as the national claimant upon the NATO shipping pool. Finally, MARAD recruits the manpower to meet requirements of ocean shipping and shoreside shipping-related operations.

- The **Interstate Commerce Commission** (ICC) regulates interstate surface transportation services. These services include those provided by rail, freight and passenger motor carrier, inland waterways, coastal shipping, and freight forwarders. Before and during mobilization the ICC, at the request of the Department of Defense and as approved by DOT, issues priority service orders to civil transportation carriers to support DOD priority requirements.

e. The **US Customs Service** is responsible for maintaining surveillance and confiscation of illegal goods entering the United States through DTS PODs. All forces and materiel redeploying to CONUS will require US Customs inspections before embarkation at OCONUS POEs.

f. The **United States Department of Agriculture** (USDA) is responsible for maintaining surveillance of agricultural products and guarding against plant and animal infestations entering the United States through DTS PODs. All forces and materiel redeploying to CONUS will require USDA inspections before embarkation at OCONUS POEs.

g. **Multinational forces** possess complementary and/or unique capabilities to support US operations. The responsibility for providing logistic support to national component forces ultimately resides with their nations. Varying degrees of mutual logistic support exist in multinational operations and must be planned to complement partners' capabilities. Normally multinational forces are supported through a combination of national and multinational sources of support. To supplement purely national support, to ease individual burdens, and to achieve economies of scale, nations may participate in one or more of the following multinational logistic support arrangements.

- Resource pooling through multinational integrated logistic support
- HNS and/or in-country resources
- Role specialist nation logistic support
- Lead nation logistic support
- Individual national contributions to multinational forces
- Bilateral/multilateral mutual support

h. **Allies and coalition partners** design their logistic systems to facilitate self-sufficiency within their fiscal capabilities. The sustainment of forces is each nation's responsibility; however, varying degrees of mutual logistic support among nations can be expected (i.e., Saudi and Egyptian heavy equipment transporter support of US forces during Operation DESERT STORM). If a mutual support agreement does not exist, the supported combatant commander can take steps to initiate an acquisition cross-Service agreement (ACSA) with the HN functional government.

i. **HN forces** can provide valuable resources to support terminal operations. HNS may support operations at reception facilities, air and naval operating bases, staging facilities, and support areas, and may encompass a wide variety of commodities and services concerning supplies, medical operations, transportation, facilities, environmental management services, communications, rear area operations, petroleum, military police, prisoners of war and internees, and civil labor. HNS can reduce the need to deploy forces and materiel to support terminal operations, shrink strategic lift requirements, and minimize the in-theater logistic footprint. In addition to established HNS agreements that are normally limited to use in war, this support can also be arranged

using existing ACSAs or, at the local level, by directly contracting for support and services. The Command Surgeon should assess and validate HN capabilities early in the deployment process. In contingency operations, enormous savings in manpower, units, and equipment are possible by maximizing HNS. This is particularly true in the area of transportation and specialized equipment. HNS responsibilities are negotiated through bilateral or multilateral agreements and memoranda of support. The agreements focus on labor support arrangements for port and terminal operations, use of available transportation assets in country, use of bulk petroleum distribution and storage facilities, availability of other classes of supply, and development and use of other field services. The supported combatant commander can appoint one Service component to be Executive Agent for all Military Services to conduct contracting and HNS arrangements with the HN to avoid duplication of efforts and to control costs.

Specific details on the HN, allied, and multinational logistic support arrangements can be found in JP 4-08, Joint Doctrine for Logistic Support of Multinational Operations. *Additional information is available in JP 3-16,* Joint Doctrine for Multinational Operations.

j. **International and Nongovernmental Organizations.** Designated commanders, in concert with Department of State representatives and IOs and/or NGOs, normally conduct FHA programs. The US Department of State, through the Chief of Mission, is the ultimate arbiter for the disposal of foreign excess personal property (FEPP). The United States Agency for International Development (USAID) normally approves IOs and NGOs to distribute FEPP for use in humanitarian relief operations. Approximately 350 IOs and NGOs are registered with USAID and are capable of conducting some form of foreign humanitarian relief operation.

k. **Contracting support** is another force multiplier and, like HNS, should be planned and coordinated in advance of an actual deployment. Normally, HNS will be considered first before a decision is made to contract for required support. The supported combatant commander should ensure the early deployment of contracting, finance, resource management, and legal personnel to accomplish necessary contracting actions. In the context of JRSOI, contract support is the use of foreign or US civilian personnel and/or equipment to perform a function, such as off-loading vessels or transporting supplies forward, and is normally arranged by MTMC DST personnel in coordination with the theater contracting office. Using contractor personnel reduces the need for US military personnel.

17. Summary

Terminal operations are a complex and highly interrelated activity involving many different and sometimes conflicting organizations. Intrinsic to the process are the chain of command and the command relationships or agreements that occur among these organizations. Knowledge of these organizations, their functions, and the working processes will assist the staff planner in achieving successful terminal operations.

CHAPTER II
TERMINAL PLANNING CONSIDERATIONS

"To successfully fight and win wars, we must make war planning our central focus. We will develop the best possible plans using the collective wisdom available among all military planning staffs. . . .The products of our planning efforts must be able to stand up to the strongest scrutiny, including the ultimate test: execution."

General John M. Shalikashvili
Chairman of the Joint Chiefs of Staff, 1993-1997

1. Purpose

This chapter examines joint planning considerations, procedures, and coordination required for determining the numbers, types, and locations of terminals at all levels of war. This effort is vital to the development of the distribution system that will sustain the supported combatant commander. Planning begins at the strategic level and concludes with considerations applicable at the terminal level.

SECTION A. TERMINAL OPERATIONS

2. Introduction

In most force projection operations, land, air, and water terminals will be required. Adequate logistic support of operational forces is contingent upon the timely identification of terminals or the development of terminals in cases where they do not exist. The capabilities of these terminals for supporting various modes of transportation are among the foremost considerations. During joint operation planning, terminal requirements will be identified and detailed as an appendix to the logistics annex of the OPLAN. Plans must be based on the numbers of personnel and the types and amounts of cargo that will be brought in. Commodities such as combat equipment, bulk petroleum, food, and ammunition all create unique shipping and terminal requirements. The methods of delivery to the terminal are varied and can greatly influence transportation requirements. Delivery from ship to shore by lighters or by amphibious vehicles may be necessary; or movement directly from ship to depot by helicopter may be a useful expedient. Air delivery by relatively small aircraft or helicopters to hastily prepared landing strips may also be necessary.

a. LOCs connecting terminals with supply organizations and fielded forces must be planned to accommodate the throughput capacities of the terminals. A high-capacity air terminal, for example, is of reduced value if the roads emanating from it are inadequate. When determining gross transportation requirements, competing needs of the local civilian population and allied and/or coalition partner military forces must be considered. Requirements for terminals, pipelines, and petroleum, oils, and lubricants (POL) storage facilities are determined based on the type of military operation, the characteristics of the specific environment, and the delivery system to be employed.

b. Planning for the optimization of cargo terminals in the transportation system involves the following five-step process.

- Computing the terminal workload required for supporting the operation, expressing it as cargo tonnage and/or containers per day.

- Estimating the available terminal throughput capacity, which is the total tonnage that can be received, processed, and cleared through the terminal per day.

- Estimating construction requirements, which are the requirements for repair, rehabilitation, or new construction of facilities necessary to increase the terminal capacity to equal the required terminal workload.

- Estimating equipment requirements, which is the amount of equipment needed to process the required workload through the terminal with maximum efficiency.

- Estimating personnel labor requirements, which are the units and individuals needed for the operation of the terminal.

c. At the operational and tactical levels, the combatant commander determines whether the theater transportation network is adequate for employment of assets, forces, facilities, and supporting systems. In cases where the geographic area's terminals are inadequate, options available to the combatant commander include increasing the infrastructure, reducing the deployment flow, or extending allowable force closure times.

3. Joint Operation Planning

a. Joint operation planning is conducted within the chain of command that typically extends from the President through the Secretary of Defense to the combatant commanders and is primarily the responsibility of the Chairman of the Joint Chiefs of Staff and the combatant commanders. It is directed toward the employment of military forces within the context of a military strategy to attain specified objectives for possible contingencies using deliberate and crisis action planning procedures. Joint operation planning includes the preparation of plans (e.g., OPLANs and campaign plans) and orders (e.g., operation orders [OPORDs]) by the combatant commanders as well as those joint-planning activities that support the development of these plans or orders. These activities also incorporate the functions of the Military Departments and Services. Joint operation planning is a sequential process performed simultaneously at the strategic, operational, and tactical levels of war. The strategic level of planning establishes the context in which the combatant commander identifies requirements for POEs and PODs.

- At the **strategic level**, joint operation planning involves the development of strategic military objectives and tasks in support of national security strategy and the development of force and materiel requirements necessary to accomplish those tasks. The President and Secretary of Defense develop policy and the Chairman of the Joint Chiefs of Staff translates it into strategic national military objectives. The JSCP provides the strategic direction required to coordinate the planning efforts of the combatant commanders in pursuit of national strategic objectives and to integrate their efforts with those of the remainder of the JPEC. The JSCP is the link between strategic planning and joint operation planning. It is the primary vehicle through which the Chairman of the Joint Chiefs of Staff exercises his or her responsibility to provide for the preparation of the joint operation plan. The JSCP initiates deliberate joint operation planning by assigning planning tasks to the combatant commanders apportioning major combat forces and resources and issuing planning guidance to integrate the joint operation planning activities of the entire JPEC within a coherent, focused framework. The combatant commanders plan at the strategic level of war through the development of various joint OPLANs, theater estimates, and theater

strategies. In the case of terminal planning, combatant commanders' plans and strategies will determine the strategic use and importance of the terminals within their theater. The theater strategy is thus an element that relates to both US national strategy and operational activities within the theater.

- Joint operation planning at the **operational level** links the tactical employment of forces to strategic objectives. The focus at this level is on operational art — the employment of military forces to attain strategic and/or operational objectives through the design, organization, integration, and conduct of strategies, campaigns, major operations, and battles. Operational art determines when, where, and for what purpose major forces will be employed and should influence the enemy disposition before combat. It governs the deployment of those forces, their commitment to or withdrawal from battle, and the arrangement of battles and major operations to achieve operational and strategic objectives. Operational level planning includes providing for the logistic support and sustainment of theater forces. Operational level planning for terminals is extremely critical to the overall disposition of those forces and for their logistic support and sustainment.

- The **tactical level of planning** pertains to the employment of units in combat. It includes the ordered arrangement and maneuver of units in relation to each other and to the enemy in order to use their full potential. Tactics are employed to fight and win engagements and battles. Terminal planning at the tactical level ensures the availability of deployment and mobility forces to support the rapid employment of combat or other forces to achieve mission objectives.

The JP 5 series establishes the joint planning process. JP 5-0, Doctrine for Planning Joint Operations, *establishes doctrine and general principles. The Chairman of the Joint Chiefs of Staff Manual (CJCSM) 3122 series explains the JOPES. Specific applications for transportation are found in JP 4-01,* Joint Doctrine for the Defense Transportation System.

b. USTRANSCOM is responsible for global air, land, and sea transportation planning in support of the geographic combatant commander. This includes reviewing the JSCP tasking, analyzing supported commander's requirements for transportation feasibility, and providing input on changes required to produce a sustainable force deployment concept. This support is normally developed during the joint planning process using JOPES. Part of this planning involves the routing of units and cargo to USTRANSCOM-designated POEs. USTRANSCOM, through its TCCs (AMC, MTMC, and MSC), is responsible for planning for the use and operation of USTRANSCOM-controlled common-user air, land, and water terminals at the strategic level with the warfighting combatant commands. The supported and supporting combatant command transportation staffs, working closely with the Service components and USTRANSCOM, plan and coordinate the selection of terminals at the strategic and operational levels.

4. Joint Force Staff Planning

a. At the operational level, the supported combatant command's staff is responsible for planning and executing military operations in the assigned AOR. These responsibilities encompass all facets of reception and retrograde through terminals. Based upon the supported combatant command's guidance, staff planners must assess the theater's operational environment and determine terminal requirements for supporting the JFC's

COA. They also have a dual responsibility to contribute to the strategic transportation plan for deployment of forces and develop an operational level transportation plan. This plan ensures that the combatant command has the capability for receiving, moving, and sustaining the force. The plan involves the selection of terminals and the number, type, and sequencing of transportation units needed to operate terminals in the theater. The plan also addresses the AIS, automated identification technologies (AITs), supporting infrastructure, and business processes necessary to facilitate the exchange of movement data to provide the combatant command with a comprehensive ITV capability. The staff continues its planning for expansion of the transportation system's capability to support the total force projected for deployment.

"Decisions made on the front end concerning what to send will directly affect fighting effectiveness on the other end. Not enough stevedores and ship-handling equipment forward early enough in building the theater might delay the unloading of combat vehicles and ultimately defeat the intended purpose of putting the vehicles on the ground first."

Certain Victory: The US Army in the Gulf War
by BG Robert H. Scales

b. The JMC, if established, serves as the primary advisor through the J-4 to the supported combatant commander on all matters pertaining to the theater transportation support structure. The JMC develops the theater movement plan that supports the combatant commander's priorities and concept of operations. The JMC develops this plan while considering theater throughput capabilities (including in-depth analysis of airfield, seaports, and surface transportation routes), the TPFDD, apportionment and allocation of transportation resources, and resource protection requirements. **The plan must mesh incoming strategic movements at the terminals with theater JRSOI operations.** It excludes bulk fuel and water that move by pipeline; however, it must incorporate their movement by any other mode of transportation. Balancing resources is critical to maintaining a flexible system. To provide an uninterrupted flow of supplies and units, the system's overall terminal reception capability must match its strategic movement capability. Likewise, the system's terminal onward movement capability must match its reception capability. Apportioning resources is, therefore, a key element of the plan. The plan includes transportation apportionment developed in consultation with the component commanders.

c. Service component commanders develop supporting plans to achieve the objectives of the combatant commanders. When developing these plans, Service component commanders recommend concepts of operations for terminals to support the overall strategy **and to include addressing business processes to facilitate the exchange of ITV data.** These recommendations establish how these terminals are to be staffed and operated. Normally, Service component commanders provide the resources to staff Service-unique terminal organizations. Appendix B, "Terminal Units," contains details on unit capabilities, by Service, to support terminal operations. Service component planners must consider the linkage to the strategic and operational level transportation systems when selecting the location of their units.

d. Terminal unit-level planning begins when cargo transfer functions are assigned at a specific site. Initial procedures include a meeting between the transfer unit and the transport mode commanders to define and determine mutual support requirements. The meeting is followed by an inspection of the terminal area to acquaint the transfer unit

commander with the layout. Tentative real estate allocations for all units to operate at or from the proposed terminal are normally made during this area reconnaissance.

e. The port commander has been delegated authority from the combatant command to carry out the mission and perform the functions required to get cargo and personnel through the port. The port commander's control of activities at the port will probably be less than desired due to the requirement to share the port with commercial organizations and other military forces. The port authorities may view the port commander as nothing more than another customer they need to service, and other customers may have a higher priority. This may be especially applicable when the country in which the port is located is not involved in the military actions.

f. Transportation planners choose from among a variety of transportation units to operate the terminals in the operational area. These organizations are designed to provide maximum flexibility. They allow a planner to fit the units to the commander's concept of operations by matching them with the size of the force to be deployed and the characteristics of the terminals available.

5. Transportation Infrastructure

a. Analyzing the capabilities of the theater's transportation infrastructure (**infrastructure assessment**), to include terminal characteristics and capacities is essential to developing a successful military operation. This analysis serves as a basis to determine the forces, equipment, and materiel that must be deployed; as well as facility upgrades required to enhance port and terminal operations. Theater infrastructure consists of four general networks: physical, resources, information, and communications systems. The infrastructure capacity (net capability of the combined physical and resource networks) establishes the finite capacity of the distribution system.

- The physical network consists of the type and number of terminal facilities, transportation networks, real estate, and modes of transportation. Transportation infrastructure strongly influences movement. A robust infrastructure of modern air and seaports, highways, railroads, and inland waterways (IWWs) expedites the throughput of forces, equipment, and supplies. A lesser-developed or austere infrastructure impedes throughput and may require the early deployment of support capabilities such as port opening packages, JLOTS operations, or early deployment of engineer units to upgrade or repair terminals.

- Terminal resource networks are the personnel (government, military, contractor, and HN), organizations, materiel, and equipment operating within the terminal's physical network distribution system. Here, a robust infrastructure may have an abundant resource network in the form of an experienced terminal workforce (e.g., stevedores). A lesser-developed resource network may contain a large population of workers with little to no experience in terminal operations. In this case, there would be a need to first deploy various terminal units capable of producing the throughput levels desired.

- **Information Network.** The information network is the combination of all the information collection devices, AITs, and AIS that either support or facilitate the distribution process. The combination and compatibility of these AIS and their data provide total asset visibility (TAV) and ITV of assets critical to the efficiency and effectiveness of theater distribution operations.

- **Communications Network.** Communications technology, when combined with the automation system, provides critical efficiency and effectiveness to the distribution system.

b. Receiving detailed information concerning infrastructure and transportation capabilities (**infrastructure intelligence**), maintaining the visibility of assets that will move on that infrastructure, and the ability to manage this information play key roles for planning and working terminal operations. Information resources include intelligence, automation, and communications networks.

- The collection and maintenance of infrastructure data (intelligence) is the purview of the Services and various agencies that include the Defense Intelligence Agency (DIA), the supported combatant commander's joint intelligence center, USTRANSCOM's joint intelligence center, and Service organic intelligence units. Within the Department of Defense, USTRANSCOM's intelligence directorate is the authoritative source on port infrastructure worldwide. DIA is the primary source on land transportation (roads and railroads), while NIMA is the recommended source for airfield data. The data collected and available includes information on infrastructure capacity and engineering capability (ports, railroads, IWWs, roads, airfields, bridges, off-road land tractability, power plants, and communications nodes) in most theaters. The characteristics of roads, ports, and rail lines within the theater are sometimes available in digital form. Such information serves as baseline data for planning. For example, the Military Traffic Management Command Transportation Engineering Agency (MTMCTEA) compiles unclassified and classified data on many seaports, to include throughput calculations and infrastructure assessments. MTMCTEA also develops and maintains detailed transportation infrastructure networks of various theaters for use in analyzing theater transportation capabilities using the emerging enhanced logistic intratheater support tool.

- The automation network combines all of the information collection devices, AITs, and the AIS that either support or facilitate terminal operation processes. Examples of these include joint total asset visibility (JTAV), joint personnel asset visibility (JPAV), and GTN and the timely, accurate capture of ITV data for GTN, JTAV, or the Global Command Support System (GCSS).

- C2 technology (communications), when combined with the automated systems and knowledgeable commanders, contributes to efficient and effective terminal operations. The communications system, (e.g., Global Command and Control System [GCCS]) and GCSS, in concert with Service communication capabilities, assists with the unity of command necessary to successfully complete military operations associated with planning and conducting terminal operations.

6. Terminal Throughput Capacity

Estimating terminal throughput capacity is key to the process of selecting terminal sites and operating units. The throughput capacity of a terminal is the lowest value of the reception, discharge, transfer, storage, and clearance capacity as described below.

a. The **reception capacity of a terminal** relates to the type and sufficiency of operating space available to perform terminal operations. This measures the existence of sufficient modes of transport and space to

stage cargo while waiting the processing of cargo and/or personnel. For example, important reception factors for water terminals include the number, size, and type of piers or wharves available; water depth; anchorage capacities; beach gradients; and the capability to satisfy special requirements for vessels containing hazardous cargo. The type and sufficiency of parking (maximum (aircraft) on ground [MOG] or truck), warehousing, work space available for aircraft, rail cars, and motor transport assets usually dictate the reception capacity for inland and air terminals.

b. **Terminal discharge capacity** is the amount of personnel and materiel that can be received and off-loaded over a specified time. Discharge capacity is expressed in twenty-foot equivalent units (TEUs) for containers, tons, barrels, square feet, short tons, measurement tons, or in numbers of personnel over a specific unit of time. Discharge or off-load capacity is normally a function of the available work force size. Discharge capacity is also affected by the physical facilities and specialized CHE available at the terminal. Environmental compliance factors or restrictions may also affect discharge capacity.

c. **Terminal transfer capacity** consists of the activities required to transship personnel and cargo. Transshipment occurs at all types of terminals. Transshipment usually includes segregating, repackaging, holding, documenting, and staging or storing, whenever a change in mode operator or carrier occurs. Naturally, those items that do not require repackaging have a faster terminal transfer rate.

d. **Terminal cargo storage capacity** is the amount of cargo that can be stored at any one time. Storage capacity is expressed in square feet, thousand barrels, measurement tons (MTONs), number of TEUs, or net explosive weight (NEW). When storage space is not available, major interruptions of terminal operations occur. Ideally, cargo unloading, processing, and reloading between various transportation modes takes place without interruption.

e. **Terminal clearance capacity** is the ability to move cargo from the terminal to its first destination. It is measured in terms of tonnage, TEU, equipment drive-away, bulk liquid clearance measures, or numbers of personnel per unit of time. The first destination may be the final destination or an intermediate stop during onward movement.

f. All capacities described above help the planner determine **terminal throughput capacity**. All capacities are considered, even if the limiting capacity is obvious. These estimates make it possible to determine the improvements that can generate the greatest increase in throughput capacity. Other considerations such as the threat, weather, and the availability of labor also must be taken into account. One of these factors may become the dominating factor. Other planning considerations to be addressed are shown in Figure II-1.

7. Deployment Terminal Workload Phases

Based on the supported combatant command's required delivery date (RDD), USTRANSCOM selects the type of strategic lift used to support a theater. Mode selection is based upon the availability and type of terminals and the four terminal workload phases. These phases are also important to the theater terminal planners. The different phases reflect changes in type and volume of cargo and cargo packaging arriving at the terminals during deployments. The four workload-planning phases are initial or surge phase; tactical resupply phase; sustained resupply phase; and build-down or redeployment.

a. **Initial or Surge Phase.** This phase is almost entirely dedicated to the movement of deploying units with their unit personnel,

TERMINAL PLANNING CONSIDERATIONS

Physical Characteristics and Layout of the Terminal Area

- Physical restrictions on working space
- Availability of hard surfaces in transfer areas
- Existing facilities for storage and maintenance of materials handling equipment (MHE) and other equipment
- Proximity of exit routes to transfer points
- Distances between loading and unloading points and temporary holding areas
- Existing and required communications infrastructure and automated information systems and/or automated identification technology resources to facilitate port processes and data capture

Characteristics of Transportation Equipment

- Number of individual carriers that can be handled simultaneously
- Turnaround time of delivery transportation
- Unit loading and unloading rates for various types of transportation
- Effects of size and maneuverability of carriers on the location of transfer points within the terminal
- Effects on use of and requirements for MHE

Types of Cargo to be Handled

- Size and type of packaging
- Average weights of cargo units
- Requirements to break down into smaller lots or consolidate for reloading
- Shelter and security protective requirements in in-transit storage areas
- Fragility and/or perishability of the cargo
- Problems involved in and precautions for handling hazardous cargo

Requirements for and Selection of Temporary In-transit Storage Areas

- Estimated availability of clearance transportation compared with the volume of delivery transportation
- Shelter and security requirements
- Additional documentation required
- Distances from loading and unloading points
- Requirements for MHE in the holding area

Composition of the Work Force

- Messing and berthing availability and limitations
- Number, size, and training of teams required
- Allocation of MHE according to the types of carriers and types of cargo
- Arrangement of shifts for around-the-clock operations
- Provisions for consolidating documentation
- Availability of civilian, host nation commercial labor
- Procedures for documentation, communications, supply, safety, and maintenance of equipment
- Provisions for anti-terrorism and force protection considerations
- Procedures for complying with applicable federal, state, local, and host nation environmental regulations, including but not limited to oil spill contingency planning, waste disposal, and site-specific environmental concerns

Other Considerations

- Procedures for documentation, communications, supply, safety, and maintenance of equipment
- Provisions for anti-terrorism and force protection considerations
- Procedures for complying with applicable federal, state, local, and host nation environmental regulations, including but not limited to oil spill contingency planning, waste disposal, and site-specific environmental concerns
- Procedures for detecting, protecting against, marking, decontaminating, and limiting the spread of nuclear, biological, chemical, and radiological contamination

Figure II-1. Terminal Planning Considerations

equipment, vehicles, and accompanying supplies. A very important factor during this phase is that deploying units will require a high level of unit integrity of their personnel, unit equipment, and supplies. A key consideration is that the military terminal organizations will also be in early stages of development and will be unable to handle large volumes of people and cargo by themselves. The early activation and employment of reserve units may shorten this development stage. Significant reliance will be placed on the existing commercial terminal infrastructure and HNS.

b. **Tactical Resupply Phase.** This phase occurs when the terminals are required to process the materials necessary to support initiation of combat operations. Personnel and combat equipment moves will decrease. Distribution nets will be developed. Requirements for combat support materials will increase.

c. **Sustained Resupply Phase.** This phase occurs when terminals must support the materials levels that are necessary to sustain those forces engaged in combat operations, while at the same time building a theater war reserve supply level.

d. **Build-Down or Redeployment Phase.** This phase includes the transfer of units, personnel, and supplies from one theater to another theater or back to CONUS. Planning for this stage must start during the sustained resupply phase. These plans must consider the prevention of terminal congestion and the need to accommodate both incoming and outgoing operations at the same time.

8. Logistic Support

Under crisis action, wartime conditions, or where critical situations make diversion of the normal logistic process necessary, the logistic and administrative authority of combatant commanders enable them to use all facilities and supplies of all forces assigned to their commands as necessary for the accomplishment of the mission. The geographic combatant commander may delegate directive authority for a common support capability to 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.

a. **Sources of Logistic Support.** Within each geographic combatant commander's AOR, the US organizations available to accomplish support terminal operations vary significantly. Fundamental factors that cause this variance include geographical constraints such as the length of LOCs, capability of HN infrastructure, ACSAs, anticipated threat and mission, and the available forward-stationed US force structure. Each Service component possesses unique, specialized forces and capabilities to support various terminal logistics requirements. A variety of capabilities exists outside of the US military structure that can enable the combatant command to solve terminal logistic problems. The combatant command can utilize the knowledge of this capability in assessing HN, allies, and contractual capabilities along with the command capabilities available to support key logistic functions. Depending upon the existing infrastructure, the HN, allied, and contractual capabilities that are available may greatly reduce the type and amount of military support forces that a combatant commander requires. The areas where these assets can be of assistance are as follows.

- Transportation
- Facilities
- Security
- Supplies

- Services
- Labor service
- Medical
- POD services and other key functions

These sources of logistic support can be used as enablers and enhancements for terminal operations. How these enablers combine will depend upon the condition of the HN infrastructure, what agreements exist (allied or otherwise), and how or if civil augmentation programs (CAPs) and cross-service logistics are necessary.

b. **HNS** can include air, sea, and ground transportation; POL; telecommunications; civilian labor; rear area operations; facilities; contracting; acquisition of equipment; supplies; services; environmental management services; and health service support. When available, HNS successfully assists in executing terminal logistics. If HNS agreements do not exist or have limited application, then the combatant commander (upon ensuring that both procedural and substantive authority exists) should, in coordination with the State Department, immediately start negotiation of HNS agreements and arrangements combined with an integrated contracting plan to obtain necessary support. For force protection issues, counterintelligence teams should be included for use in screening HN contractors. Many terminal operations planning considerations can be satisfied using HNS.

c. **Allied and/or coalition partner support** is another force multiplier. Allies and coalition partners often can offer capabilities or functional units identical to US capabilities. The use of these units can enhance terminal operations, minimize US support requirements, and ensure mission success. The joint planner should consider complementary allied and/or coalition partner capabilities during COA development. However, during the planning phase, this capability should be balanced against the potential for competition for US transportation assets to deliver those allied and/or coalition units into the theater.

"One of the most dramatic lessons to come out of Operation JOINT ENDEAVOR is that civilian contractors are an integral part of the total force, particularly when it comes to providing logistical and engineering services . . . Logistics civilian augmentation program (LOGCAP) uses a civilian contractor to perform selected logistics and engineering services to augment US forces during military contingency operations . . . The Corps (of Engineers) is also using LOGCAP in unison with Air Force Red Horse and Navy Seabee construction troops. Red Horse and Seabee trade specialists erect the tents while the Corps uses the LOGCAP contract to set up latrines, showers, heaters, dining halls, laundries, and other essential life support facilities."

Corps of Engineers News Release
31 January 1996

d. To optimize **contractor support** among Services, a central contracting authority (CCA) should be designated. The CCA achieves and maintains control and optimizes contracting resources. Contracting officers should ensure that wartime exclusionary clauses are not in place in contracts that augment operations during times of conflict or war. MTMC and MSC, for example, routinely use civilian contractors to perform or augment their operations. In accordance with standing directives and with guidance from appropriate commanders, contractors should be used. However, the joint planner should be aware that in some cases, wartime exclusion clauses might prevent contractor personnel from delivering goods and services.

e. **CAPs** are separate Military Department contracting options most often used when

HNS is insufficient or unavailable. The Army, Navy, and Air Force each have separate CAPs. The Army's is the logistics civilian augmentation program, the Navy's is the emergency construction capabilities contract program, and the Air Force's is the Air Force contract augmentation program. Information concerning these programs may be found in applicable Service publications. CAPs employ pre-existing contracts with US and other vendors to provide support in many areas including facilities, supplies, services, maintenance, and transportation. Additionally, planners should consider initiating contracting for services if HNS agreements do not already contain those provisions. The goals of CAPs are to:

- Allow planning during peacetime for the effective use of contractor support in a contingency or crisis;
- Leverage global and regional corporate resources as facility and logistics force multipliers;
- Provide an alternative augmentation capability to meet facility and logistic services shortfalls; and
- Provide a quick reaction to contingency or crisis requirements.

f. Theater support concepts of bulk petroleum operations revolve around detailed planning for fuels requirements at the customer level. Land-based customers (Service units, bases, and other types) plan for and request fuels from direct support organizations of the Service component designated the dominant user. The dominant user then combines the overall requirement (usually at the combatant command Joint Petroleum Office) and forwards that requirement to DESC. At the same time, the combatant command schedules POL movement and storage based on available petroleum distribution systems. The terminal logistic planner must coordinate with the joint petroleum officer when designing the theater terminal LOCs.

For further discussion see JP 4-03, Joint Bulk Petroleum and Water Doctrine.

9. Force Protection

Terminals are critical logistic installations that are high-value targets and must be safeguarded by both active and passive means. These terminals will be susceptible to air and missile attack, hostile unconventional forces, sabotage, terrorism, mining, and espionage. The intent of force protection should be to accomplish the mission with the least loss of personnel, equipment, and materiel.

For additional force protection information see JP 3-10, Doctrine for Joint Rear Area Operations, *JP 3-11,* Joint Doctrine for Operations in Nuclear, Biological, and Chemical (NBC) Environments, *and JP 3-54,* Joint Doctrine for Operations Security.

a. **Threat Assessment.** The first step is to **understand the operational risk** to terminal operations and developing risk controls to mitigate the threat. The joint intelligence preparation of the battlespace process assists the combatant commander in formulating planning guidance by identifying enemy capabilities and likely enemy COAs. Based on the assessed threat, the combatant commander must determine where to accept risks, where to focus protection efforts, and how much of the force should be devoted to force protection. The threat assessment should include threats to terminals and to commercial infrastructure in the vicinity upon which the terminal depends. The threat must be considered in light of the concentration of forces and materiel within the limited confines of a terminal.

b. **Countering the Threat.** The combatant commander is responsible for providing the

assets needed to protect the theater LOC and the force traversing it. Force protection functions should include but are not limited to the following.

- Maintaining coastal, harbor, and IWW defense.
- Providing APOD and/or SPOD facility defense.
- Providing military police support.
- Establishing joint rear area tactical operations center for security oversight.
- Preparing for the effects of noncombatant evacuation operations (NEOs) and refugees on terminal operations.
- Providing defensive counterair.
- Providing active air defense.
- Providing passive air defense.
- Providing protection against weapons of mass destruction (WMD), including adequate individual protective equipment for all HN personnel and the civilian workforce in each APOD and SPOD.

Most terminals, airfields, harbors, and ports are physically laid out so that limited dispersion can be achieved within the boundaries of the facility itself. Dispersion within an established terminal does not permit maximum port use. However, it does allow the commander to take partial advantage of the many port facilities without unduly endangering the mission. The extent to which the commander uses the established terminal represents a calculated risk. The commander must carefully evaluate the probability of an attack that could destroy the port or render it ineffective and consider its subsequent effect on the theater logistic plan.

c. **Vulnerability to Terrorism or Sabotage.** Due to the reduction of US-operated bases overseas, the chances of a military buildup through commercial terminals are excellent. The terminals may be unable or unwilling to provide or allow adequate security for sensitive military cargoes. A simple sabotage act against a commercial terminal may be able to halt a military buildup.

d. "Port security" refers to the safeguarding of vessels, harbors, ports, waterfront facilities,



The combatant commander is responsible for providing the assets needed to protect the theater LOC and the force traversing it.

and cargo from internal threats such as destruction, loss, or injury from sabotage or other subversive acts; accidents; theft; or other causes of similar nature. The responsibility of terminal security belongs to the base or terminal commander. Availability of existing terminal security elements determines whether the port commander deems augmentation to be necessary. Those security elements already present might consist of security fences, controlled storage areas, warehouses, electronic surveillance, and alarms. An RC port security company (PSC) may be required to augment existing port security elements and local Coast Guard or equivalent for waterborne security support. The PSC works for the physical security officer within the operations section of a terminal battalion or group. The PSC administers the port commander's physical security plan. The goal of the plan is to keep unauthorized personnel out of the area. Such persons may engage in sabotage, petty and large-scale theft operations, and establishment of inside contacts with foreign nationals or others working in the terminal or marshalling yards.

e. **Health, Welfare, and Morale.** Commanders are responsible for health promotion and disease and non-battle injury prevention. Commanders must ensure that systems are in place for adequate medical care, quick return of minor casualties to duty, preventive medicine, and epidemiological surveillance for infectious diseases.

See JP 4-02, Doctrine for Health Service Support in Joint Operations, *for more discussion on health support for joint operations.*

f. Commanders must plan to make **safety** an integral part of all joint training and operations. Sustained, high-tempo operations put personnel at risk. Command interest, discipline, and training lessen those risks. Safety in training, planning, and operations is crucial to successful mission accomplishment.

g. **Individual Awareness.** All terminal commanders, "from top to bottom," must have in place a plan to stress to the "troops" and others (e.g., media personnel, other government agencies' personnel, and civilian organizations) **the significance of security and the importance of individual awareness** (be aware of what is going on around them, knowledge of alarms, what they mean, and actions to take).

h. The military terminal commander must have an excellent working relationship with his or her commercial counterpart, and should pay particular attention to security planning beyond the terminal's normal practices. Figure II-2 illustrates the key ideas behind comprehensive force protection.

Guidance on terrorism can be found in JP 3-07.2, Joint Tactics, Techniques, and Procedures for Antiterrorism, *JP 2-0,* Doctrine for Intelligence Support to Joint Operations, *and JP 2-01,* Joint Intelligence Support to Military Operations.

i. **Risk Management.** Uncertainty and risk are fundamental to all military operations. A time-tested tenet of success of the joint operations of the United States is taking bold, decisive action and a willingness to accept the associated risk. Risk is the probability and severity of loss linked to various hazards. Carefully determining the risks, analyzing and controlling as many hazards as possible, and executing a supervised plan that accounts for these hazards contributes to the success of terminal operations. When evaluating risks, items to consider include the following.

- **Identifying Hazards.** Consider all aspects of current and future situations, environments, and known historical problem areas.



Figure II-2. Force Protection

- **Assessing Hazards.** Assess hazards to determine risks. Assess the impact of each hazard in terms of potential loss and cost, based on probability and severity.

- **Developing Controls and Making Risk Decisions.** Develop control measures that eliminate the hazard or reduce its risk. As control measures are developed, risks are reevaluated until all risks are reduced to an acceptable level.

- **Implementing Controls.** Put controls in place that eliminate the hazards or reduce their risks.

- **Supervising and Evaluating.** Enforce standards and controls. Evaluate the effectiveness of controls and adjust and/or update as necessary.

10. Cargo Considerations

a. The amount of palletized and/or containerized, breakbulk, and vehicular cargo greatly influences the transportation plan. In peacetime, the estimated ratio of containerized to non-containerized cargo is four to one. 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

or climate-controlled 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 the 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 NEW of ammunition moving through the terminal. 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. Hazardous cargo is further discussed in the "Environmental Considerations" section below.

b. Personnel and equipment requirements are based upon the type of cargo and method of containerization, if any. Time studies of cargo-handling operations indicate that the following are valid for long-range planning purposes.

- **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 one-half ton per man-hour 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.

- **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 usually consist of an operator for each piece of MHE, a checker, and appropriate supervisory personnel per shift.

c. **Customs and Agriculture Inspections.** Where possible, the Military Customs Inspector, US Customs Service, or HN customs service will inspect cargo before loading or unloading. As part of the customs inspection, the surgeon, preventive medicine personnel, and/or veterinarian checks for communicable diseases, sanitary conditions of personnel spaces and facilities, and condition of perishable cargo. Additionally, the customs representative checks for clearances, narcotics, weapons, and contraband and performs other necessary customs activities according to theater directives and HN laws. Terminal operators will deal with inspections on a daily basis, or as personnel and cargo enter the host country. Deploying units must ensure that their cargo is ready for inspection and clearance. Prior to any inspection, the unit should:

- Provide customs personnel access to all cargo requiring clearance and agricultural inspections;

- Ensure that keys and packing lists are available for inspection;

- Provide any information needed to clear cargo during customs inspection;

- Keep customs clearance documents in a permanent file; and

- Notify customs of classified material being shipped.

Additionally, for **CONUS redeployment**:

- Thoroughly clean all vehicles and cargo (Remove all loose ammunition and undocumented and/or improperly

prepared hazardous materials (HAZMATs) from vehicles).

- Prepare for customs inspections according to DODR 5030.49-R, *Customs Inspections;* and

- Arrange for US customs clearance at first US terminal port of entry.

d. **Other HN Requirements.** Terminals are the initial locations where deploying forces will enter host countries. Therefore, units must coordinate with the terminal transportation officer to ensure that movement of personnel, cargo, and equipment complies with the current status-of-forces agreement (SOFA) for the HN. The SOFA also may require compliance with HN laws and place restrictions on movement of HAZMATs, weapons, and military vehicles.

11. Environmental Considerations

The JFC is responsible for the development and inclusion of environmental considerations as part of the planning for terminal operations. Environmental considerations include the spectrum of environmental media, resources, or programs that may impact on, or are affected by, the planning and execution of military operations. Factors may include but are not limited to environmental compliance, pollution prevention, conservation, noise control, protection of historical and cultural sites, and protection of flora and fauna. In general, environmental requirements can be divided into overseas requirements and requirements applicable in the United States, its territories, and possessions, although some US environmental requirements may have extraterritorial application.

a. By considering environmental issues early during the terminal planning process, the JFC may continue to achieve operational objectives while minimizing the impact on human health and the environment. Failure to consider the environmental impacts of all activities may adversely affect the operation. Potential effects on terminal operations include the delaying of the operation's commencement, limited future use of exercise or HN areas, and adverse public opinion, potentially impacting the success of the operation. Commanders should make environmental considerations an integral part of the mission planning and operational decisionmaking process. In the joint arena, it is important that all Services implement these requirements in the same way.

b. The JFC can develop and publish environmental policies and procedures in the OPLAN or OPORD that will minimize the impact of environmental health effects on the terminal operation and the operational effects on the environment. By early development of environmental considerations, commanders may become aware of the potential environmental effects or impacts of mission accomplishment while alternatives still exist to address mitigating actions. Furthermore, careful and visible attention to environmental considerations in the conduct of the terminal operation and other military operations can assist in shaping a positive image both internationally and domestically.

c. Retrograde cargo, such as containers, vehicles, tanks, aircraft, military containers moved via ocean, and military-owned demountable containers being returned to CONUS are prepared and processed for CONUS Department of Agriculture quarantine inspections. This is done before cargo is loaded aboard aircraft or vessels. Plans should be made in advance to have adequate cleansing equipment and appropriate insecticides, chemicals, and rodent poison on hand and the proper environmental clearances for their use. This ensures that retrograde cargo can be promptly and properly processed for redeployment.

d. Key terminal activities where critical environmental issues need to be planned for and monitored are as follows (this list is not exclusive).

- Movement programming
- Cargo clearance
- Conveyance unloading
- Maintenance
- JLOTS
- Redeployment
- Recovery operations

For more information on environmental planning considerations, see Annex F to Appendix A, "Force Protection Requirements," and JP 4-04, Joint Doctrine for Civil Engineering Support.

Specific environmental standards can be found in the DOD Overseas Environmental Baseline Guidance Document *and, if established by the Theater Environmental Executive Agent, national* Foreign Governing Standards.

12. Safety Considerations

a. The special requirements for handling ammunition, explosives, bulk fuel, and other hazardous cargo must be planned for along with port restrictions such as the NEW. Terminal safety requirements may restrict the amount of ammunition or other HAZMATs that may move through the terminal at any given time.

b. Establishing hazardous cargo terminals usually requires the calculation of quantity safety distance factors. The areas should also have a hard, all-weather surface and should be located between the discharge points and the inland transportation net. This will permit efficient use of MHE and CHE to move cargo through the terminal. Emergency supplies and equipment for containing HAZMAT spills should be readily available at or near temporary storage areas.

c. The terminal operations officer determines and reports the general condition of the equipment and facilities, and also delivers pertinent terminal regulations and the terminal commander's orders to the terminal users and to the military troop commander. Dangerous cargo requires careful handling, segregation, or possibly a separate and isolated terminal. The special requirements for handling ammunition, explosives, bulk fuel, and other hazardous cargo must be planned for along with port restrictions such as the NEW. Terminal safety requirements may restrict the amount of ammunition or other dangerous materials that may move through the terminal at any given time.

d. Prompt clearance of dangerous cargo is important. It is essential to the efficiency and success of the total theater logistic system, and is necessary to avoid congestion in the terminal area. The most efficient method of clearance is to discharge dangerous cargo directly to the clearance transport. However, operating conditions of handling dangerous or hazardous cargo often do not permit this. Terminals serve dual purposes. They receive, load, and unload cargo destined for points accessible to and from distant theater locations. They also provide for the maintenance of vehicles and equipment and rest for crewmembers. Maintenance organizations provide a flexible, system-oriented supply support structure tailored to the unique characteristics of the conveyance.

13. Contamination Considerations

a. The safe retrograde and long-term disposition of equipment with residual

contamination requires a thorough understanding of the associated risks and the minimum requirements necessary to mitigate those risks. Following decontamination, residual contamination risks may remain on equipment and materiel scheduled for redeployment. The contamination risk could include potential vapor hazards and contact hazards below levels which are measurable with existing tactical detection equipment.

b. During redeployment planning, the unit commander will provide detailed listings of any contaminated equipment and any suspect equipment through their chain of command to the JRAC. This information allows for detailed planning regarding the disposition of the equipment (e.g., consolidation and decontamination).

For more information see JP 3-11, Joint Doctrine for Operations in a Nuclear, Biological and Chemical (NBC) Environment.

14. News Media Considerations

Operations at terminals during any contingency are likely to draw significant attention from national and international news media. Sometimes increased activity at terminals or the notification of civilian work force members may be the first indications reporters have that joint operations are underway. It is DOD policy to provide as much information to news media as possible consistent with the constraints of operations security and personnel safety. During joint operations, the supported combatant command will issue detailed public affairs guidance. This guidance establishes basic guidelines for the release of information and sets the parameters for discussing the ongoing operation. Planners should consider the potential for news media interest, both local (HN) and international press, and its possible impact on terminal operations. For more information on working with the media, see JP 3-61, *Doctrine for Public Affairs in Joint Operations*.

15. Deployment

The primary objective of deployment planning is to provide personnel, equipment, and materiel when and where required by the JFC's concept of operations. Deployment operations require a balanced, integrated transportation system of node operations, movement control, mode operations, and cargo transfer operations. Terminal planning is part of the transportation plan that is developed to support the combatant command's OPLAN.

a. During deployment, units are echeloned, configured, and scheduled for movement based on the TPFDD that **synchronizes arriving personnel, equipment, and materiel with mission needs** and simplifies the terminal operation. **Time-phasing allows for rapid theater reception** and **onward movement** of arriving personnel, equipment, and materiel through the terminal.

b. USTRANSCOM has common-user transportation and reporting responsibilities that include transporting, accounting for, tracking, and guiding deploying personnel, equipment, and materiel from the POE to the POD. Accounting for and tracking of personnel and cargo is accomplished using the **current and accurate movement data** transmitted on allocated space systems and assets provided by the forces being moved. JTAV and ITV is critical to C2 of equipment and personnel terminal reception operations.

c. Since changes during deployment execution are inevitable, **terminal operators must anticipate adjustments and manage the impact of changes** to avoid disrupting or impeding the deployment flow. **Planning is the key.** In order to manage the impact of

changes, terminal operators must be prepared to:

- Provide resources at critical sites to ensure efficient off- and on-loading;
- Develop flexible, responsive steps at all levels to maintain throughput; and
- Synchronize all aspects of terminal operations (e.g., adjusted deployment flow may require different staging or support).

d. ITV is also key to anticipating adjustments and managing changes in the deployment flow. Visibility over assets scheduled to move through the terminal or that are en route to the site provide terminal personnel with a valuable planning tool that facilitates flexible, responsive terminal management. It is imperative that terminal operators not only have access to the DOD visibility systems, but that their business processes and systems support the timely and accurate transmission of ITV data to provide downline terminal operators with the same advantage.

16. Joint Reception, Staging, Onward Movement, and Integration

In a force projection environment, the ability to execute a mission largely depends on the speed with which forces assemble at the required location. JRSOI is the essential process that transitions deploying forces consisting of personnel, equipment, and materiel arriving in theater into forces capable of meeting the combatant commander's operational requirements. Theater terminal planning covers the reception of forces at PODs and the establishment of terminals along the theater LOC to support staging, onward movement, sustainment and retrograde operations, and visibility over those operations, in support of the theater transportation plan. A clear understanding of the combatant commander's COA and how it relates to the JRSOI plan is essential for the productive management of terminal operations. Some key planning considerations for JRSOI are discussed in subsequent paragraphs.

a. **Reception** is the process of unloading personnel, equipment, and materiel from strategic or operational transport, and marshalling the deploying units for movement out of the reception area. Reception operations include all those functions required to receive and clear unit personnel, equipment, and materiel through the POD. Successful port and terminal operations require detailed planning and disciplined adherence to procedures. When possible, port and terminal operation responsibilities should be articulated in CAAs between supporting and supported combatant commands to clearly fix responsibility for specific functions within the port and terminal. For example, functional aspects outlined in POD operations that may be outlined in CAA include: command arrangements; command relationships; reporting requirements for port support operations; responsibilities for life support of transient units; crisis action policies and procedures; and/or frustrated cargo procedures. In general, large port operations have terrain management plans with designated local dispersal, staging, marshalling, and call forward areas as well as restricted traffic patterns to regulate movement in, around, and through the POD terminal. Force planners and supporting deployment agencies must ensure that unit continuity is a dominant consideration when planning unit and equipment deployment and movement increments and their supporting schedules. They can accomplish this as follows.

- Schedule the arrival of unit personnel and equipment to coincide. In most deployments, unit equipment will usually arrive at the SPODs and the personnel

arrive at APODs. If the equipment arrives too early, the terminal marshalling and staging areas may become saturated with equipment and materiel awaiting unit personnel to clear the terminal complex. If personnel arrive before unit equipment, it increases the life and logistic support and force protection requirements at the terminal complex.

- Combatant commanders must plan and regulate the transportation flow by ensuring that adequate support and reception assets are effectively coordinated through a theater reception plan. This is done by ensuring that terminal units are available or deployed early in the movement schedule (TPFDD) to facilitate JRSOI.

- A movement control system must be established that allows the combatant commander to adjust the movement schedule for all units (combat and support) as the requirements of the mission change. The flow of the deployment must be regulated and integrated to allow a balanced and synchronized flow of forces and supplies into and throughout the AOR. In order to manage the impact of changes, terminal operators must be prepared to:

  •• Provide movement personnel and equipment resources at critical sites to ensure efficient off- and on-loading;

  •• Develop flexible, responsive steps, at all levels, to maintain throughput; and

  •• Synchronize all aspects of terminal operations (e.g., adjusted deployment flow may require different staging or support).

b. **Staging.** The major objective of staging is to assemble and prepare forces to perform their mission. Staging includes the assembling, temporary holding, and organizing of arriving personnel, equipment, and materiel into units and forces, and preparing them for onward movement and employment. This often involves consecutive iterations of staging and onward movement as units move from the PODs through theater terminals to their final destination. Staging requirements must be planned and communicated to supporting units executing actions to prepare and organize the personnel, supplies, equipment, and materiel for efficient staging operations. Staging areas are usually established in proximity to PODs, inland terminals, or theater LOCs.

c. **Onward movement** is the process of moving units and accompanying equipment and materiel from reception facilities, marshalling areas, and staging areas to the operating areas. It includes moving non-unit personnel arriving to gaining commands and moving sustainment materiel from reception facilities to distribution sites. Rail, road, inland and coastal waterways, and/or air can accomplish this movement. Terminals are established at the operational and tactical levels to support onward movement. The onward movement process encompasses support to all Service components of a joint operation, and often includes HNS efforts. Movement of personnel, equipment, and materiel is prioritized according to the combatant commander's needs. Onward movement is completed when force elements are delivered to the designated location at the designated time and are preparing for integration into the joint force.

d. **Integration** is the synchronized handoff of units into an operational commander's force prior to mission execution. Integration into the joint force completes the deployment process.



Equipment staged vicinity of the port in preparation for onward movement.

17. Redeployment Operations

Redeployment activities are directed at the **transfer of individuals, units, and/or materiel** and can **begin at any point** during joint force operations. For this reason, the terminal operations should reflect exit or transition strategy concerns developed during mission analysis. **Redeployment is not merely reversing the deployment process.** Redeployments are planned and executed as discrete, mission-based operations within the overall context of the joint force mission.

a. At the tactical level, redeployments to support movement of the joint force may sacrifice tactical considerations for speed, control, and efficiency of movement through the terminal. This type of redeployment would be conducted when little or no threat is anticipated that could impede or interdict the terminal operational flow. **Tactical redeployment** could include **movement of a force from a sector in the JOA to the joint rear area,** for later deployment as part of an operational maneuver. This would require, at a minimum, operations at two terminal locations. Terminal operations at the **strategic and/or operational levels of war** could include **redeployment of the joint force upon completion of its mission** within the AOR and/or JOA.

b. Redeployment planning and execution is also based on a TPFDD. TPFDD development and movement scheduling should optimize the available cargo capacity in allocated lift assets and the reception capacities of the in-theater POEs and destination PODs. During strategic movement to another AOR, the gaining combatant commander will develop the TPFDD.

c. USTRANSCOM is responsible for management of common-user POEs, in this case, the theater POEs for redeployment. Activities at the **POEs focus on staging, marshalling, capturing ITV data, and loading** individuals, units, equipment, and materiel on designated transportation assets prior to movement to the POD(s). Recovery and reconstitution activities not completed in-theater before redeployment may continue at an intermediate staging site or the terminal marshalling or staging areas. Materiel stockage levels must satisfy war reserve materiel (WRM) requirements, and the activities to identify the shortages will normally be handled at the terminal. Immediate recovery

and reconstitution of forces and materiel parallels integration efforts by ensuring that the US forces are prepared for the next action or event requiring another deployment. When units or individuals redeploy, reintegration processing must be accomplished prior to returning active duty Service members to their permanent duty stations or demobilizing RC Service members. Reintegration includes medical, clothing and equipment turn-in, security debriefs, and update of personnel and finance records. Again, the in-theater POE terminal will play host to many of these operations during redeployment.

d. Additional geographic combatant command considerations for redeployment include, but are not limited to the following.

- Agricultural wash down and customs clearance requirements.
- Return disposition of unused sustainment cargo and supplies.
- Inspection of personnel and containers to locate and confiscate contraband (to include unauthorized weapons, ammunition, and war souvenirs).
- Additional mission requirements directed en route (e.g., maintaining tactical capabilities during redeployment).
- Return of intermodal equipment (container and/or flatrack).

For more information see JP 3-35, Joint Deployment and Redeployment Operations, *and JP 4-01.8,* Joint Tactics, Techniques, and Procedures for Joint Reception, Staging, Onward Movement, and Integration.

SECTION B. AIR TERMINAL PLANNING

18. Responsibilities

a. USTRANSCOM designates peacetime aerial ports. The geographic combatant commander designates wartime and contingency aerial ports in coordination with USTRANSCOM and appropriate HN authorities. Air mobility operations involve the air transport of units, personnel, supplies, and equipment and the collection and transmission of associated lift data. These activities may be conducted by any combination of force organizations. Movement of units by airlift demands extensive advanced planning on the part of the JFC. The primary goal in planning is to minimize the time during which a unit being moved is non-operational. Planning to ensure efficient terminal operations can reduce this non-operational time and speed throughput of personnel, equipment, and materiel.

b. The Director of Mobility Forces (DIRMOBFOR) may be of great assistance in the planning and execution of terminal operations. Some of the DIRMOBFOR's authorities and responsibilities as they relate to terminals include the following.

- Direct, through the air operations center air mobility division, the tasking of AMC strategic and theater air mobility forces (air and ground) supporting the joint force air component commander or Air Force component commander for specific missions or operations. In this capacity, DIRMOBFOR normally exercises TACON over AMC strategic mobility forces through the AMC air mobility division.
- Coordinate with the joint air operations center director to ensure that all air mobility missions supporting the JFC are

fully integrated with the air tasking order cycle and are deconflicted with all other air operations.

- Coordinate procedures for transporting individual weapons, ammunition, and equipment.

- Review US territories and possessions and foreign border clearance requirements and procedures.

A series of **joint planning conferences** is required during the planning phase. Conferences are necessary to ensure coordination, a clear understanding of responsibilities, and a mutual understanding of regulatory guidance. At a minimum, a joint planning conference will be held as soon as possible after receipt of an air movement order or directive. Key personnel should represent all participating elements at these conferences. These personnel must be able to resolve problems and make decisions for their organization, including interface requirements. These formal conferences do not rule out a need for continuous coordination throughout the planning cycle.

19. Air Terminal Considerations

Planning air terminal operations is a complicated process involving numerous interdependent functions. These range from such things as ensuring that airlift facilities are capable of supporting the operation to comprehending the nature of the threat to airlift and coordinating effective threat countermeasures. Terminal planners must be thoroughly familiar with each Service component's unique airlift capabilities as well as those of common-user airlift.

a. Planners must know the capabilities of each airlift facility in the theater. The required capability may necessitate the need to plan for the development, rehabilitation, and maintenance of facilities to maximize airlift support to joint operations. This includes construction of base support systems that can improve both airlift mission capabilities and the ability of airlift aircraft to survive. The type and sophistication of a facility depends on its location, climate, and engineer support. The supported Service component is responsible for maintaining forward airlift facilities. General considerations for terminal planning are as follows.

- **Facility Support Forces.** Successful airlift operations depend on various support forces. The supported Service component is responsible for the movement of personnel and cargo to the onload site and forward after off-loading, and for the submission of required manifest data to the supported combatant command's designated support function (A/DACG, TALCE, aerial port, and air terminal). When Service component support is unavailable or inadequate for organic airlift operations, commanders may request augmentation by Air Force or common-user mission support forces. When an operation involves multiple components, the geographic combatant commander should appoint a single component to coordinate with the host facility, decide resource allocation, and prioritize on-load and off-load operations. However, the individual components remain responsible for providing the required manifest data to the appropriate supporting function.

- **Operational Aerial Ports.** The effectiveness of airlift depends on the number and type of aerial ports available within the theater. Aerial port operations and their associated terminals assure the timely and effective movement of personnel and materiel into and across the theater. A lack of aerial ports and/or ground support personnel can seriously constrain cargo throughput operations.

- **Onload and Off-load Operations.** Effective cargo marshalling area clearance at airlift facilities can minimize terminal congestion. Early in the planning process the supported unit's movement control organization must coordinate the distribution of cargo with airfield operators. The geographic combatant commander may require the dominant supported component to establish an A/DACG. In cases involving an Army dominant force, the geographic combatant commander may place an air terminal movement control team at the airfield in addition to the A/DACG. The A/DACG must coordinate its activities with the mobility forces. Mobility forces consist of one or more of the following: a TALCE, a mission support element (MSE), a mission support team (MST), a fixed aerial port, or air terminal. This interface speeds the movement of cargo through the airport, landing zone, or drop zone. Effective aerial port operations normally require the items listed in Figure II-3.

b. Terminal operations require suitable airfields and relatively low-threat levels. Additionally, the timely exchange of information among the Service components is critical to successful terminal operations. When planning terminal operations, consideration should be given but not limited to the following.

- The nature of the expected threat throughout the mission.
- The duration and location of the operation.
- The location, availability, and suitability of airfields, supply bases, and fixed operating bases.



Figure II-3. Requirements for Effective Aerial Port Operations



Aerial port of debarkation flight line operations

- The location of the air mobility express hub.
- The type and amount of cargo or personnel for delivery.
- Desired phasing of forces into the operation.
- Expected conventional and non-conventional threat throughout the mission.
- Weather conditions.
- Aircraft servicing, maintenance, and damage repair capabilities.
- Airfield onload and off-load capabilities.
- MHE support and the availability of loading crews.
- Geospatial information (e.g., maps and charts) and imagery requirements.
- TALCE, combat control team, air liaison officer, and ground force assault team requirements.
- Availability of 463L pallets, top and side nets, plastic pallet covers, shoring, and dunnage required.

  Refer to DOD Directive (DODD) 4500.9-R, Defense Transportation Regulation Parts I, II, and III, *and specific Service regulations for guidance.*
- Time to coordinate diplomatic clearances and radio frequency authorizations.
- Agricultural, customs, and immigration clearance requirements and procedures, as applicable, for possessions, US territories, and foreign countries.
- Support requirements (i.e., MHE, weighing devices, and prime mover vehicles) provided to the A/DACG and airfield support forces.
- Qualified personnel provided for the airfields survey team (if applicable).
- Automated support for data capture to facilitate port processes and ITV (AIS, AITs, etc)



Insufficient maximum aircraft on ground can affect throughput, thereby hindering overall operations.

Additional planning considerations can be found in Annex A of Appendix A, "Transportation Planning Checklist."

c. **MOG** is the maximum number of aircraft that can be accommodated at an airfield on the ground at a given time. MOG is a critical variable in efficiently scheduling aircraft through an airfield and can be defined in terms of parking space, or in terms of the ability to work aircraft servicing tasks simultaneously (refueling, cargo and/or passenger loading and unloading, etc). Each category of servicing may yield a different capability. The "working MOG" normally limits airflow to a rate of aircraft not greater than the most constrained individual MOG factor.

20. Cargo Considerations

a. Most cargo entering an air terminal will be palletized, with lesser amounts of oversized and outsized cargo. The terminal commander will require specific MHE for aircraft (civilian and military) unloading and loading, and for cargo movement (e.g., 40/60K loaders). Additionally, any hazardous and/or classified cargo or materiel arriving at the terminal will require secure handling and storage sites and equipment. Some other considerations for planning are found in Figure II-4.

b. Another consideration is the movement of deceased personnel who pass through OCONUS terminals to CONUS port of entry mortuary facilities. Although each Service has the responsibility for mortuary affairs, support planning for this activity must be accomplished since many of the requirements for this service will be at the terminal.

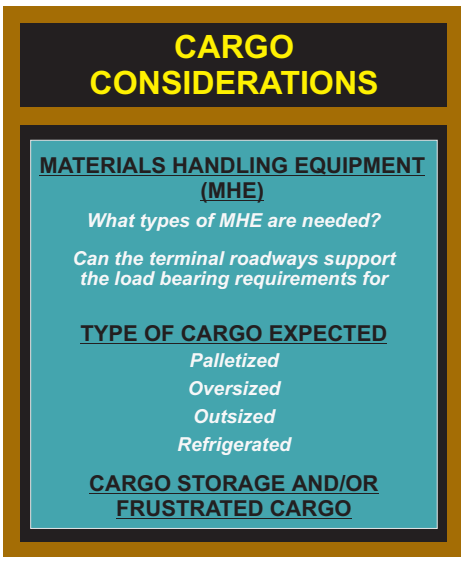


Figure II-4. Cargo Considerations

See JP 4-06, Joint Tactics, Techniques, and Procedures for Mortuary Affairs in Joint Operations.

21. Passenger Considerations

Passenger movement requirements on AMC channel lift (frequency and requirements airlift channels) between CONUS and overseas areas are forecasted IAW the provisions of Appendix M of Part I of the Defense Transportation Regulation (DTR) (DOD 4500.9R). Additionally, immigration requirements for each HN (as specified in the *Foreign Clearance Guide*) may be helpful during planning for terminal operations. Intratheater group personnel movements are performed using common-user owned or arranged lift or by unit movement assets through the theater's terminals. While these personnel or groups are awaiting transportation to follow-on destinations, the terminal will be required to provide passenger support, usually at the air terminal personnel holding area.

22. Airfield Command and Control Considerations

During contingency operations, the most efficient and effective use of limited airfield capacity and resources is often critical to a successful military response. The task is complicated when foreign airfields are host to a variety of Allied military, NGOs, and commercial air activities. In some scenarios, an AMC-commanded aerial port may potentially be competing for ramp space and facilities with many other users, including other US military units (e.g., Army aviation assets or Air Force strike aircraft). To achieve a unity of effort of all US military forces operating on an airfield, the geographic combatant commander must decide on the priority of US military operations and/or appoint a single on-scene commander to determine priorities among competing US demands. Additionally, US military forces should normally designate a single primary point of contact to negotiate airfield usage issues with Allied forces and HN airfield manager.

SECTION C. WATER TERMINAL PLANNING

23. Responsibilities

a. A determination as to numbers, types, and locations of water terminals within the theater 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. The planning process also involves selecting the appropriate water ports and deciding who will operate them. The campaign plan, developed by the combatant commander, guides this decision.

b. The planning and execution of water terminal operations at the operational level requires a detailed analysis of a wide range of factors. The factors include the following.

- Overall concept of the operation.
- Logistic support requirements.
- Physical characteristics and layout of the port and/or beaches.
- Relative location of highway, rail, air, and IWW networks.
- Location of supported and supporting units.
- Required repair and rehabilitation of existing facilities.
- Requirement for new construction.
- Requirement for security, especially if HNS is not available.

- Required communications infrastructure, AIS, and AIT to facilitate ITV, manifesting, and documentation requirements during vessel loading and discharge operations.

In a theater, water terminals are located at one or more fixed port facilities, unimproved port facilities, or bare beaches.

See Annex A, "Transportation Planning Checklist," and Annex B, "Water Terminal Planning Considerations," to Appendix A for more information on water terminal planning.

c. At the operational level, water terminals introduce unit equipment (to include bulk fuel) into the JOA and conduct operations to sustain the force. During initial reception, the military terminal organization is sequenced into the JOA early enough to conduct timely discharge operations. The planning must provide for the off-loading of MHE and CHE equipment to allow the terminal unit to become operational prior to any major force introductions. Ships should be sequenced into the terminal to match the evolving capabilities of the operating terminal unit. For example, in the early stages of the deployment, RO/RO ships should be scheduled for arrival. Container and other cargo ships should be scheduled only after the terminal has the capability to handle them. However, the transportation planner may consider container off-loading early when using self-sustaining vessels. The availability of HNS also will influence how the ships are scheduled for arrival.

d. The terminal unit commander also has planning and execution aspects to consider before off-load operations. The commander should coordinate with MSC representatives for the following.

- Planning ship discharge and staging.
- Planning for the ship arrival meeting.
- Planning to perform harbormaster functions when there is no effective governmental infrastructure to execute this task.

e. **Deploying Force Requirements.** Organic support elements of deploying forces normally form a PSA or Service-unique terminal organization (e.g., POG) to assist with the deployment. PSAs and POGs are temporary military augmentation organizations comprised of personnel with specific skills. Their mission is to support the port operator in receiving, processing, and clearing cargo at the SPOD. Upon the PSA and POG arrival at the SPOD, they come under the OPCON of the port operator. This element must precede its main body of equipment and troops to the terminal. A PSA or POG will arrive at the 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 and POG support and requirements are provided under an MOU between the deploying or arriving unit and the appropriate terminal commander. The PSA and/or POG 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. Additionally, PSA and/or POG may be tasked to provide life support at the terminal.

24. Water Terminal Considerations

There are numerous considerations when planning terminal operations. Terminal throughput capacity is one of the most critical. Terminal throughput capacity is the daily amount of cargo and the numbers of personnel that are brought into, discharged,

and cleared from the terminal. 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 the anchorage, depth of water at berth, type of terminal at berth, height restrictions on channels, and theater JRSOI. Figure II-5 shows a notional checklist for estimating throughput capacity for water terminals.

25. Terminal Workload Phases

For common-user ports, MTMC and MSC, based upon availability, select the types and numbers of vessels used to support the operation. Vessel selection is based upon the anticipated availability of marine terminals and the four phases of terminal workload as shown in Figure II-6 and discussed below. These phases are important to theater planners. The different phases reflect changes in type and volume of cargo that are more efficiently handled by different types of water terminals.

A NOTIONAL WATER TERMINAL THROUGHPUT ESTIMATION CHECKLIST

Collect These Data	*Compute These Factors*	*To Determine*
Channel depth Channel width Length of berths Type of berths (such as quay, pier, and mole) Diameter of anchorages Depth of water at berth Type of terminal at berth	Evaluate to determine water terminal reception capacity	Water terminal throughput capacity for importing cargo only. (Retrograde operations will reduce the import capacity.)
Discharge equipment on board Discharge equipment ashore Width of apron Special lift equipment Number of discharge equipment	Evaluate to determine water terminal discharge capacity	
Type of cargo Type of cargo-handling equipment Round-trip distance Number of cargo-handling equipment	Evaluate to determine water terminal transfer capacity	
Intrinsic capacity Average dwell time Operating capacity Terminal facilities Stacking methods Equipment used	Evaluate to determine water terminal storage capacity	
Clearance conveyance by mode Terminal equipment and personnel Gate capacity	Evaluate to determine water terminal clearance capacity	

NOTE: *Once all of the above evaluations are completed, then the following should be applied: threat assessment, effect of the elements, and training level of labor.*

Figure II-5. A Notional Water Terminal Throughput Estimation Checklist

a. The **initial or surge phase** is almost entirely dedicated to the movement of deploying units with their unit equipment, vehicles, and accompanying supplies. This phase relies predominantly on RO/RO and breakbulk cargo terminals, when available. Considerations during this phase are that the JRSOI forces, the terminal organizations that will operate the terminal, will also be in their initial stages of deployment and will be unable to handle large volumes of cargo. The early activation and employment of RC JRSOI water terminal operation units may shorten this development stage. Significant reliance will be placed on the existing commercial water terminal infrastructure and HNS to handle cargo during this phase. JLOTS operations may be necessary during this phase as operational circumstances require, but fixed water terminal facilities are greatly preferred, even where they are only marginally operational.

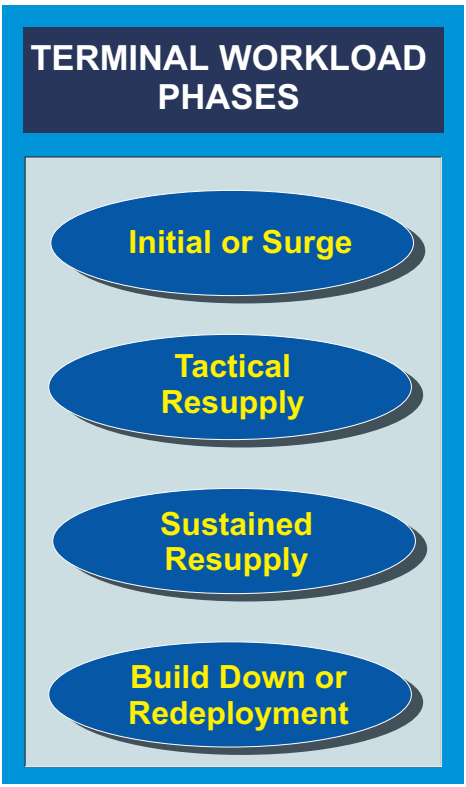


Figure II-6. Terminal Workload Phases

b. **The tactical resupply** 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 forces under the combatant commander may begin to augment and/or 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 non-containerized) 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 and limited use of bare beach and/or degraded port and/or JLOTS equipment may be required, based on operational circumstances. To avoid discharge bottlenecks or constraints on operational reach of combat forces, the supporting and/or supported combatant commands must focus on the use of fixed water terminal facilities and minimize, if possible, the reliance on JLOTS use.

c. The **sustained resupply** phase occurs when the water terminals must support the materiel levels necessary to sustain those forces that are engaged in combat operations, while building a theater war reserve supply level. Bottlenecks occur when water terminals and the theater's transportation net are not able to receive and process large volumes of cargo (both containerized and non-containerized) for onward movement to their final destination. During this phase, reliance on JLOTS operations should be minimized because they are slow, resource-intensive, and risky based upon weather, sea states, and other factors. However, in the event of port denial due to adversary attack, transition to JLOTS operations may be required.

More detailed discussion of offshore discharge considerations is found in JP 4-01.6, Joint Tactics, Techniques, and

Procedures for Joint Logistics Over-the-Shore (JLOTS).

d. The **build down or redeployment** phase includes the transfer of units, personnel, or supplies deployed to one theater either to another theater or back to CONUS. Planning for this phase of terminal operations must be conducted during previous phases. These plans must consider the prevention of port congestion, means to minimize the effects of port congestion on terminal throughput should it occur, and efficient scheduling to enable simultaneous inbound and outbound cargo operations to be conducted, if required.

26. Cargo Considerations

a. **Ship's Cargo Stowage Plan.** A very 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. 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, MTMCTEA documents such as Pamphlet 700-4, "Vessel Characteristics for Ship Loading," ITV data as provided by GTN, and pertinent automated data processing (ADP) systems fielded by MTMC for this purpose. However, not all ships (particularly foreign-flagged 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. Terminal operators are responsible for developing vessel stow plans.

b. **Ship arrival planning and port scheduling is important** to ensure that the supported combatant commander's plan is executed as expeditiously as possible. These plans enable the port commander to plan for certain types of off-loads of cargoes and schedule the port activities appropriately. Some of the issues to be covered during planning are as follows.

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

- **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 each ship so that planning at operating echelons may be completed before vessels arrive. Normally represented at these meetings are the JMC, USTRANSCOM, component representatives, HN, and representatives from allied countries. Additionally, a representative of the naval coordination and protection of shipping (NCAPS) organization attends these meetings. The NCAPS organization carries out responsibilities for the control of movement, routing, reporting, and tactical diversion of multinational merchant shipping.

- **Directing Incoming Ships.** Incoming ships are directed to specific terminals for discharge based on the overall operational necessity, final cargo destinations, workloads of theater terminals, relative location of depots for inbound cargo, terminal throughput capacity, and capabilities of all segments of the transportation system.

- **Planning Ship Arrival.** The above information, along with vessel manifest information provided by MTMC, is made available 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.

- **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.

  •• Strategic sealift ships submit via message pre-arrival reports (PREREPs) within 72 hours of arrival to the MSC office or representative and/or ships agent. The PREREPs contain the ship's estimated date and time of arrival and lists port services and support required upon arrival at the SPOD, to include tug and pilot support and other logistic requirements (e.g., fuel).

  •• The local MSC office or representative responds to PREREPs and arranges for these services for the ships arriving at the SPODs.

- **Ship Berth Assignments.** Ship berth assignments require coordination with local MSC representatives and HN authorities.

c. 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 assist 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.

27. Passenger Considerations

Normally most passengers travel via air; however, many ships will contain personnel to assist with the cargo en route or with off-load. These personnel are referred to as supercargo. These personnel will require life support upon arrival and until the parent unit has cleared the terminal.

SECTION D. LAND TERMINAL PLANNING

28. Responsibilities

a. Land terminals provide flexibility and increase the capability of the transportation system to handle cargo. The combatant commander or Service component with the support of USTRANSCOM establishes land terminals at sites that can support inland waterways, motor, rail, and air transport modes. When established, the terminals and the nodes that link them should form the LOCs that flow from origin to destination. When possible, transportation planners should use and incorporate existing terminal facilities into the transportation distribution network. Terminals serving railways and IWWs are examples of existing facilities.

b. The supported and supporting combatant commands normally delegate the operation and control of inland terminals to the ASCC or the appropriate Service component commander. The Service component commander usually delegates the selection and operation of inland terminals to the senior transportation, aviation, and support command commanders on an area basis. However, their selection requires integrated planning to ensure that they link with the LOCs and support the overall concept of operations. These organizations plan for and establish operational inland terminals at both ends of interchange points along the LOCs to provide for transshipment of cargo and personnel transported by the various modes. The senior transportation commander normally operates transportation inland terminals with cargo transfer companies.

29. Land Terminal Considerations

a. The transportation commander places truck terminals in or near centers of concentrated trucking operations at both ends of a line-haul system. TTPs are also placed at strategic locations between both ends of a line-haul system.

b. Truck terminals connect local pickup and/or delivery service and line-haul operations. They are assembly points and dispatch centers for motor transport equipment used in line-haul operations. They also may be used for in-transit storage or freight sorting, but these uses should normally be minimized as they detract from efficient operations. Cargo transfer elements provide cargo-handling service at most motor transport terminals.

c. The transportation commander may establish one or more intermediate truck terminals at points along the line-haul routes. Their location depends upon the organization of the line-haul operation. The location of supported direct support and general support units also influence the selection of sites for intermediate terminals. These terminals provide delivery of cargo to supply support activities. The intermediate terminal may also be collocated with a TTP.

d. The transportation commander locates TTPs at predetermined locations along the route of a line-haul operation. They form the connecting links between segments of a route and tie the overall operation into one continuous movement. TTPs offer facilities for exchanging semi-trailers between line-haul tractors operating over adjoining segments of a line-haul route. They also provide a means for controlling and reporting equipment engaged in the operation. Specifically, TTPs provide facilities for exchanging semi-trailers, reporting (ITV), vehicle and cargo inspections, documentation, and dispatch procedures. They may also provide food service, maintenance, and other support. TTPs are not normally used to pick up and deliver cargo.

e. Truck terminals and TTPs are established on or as close to the line-haul

route as possible. However, requirements for hardstands, support facilities, security, and the availability of real estate may force the establishment of truck terminals or TTPs off of the line-haul route. The truck terminals and TTPs include a marshalling area and other activities and services as required to support the operation. Truck terminal site selectors should consider the following.

- Physical security of the site.
- Size, complexity, and duration of the operation.
- Number and type of vehicles to be employed.
- Facilities required at the terminals and transfer points.
- Anticipated backlog of semi-trailers at these sites.
- Required communications infrastructure, AIS, and/or AIT to facilitate ITV.

30. Rail Terminal Considerations

a. Rail terminals include rail yards, freight stations, passenger stations, and repair and service facilities. Except for some intermediate rail yards, they are located at the start and the end of rail lines. Rail yards are areas with sufficient track lines to allow for the forming of trains. Switching and spotting rail cars form trains. Rail yards are usually available within a rail terminal. However, well-developed rail lines usually have one or more rail yards between the start and the end of a line.

b. Freight stations are buildings, sheds, or warehouses that provide for receiving, loading, unloading, or storing cargo. A capable freight station enhances the capability to handle cargo and provides an ITV capability for assets received, loaded and unloaded, or stored. Freight stations usually have a paved access to ease the loading and unloading of other modes of transport. Freight stations also have ramps to ease the handling of tracked and wheeled vehicles. Transportation planners should provide portable ramps to handle tracked and wheeled vehicles anywhere along the rail line.

c. Passenger stations contain a track that allows for the spotting of passenger rail cars. They also should include a facility for the use of troops waiting to board rail cars. Finally, a rail terminal should have adequate maintenance facilities to repair and service engines and rail cars.

d. While Army RC and/or HN rail units operate railroads, cargo transfer companies operate the terminals. When available and when the tactical situation allows, commanders should exploit rail capabilities within the operational area.

31. Inland Waterway Terminal Considerations

The transportation planner is interested in an IWW's ability to move cargo. Consequently, the planner is interested in the effect of the IWW's physical features on its ability to carry cargo. Planners must consider use of both commercial and military IWW barges when moving unit equipment and supplies to and from terminals.

a. **Physical Planning Considerations.** Among the physical features that determine what can be moved over an IWW are the following.

- Restricting width and depth of the channel.
- Horizontal and vertical clearance of bridges.



M109A3 Howitzers are loaded onto flatcars for movement to a forward assembly area.

- Number of locks, their method of operation, and the length of time required for craft to clear them.

- Freeze-ups, floods, and droughts also affect an IWW's capacity. (The transportation planner must know when to expect these seasonal restrictions and how long they can be expected to last.)

- Speed, fluctuation, and direction of water current.

- The availability of craft, labor, terminal facilities, and maintenance support.

b. Seldom are enough craft or barges available to fill or exceed the capacity of an IWW. However, if there are enough, the daily capacity can be estimated. This is done by determining the number of craft per day that can pass through the most limiting restriction, such as a lock, lift bridge, or narrow channel; this will provide the "passage capability." Deduct the number of civilian passages and that leaves the passages allowed the military. (A percentage may be allowed instead.)

c. Turnaround time is the length of time between leaving and returning to a point. Since barges are being picked up at a wharf or stake barge, barge loading time is not part of the computation. If barges are picked up at shipside without marshalling at a wharf or stake barge, loading time of the barge becomes a factor of turnaround time. The paragraphs below discuss items that must be known in order to calculate turnaround time.

d. Length of haul is the round-trip distance between the barge pickup point and barge delivery points. The wind, current, power of craft, and size of load influence speed. If the craft's speed cannot be determined, assume it is 4 miles per hour in still water (6.4 kilometers per hour). Speed and direction of current can frequently be discounted since resistance in one direction may be balanced by assistance in the other direction. However, this is not always the case. Loading and unloading time is the time to load and unload a craft at origin and destination. Time consumed in the locks is the time taken by a craft and its tow to pass through a lock. When exact data is lacking, lock time is assumed to be 1 hour per single lock. Planned hours of operation per day are usually 20. Dropping barges from the tow, refueling, taking on stores, rigging up, and maintenance consume the remaining 4 hours. Transit time is the time to move the craft the

length of the haul and return to its origin. Transit time equals the distance divided by the speed of the craft. It does not include stops or delays of any kind. Due to possible damage to the IWW, a speed control may be in force. To determine transit time, add the following:

- The time to make up the tow;
- The distance divided by the speed of the tow;
- The time consumed passing through the locks; and
- The time to break up the tow.

32. Passenger and Cargo Considerations

a. Passenger and cargo considerations for personnel, equipment, and materiel moving via the land terminals are similar to those of the air terminal. En route terminals along the theater LOCs provide security, life support, refueling, limited vehicle maintenance, and vehicle recovery. The size of the terminal will be based upon the available facilities, length of route, and volume of equipment and personnel transiting the sites. Various types of en route terminals that support onward movement include:

- Convoy support centers (CSCs);
- TTPs;
- POL transfer points;
- Pre-positioned equipment sites; and
- Railheads.

b. Of the above listed terminals, CSCs are among the most critical. CSCs provide the bulk of en route support during onward movement. Services provided at CSCs may be tailored based upon such factors as distance between LOCs nodes; number and location of support bases; and MSR congestion, condition, and security. CSCs usually provide support in the following areas.

- Administration and communications.
- Refueling.
- Dining and billeting.
- Latrines.
- Laundry and showers.
- Vehicle recovery and maintenance.
- Medical.
- MHE and CHE.
- Security (force protection).
- Hazardous material and waste accumulation and storage.

CHAPTER III
AIR TERMINAL OPERATIONS

"The USAF will establish and operate air terminals in support of other DOD components to satisfy authorized airlift requirements. Air terminals may be established on airfields of a military service (with concurrence) other than the Air Force to meet requirements . . . "

AFJI 24-109, AR59-105, MCO 4660.2, OPNAVINST 4630.13 Series

1. General

Air terminal operations function at strategic, operational, and tactical levels in peacetime and in wartime. AMC operates air terminals at CONUS aerial ports and operates or arranges for the operation of fixed air terminals in theaters for all DOD components. AMC also operates air terminals from non-fixed locations within the theater, as required. In theater, the Air Force component commander normally provides terminal facilities at all points served by AMC-controlled airlift aircraft. This includes loading and unloading the aircraft and providing respective Service clearance and MHE. Service component commands may also provide personnel and equipment to participate in loading, unloading, and transshipping component personnel and materiel at Air Force-operated air terminals. Tactical commanders may also accept responsibility for loading and unloading Air Force aircraft at forward landing fields or airstrips that are not a regularly scheduled stop for theater airlift aircraft.

2. Joint Aerial Port Complex

An aerial port is an airfield that has been designated for the sustained air movement of personnel and materiel, and to serve as an authorized port of entrance into or departure from the country in which located. An APOE is the port where strategic transportation begins. It may or may not be the origin for the movement. An APOD is the port where strategic transportation ends, and it may or



An air terminal is a key node in any reception and deployment and/or redeployment operation.

may not be the final destination. When an APOE or APOD is not the origin or final destination for movements, it is a critical node serving both the strategic and theater transportation systems, generally providing intermodal transfer capability. At a common-user APOE or APOD, which may be a military airfield or civilian airport, the airfield and the entire system of supporting facilities required to handle inbound and outbound passengers and cargo is collectively known as a joint aerial port complex. The joint aerial port complex containing an air terminal is a key node in any reception and deployment and/or redeployment operation. During deployment and/or redeployment operations, the aerial port complex handles flows in both directions including the reception of unit personnel and materiel, non-unit cargo, and replacement personnel as well as the retrograde movement of equipment requiring repair, noncombatants, wounded personnel, enemy prisoners of war (EPWs), and human remains.

a. The operations of a joint aerial port complex can be divided into two parts: the air terminal operations, run by AMC; and the air terminal "support" functions which are, in most cases, the responsibility of the supported component command. The "support" operations may include such functions as port clearance, movement control, onward movement, liaison, coordination, operation of holding areas, postal operations, personnel replacement processing, and life and logistic support. Passengers and cargo can terminate at the air terminal and depart by a surface mode of transportation, or be transloaded between intertheater and intratheater aircraft. The functions of an aerial port include, but are not limited to, the items in Figure III-1.

b. Within the joint aerial port complex, the various organizations establish sites where they can carry out these functions. The joint aerial port complex commander is identified as the person who will designate sites for specific functions within or in the vicinity of the aerial port complex. Many of these functions are performed at supporting nodes. Some of these supporting nodes include holding areas (EPW, NEO, and frustrated cargo), assembly areas (convoy, helicopter, and vehicle) and railheads. Figure III-2 depicts a notional configuration of a joint aerial port complex illustrating supporting nodes and some of the functions performed within the complex.

3. Aerial Port and Air Terminal Organizational Considerations and Responsibilities

a. Geographic combatant commanders will:

- Provide USTRANSCOM with validated movement requirements;
- Designate the Service component to perform A/DACG functions in joint operations;
- Designate an agent to act as the joint movement control group (JMCG); and
- Designate an agency to validate special assignment airlift missions (SAAMs) within their AOR.

b. Major subordinate commands will:

- Ensure that the organizing, equipping, and training of personnel for A/DACG duties is done by the parent organization or home station installation commander from which a deploying unit originates; and
- Validate deploying unit SAAM requests to the appropriate geographic combatant command agency.

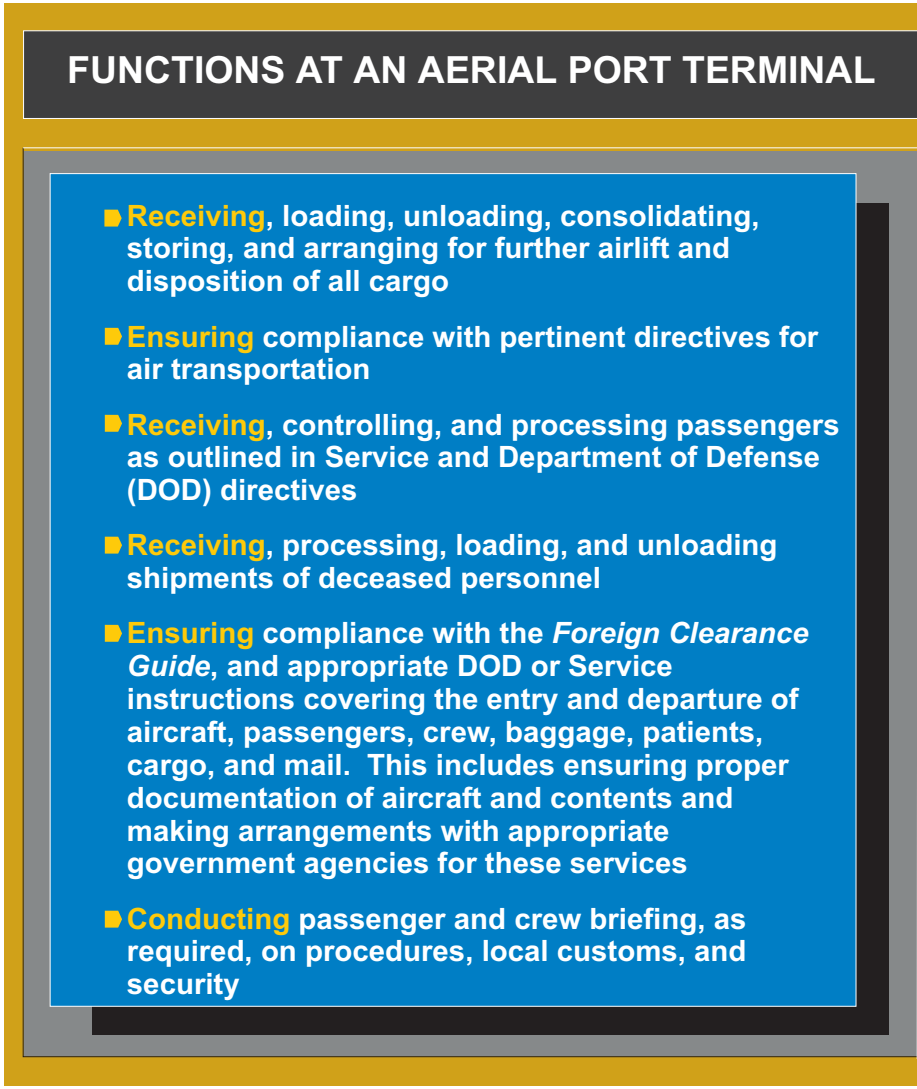


Figure III-1. Functions at an Aerial Port Terminal

c. Host or supporting installations will:

- Provide A/DACG and support deploying mobility forces as requested and IAW existing support agreements (i.e., MHE, CHE, manpower, fuel, and staging facilities);
- Be the primary provider of mobility forces and MHE support when the aerial port or air terminal is the host; and
- Be the primary provider of mobility forces when the aerial port or air terminal is operating as a tenant unit. The tenant aerial port should be consulted for MHE and technical support.

d. USTRANSCOM, in conjunction with AMC, will:

- Ensure that TPFDD requirements are scheduled for transportation from APOEs to APODs;

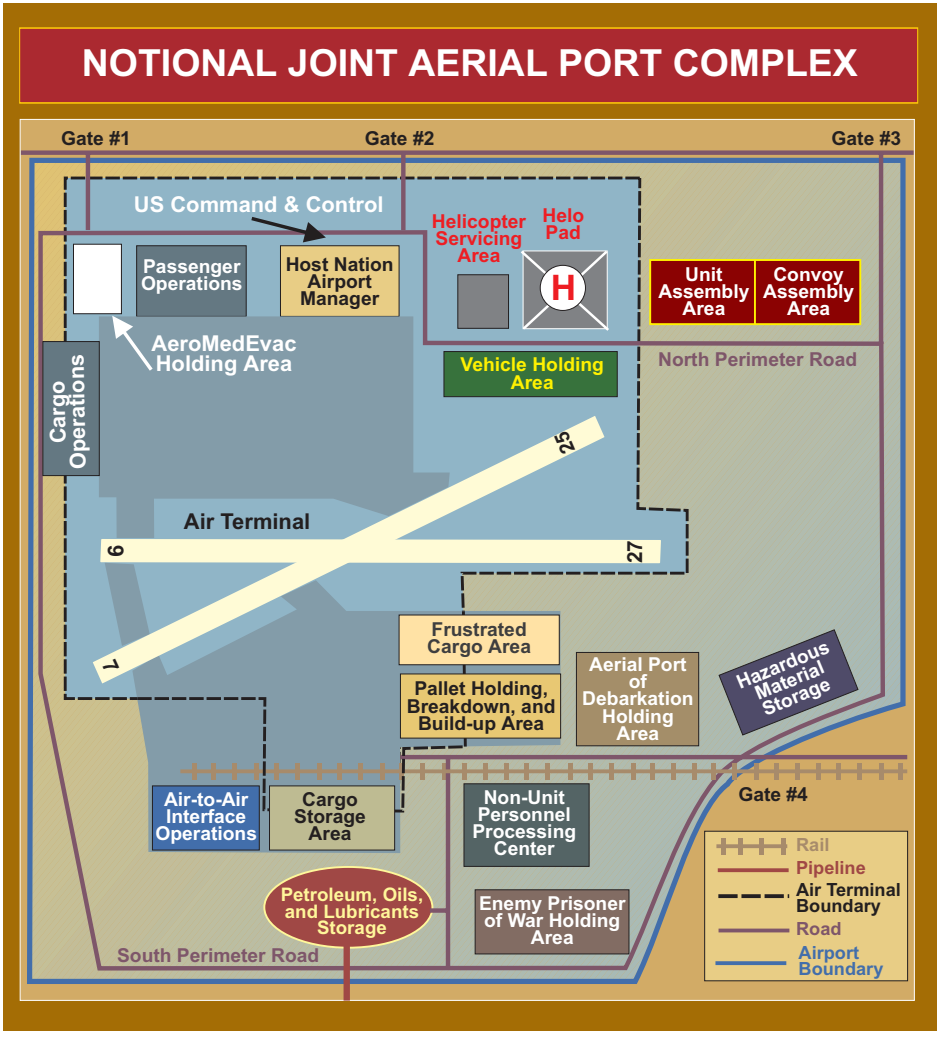


Figure III-2. Notional Joint Aerial Port Complex

- Monitor movement status of validated deployments;
- Schedule airlift to move units from APOEs to APODs; and
- Notify all involved commands and units of their deployment schedules and type and number of airlift assets allocated against the movement requirement.

e. HQ AMC is responsible for:

- Operating or arranging for the operation of all air terminals at CONUS aerial ports;
- Operating, or arranging for the operation of, fixed air terminals in theaters for all DOD components; and
- Operating mobile air terminals from non-fixed locations during wartime, contingencies, and exercise operations and in peacetime within the theater, as required.

f. Air Force component commanders are responsible for:

- Identifying air terminal requirements to the unified command; and
- Operating air terminals at designated airfields by agreement with AMC.

g. **Air Force Terminal Units.** Mobility forces consist of one of the following: a TALCE, an MST, an MSE, a fixed aerial port, or an air terminal.

- **TALCE** is an element of an air mobility operations group (AMOG) or a stand-alone organization within a geographic combatant command theater. As such, a TALCE may be deployed to any worldwide location where airlift command, control, and mission support are required but nonexistent. A certified officer commands the TALCE. A TALCE operations center (TOC) serves as the focal point for deployed command, control, and communications (C3). TALCEs are limited to aerial port functions that impact on mission planning, preparation, and execution of airlift operations. All areas shown below are not required for every operation and a TALCE may include additional MSEs, as required. The TALCE will:

  •• Control aircraft movements, communications, technical supervision of aircraft loading and off-loading operations, aeromedical evacuation, and marshalling of aircraft;

  •• Coordinate all Air Force operational aspects of the airlift mission; and

  •• Provide continuous liaison with all interested parties to ensure the operation is proceeding according to plan.

- **MST**s are deployed to locations where airlift command, control, and mission support is required but nonexistent, and where a full TALCE is not required. An MST will provide the air movement coordinating activities of a TALCE. MSTs perform maintenance, aerial port, and related support functions as required. MSTs will not have a TOC; however, as an extension of airlift C2, an MST will provide minimum C2 reporting consistent with mission requirements. MSTs perform the same functions as TALCEs, but are commanded by a senior non-commissioned officer. Normally the MST is sized to support a MOG of one aircraft.

- **MSE**s perform maintenance and flying safety in support of TALCEs or existing AMC and/or non-AMC operations throughout the world other than core C2, logistics, or aerial port services. They also provide weather and intelligence support. When deployed with a TALCE or MST, the MSE is under direct command of the TALCE or MST commander. When deployed to augment an existing operation, an MSE may be under the command of HQ AMC tanker/airlift control center (TACC). An MSE has personnel and equipment deployed to support a specific mission or requirement at mobility airfields or other locations.

h. **Service Operations at AMC Air Terminals.** Service transportation support at air terminals assist with the deployment, redeployment, and sustainment of forces. Normally, an Army, Navy, or Marine Corps A/DACG assists the mobility forces in processing, loading, and off-loading deploying and arriving service component personnel and equipment. **A/DACGs** are the deploying Service component's counterpart

to a TALCE, MST, and MSE. The A/DACG is a provisional organization designed to assist the AMC and the deploying unit in receiving, processing, and loading or unloading personnel and equipment. The capabilities of the A/DACGs are tailored based on the mission and military units performing aerial port operations. A/DACGs are formed from the Navy; Marine Corps transportation support organizations; Army port movement control teams; and all Air Force deployment control functions. A/DACG should be organized as a provisional unit, with personnel and equipment resources coming from units or activities that are not required to accompany the transported force. Occasionally, the A/DACG may be a joint operation with representatives of the airlifted forces. Host or supporting installations will provide manpower augmentation to form a composite A/DACG. A/DACG will:

- Coordinate and control the reception and/or loading of units for deployment or redeployment;
- Coordinate with the installation commander and the commander of each Service-deploying unit;
- Provide a liaison to the mobility force (normally the air terminal operations center [ATOC]).; and
- Perform those functions when no mobility force is available.

The major command involved in the air movement will provide the terminal units. When personnel and equipment needed to accomplish the arrival function are not available at the arrival airfield, the terminal units should be airlifted with the lead elements of the deploying unit. Determination of who provides the terminal units will be made at the earliest practical time by the joint force or appropriate commander responsible for the deployment and/or redeployment mission.

i. **Air Terminal Operations Center.** The focal point for aerial ports or air terminals is the ATOC. The ATOC serves as the control center for all air transportation related activities. An MST and/or MSE, fixed aerial port, or air terminal will have an ATOC function. The A/DACG will coordinate with the ATOC for all deploying unit requirements. The ATOC function is elemental to TALCEs. ATOCs normally consist of information



The capabilities of the A/DACGs are tailored based on the mission and military units performing aerial port operations.

controllers, ramp coordinators, load planners, capability forecasting, a record section, and duty officer. The ATOC will:

- Validate all load plans, cargo, and passenger manifests;
- Supervise all functional areas of the aerial port;
- Provide technical assistance to airlifted unit;
- Coordinate airflow information and control airlift aircraft and any mission support load teams that may be involved;
- In conjunction with the deploying unit and A/DACG, coordinate the inspection of cargo offered for airlift to ensure it is movement ready; and
- Provide appropriate MHE and operators when MHE is not organic to the unit being transported or to the airfield operator.

4. Aerial Port of Embarkation Transfer of Functions

The APOE is any air passenger or cargo terminal where passengers and/or cargo are dispatched aboard aircraft. (Alternately, APODs are air passenger or cargo terminals where passengers and/or cargo arrive aboard aircraft.) Most air terminals serve as both APOEs and APODs simultaneously. APOE and APOD support functions are listed in Figure III-3.

a. **Operations at APOEs.** APOEs serve as the authorized points of departure for deploying forces. APOEs require close coordination among many participating units and inter-Service activities. AMC exercises overall control of airlift operations and resources at APOEs. Resources of the deploying unit are initially under the control of the deploying unit commander. Control passes to A/DACG and then to the AMC. The deploying unit prepares equipment for air movement, conducts initial and joint planning sessions, and provides liaison to the A/DACG. Additionally, the deploying unit appoints chalk leaders, assembles and manifests equipment and personnel into individual chalks, and delivers them to an alert holding area to be called forward by the A/DACG. AMC provides airlift support through the AMOG. The airlift control squadron deploys a TALCE, as required, to the APOE to conduct airlift operations, including aircraft and ground support. It is responsible for aircraft movement control, communications, technical supervision of loading, and aircraft marshalling.

b. **Departure Airfield Organization.** The departure airfield is organized around four separate activities: marshalling area, alert holding area (AHA), call forward area, and the ready line and loading ramp area (see Figure III-4). These areas may or may not be located on a contiguous piece of ground.

- **Marshalling Area.** Marshalling is a process by which units move to an area near the APOE and complete preparations for aircraft loading. The marshalling area includes the temporary fixed or field facilities for transportation, communication, and lodging and the areas that support those functions. The deploying unit is responsible for activities conducted within the marshalling area. In this area, the unit prepares for air movement by assembling vehicles, equipment, supplies, and personnel into chalks. These loads are manifested in accordance with DODR 4500.9-R, *Defense Transportation Regulations (DTR), Part I*, and sent to the alert holding area upon notification from the A/DACG or mobility forces.

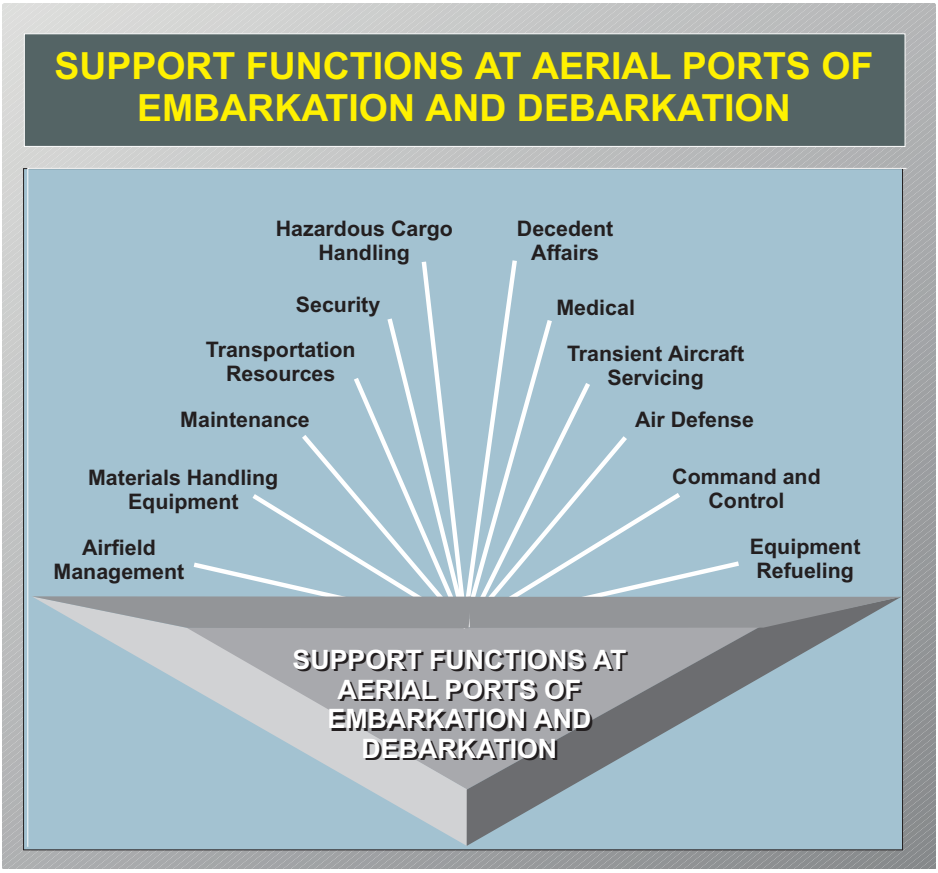


Figure III-3. Support Functions at Aerial Ports of Embarkation and Debarkation

- **Alert Holding Area.** AHA is the vehicle, equipment, supply, and personnel control area. It is used to assemble, inspect, hold, and secure aircraft loads. The A/DACG and/or host installation is responsible for activities conducted within the AHA. The deploying units check-in with the AHA team chief to receive specific information concerning the on-load. Deploying units complete final preparation and assembly of personnel, cargo, and equipment into chalks. Control of chalk transfers to the A/DACG upon completion and acceptance of personnel, cargo, and equipment. Normally, personnel assigned to the AHA do not deploy. The A/DACG calls for movement of personnel, cargo, and equipment from the AHA to the call forward area.

- **Call Forward Area.** The activities conducted within the call forward area are the responsibility of the A/DACG with assistance from the mobility force and the host installation. In this area deploying units and mobility force members conduct a joint inspection and correct discrepancies. This is the final check to ensure that all cargo and equipment is properly prepared and documented for safe and efficient air shipment.

- **Ready Line and Loading Ramp Area.** The mobility force controls activities conducted within the ready line and loading ramp area. In this area, the mobility force receives personnel, cargo, and equipment from the call forward area;

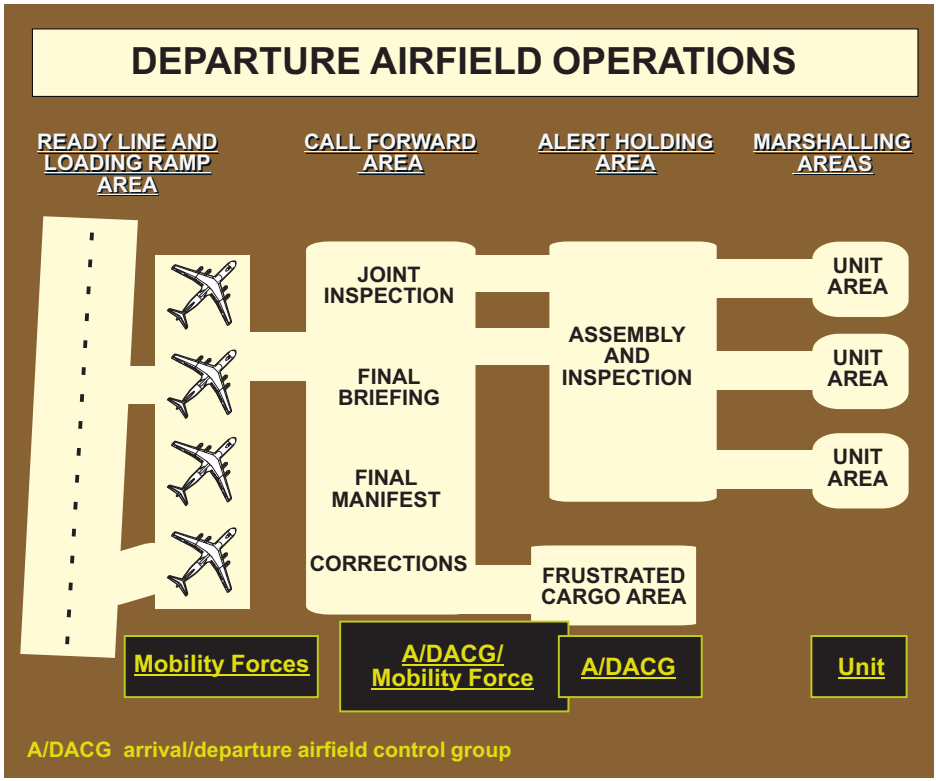


Figure III-4. Departure Airfield Operations

directs aircraft loading in conjunction with aircraft load masters; supervises the supported Service while loading and restraining cargo aboard aircraft; conducts additional briefings; and performs inspections, as required, to facilitate loading of the aircraft.

Reference DODR 4500.9-R, Appendix AL, "Ready Line/Loading Ramp Area Checklist."

c. **Support Functions.** Air movement of units involves detailed planning in all aspects of control, coordination, preparation, and execution that have a direct impact upon the operation. Several of the support functions related to a successful deployment are security, communications, and safety.

- During airlift operations conducted at airfields and air bases, the installation commander is responsible for overall installation **security**. The deploying unit commander is responsible for the security of the marshalling and staging areas.

- Effective **communications** is essential to the success of the airlift operation. Establishing an effective communications system is the responsibility of the mobility force and the A/DACG. The focal point of the airlift operations communications system is the mobility force TOC. To establish these communications, the mobility force will ensure that adequate communications channels exist among all functional areas of the mobility force. The A/DACG is responsible for providing communications to the AHA, call forward area, the deploying unit command post, and to the TOC. In addition, the A/DACG will provide a wire or radio net between the TOC and

the deploying unit command post.

- Vehicle, aircraft, and personnel **safety** throughout a joint operation depends on compliance with all DOD standard safety practices. Safety of vehicles and personnel will be governed by requirements of the Air Force and applicable aircraft technical orders.

d. **En Route Support Units.** AMC operates the geographic combatant en route system by means of air mobility support groups, air mobility support squadrons (AMSSs), detachments, operating locations, contracted air terminal operations, and station managers. These organizations provide for peacetime sustainment operations, and provide the foundation for surge and augmented operations during contingency operations.

e. **Contracted Operations.** AMC establishes contracts for services in locations where missions are scheduled infrequently or where contracted operations can accomplish the mission in the most economical manner. These service contracts are sized for the peacetime mission requirements, but allow for surges in workload. During contingencies, humanitarian relief operations, and other sustained operations, AMC augments the contracted workforce to ensure that all mission requirements are met.

5. Passenger Processing

a. General passenger requirements are found in DODR 4500.9-R, *Defense Transportation Regulations (DTR), Part I*. In general they are as follows.

- **Passenger Movements.** Installation transportation officers have overall responsibility for arranging travel of mobilized units and personnel within their area of concern to designated POEs.
- **Port calls** are used to notify deploying units and/or individuals to report to the POE for onward movement.

b. Non-unit-related personnel are any active duty personnel from any Service (including RC Service members accessed onto active duty), DOD civilians, contract civilians, and Red Cross personnel who deploy as individuals or as small groups of individuals without a unit.

c. **Aeromedical Evacuation.** Aeromedical evacuation is conducted to transport wounded personnel out of the combat zone to medical facilities in the rear area, or out of the theater to the CONUS.

For additional information on aeromedical evacuation see JP 4-02.2, Joint Tactics, Techniques, and Procedures for Patient Movement in Joint Operations.

6. Cargo Considerations

a. Arriving unit equipment will be moved to either a vehicle assembly area in the vicinity of the railhead (if available), or to the convoy assembly area, depending on the mode of transport for movement to the staging area or onward movement as appropriate. Arriving unit helicopters will be towed to the helicopter assembly area and prepared for flight to the helicopter marshalling area normally located outside the joint aerial port complex. This is done to maintain the working MOG.

b. Palletized non-unit materiel will be unloaded and transported either to the pallet holding and breakdown area or to another cargo storage area within the complex. Palletized unit materiel beyond the unit's capability to transport will normally be loaded directly onto common-user HN, allied, or US vehicles and depart the complex with the deploying unit personnel.

c. Non-unit ammunition and other HAZMAT arriving in the complex will be transported to designated hazardous cargo storage areas IAW local procedures established to comply with HN, NEW limits, and quantity-distance restrictions.

d. The joint aerial port complex will also support retrograde and redeployment operations when required. To accommodate retrograde and redeployment operations, the joint aerial port commander will designate specific locations within the complex to perform these functions (e.g., NEO holding areas, and EPW holding areas).

e. In certain cases, there may be a need for selected sustainment materiel or items of unit equipment arriving by air to be moved by theater airlift to intermediate or final destinations within the theater. In most cases, such materiel or unit equipment will be specifically identified as air-to-air interface site cargo by the unit at the CONUS POE. In others, the supported combatant commander through the JMC identifies emergent air-to-air interface cargo requirements.

f. Deploying units will:

- Prepare cargo for airlift in accordance with procedures set forth in the DTRs, Part III;
- Prepare and certify load plans; and
- Furnish shoring, dunnage, and vehicle operator.

g. Shipper (other than the deploying unit) will:

- Prepare cargo and equipment for airlift (Preparation includes weighing, marking, labeling, measuring, palletizing when required, securing and manifesting cargo, as well as computing center of gravity, when appropriate);
- Prepare and certify hazardous cargo and equipment;
- Deliver cargo to the reception point at the departure airfield; and
- Provide documentation for ITV and control.

h. Special services cargo consists of any cargo requiring special consideration or handling, including hazardous cargo, classified materials, or constant surveillance cargo (unclassified but highly valuable or pilferable materiel, such as weapons or medicines). HAZMAT and hazardous wastes must be declared during initial planning for inclusion in diplomatic clearances request messages, and must be properly prepared, marked, and certified for safety during flight. Some other cargo requiring special services include the following.

- Outsized cargo consists of any cargo transportable only aboard C-5 or C-17 aircraft.
- In air movement, oversized cargo exceeds the usable dimension (length, width, and height) of the 463L pallet, but is equal to or less than 1,090 inches in length, 117 inches in width, and 105 inches in height.
- Bulk cargo is general cargo that is palletized and moved aboard 463L pallets.
- Human remains will normally be moved in accordance with the DTR, Part I, Passenger Movement. Geographic combatant commanders will determine the type of transportation to meet requirements and expedite movement of human remains.

7. Aerial Ports of Debarkation, Reception, and Onward Movement

The APOD is any air terminal that receives passengers and/or cargo via airlift. Numerous operational and support functions occur at the APOD. Primary operational functions are to receive, off-load, marshal, provide essential field services, and release deploying forces and their equipment. Tasks include off-loading materiel, both equipment and cargo, clearing personnel through air terminals, accomplishing movement control, and maintaining ITV. The APOD serves as the port of entry for most deploying personnel and high priority cargo. APODs are usually operated in conjunction with the HN. APOD reception begins with the arrival of forces and their materiel at the air terminal. The primary challenge of this process is terminal clearance. Except in the case of forcible entry, port-opening elements should precede the arrival of deploying combat forces. Reception at the APOD is coordinated by the senior logistics commander and executed by a mobility force, A/DACG or both, depending upon the magnitude of the operation. The mobility force and/or A/DACG must be in the lead elements of the transported force. Augmentation by cargo transfer units or HNS is desired to rapidly clear the APOD.

a. Figure III-5 depicts a notional APOD. The numerous functions and interfaces that can occur at the APOD are explained below. The main areas of the arrival airfield are the **off-loading ramp**, **holding area**, and **unit marshalling area**.

- In the **off-loading ramp area** mobility forces will ensure that arriving aircraft are off-loaded in a timely manner and that equipment, supplies, and personnel proceed immediately to the holding area. The off-load ramp activities are

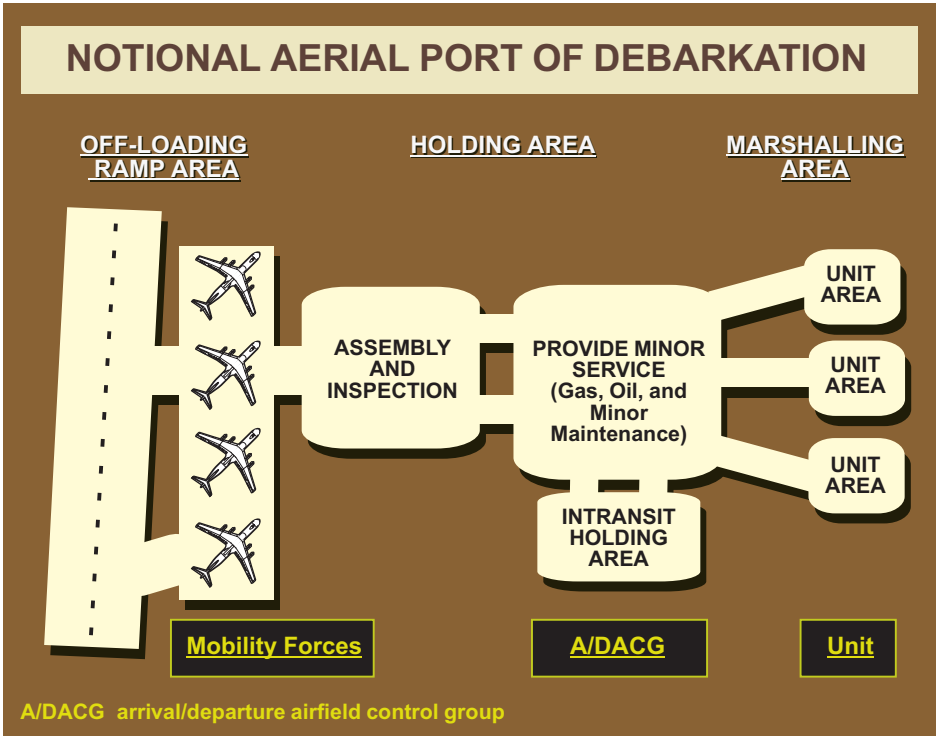


Figure III-5. Notional Aerial Port of Debarkation

controlled by the mobility force. Each load will be released to the A/DACG for return to unit control at the holding area.

- In the **holding area** the A/DACG will assemble personnel, cargo, and equipment for movement to the units' marshalling areas. Control of chalks is transferred to the unit in the marshalling area.

- **Unit Marshalling Area.** Planning must focus on moving units through the APOD with minimum delay. Marshalling areas should be designed to allow rapid clearing of the APOD and make staging areas available for off-loading, thus reducing port congestion and the potential for slowdowns or work stoppages in off-loading operations. Marshalling areas also prepare arriving units to move forward to staging areas and to the TAA or JOA. In the unit marshalling area, units prepare for onward movement to the staging areas.

b. **Passenger Reception and Onward Movement.** Arrival at the APOD marks the transition from the strategic to the operational level. Reception is the supported commander's responsibility. Duties generally include health, welfare, and life support of arriving forces and assisting with their onward movement. In accordance with JP 4-01.3, *Joint Tactics, Techniques, and Procedures for Movement Control*, movement control units coordinate onward movement to ensure a smooth flow of personnel, equipment, and supplies through PODs and LOCs. Deploying unit personnel should arrive at the APOD to coincide with the arrival or draw of equipment, either at the APOD, SPOD, or at the pre-positioned stock sites. When unit personnel arrive, they may move:

- Directly to a unit marshalling area if the unit moves with its equipment;

- To pre-positioned stocks sites to receive equipment;

- To aircraft for theater air movement (air-to-air interface);

- To the SPOD to receive unit equipment off-loaded from ships; or

- To holding areas, if equipment arrival is delayed.

c. **Cargo Reception and Forward Movement**

- **Common-User Land Transportation.** CULT outside CONUS is usually managed by the US Army, which coordinates with consignors and consignees to ensure timely surface cargo movement based on transportation priority without preference to owning Service. This includes acquisition and management of both commercial and organic assets.

- The JMCG or the JMC will ensure that cargo moves according to its transportation priority without prejudice to the owning Service.

- **Cargo Movement.** Airlift clearance authorities are designated as the focal points for tracking, tracing, expediting, and diverting of cargo currently in the DTS.

d. **MHE, Containers, and 463L Assets.** Units are responsible for providing pallets, nets, containers, and other special equipment requirements to the installation transportation officer. DODR 4500.9-R, *Defense Transportation Regulations, Part I*, provides specific procedures for management and authorized use of DOD intermodal container system and 463L assets.

8. APOE and APOD Service Capabilities

Various Service organizations provide the operational capabilities needed for APOD and APOE reception. For example, AMC, through its AMSS, aerial port mobility flights, and TALCEs provides much of the operational and logistic support needed to receive airlift aircraft. Additionally, NAVCHAPGRU and, when mobilized, NCHBs unload aircraft and operate air cargo and passenger airheads. A/DACGs provided by either the US Army or the US Marine Corps can assist with the flow of deploying personnel, equipment, and materiel. In addition, HNS may be used to free up finite reception assets and minimize the logistic footprint at the APOD and/or APOE. Close coordination with HNS activities is necessary to balance the operational requirements of all organizations competing for limited resources.

9. 463L System Accountability

a. **Contingency Operations.** 463L pallets, nets, and associated cargo tie-down equipment are crucial components of the airlift portion of the DTS. In general, the DOD airlift system is built around the 463L air cargo handling system.

b. **Functionality of 463L System Equipment.** Pallets and nets interface with the aircraft's cargo restraint system within extremely close tolerances. They are easily damaged when used for other than intended purposes. For this reason, units will not use 463L pallets and nets to palletize cargo for movement by surface modes of transportation, except during inspections or exercises.

c. **Accountability.** Although pallets and nets may be authorized to and in the custody of any Service or DOD agency, they are funded by the Air Force, and as such they remain Air Force property. Since pallets, nets, and tie-down equipment are considered "show stoppers," they are subject to a one-for-one exchange, when practical. For accountability and audits, installation pallet and net managers should note all exceptions to the one-for-one exchange policy in their control log.



463L system equipment

d. Commanders of combatant commands shall ensure that 463L pallet management is carried out in their AORs, and provide for control, expeditious download, and return of 463L pallets, nets, and tie-down equipment entering the theater.

e. The HQ AMC/TACC normally will source and direct the movement of MHE system components as required. For units not possessing WRM pallets and nets, coordinate with the DOD component pallet and net monitor to obtain pallets and nets for unprotected deployments, SAAMs, and exercises.

10. In-transit Visibility

The ability to capture and use movement information is key to integrating all levels of deployment and sustainment efforts, and ITV provides the necessary means to track the identity, status, and location of critical assets. To be effective, ITV must be both timely and accurate. There are a number of factors critical to effective ITV, including the following.

a. **Data Capture and Manifesting Responsibilities.** Units and agencies requiring airlift are responsible for providing, at a minimum, the standard manifest data elements required for ITV as outlined in the DTR, but should provide complete manifest data in accordance with the DTR where AIS support the provision of such data. Non-DOD or nongovernmental agencies requiring airlift should provide manifest data IAW the applicable USTRANSCOM memorandum of agreement or as coordinated by the supported agency, USTRANSCOM, and the supported combatant command. ITV and manifest data should be provided to the supported combatant command's designated mobility force(s) (TALCE, A/DACG, fixed aerial port,and air terminal,) at the APOE and/or APOD for submission through the appropriate AIS to GTN. Manifest data should be provided electronically, via AIT devices, diskette, other file transfer protocols, or direct interface between the appropriate AIS. ITV data for DOD assets moving via commercial carriers from DOD or non-DOD controlled terminals will be fed to GTN via the appropriate government AIS and/or IAW the terms of a previously established commercial electronic data interface (CEDI) with GTN. The source of the ITV feed will depend on the type of contracted lift. Manifest and ITV data for assets moving forward from the APOE will be provided by either the combatant command's designated mobility forces or the moving unit, IAW the supported combatant command's theater ITV plan and the availability of the appropriate AIS and/or AIT.

b. **Automated Information Systems.** The supported combatant command's theater movement plan must ensure the availability of AISs to support visibility over theater movement. These systems may be either fixed or deployable. Two primary AISs developed to facilitate air terminal processes and/or movement documentation are the Transportation Coordinator's-Automated Information for Movement System (TC-AIMS) II and the Global Air Transportation Execution System (GATES). TC-AIMS II, the emerging transportation information system, is the DOD system that will support mobility and transportation of DOD passengers and cargo in peace and war. It is designed to enhance the efficiency and effectiveness of the DTS; support planning for deploying and redeploying combat and support forces; enhance coordination, control, and management of force deployments, including ITV and TAV; provide for reception, staging, onward movement, and integration (RSOI) of deploying forces into the theater; and be Service-configurable to meet the needs of different organizational levels and business processes. GATES is the AMC aerial port operations and management information system designed to support automated cargo and passenger processing, the reporting of ITV data to GTN, and billing to AMC's financial management directorate. For joint movements from locations supported by

GATES or one of its derivative systems (Remote GATES or Deployed GATES), GATES will be the manifesting system of record and the primary ITV feed to GTN. For those locations not supported by GATES, TC-AIMS II will be the manifesting system of record and the primary ITV feed to GTN. Other AISs may also produce manifest information. Those include but are not limited to the Cargo Movement Operations System (CMOS) and the Logistics Automated Information System. For movements from a non-GATES- or TC-AIMS II-supported location, these systems may also serve as the manifesting system of record and feed GTN.

c. **Automated Identification Technology.** AIT is a critical ITV enabler. It encompasses a variety of data storage media that carry asset identification information. The information is transferred electronically to and from certain AIS that support visibility and logistic operations. AIT reduces the need for manual data input, facilitating timely, accurate data capture. All personnel will be manifested for movement using AIT. Other AIT devices may be employed at the option of the moving force or the supported combatant command. The supported combatant command must consider all AIT protocols available to him or her and determine their optimal use to facilitate terminal processes and/or paint the most comprehensive ITV picture. Additional AIT information may be found in the DOD Implementation Plan for Logistics Automated Identification Technology.

d. **Timeliness.** The terminal or mobility forces business processes must support the timely submission of ITV data to GTN. The performance measurements against which timely ITV for airlifted assets is measured are 1 hour for unit strategic movements (personnel and equipment) at all nodes from origin to destination; 1 hour for the arrival and departure of sustainment air cargo and non-unit move passengers, at all nodes, from origin to destination; and 1 hour for the arrival and departure, at all nodes, of non-unit cargo and passengers originating and terminating in the theater or CONUS. Timeliness for these events is measured from the event occurrence until it is submitted to GTN.

CHAPTER IV
WATER TERMINAL OPERATIONS

"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**

1. Purpose

The purpose of this chapter is to define the categories of water terminals and the type of operations that occur at each. This information is tied to the Services, organizations, responsibilities, and functions to clarify relationships that enable efficient terminal operations.

2. Introduction

Strategic sealift is the principal means of delivering equipment and logistic support for land, air, and sea forces in a major conflict or for moving oversized equipment during military operations other than war (MOOTW). The availability and capabilities of water terminals are essential to the success of most military operations. Destination water terminals are crucial to establishing a lodgment and to sustaining the deployed force. Water terminal operations are conducted at fixed, unimproved, or bare beach and/or degraded port facilities. Water terminal operations could include MSC common-user ships, multipurpose ships, other ships that may be chartered or provided by HNS as required, or by maritime pre-positioning ships (MPSs) capable of over-the-shore and port operations from anchorage and commercial ocean transportation capabilities through MTMC's Joint Traffic Management Office. One of the main objectives is to maximize the throughput of cargo. Maximizing throughput may require the military force to use a combination of terminals. This chapter addresses elements essential to the reception of strategic sealift ships and the handling and onward movement of cargo.



USTRANSCOM through MTMC is the DOD designated single port manager for common-user seaports worldwide.

3. Responsibilities

At the strategic level, USTRANSCOM operates most common-user water terminals used as SPOEs and SPODs. USTRANSCOM selects the strategic terminals in coordination with the supported combatant commanders. The operation of water terminals in theater is the responsibility of the geographic combatant commander. However, the geographic combatant commander may opt to enter into CAAs with USTRANSCOM to allow USTRANSCOM to operate some or all of the water terminals in the theater. In most cases, USTRANSCOM sets up forward elements from each of the subordinate TCCs within the AOR. These elements coordinate strategic transportation information with the supported combatant command's JMC or staff.

a. **MTMC** operates at most common-user ocean terminals worldwide. Normally, the combatant command will use MTMC forward base terminal operations to support deployments. Combatant commands may also request MTMC support to operate water terminals in an area where MTMC has no presence. **MSC** usually establishes C2 elements at water terminals. It provides combatant commanders with strategic sealift and related management information. MTMC and MSC will oversee operations conducted at differing categories of water terminals. Other terminal responsibilities are broken out below by organization and Service.

b. MSC will:

- Coordinate ship arrivals, departures, berth assignments, husbanding services, availability of shipboard lashing gear, pre-stow plans, and readiness to load with the terminal operator;
- Coordinate with terminal operator and Coast Guard for support requirements; and
- Coordinate with MTMC or geographic combatant command to establish vessel port call.

c. MTMC and/or geographic combatant command will be responsible for the following.

- Select appropriate POEs and PODs to meet supporting or supported combatant command requirements.
- Issue call forward notifications based on TPFDD requirements to control flow into the water terminals, monitor port throughput, and receive unit movement documents.
- As necessary, contract for and coordinate use of expanded port facilities, plus labor services and raw materiels needed at expanded or newly activated water terminals.
- Identify need, composition, and employment of PSA units within the water terminal. In CONUS, the terminal transportation brigades and/or port commander identifies PSA requirements.
- Define extent of need and request activation of RC resources.
- Schedule and provide water terminal operational services such as stevedores, cargo checkers, motor transport services, MHE, and cranes, at newly activated or expanded ports.
- Establish or expand the following to meet emergent needs: terminal capabilities for cargo documentation, ITV, vessel papers, hazardous cargo manifest and cargo pre-stow, and final stow plan preparation.
- Provide or expand automated data systems' availability at water terminals.

SEAPORT MANAGEMENT

USTRANSCOM, through MTMC, is the DOD-designated single port manager for most common-user seaports worldwide. When necessary, in areas where MTMC does not maintain a manned presence, a port management cell may be established to direct water terminal (i.e., fixed, unimproved facility, and/or bare beach) operations, including the work loading of the Port Operator based on the combatant commander's priorities and guidance. Depending on the situation, the geographic combatant commander may also request, in their command arrangement agreement with USTRANSCOM, MTMC to operate some or all water terminals in the theater.

MULTIPLE SOURCES

- Provide or expand safety and security policies and procedures for water terminal activities.

- Coordinate with MSC and Coast Guard and/or geographic combatant command for support requirements.

d. The Coast Guard and/or geographic combatant command will be responsible as follows.

- Provide all waterside physical security to include harbors, channels, approaches, and security of vessels in these areas:

  •• The Coast Guard physical security plan is integrated with the port commander's physical security plan; and

  •• In overseas areas, the theater port commander develops and executes a port physical security plan in coordination within HN port authority.

- Regulate shipping, handling, and pier-side storage of hazardous cargo.

- Interface with HN and military authorities on storage and handling of hazardous cargo, as the senior DOD port safety agent.

- Issue hazardous cargo permits.

- Orchestrate vessel fire prevention programs.

e. The unit transportation officer will be responsible for the following.

- Prepare deploying unit equipment list.

- Ensure that equipment is properly prepared and configured for loading.

- Ensure that appropriate documentation (to include waivers and exemption requests for hazardous cargo and ammunition) accompanies equipment.

- Prepare hazardous cargo documentation.

- Ensure that HAZMAT documentation is properly prepared in accordance with International Maritime Dangerous Goods Code and Title 49, Code of Federal Regulations (CFR), as applicable.

Further guidance can be found in DODR 4500.9R, Defense Transportation Regulations Part III, Mobility, *at Appendices AC and AR.*

4. Redeployment Operations

a. During redeployment, all the deployment procedures (above) will be followed unless otherwise directed.

b. Additional geographic combatant command responsibilities for redeployment include, but are not limited to, the following:

- Agricultural wash down and customs requirements.
- Return disposition of unused sustainment cargo and supplies.
- Inspection of personnel and containers to locate contraband (to include unauthorized weapons, ammunition, and war souvenirs).
- Additional mission requirements directed en route, (e.g., maintaining tactical capabilities during redeployment).
- Return of intermodal equipment (container and/or flatrack).

5. Organizational Considerations

Organizational considerations for **SPOD water terminals** include fixed, unimproved and bare beach seaports as well as IWW facilities. Many established terminals will have a transportation infrastructure in place such as railways, highways, IWWs, and adjacent airfields. Although terminal facilities will vary, many will already be equipped to handle RO/RO vessels, containers, general and bulk cargo, and lighterage. The SPOD will contain facilities and organizations, both military and civilian, to perform many of the APOD functions described earlier. Responsibility for essential SPOD organizational functions are shared between HN seaport organizations and US DOD organizations such as MSC and MTMC, military terminal service units, and contractors. Primary US and HN organizations involved in SPOD operations are shown in Figure IV-1.

a. **Pre-positioning port opening packages** are an option available to the combatant commander through the different Services' pre-positioned equipment packages located ashore or afloat. Pre-positioned port opening packages are capable of operating a water terminal and providing the initial transportation and logistic units necessary to receive forces.

b. The **transfer of functions** occurs at the seams between terminal units, and the interface with differing roles of those designated components. When the supported commander considers transfer of functions, the commander should factor in resources, geography, transportation capabilities, climate and seasonal changes, and distance between LOC nodes as well as projected requirements for movement of the forces from the SPOD. When selecting a SPOD, the supported commander should consider the transportation infrastructure as well as the capacity of the port to handle potential throughput and surges of deploying forces. A robust rail, road, airport, and inland waterway system (IWWS) will be vital in efficiently receiving and moving the force to staging areas.

6. Categories of Water Terminals

Water terminals are classified into three main categories that are based on their characteristics. These characteristics are **physical facility and attributes**, **commodity handled**, and **method for cargo handling**. These categories are further subdivided within the three main categories and Figure IV-2 illustrates these categories and their subdivisions.

a. The three types of terminals based on the **physical facility** are fixed, unimproved facility, and bare beach and/or degraded ports.

ORGANIZATIONS AND FUNCTIONS AT SEAPORTS OF DEBARKATION		
Organization or Activity	**Parent Organization**	**Major Functions**
Military Sealift Command (MSC) Office	US Transportation Command (USTRANSCOM) (MSC)	Coordinate husbanding services of ships in port
Military Traffic Management Command (MTMC)	USTRANSCOM (MTMC)	Coordinate loading and unloading of ships, administer contracts, and document cargo
Ocean Cargo Clearance Authority	USTRANSCOM (MTMC)	Coordinate movement of outbound cargo from seaport
Logistic Support Element	Army Materiel Command	Provide support to Army pre-positioned afloat operations
Naval Coordination and Protection of Shipping Organization	Navy Component Command	Coordinate deployment of merchant ship convoys
Port Support Activity and/or Port Operations Group	Deploying unit or designated unit	Provide support necessary to assist in deployment (i.e., vehicle drivers, equipment operators, limited maintenance, security, and life support)
Port Movement Control Team	Movement Control Agency	Assist deploying units with onward movement from port
Area Support Group (ASG)	Army Component Command	Coordinate ASG support at port. Headquarters for Army water terminal and watercraft units
Noncombatant Evacuation Operation Liaison Element	Army Component Command	Coordinate all movements of noncombatants
Helicopter Maintenance Team	Army Component Command	Provide technical assistance to Army aviation units deploying through the joint water port complex
Driver Holding Area (DHA) Control Group	Combatant Commander	Provide necessary services for accommodating personnel at DHA
Tanker Airlift Control Element	USTRANSCOM Air Mobility Command (AMC)	Control, coordinate, and monitor US airlift operations at sea-to-air interface site (SAIS)
Aerial Port Squadron and Mobility Flight	USTRANSCOM (AMC)	Provide cargo and passenger service at SAIS
Airlift Clearance Authority	Air Force Component Command	Provide clearance for theater airlift of cargo from SAIS
ASG SAIS Liaison Element	TSC	Coordinate ASG support at SAIS
Port Security	US Coast Guard, deploying units, and/or host nation	Provide physical security of the port complex

Figure IV-1. Organizations and Functions at Seaports of Debarkation

ORGANIZATIONS AND FUNCTIONS AT SEAPORTS OF DEBARKATION (cont'd)		
Organization or Activity	**Parent Organization**	**Major Functions**
Host-Nation Support Elements	Host Nation	Operate port, load and unload vessels, operate SAIS airfield, load aircraft, provide local transportation, provide security, provide air defense
Navy Cargo Handling and Port Group (NAVCHAPGRU) (active component) Navy Cargo Handling Battalion (Naval Reserve units which can augment NAVCHAPGRU or operate independently)	Commander in Chief, Atlantic Fleet Commander, Naval Reserve Force Naval Expeditionary Logistics Support Force	Provide maritime pre-positioning ships and assault follow-on echelon cargo handling, heavy lift marine crane operations; provide stevedores and command and control personnel capable of loading and discharging all classes of cargo including munitions
Water Terminal Logistic Office (WTLO)	Air Force	The Air Force establishes a WTLO, a temporary organization, at selected water terminals in the continental United States and outside the continental United States 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. They provide 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.

Figure IV-1. Organizations and Functions of Seaports of Debarkation (cont'd)

- **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.



Figure IV-2. Categories of Water Terminals

- **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, MHE, or 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 conducted using JLOTS techniques and is normally established when fixed water terminals are not available or to increase throughput to meet increasing requirements of the joint force.
- **Bare Beach and/or Degraded Ports.** For this type of operation, lighterage is used to off-load ships in-stream (at anchor), and cargo is moved over a beach on 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 when fixed port facilities are not available, damaged, or denied. In the current threat environment, proliferation and use of WMD and terrorist attack increases the probability that existing ports may not be available. Dominant maneuver may be enhanced by the increased flexibility that the geographic combatant commander enjoys through the use of bare beach JLOTS operations as discussed in detail in JP 4-01.6, *Joint Tactics, Techniques, and Procedures for Joint Logistics Over-the-Shore (JLOTS)*. JLOTS 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).

An MPF operation is the rapid deployment and assembly of a Marine air-ground task force (MAGTF) in a permissive area utilizing a combination of strategic airlift and forward-deployed MPSs. The MPF operation can be a stand-alone operation or may be conducted in conjunction with or in response to a combatant command or commander, JTF requirement, and is usually conducted in the early stages of the operation.

b. **Commodity Handled.** The types of cargo handled at a specific terminal categorize individual water terminals. The special requirements for handling ammunition, explosives, bulk fuel, and other hazardous



JLOTS operations are conducted when fixed port facilities are not available, damaged, or denied.

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 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.** Methods of cargo handling include **containerization** (the transport of goods in standardized boxes meeting international standards), **palletized** (breakbulk and/or crated), or in **original item configuration,** such as with rolling stock. Cranes, MHE, CHE, lighters, or a combination of all can accomplish the loading or discharge of the cargo. The type of cargo-handling capability being employed categorizes water terminals. 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' wide by 8' high by either 20' or 40' 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 an 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 cargo in specially configured containers. When operationally feasible and when 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. MPF ships are self-sustaining (have on-board cranes) and maintain their own Navy-maintained and -operated lighterage and landing craft dedicated to off-load the MAGTF equipment and supplies. Container management and onward movement may affect logistic operations and must be balanced with other logistic considerations.

See JP 4-01.7, Joint Tactics, Techniques, and Procedures for Use of Intermodal Containers in Joint Operations.

- **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 have sufficient open hard surface storage space as well as wharves, 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. Heavy tracked vehicles take longer to load or discharge than light non-tactical 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.

- **Lift-on/Lift-off (LO/LO).** Lift-on/lift-off cargo (breakbulk) is items loaded aboard a ship and handled in their basic shipping package or configuration. The term lift-on/lift-off is used to describe the method for handling general cargo. 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, LO/LO terminals can handle up to 2,500 MTONs of cargo each day per ship. At a minimum, the berth should:

  •• Have an apron for the full length of the ship;



RO/ROs are the preferred method of transporting vehicular unit equipment.

•• Be sufficiently wide to support MHE operations; and

•• Provide sufficient covered storage to protect the cargo until it is loaded aboard ship or until surface transportation is available for onward movement. LO/LO 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 anchored in stream and a fixed, unimproved, or bare beach facility. Lighterage operations are inherently hazardous, complex, time-consuming, manpower intense, and may involve transport of containers, vehicles, or breakbulk cargo. Lighterage operations should be used only when no other capability is available for moving cargo via JLOTS or through IWW to inland terminals, or to augment other ongoing cargo-handling operations. Lighterage equipment includes lighter aboard ship (LASH) and sea barges (SEABEEs), ferries, commercial self-propelled and towed barges, and Army and Navy landing craft.

d. Direct **pierside discharge** should be used whenever possible because it most effectively uses personnel and equipment and reduces military resource requirements. It is the most practical way to discharge oversized and/or outsized pieces of cargo, equipment, and large volumes of containerized cargo. Pierside discharge effectiveness depends on the inland transportation network's ability to clear discharged cargo. Equipment needed for direct pierside discharge operations varies with the nature of the cargo and the type of vessel being worked.

7. Water Terminal Resources

An understanding of overseas terminal resources is key to the reception of sealift assets and central to the theater's JRSOI capabilities. Knowledge of the true capabilities of POEs and PODs and the resources available 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. Harbor support vessels (i.e., tugs and various landing craft) are prime examples. 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. The port commander and/or the MSC representative needs to ensure that berths, anchorages, ship arrival meetings, ship chandler services (specific equipment or goods), and ship support services are coordinated for strategic sealift vessels. Based on the supported combatant commander's guidance, 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 control team (MCT), 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 usually conduct a ship's meeting with the vessel master and his or her staff. A number of individuals from different organizations attend this meeting. This group is referred to as the boarding party.

a. The **ship's arrival meeting boarding party** is the first communications between a vessel master and water terminal operators. 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.

b. A combination of factors dictate **the assignment of berthing or anchorage** for a ship at a given water terminal. MSC or Navy representatives, if available, will advise on **anchorage areas** and the naval support required. If the Navy representative indicates 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 or limit the use of certain landing craft. Vessel masters, harbormasters, pilots, and others with "local knowledge" should be consulted by MSC, Navy, or other Service personnel when establishing anchorage areas. Factors affecting reception are discussed below:

- Oceanographic conditions, such as harbor channel depth and width, currents, tidal fluctuations, prevailing winds, sea states, and seasonal storms contribute to assignment of berths and anchorages.

- The type or category of cargo (e.g., container, RO/RO, breakbulk, special commodity (ammunition), bulk fuel) will require varying types of off-load.

- 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.

c. Generally, **ship chandler services** include **re-provisioning 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 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. In terminal locations where **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.

d. For strategic sealift ships, the MSC office or representative and/or ship's agent will arrange for **ship support services** related to pilots, tugs, line handlers, payment of dues and port charges, and bunkers. Ships identify support requirements in PREREPs that are sent via message to the MSC office 72 hours prior to ship arrival at the SPOD.

8. Ship Loading Operations

Vessel load and discharge is governed at each MTMC terminal by both stevedore and related terminal service contracts that are in place or in some cases by a basic ordering agreement that is established to perform the vessel operations, rail, truck, and other terminal procedures. In addition the procedures for vessel load and discharge are established in Chapter 7 of MTMC Regulation 56-69, *Surface Transportation Terminal Operations*. Further specific guidance on Army terminal operations can be located in HQ, Department of the Army Field Manual (FM) 55-17, Part III, Chapters, 7-15, covering

pier operations and vessel operations. Information specific to Army Terminal Operations may be found in FM 55-60, *Army Terminal Operations.* This manual is mainly designed for unit commanders, key personnel, higher HQ staffs, theater planners, and commanders of operational allied units. Further reference specific to strategic planning may be located in MTMCTEA Reference 97-700-2, *Logistics Handbook for Strategic Mobility Planning.* MPF operations, whether conducted in-stream or pier-side, will normally be conducted by utilizing deploying Navy and MAGTF personnel. Coordination for stowage space, ramp space, MHE, and all other joint support will be coordinated with the designated port authorities.

Vessel stow-planning at each MTMC controlled terminal is accomplished using the Integrated Computerized Deployment System (ICODES). This system is integrated with other MTMC support systems, such as the Worldwide Port System (WPS) and the Integrated Booking System (IBS), and is managed by HQ, MTMC. The US Army Transportation School at Ft. Eustis, Virginia, manages training for terminal operators in the use of ICODES.

9. Ship Discharge Operations

Generally, cargo off-load of strategic sealift may be conducted by Navy, Marine Corps, Army, or a combination of 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.

a. **Off-load preparation** involves advanced planning; coordination; assigning a boarding party; understanding and working within each vessel's policies; and other special considerations. Figure IV-3 depicts some items helpful in preparing for a ship's arrival.

- 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.

  •• The specific **berthing and/or anchorage site** location to be used within the terminal.

  •• The **method of discharge** includes use of floating or shoreside cranes and alongside or offshore discharge options. It also involves the sequence of hatches and cargo within the hatches to be discharged.

  •• The **assignment of units** is the designation of specific stevedore units to work each vessel.

- 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 reduce delays in port clearance.

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

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

  •• **Cargo Handling Equipment.** Ensuring that all CHE needed for the job is available.

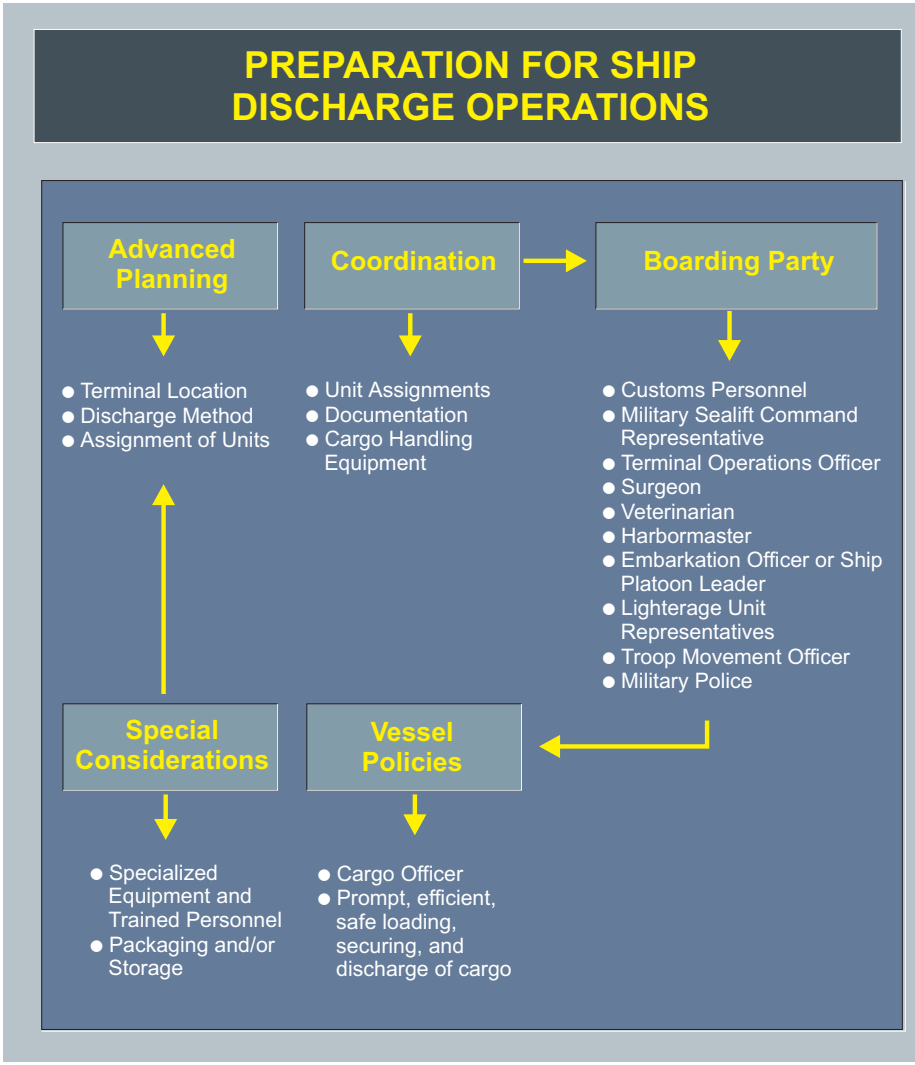


Figure IV-3. Preparation for Ship Discharge Operations

- 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 quantity of cargo in the shortest period of time. This individual is also responsible for calculating vessel stability and will provide the ultimate and only valid recommendation to the vessel's master regarding the overall safety of the ship's 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 pre-arrival 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:

•• The **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.

•• The **customs** 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.

•• The **MSC representatives** 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.

•• The **surgeon** checks for communicable diseases and determines the sanitary conditions of troop spaces and facilities.

•• A **surgeon or veterinarian** inspects the condition of perishable cargo.

•• The **harbormaster** coordinates matters pertaining to berthing, tug assistance, and employment of floating cranes and other harbor craft under his or her control.

•• The **embarkation officer and/or ship platoon leader** coordinates the detailed plans for cargo loading and unloading.

•• The **lighterage unit representatives** coordinate plans for employing lighters for unloading vessels at anchorage berths.

•• The **troop movement officer** coordinates plans for movement of troop units through the terminal.

•• The **military police** determine needs and provide support required during unloading and debarkation operations.

•• The **signal officer** coordinates all signaling and other communication methods to be used during ship discharge operations.

- **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 damage. It is not unusual for the chief mate to insist that ship personnel rig the ship's gear, open and close hatches, or 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.

- **Special considerations** for packaging dictate a need for specialized equipment and trained personnel. Cargo handlers may need 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.

b. **Productivity** in terminal operation is based upon many factors. Factors include terminal service unit's production capabilities and production factors.

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

- **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.

- **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 and/or POG availability all impact on discharge production. The combined positive and negative influences of these factors result in the number of lifts that can be performed 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.

c. 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. This makes it easier to designate specific truck units to support specific unload or backload operations.

d. **Petroleum Doctrine.** Joint doctrine for bulk petroleum is contained in JP 4-03, *Joint Bulk Petroleum and Water Doctrine*. **Each Service is responsible for providing retail bulk petroleum support to its forces.** Each Service has control points with the DESC that coordinates retail bulk petroleum support. 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 (JPO) will develop the petroleum logistic support plan.** A key consideration is the compatibility between interfaces of fuel transfer systems. The JPO 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, Air Force, Navy, and Marine Corps units for retail use. In a developed theater, the DESC contracts with CONUS or OCONUS commercial suppliers to deliver the required petroleum to the appropriate Service 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. In an 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. It may also include pump stations, flexible hoselines, coupled pipelines, and tank vehicles. Bulk petroleum is received in the undeveloped theater via JLOTS, MPS, or a fleet oiler (MSC manned) using the AABFS or Navy offshore petroleum distribution 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. Specific Services' responsibilities for petroleum distribution are as follows.

- The Army is responsible and provides management of overland petroleum support, including IWWs, to US land-based forces of all the DOD components. To ensure wartime support, the Army funds and maintains tactical storage and distribution systems to supplement existing fixed facilities. The Army is 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.

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

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

- The Marine Corps maintains a capability to provide bulk petroleum support to Marine Corps units.

e. **Lighterage Use at Terminals.** JP 4-01.6, *Joint Tactics, Techniques, and Procedures for Joint Logistics Over-the-Shore (JLOTS),* describes the discharge of ships in ports using **lighterage**. Situations may occur when lighters discharge ships over the pier as opposed to over the shore. The water terminal commander coordinates fixed terminal discharge operations using lighterage in

combination with other JLOTS operations in the AOR.

10. Terminal Reception and Clearance

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 Chapter II, "Terminal Planning Considerations," and Annex B to Appendix A, "Water Terminal Planning Considerations." Efficient loading and discharging of vessels requires rapid and controlled movement of cargo between ship and shore. **The cargo-marshalling yard is an essential part of this shore side operation**, providing a place to hold and process cargo pending further movement and is a key to rapid clearance. The **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 cargo. It reduces pier congestion, thus reducing the potential for work slowdowns or stoppages in discharge operations. With proper management of MHE and CHE, 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 due to reasons shown in Figure IV-4. All costs associated with cargo delays occurring at the commercial water terminal are reportable through Service regulations governing ship and terminal demurrage reporting requirements.

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 IV-4. Reasons for Water Terminal Delay

a. **Cargo Marshalling Yard Organization and Functions.** The cargo-marshalling 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.

b. No set physical layout, **organization, and/or function** for a marshalling yard exists. It is organized to meet operational requirements within available space. By grouping related functions, marshalling yard design should eliminate lost motion, reduce container and cargo handling requirements, and permit a logical flow of containers and cargo through the terminal. 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 and functional operation. All marshalling yards should provide for the activities and functions listed in Annex B to Appendix A, "Water Terminal Planning Considerations." The organization of and traffic flow through a marshalling yard at a fixed-port container transfer facility is shown in Figure IV-5.

- The location of the marshalling area (general cargo, container, or both) should be 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 existing hardstand, structures, and rail lines.

- The water terminal commander has the operational responsibility, through the operations officer, for operating the marshalling yard. One of those responsibilities is the establishment of marshalling yard procedures. The operation may use automated documentation or, if automated data processing equipment is not available, manual procedures. Operations and procedures must be set up to facilitate actions that include some of the following.

  •• The shipping water terminal transmits an advance manifest to the receiving water terminal (theater) for the **import cargo**. 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 (CDI), and transportation control and movement documents (TCMDs), or use of logistics applications of automated marking and reading symbols (LOGMARS). 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 predetermines 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.

  •• **Communications** are important in the marshalling yard. The cargo checker can direct the yard transporter to the designated stacking location using

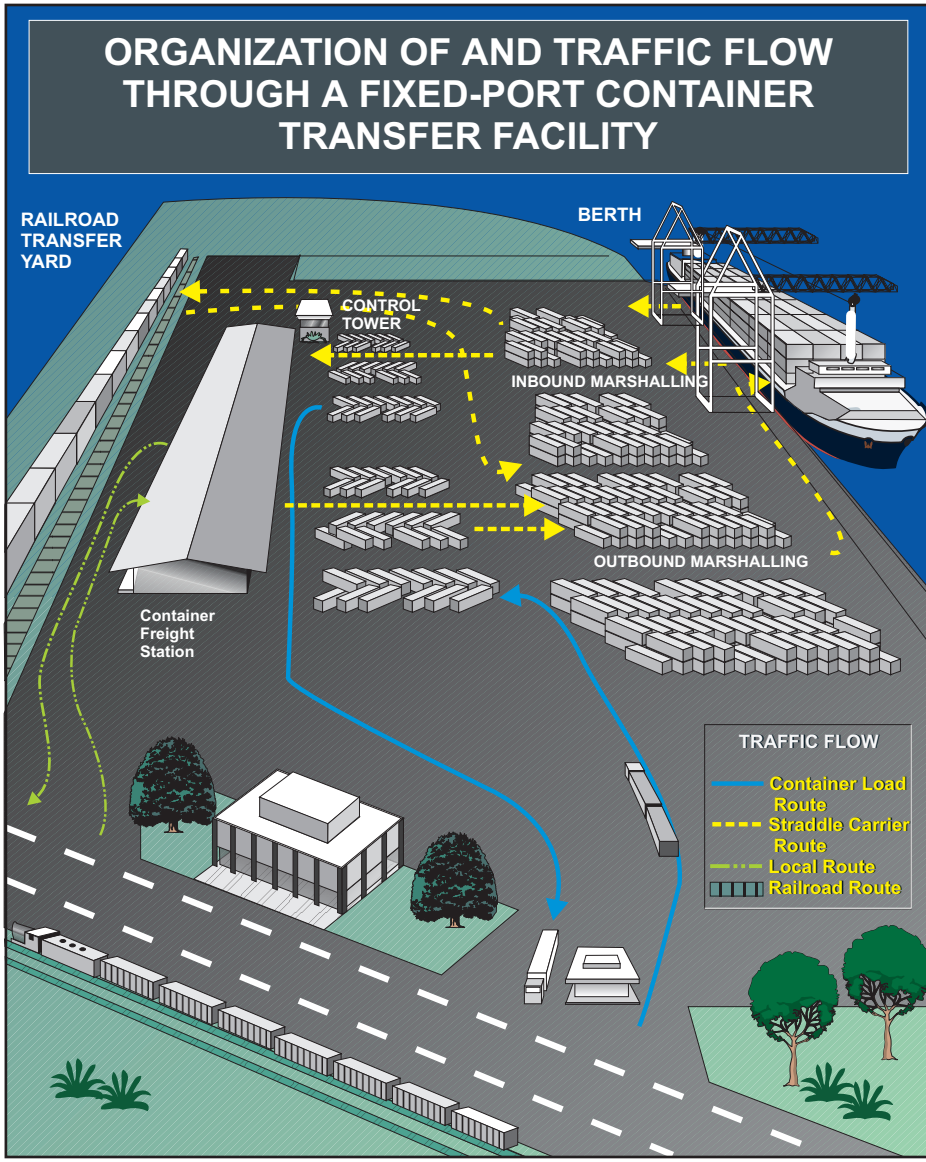


Figure IV-5. Organization of and Traffic Flow Through a Fixed-Port Container Transfer Facility

information from a cargo tally printout. Radio communication, where feasible between the cargo checker and the marshalling yard, is the preferred method to ensure adequate 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.

•• **CDI** are used as consignee advance notification documents. Based on the CDI, 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.

•• Cargo **documentation** is a critical step in the marshalling yard. When cargo enters the marshalling yard, the cargo or container transporter driver inspects the container. The driver is inspecting for obvious damage to the containers or evidence of pilferage. 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 and as a critical ITV enabler.

- **Marshalling Yard Security.** Containerization reduces cargo theft and pilferage compared with losses suffered in breakbulk operations. Nonetheless, cargo losses happen. Terminal commanders must enhance yard security and work to eliminate losses due to theft.

•• Strict **control of incoming and outgoing traffic** is a key factor in marshalling yard security. Restricting vehicular traffic entering or exiting cargo storage is essential. Establishment of a single control point (gate) for vehicular traffic entering or exiting cargo areas is a prime measure for limiting access. This point should be staffed and operated by US military personnel who are assisted, as necessary, by HN police or interpreters. Surveillance and control functions of the vehicular control point are designed to prevent the entry of unauthorized vehicles, inspect inbound and outbound containers, and verify documentation for correctness, completeness, and legibility. This ensures that transporter, container, and container seal numbers match those shown on the TCMD and update the yard inventory. Finally, a separate control point for pedestrian traffic is needed, operated by US military personnel and assisted, as necessary, by HN police or interpreters.

•• 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 HN personnel authorized to be in the area.

•• **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 may establish 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 control. Perimeter defense measures may

include one or a combination of the following: chain-type fencing topped by barbed wire; concertina wire; sensors and television video monitors; and active patrols. Inspect fences daily to ensure that no holes or breaks exist.

•• Drivers of line- and local-haul container transporters **(container transporter operators)** are required to remain in the cabs of their trucks when operating within cargo areas.

•• **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, military police (MP) security personnel should observe unloading operations.

•• **Verification of containers arrival at the 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. The consignee will also electronically receipt for the container or cargo if appropriate AIS are available to feed GTN and provide ITV closure. Otherwise, the shipping terminal activity will electronically receipt for the container or cargo on behalf of the consignee upon receiving a copy of the TCMD from the consignee.

•• **Cargo Movement by Rail.** Cargo is moved by rail wherever possible. Rail presents an economical, mass movement capability with little interference from weather or refugee traffic.

11. Passenger Reception and Clearance

Although most personnel are moved by air, there remains a need for the ability to receive, process, and clear personnel through water terminals. This requires the presence of customs and/or inspection officials, medical support, and life and logistic support for personnel while they are in-transit.

JPAV gives users access to an integrated database containing information on units and individuals. JPAV, an integral part of JTAV, provides **cross-Service integration of various Service personnel databases**. This gives terminal operators access to and visibility of personnel resource data for individuals deploying to, employed in, or leaving the AOR and/or JOA, through the use of C2 systems, SATCOM, and information technology. The database contains basic identifying information on individuals, such as name, rank, social security number, and Service component. Military skill identifiers, qualifications, and other personnel resource data needed to support personnel tracking and readiness assessments are also contained in the database. The integrated JPAV database is updated frequently from various sources, including TPFDD, Service component personnel systems, transportation manifesting systems, and casualty reporting and tracking systems. The system will enable the terminal operators to better respond to passenger needs and reduce clearance times through the terminal. Combining JPAV with the personnel ITV available to JTAV from GTN will provide terminal operators with a complete picture of supercargo arriving in port and will enable them to better respond to passenger needs and reduce clearance time through the terminal.

12. Cargo Considerations

Terminal operations involve movement, handling, and storage of hazardous and/or explosive cargo and/or materials through areas that are particularly sensitive to environmental damage. Preventing damage to the environment must include attention to

accidental and routine operational causes as well as enemy action and sabotage. Hazardous and/or explosive cargo and materials require special attention due to the inherent nature of these items. Personnel involved in the transportation of HAZMATs and hazardous wastes must be familiar with all laws and regulations HN agreements, and other rules affecting the movement of these items.

a. The **special requirements for handling ammunition, explosives, bulk fuel**, and other hazardous cargo must be planned for along with port restrictions such as the vessel port NEW. Provisions must be made for classified storage facilities. Personnel must be properly cleared to handle classified cargo. Constant coordination is needed between terminal operators and ammunition units for inspections, unloading, clearance, courier service, safety, and special security requirements for the conventional and special ammunition entering terminals. For hazardous chemical shipments, there may be the requirement for a munitions safety control (technical escort) unit to guard shipments, protect personnel handling the shipments, and dispose of the damaged munitions and decontaminated objects and areas accidentally contaminated during shipment. The deploying unit is responsible for certification of ammunition, explosives, and other HAZMATs for movement on DOD-owned and controlled conveyances in accordance with applicable regulations. In addition, port safety requirements may restrict the amount of ammunition or other HAZMATs that may move through the port at any given time. This will require a ship to remain berthed in port longer than anticipated and cause a backlog in inbound shipping. All HAZMATs (including ammunition) shipments must be prepared and documented IAW DODR 4500.9-R, *Defense Transportation Regulation, Parts II and III*, and other governing regulations. Special requirements governing the transport and handling of military explosives and other hazardous cargo aboard vessels and in ports are in title 49, CFR, IAW international maritime dangerous goods (IMDG) code international.

b. **Routing instructions for movement of all classes of ammunition** entering the DTS is provided by MTMC. In a contingency operation, specified units may be designated to deploy through select commercial ports with their ammunition basic loads. A potential deployment constraint (particularly in HN ports) related to movement of ammunition is NEW. The discharge of ammunition at OCONUS PODs require prior coordination with HN authorities to certify the port for ammunition handling and storage, or to obtain the necessary waivers to discharge ammunition through commercial ports.

- For CONUS ports, the HQ MTMC commander will be the sole authority to grant explosive safety waivers, which will be considered on a case-by-case basis and with coordination with the HQ, MTMC Safety Office.

- For CONUS deployment situation, if a unit is scheduled to move through a commercial seaport with basic load munitions, MTMC must be notified early to process the necessary DOD explosive safety waivers and Coast Guard permits. The following information must be provided for waiver and permit purposes: DOD Identification Code; National Stock Number; proper shipping name; hazard class, storage compatibility, and/or fragment distance; United Nations identification number; round count; NEW; and shipping configuration (for example, vehicle upload, containerized). MTMC must also activate DOT Exemption 3498 before actual movement of uploaded vehicles can commence.

c. Commanders shall ensure that transportation of munitions and other

HAZMATs comply with the Federal (title 49, CFR), International Laws IMDG Code.

13. Container and Reusable Item Accountability and Configuration Considerations

The intermodal platform-oriented distribution system capability was instituted to meet DOD-established required delivery dates for mobilization, deployment, employment, sustainment, and redeployment. Intermodal platforms include containers, flatracks, 463L pallets, nets, tie-down equipment, and the associated equipment. The intent of the container and reusable item accountability system is to provide a seamless transportation system that cooperatively interacts with commercial operations to enhance combat effectiveness, safety, and efficiency. Service components are required to utilize the DOD intermodal container system for movement of supplies and equipment across the range of military operations consistent with the supported commander's requirements, capabilities, and concept of operations.

a. USTRANSCOM serves as the DOD single manager for DOD common-use containers and exercises COCOM over DOD container system assets, except Service-unique or theater-assigned ones. Additionally, it provides management support to Military Services and commanders of combatant commands for Service-unique or theater-assigned container system assets when:

- The Secretary of Defense directs; or
- USTRANSCOM and the affected Service chief or combatant commander so agree.

b. The supported combatant commander is responsible for establishing and enforcing a comprehensive program to track and account for intermodal platforms for return or reuse. Additionally the supported combatant commander will:

- Develop requirements and optimize use of the DOD container system for cargo movement between origin and destination consistent with the supported commander's concept of operations during deliberate, crisis action, and exercise planning.
- Ensure that container management is carried out in AORs to include the following.

  •• Assigning responsibilities for container control functions IAW Army Regulation 55-15/Chief of Naval Operations Instruction 4640.3A/Air Force Regulation 75-95/Marine Corps Order 4600.34, *Land Transportation Within Areas Outside the Continental United States.*

  •• Coordinating with component installations and organizations for continuous visibility of all containers arriving, departing, and moving within the AOR.

- Provide for effective, efficient receipt, movement, and return of DOD common-use container and intermodal equipment (including abandoned assets), containerized ammunition distribution system containers, and associated equipment entering the theater.

c. **Container Configuration Considerations.** 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. Depending upon the size of the operation this may not be feasible due to the large number of containers passing through the terminal. Storing or staging

containers on chassis also increases space requirements in the marshalling area. When containers do not remain on chassis from transportation mode off-load until delivery; one chassis for every two to three containers is the recommended number.

d. The concept of **yard storage** is that loaded containers are stacked, after removal from their chassis, to a maximum of two high. Empty retrograde containers can be stacked five high if this height is within the capability of CHE. Another space consideration is stacking collapsed flat racks. Flat racks should be stacked as high as possible by available CHE to ease retrograde backloading. Although stacking containers increases handling, it also requires fewer chassis and reduces requirements for marshalling yard space.

For more container and cargo information see JP 4-01.7, Joint Tactics, Techniques, and Procedures for Use of Intermodal Containers in Joint Operations, *and DODR 4500.9-R,* Defense Transportation Regulations Part I, *"Management and Control of the DOD Intermodal Container System."*

14. In-transit Visibility

ITV for sealift is key to the supported combatant command's effort to integrate all levels of deployment and sustainment efforts, and it is critical to successful SPOE and SPOD terminal operations. ITV facilitates stow planning and vessel discharge planning. AIS and AIT devices that are ITV enablers also expedite port operation and speed production and throughput by eliminating the requirement to manually input manifest and documentation data.

a. **Data Capture and Manifesting Responsibilities.** Units and agencies moving via sealift are responsible for providing, at a minimum, the standard manifest data elements required for ITV as outlined in the DTR, but should provide complete manifest data in accordance with the DTR where AIS support the provision of such data. Non-DOD or nongovernmental agencies requiring sealift should provide manifest data in accordance with the applicable USTRANSCOM memorandum of agreement or as coordinated by the supported agency, USTRANSCOM, and the supported combatant command. Cargo and supercargo manifest information should be provided in advance to the supporting MTMC terminal operations to facilitate stow planning. Manifest data should be provided electronically, via AIT devices, diskette, other file transfer protocols, or direct interface between the appropriate AIS. MTMC terminal operators will provide manifest and ITV data for cargo and super cargo loaded at the SPOD or other units as designated in the supported combatant command's theater movement and ITV plans. ITV data for DOD assets moving via commercial sealift from DOD or non-DOD controlled terminals will be fed to GTN via the appropriate government AIS and/or in accordance with the terms of a previously established CEDI with GTN. The source of the ITV feed will depend on the type of contracted lift. ITV data for cargo and supercargo at time of discharge will also by provided by either the MTMC terminal operator, a combatant command designated unit, or commercial carrier CEDI.

b. **Automated Information Systems.** The supported combatant command's theater movement plan must ensure the availability of AIS to support visibility over theater movement. These systems may be either fixed or deployable. The primary AIS facilitating ITV of sealifted assets are the Integrated Command, Control, and Communications System (IC3), IBS, and the WPS. Each of these systems feed GTN. IC3 is the MSC's C3 system providing ship schedule and position information. IBS is a MTMC sealift traffic management system that registers cargo for sealift, provides schedules for unit arrivals at

ports, and issues port calls to units. WPS is the MTMC port operating system for military ocean terminals, Navy port activities, Army Transportation Terminal Units, and automated cargo documentation detachments. WPS provides schedules for assets arriving at ports, cargo staging, and cargo out-loading as well as ship manifests and appropriate documentation for land movement. Comprehensive sealift ITV is dependent on the integrated picture provided by these three systems.

c. **Automated Identification Technology.** AIT is a critical ITV enabler. It encompasses a variety of data storage media that carry asset identification information. The information is transferred electronically to and from certain AIS that support visibility and logistic operations. AIT reduces the need for manual data input, facilitating timely, accurate data capture. All personnel will be manifested for movement using AIT. Other AIT devices may be employed at the option of the moving force or the supported combatant command. The supported combatant command must consider all AIT protocols available and determine their optimal use to facilitate terminal processes and/or paint the most comprehensive ITV picture. Additional AIT information may be found in the DOD Implementation Plan for Logistics Automated Identification Technology.

d. **Timeliness.** The performance measurements against which timely ITV for sealifted assets is measured are 1 hour for unit strategic movements (personnel and equipment) at all nodes from origin to destination, and 4 hours for the arrival and departure of sustainment ocean cargo non-unit super cargo at all nodes from origin to destination. Timeliness for these events is measured from the event occurrence until it is measured in GTN. Bulk POL are excluded from ITV requirements.

Intentionally Blank

CHAPTER V
LAND TERMINAL OPERATIONS

"As we have learned many times, the US can ship supplies and materiel to an objective area much more effectively and efficiently than the objective area can unload and distribute those supplies."

LTG (Ret.) Joseph M. Heiser
***A Soldier Supporting Soldiers*, 1992**

1. Purpose

This chapter outlines land terminal operations at the strategic, operational, and tactical levels. It describes the capabilities of each Service component and major considerations that the combatant commander must integrate as the theater expands and movement from PODs integrates with movements to sustain operations. It presents a suggested organization and identifies procedures available to geographic combatant commanders on deciding how to control land terminal operations. The nature of the theater, composition of the force, and agreements with the HN affect the procedures used for terminals and movement control operations.

2. Introduction

Land terminals tie the strategic to the tactical level as the endpoint of the distribution system. They are established where required to facilitate distribution to the end user. At the strategic level, land terminals include activities such as military installations, depots, and air and water port terminals. Operational and tactical land terminal operations are conducted chiefly at motor, rail, pipeline, inland water terminals, transfer points, and at interchange points along the land LOCs. Operations at land terminals require transportation and cargo transfer capabilities. Normally, the predominant user organization operates and controls the land terminal facility.

a. Efficient land terminal operations greatly reduce congestion along the land LOCs and serve to better facilitate the distribution process. Terminal operations include activities at single mode land terminals (motor, rail, and inland water) or at multi-modal (sea-to-land, air-to-land) terminals. Terminals serving rail and IWWs are established along existing operable routes and, in the case of rail, with available and operable rolling stock and facilities. Other commonly known facilities such as central receiving points and supply support activities are also considered land terminals. Land terminals also provide facilities for connecting links of the same modes when the situation dictates a change in carrier. In exigency situations, in-transit storage can be provided at origin, intermediate, destination terminals, or TTPs.

b. The supported combatant command, in conjunction with USTRANSCOM and supporting Services, must ensure that the theater distribution system is allocated sufficient surface and airlift resources to facilitate rapid onward movement for assets arriving via express channels. That system must ensure time-definite delivery from the APOD terminal to supply support activities throughout the theater. To facilitate that time-definite delivery, APOD terminal processes must be streamlined to permit a rapid hand-off between strategic and intratheater transportation modes. Express cargo will not be held for consolidation, but will be moved as quickly as possible to its final destination.

3. Responsibilities

a. The **Secretary of the Army** has title 10, USC responsibility as the single-Service manager for land transportation. Within this authority, the Army component commander routinely holds the responsibility for (intratheater) OCONUS land terminal operations based upon the supported geographic combatant commander's concept of the operations.

b. The **USCINCTRANS** implements the following.

- Provides air, **land**, and sea **transportation terminal operations** at SPODs and SPOEs for the Department of Defense across the range of military operations.

- Exercises responsibility for global air, **land**, and sea **transportation terminal operation** planning (deliberate and crisis action) to optimize their use and support plan execution during mobilization, deployment, employment, redeployment, and sustainment.

- Ensures that TCCs achieve optimum intermodal capability through integration of common-user transportation systems and terminal operations resources. Terminal operations and transportation assets remain under the OPCON of the respective Service component commanders.

c. **Geographic combatant commanders** should develop a concept of operations using the forces (terminal operation units) and assumptions (locations of terminals) made available for planning. Subordinate component commanders then determine their specific force requirements, logistic requirements, and personnel replacements with recommended time phasing. Supported and supporting commanders' planners integrate component requirements and develop the TPFDD, which identifies force requirements to support a particular OPLAN and provides routing data from origin to destination. Movement requirements to include land terminals are analyzed to determine transportation feasibility using available assets. The geographic combatant commander usually delegates the planning and execution of the land and IWW terminals to the Army component commander. However, specific responsibilities may vary in theaters where both Army and Marine Corps forces exist in large numbers. For example, it is normal to delegate the responsibility for coordinating MSR traffic to the component that has primary use of the route.

- The JMC is responsible for coordinating the employment of all modes of theater transportation (including that which is provided by allies, coalition partners, or the HN) as well as terminal operations to support the theater concept of operations. Additionally, the JMC will:

  •• Provide terminal support requirements, including requests and MHE and CHE, to supporting combatant commands and HN agencies; and.

  •• Analyze requirements, capabilities, shortfalls, alternatives, and enhancements to the theater transportation system (including land terminal infrastructure) and develop options and recommend solutions.

- The **inland surface movements branch** of the **JMC operations division** oversees the daily operations of the JMC for land terminals. It evaluates movement performance to assure adherence to the geographic combatant commander's priorities. The inland surface movements branch also is responsible for the following.

•• Arbitrates conflicting land transportation requirements that cannot be resolved at lower levels in the movement control system.

•• Monitors the movement of forces through terminals using rail, highway, or IWW assets.

•• Monitors terminal clearance, rail, highway, and IWW activities.

•• Maintains and disseminates information on military and HN surface transportation and terminal networks. This information includes data on obstructions, detours, capacities, critical choke points, surface conditions, and enemy activities affecting highway, IWW, and rail terminals and the transportation nets.

•• Develops short- and long-range transportation plans pertaining to repair priorities of the land terminal and transportation network. Coordination with HN activities and the senior engineer assigned to the geographic combatant commander's or subordinate JFC's staff is essential.

•• Notifies the chief, JMC operations division, when forecasted land transportation requirements exceed the land terminal capabilities.

•• Monitors inland container management program.

•• Monitors effectiveness of negotiation and award of tenders to commercial carriers.

•• Develops policy and procedures of theater commercial surface transportation.

•• Monitors border crossings, terminal clearance, and IWW activities.

•• Validates and/or coordinates requests for HN terminal and land surface movement support.

d. Service components have significant cargo handling capabilities for terminal operations. Those capabilities that exist in the Services should be used jointly rather than in isolation to maximize the throughput capability of terminals. The **Army component** usually provides common-user land and IWW transport, and also **provides inland terminal operations at land and water terminals**. They provide common-user land transport through a theater Army movement control agency (TAMCA), movement control center (MCC), and division transportation office.

FM 55-10, Movement Control in a Theater of Operations, *contains additional information on Army movement control in a theater of operations.*

- **TAMCA.** The Army fields a TAMCA to support echelons above corps. The TAMCA positions movement control elements throughout the theater. They provide movement control through movement regulating teams for such operations as logistics over-the-shore, JLOTS, and commercial carrier support. The TAMCA coordinates and monitors all shipments in the theater to the final destination and selects and controls theater main supply routes and terminals.

- **Contract Supervision Teams.** The Army component negotiates and awards contracts for the use of commercial carriers within an HN. To manage these elements, the Army places contract supervision teams in the theater.

- The Army component will normally establish an MCC to manage movements and transportation assets within a corps area of operations (AO). The MCC positions movement control elements at terminals throughout the corps area of operations to provide support.

Marine Corps Component. The Marine Corps component has a strategic mobility officer (SMO) and an embarkation officer organic to their MAGTF staffs. The SMO can coordinate Marine Corps movement requirements with the geographic combatant commander, the JMC, and USTRANSCOM. The Marine Corps activates a force movement control center (FMCC) within theater to coordinate and provide transportation services to all land-based elements of the MAGTF. As the Marine's primary movement control agency within theater, the FMCC establishes liaison and communications with the JMC and forwards all transportation shortfalls to the JMC.

4. Organizational Considerations

a. The Army component plans for and establishes transportation movement schedules. MCCs and/or MCTs control movement regions that manage land and IWW terminals for theater transportation. The number of MCCs and MCTs varies depending on the volume and complexity of movements. The size of a region depends on its critical areas and geographic boundaries. MCCs and MCTs act on requests received from regional users. They task rail, water, or motor transport elements. They are responsible for controlling and supervising all movements through their regions. They also advise users and serve as an interface with local HN operators.

b. **Component Liaisons.** Component commanders may **assign liaison officers to key transportation terminals operated by another component or the HN**. These liaison officers ensure satisfaction of component logistic requirements. The liaisons' key tasks are to monitor and, if necessary, prioritize the actual flow of their components' materiel through the terminal. They also locate and expedite the shipment of component critical items.

JP 4-02, Doctrine for Health Service Support in Joint Operations, *JP 4-02.1,* Joint Tactics, Techniques, and Procedures for Health Service Logistics Support in Joint Operations, *and FM 55-10,* Movement Control in a Theater of Operations, *contain additional information on other considerations for movement control as it applies to terminal operations.*

5. Land Terminal Resources

a. A frequently used means of augmenting or expanding the geographic combatant commander's transportation capability is HNS. HNS, negotiated through bilateral or multilateral agreements, provides for a nation to either accept responsibility for a particular function within its borders (e.g., terminal cargo clearance) or designate civilian and/or military resources to be used in that capacity under military control. HNS offers the geographic combatant commander a proven means to meet theater transportation requirements and offset transportation force structure shortfalls.

b. Multinational civil transportation support organizations and structures offer yet another source of support for geographic combatant commanders. These are most developed in the European theater where NATO has peacetime planning organizations, crisis management organizations, and other organizations that are activated during wartime.

c. Commercial ocean carriers under MTMC container agreements often have an existing infrastructure in developed areas that can

transport containerized cargo from SPOD to designated destinations. The theater traffic manager in concert with MTMC can use these services to ease demands on military and HNS assets.

d. Third-party logistic operations can also provide additional resources to geographic combatant commanders when they are properly coordinated with intratheater transportation policies, requirements, and contingency procedures. C2 of the movement of materiel arriving in, and departing from, a theater on civilian contractor assets must be fully integrated into the commander's OPLAN to ensure that transportation requirements are met and to offset transportation force structure shortfalls. Fully integrated OPLANs should ensure third-party contractual compliance with DOD policies regarding contingency validation procedures, TPFDD procedures, ITV, and coordination of civilian operations within DTS. Proper third party logistics integration will ensure timely movement coordination, transportation assets validation, and required ITV of vital support requirements while easing demands on limited space requirements and essential CHE or MHE.

e. Service specific terminal resources are as follows.

- Motor transport terminals

  •• Truck terminals connect local distribution networks with line-haul operations. They are assembly points and dispatch centers for motor transport equipment used in line-haul operations. They may be used for in-transit storage or freight sorting, but this should be minimized as it detracts from efficient operations. Cargo transfer elements provide cargo-handling service at most motor transport terminals.

  •• The transportation commander places truck terminals in or near centers of concentrated trucking operations at both ends of a line-haul system and places TTPs at strategic locations between both ends of a line-haul system. They form the connecting links between segments of a route and tie the overall operation into one continuous movement. TTPs offer facilities for exchanging semi-trailers between line-haul tractors operating over adjoining segments of a line-haul route. They also provide a means for controlling and reporting equipment engaged in the operation. Specifically, TTPs provide facilities for exchanging semi-trailers, reporting ITV, vehicle and cargo inspections, documentation, and dispatch procedures. They may also provide mess (food service), maintenance, and other en route support. TTPs are not normally used to pick up and deliver cargo.

  •• Intermediate truck terminals may be established at points along the line-haul routes. Their locations depend upon the organization of the line-haul operation. The locations of supported units also influence the selection of sites for intermediate terminals. These terminals provide delivery of cargo to supply activities. The intermediate terminal may also be collocated with a TTP.

- Line-haul operation. Truck terminals and TTPs are established on or as close to the line-haul route as possible. However, requirements for hardstand, support facilities, security, and the availability of real estate may force the establishment of truck terminals or TTPs off of the line-haul route. The truck terminals and TTPs include a marshalling area and other activities and services as required to support the operation. Truck terminal site

selectors should consider the following:

•• Size, complexity, and duration of the operation;

•• Number and type of vehicles to be employed;

•• Facilities required at the terminals and transfer points;

•• Anticipated backlog of semi-trailers at these sites; and

•• Existing and/or required communications infrastructure and AIS and/or AIT resources to facilitate ITV data capture.

6. Rail Terminal Resources

a. Rail terminals are facilities found at the beginning, along, or at the end of a rail line. Rail yards are also terminals, although usually not capable of loading and unloading cargo or personnel. Rail yards provide a capability to assemble trains, switch cars, and perform minor maintenance.

b. Rail terminals usually have service facilities, freight, and passenger stations. At service facilities, rail personnel can inspect and repair tracks and service engines with fuel and water. They can also use scales to weigh railcars before their movement to another destination. At freight and passenger stations, the terminal handles cargo and personnel. Rail terminals may include yard tracks, repair and servicing facilities, train crew accommodations, and railheads. They are located at originating and terminating points and at sites that mark the limits of rail operating divisions. A railhead can be any size yard or terminal on or at the forward end of a military railway where personnel, supplies, and equipment are transferred to other modes of transportation for further movement forward.

7. Inland Waterway Resources

a. IWWs include all rivers, lakes, inland channels, canals deep enough for waterborne traffic, and protected tidal waters. In a theater, an IWW is normally operated as a complete system. It includes the locks, dams, bridges, and other structures that contribute to or affect



Rail terminal operations.

movement of vessels carrying passengers and freight. IWWs are mainly used for the civilian economy. The military can use IWWs to complement an existing transportation network when moving cargo into a theater of operations. An IWW can greatly reduce congestion and the workload of other modes. Military use depends on the degree of waterway development, necessary rehabilitation, the tactical situation, and the impact military use of the waterway will have on the civilian economy. It is an extremely efficient method for moving liquid, bulk, or heavy or outsized cargo.

b. IWW operations are generally characterized by the use of tugs and barges to extend the theater transportation system from deep-draft ports to inland discharge points. Using HN assets must be strongly considered since those craft are designed for use in their specific countries' waterway system. Landing craft and logistic support vessels can supplement standard tug and barge operations.

- **Inland Waterway System.** The US Army Corps of Engineers operates and maintains the IWWS in CONUS and could be used in this capacity overseas; however, the host country normally maintains and operates developed IWWS in overseas theaters. Aids to navigation on the IWWs differ all over the world. Some areas do not use aids, while others use the international ocean system. The United States uses many different and highly sophisticated systems. Three separate functional components make up an IWWS: the ocean reception point (ORP), the IWW, and the IWW terminal. The transportation planner must estimate the capacity for each of these functional components. The lowest capacity becomes the capacity for the IWWS. The ORP consists of mooring points for ships, a marshalling area for barges, and a control point. The mooring point can be alongside a wharf, at anchor in the stream, or offshore. The marshalling areas can be alongside a wharf or secured to stake barges at anchor. The control point can be ashore or on a stake barge. Stake barges at the ORP can be semi-permanent anchored barges or vessels. Barges can be used to house control point crews as well as the small tug crews, dispatchers, and other personnel connected with the ORP. They should have a gear locker to stow the various equipment and lines needed to service barges and tugs. There should be at least two stake barges at the ORP; one for import and one for export. LASH and SEABEE vessels are worked at the ORP.

- **Inland Water Terminal.** The IWW terminal is similar to any other inland terminal, except that it is where cargo is transferred between some form of lighterage and land-based transportation. Inland terminals vary in size and design. Some are designed for one commodity; others, for general purposes. For military purposes, the available inland terminal may not be what is needed; therefore, the planner and user must adapt, at least until engineers can modify the terminal. Quays running along the IWW, finger piers at wider points, or basin-type terminals could be adapted by installing DeLong piers as quays or piers, installing regular barges by either partially sinking or driving pilings to hold them in place, or using a beach that could be improved.

c. An IWW terminal normally includes facilities for mooring, cargo loading and unloading, dispatching and controlling, and repairing and servicing all craft capable of navigating the waterway. Appropriate cargo transfer units operate IWW terminals. The number of units required depends on terminal throughput analysis.

d. Operational level IWW terminals along an IWWS can be classified as general cargo, container, liquid, or dry bulk commodity terminals. Terminals of the latter three types usually include special loading and discharge equipment that permits efficient handling of large volumes of cargo.

e. When required, an IWWS may be formed to control and operate a waterway system and to formulate and coordinate plans for using IWW transport resources. It may also be formed to provide for integrating and supervising local civilian facilities used to support military operations. Depending on the requirements, this operational organization may vary in size from a single barge crew to a complete IWWS. It may consist entirely of military personnel or may be manned by local civilians supervised by military units of the appropriate transportation staff section.

f. **Types of Inland Waterway Floating Equipment.** A terminal unit may operate an IWWS. However, a terminal battalion composed of appropriate terminal service, terminal transfer, harborcraft, boat, and/or amphibious units is most often employed in this capacity. Transporters can use a variety of watercraft in an IWWS. They include LASH and SEABEE barges; locally available self-propelled barges; and US Navy or Army barges, tugs, and landing craft.

g. **Organization of an Inland Waterway Service**.

- When required, an IWW service is formed to control and operate an IWWS; to formulate and coordinate plans for using IWW transport resources; and to integrate and supervise local civilian facilities used to support military operations. This organization varies in size from a single barge crew to a complete IWW service depending on requirements. It may be composed entirely of military personnel or by local civilians supervised by military units of the appropriate transportation staff section.

- IWW units are normally a part of the theater Army transportation service. They are attached to the theater transportation command, but they may be assigned to a corps support command (COSCOM) and attached to a transportation brigade if the IWW operation takes place completely within the COSCOM area of concern.

- Although a terminal group may operate an IWW service, an Army terminal battalion composed of appropriate terminal service, cargo transfer, harbor craft, boat, and/or amphibious units is often employed in this capacity.

8. In-transit Visibility

a. **Data Capture and Manifesting Responsibilities.** Units moving through land terminals are responsible for providing, at a minimum, the standard manifest data elements required for ITV as outlined in the DTR, but should provide complete manifest data in accordance with the DTR where AIS support the provision of such data. Non-DOD or nongovernmental agencies moving through the DTS surface infrastructure should provide manifest data IAW the applicable USTRANSCOM memorandum of agreement or as coordinated by the supported agency, USTRANSCOM, and the supported combatant command. ITV and manifest data should be provided to the supported combatant command's designated agent (i.e., TAMCA and SMO), that may vary between nodes. Manifest data should be provided electronically, via AIT devices, diskette, other file transfer protocols, or direct interface between the appropriate AIS. In some cases, the moving unit may itself maintain the appropriate suit of AIS or AIT tools to forward movement and manifest information direct to

GTN. The combatant command's theater movement plan should clearly outline, to the extent possible, roles and responsibilities for the submission of ITV data. The plan should also address ITV data capture for third party logistics or commercial carriers and transfer of ITV data between modes and between carriers of the same mode. Finally, it must specify responsibilities and procedures for reporting ITV closure upon arrival of assets at their final destination.

b. **Automated Information Systems.** The supported combatant command's theater movement plan must ensure the availability of AIS to support visibility over theater movement. These systems may be either fixed or deployable. The primary AIS to facilitate movement documentation and ITV is the emerging transportation information system, the TC-AIMS II. TC-AIMS II is the DOD system supporting mobility and transportation of DOD passengers and cargo in peace and war. It is designed to enhance the efficiency and effectiveness of the DTS; support planning for deploying and redeploying combat and support forces; enhance coordination, control, and management of force deployments, including ITV and TAV; provide for RSOI of deploying forces into the theater; and be Service-configurable to meet the needs of different organizational levels and business processes. Other AIS may also produce manifest and movement information for submission to GTN.

c. **Automated Identification Technology.** AIT is a critical ITV enabler. It encompasses a variety of data storage media that carry asset identification information. The information is transferred electronically to and from certain AIS that support visibility and logistic operations. AIT reduces the need for manual data input, facilitating timely, accurate data capture. All personnel will be manifested for movement using the AIT. Other AIT devices may be employed at the option of the moving force or the supported combatant command. The supported combatant command must consider all AIT protocols available and determine their optimal use to facilitate terminal processes and/or paint the most comprehensive ITV picture. Additional AIT information may be found in the DOD Implementation Plan for Logistics Automated Identification Technology.

d. **Timeliness.** The performance measurements against which timely ITV for assets moving through surface terminals is measured are 1 hour for unit strategic movements (personnel and equipment) at all nodes from origin to destination; and 2 hours for the arrival and departure, at all nodes, of non-unit cargo and passengers originating and terminating in the theater or CONUS. Timeliness for these events is measured from the event occurrence until it is measured in GTN.

9. Pipeline Terminal Resources

a. US forces consume large amounts of petroleum products in support of military operations. Special channels of responsibility for the supply of bulk petroleum products, both in CONUS and in theaters, have been established to ensure uninterrupted supply of this critical commodity. Integrated management of bulk petroleum is the responsibility of the DLA, which works through the DESC. DESC procures and, in coordination with the military Services and MSC, arranges for delivery of products to the military Services at OCONUS pipeline terminals. DESC contracts with the commercial supplier either in CONUS or overseas and assures that required fuel is shipped to the theater. Responsibilities such as cataloging, standardizing, and managing bulk petroleum inventories in other defense fuel support points remain with the Military Services. Each of the Military Services has service control points that coordinate petroleum logistics matters with DESC and provide technical support to their Service.

Pipelines move large quantities of bulk POL. Pipeline terminals and pipelines are able to operate in all weather conditions, have few terrain restrictions, are the most economical and reliable mode for bulk liquid transport, and require few personnel for operation and maintenance. However, pipelines have two major limitations. First, they are immobile and vulnerable to sabotage and other enemy actions. Second, pipelines require engineering efforts to construct and maintain the pipeline, its pumping stations, and terminals. They require large amounts of construction materials, which may not be located within the AOR.

b. A petroleum terminal can be a single tank farm or a complex of dispersed tank farms with varying capacities. The number of tank farms in the terminal depends on the storage capacity required; however, standard installations usually have capacities of 50,000 to 250,000 barrels in increments of 50,000 barrels. Terminal tank farms are interconnected by pipelines and manifolds that enable the movement of more than one petroleum product into, out of, and between storage tanks and terminal tank farms as required for storage and customer distribution.

- **Capacity Required.** The total amount of POL and other liquid storage required depends on the requirements to support the theater supply level. Factors to be considered in determining storage requirements are as follows.

  •• The operating capacity of the pipeline and other means of theater transportation.

  •• Phased requirements for product.

  •• Rate of fuel consumption.

  •• Frequency of deliveries.

  •• Tanker and port capacities and tanker turnaround time between the theater source of supply.

  •• Probable losses and delays due to enemy action and weather.

- **Types of Tanks.** Two basic types of storage tanks are used in petroleum supply systems in a developed theater. They are permanent welded steel tanks and semi-permanent bolted steel tanks. However in a lesser developed theater, collapsible fabric tanks may be the preferred method of storage, if available.

- **Location and Layout.** To meet the tactical situation, existing petroleum terminals in the developed theater may require repair, modification, or the construction of additional terminals. The location, as well as the size and number of terminals, depends on tactical, logistic, and other military considerations. The primary planning consideration is flexibility to ensure continuity of distribution if one or more terminals are destroyed by enemy action. Distribution systems designed for peacetime may have to be altered to compensate for the enemy's capability to destroy them in time of war.

- **Types of Pipeline Terminals.** There are four types of pipeline terminals: base, intermediate, head, and regulating terminals. Each one is discussed below.

  •• **Base Terminals.** The base terminal is the initial bulk POL storage facility in a developed theater. It is located at a port or wherever fuel is introduced into the theater. A theater may have more than one base terminal. Because it is a prime military target, the use of alternate facilities should be considered. These

should be widely dispersed so that they cannot be destroyed or critically damaged by a single attack. The base terminal is usually the largest single bulk fuel installation of a pipeline system; therefore, in order to receive tanker deliveries, the area selected for its location must provide room for future expansion.

•• **Intermediate Terminals.** Usually, the pipeline system in a developed theater extends many miles and will have one or more intermediate terminals. These are located where branch pipelines leave the main line and serve as reserve storage and dispensing facilities and as regulating tankage. The tactical situation will determine the size of an intermediate terminal and the amount of product that must be distributed in that area.

•• **Head Terminals.** A head terminal, also called a "pipehead terminal," is located at the end of a pipeline system farthest inland. Usually, welded and/or bolted steel tanks are used at a head terminal in a developed theater. However, when engineer support is limited, collapsible tanks may be used. The head terminal is placed as close to the support area as feasible.

•• **Regulating Tank Installations.** A pipeline system may include regulating tankage installations in addition to normal pipeline terminals. The primary function of regulating tankage is to maintain a source of supply of products for forward movement through the pipeline or to store products at an intermediate location when there is an interruption in flow to the head terminal. Their use reduces delay in delivering products forward. They may be placed at pump stations between base and head terminals. Their number and location depend on the quantity of products handled and the capability of the pipeline system. These installations are also used as reserve storage sites.

c. Petroleum pipelines can move large volumes of fuels rapidly without burdening other modes of transport. In developed theaters, welded, buried, high-pressure pipelines are widely used in commercial and military systems. The total pipeline system may include or may be expanded using coupled pipeline and flexible hoseline.

d. Dispensing facilities are located at points where bulk fuel is transferred from one mode of transportation to another or where fuel is packaged or delivered to using vehicles. Dispensing facilities are installations such as tanker vehicle and rail tank car loading facilities, retail vehicle filling stations, can and drum-filling points, airfields, and fuel supply installations.

- **Tanker Vehicle Facilities.** Facilities for loading and unloading tank vehicles must be provided in any distribution system. The type of facility used depends upon its location in the theater, the size of the military operation, and resources available. Provisions must be made for both top and bottom loading tank vehicles. In some situations, a fuel system supply point may be used; in others, a permanent structure with greater capacity may be required.

- **Rail Tank Car Facilities.** Standard US tank cars usually has one compartment and range in capacity from 6,000 to 13,000 gallons. In overseas theaters, personnel should routinely expect to use rail tank cars manufactured in the country of operation. Because there are differences in the design and capacity of

tank cars, particularly between standard US and international railcars, the design of loading facilities at tank farms where cars are filled and at the delivery points where they are unloaded varies. Loading and unloading facilities may be designed to serve from one car up to a full train at the same time.

e. **Barge Facilities.** In some instances, barges may be the most economical means of moving bulk fuel inland using an IWWS. When such is the case, existing loading facilities may be expanded or new facilities constructed.

f. **Inland Fuel Distribution.** Pipeline is also the preferred method of inland fuel distribution, but a fully developed theater fuel distribution system is required which includes ship discharge ports (with moorings and piping manifolds), seaside and inland terminal tank farms, pump stations, and pipeline terminals. Bulk petroleum logistic pipelines are used in the Army's inland petroleum distribution system (IPDS) to move bulk petroleum from rear area storage locations forward to the combat zone. These lines may supplement existing Service or HN infrastructure pipelines. Air bases and Service bed-down sites are also serviced by pipeline systems when tactically feasible. Hoselines may be used to service smaller or temporary, large volume sites. The pipeline system extends as far forward as possible, usually into the designated corps rear area, with hoseline extensions into corps storage sites. The pipeline system may be supplemented by other means of bulk delivery, such as barges, rail tank cars, aircraft, bulk truck transports, and commercial distribution equipment provided by the host or occupied nation.

g. In an undeveloped theater, in-place and operational tankage, on-hand product, road nets, rail lines, and easily traversed LOCs normally are not available. Bulk petroleum may need to be received via JLOTS operations. Such operations use various combinations of the OPDS, MPS, AABFS and IPDS. The OPDS, MPS, or AABFS deliver fuel to tactical storage located immediately ashore and operated by a Marine Corps bulk fuel company, Army pipeline and terminal operating unit, or Army petroleum supply unit.

For more information concerning petroleum and pipeline terminals, see JP 4-03, Joint Bulk Petroleum and Water Doctrine, *or JP 4-01.6,* Joint Tactics, Techniques, and Procedures for Joint Logistics Over-the-Shore (JLOTS).

10. Cargo Considerations

Special services cargo consists of any cargo requiring special consideration or handling, including hazardous cargo, classified materials, or constant surveillance cargo (unclassified but highly valuable or pilferable materiel, such as weapons or medicines). HAZMAT and hazardous wastes must be declared during initial planning for control under US and international standards request messages, and must be properly prepared, marked, and certified for safety.

CHAPTER VI
DEFENSE TRANSPORTATION SYSTEM INFORMATION ENABLERS

"Perhaps no single factor has as much potential as the information explosion for changing the way in which military organizations function both during peace and in war."

Lieutenant General E. J. Rokke USAF

1. Introduction

a. The DTS is the worldwide transportation infrastructure which supports DOD and US Government (USG) agencies' common-user transportation needs across the range of military operations. It consists of those common-user military and commercial assets and systems organic to, or controlled by, the Department of Defense. The DTS is an integral part of the whole US transportation system and involves the systems, resources, procedures, relationships, and interrelationships of the Department of Defense and the federal, commercial, and non-US activities that support DOD transportation needs across the range of military operations. The system of automated tools developed to provide focused logistics and support the DTS through a capability to access and employ near real time transportation and deployment information may be described by these three functional systems:

- GCCS;
- GTN; and
- GCSS

b. These elements comprise an automated command, control, and information system that supports the family of transportation users and providers. They furnish an integrated system of ITV, information, and C2 capabilities. Commanders and their staffs utilize these automated information elements to assist in the planning and operation of terminals in support of the spectrum of military operations.

2. Global Command and Control System

GCCS is a comprehensive command, control, communications, computers, and intelligence (C4I) system designed to improve the JFC's ability to manage and execute joint operations. GCCS is the primary means of C2 for both the President and/or Secretary of Defense over all military forces and operations, and supports the exchange of information from defense agencies to combatant commanders and their components. GCCS is a joint system platform upon which the JOPES applications reside that assists the strategic planner. The transportation and logistics information resource for GCCS is GTN. Within GCCS, there are many system applications that support the President's and/or Secretary of Defense's control of military operations. The following paragraphs will discuss two of these applications in greater detail: **common operating picture (COP)** and **JOPES**. Other essential GCCS applications are listed in Figure VI-1.

a. The **COP** is an automated C4I system with interfaces to a variety of military communications and computer systems to provide dominant battlespace knowledge. COP is designed to display the joint tactical picture and provide unique tactical situation

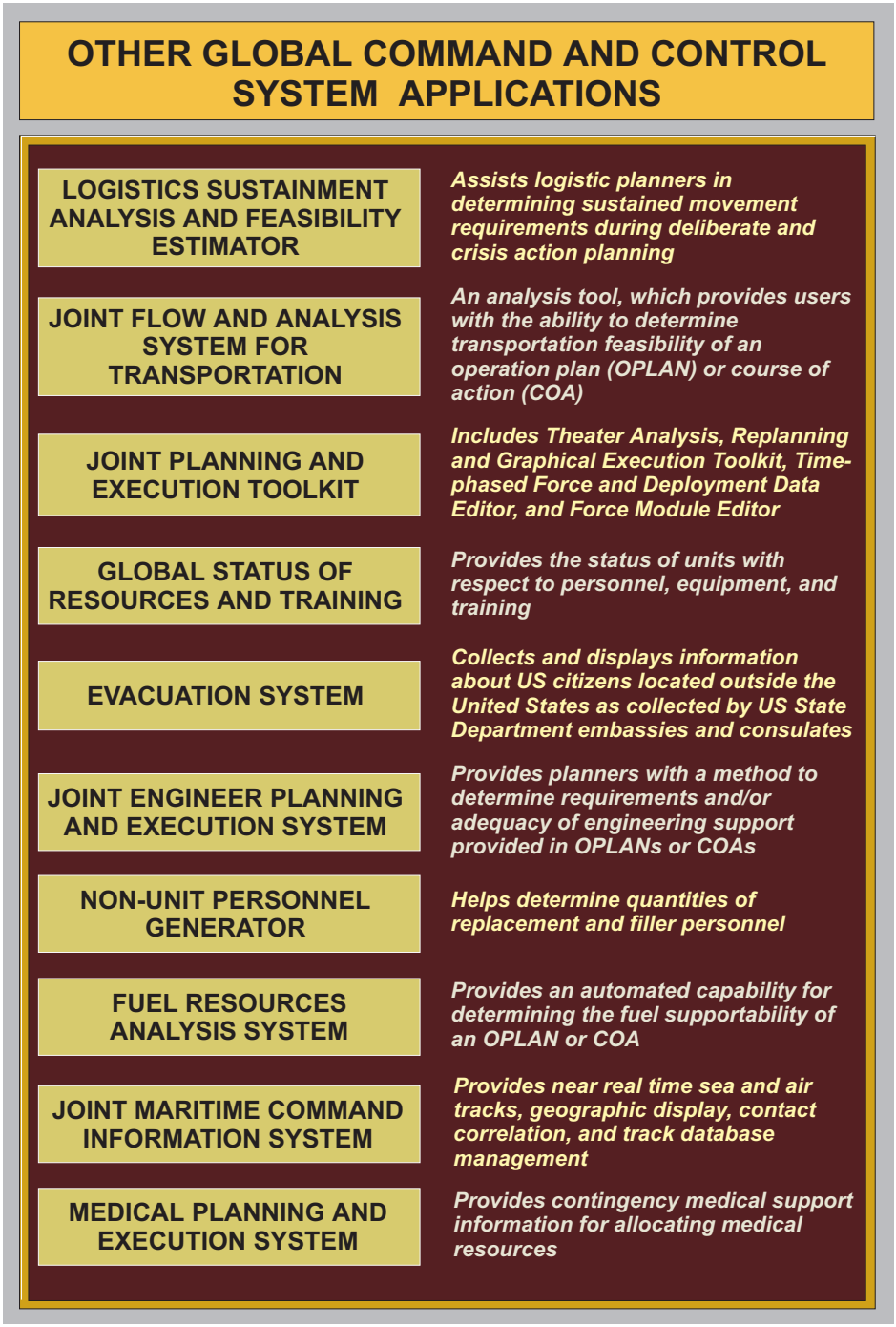


Figure VI-1. Other Global Command and Control System Applications

assessment, data fusion, and display needs of battle group and force commanders, subordinate warfare commanders, ship commanding officers, and shore-based command centers. The COP provides the warfighter with a near real time graphical

representation of the position of friendly, hostile, and unknown sea, land, and air vessels located anywhere in the world. COP is used to track not only military vessels, it is often used to track merchant ships, suspected drug trafficking vessels, commercial aircraft, and refugee camps. This makes it a very dynamic application with multiple uses.

b. **Joint Operation Planning and Execution System** is a CJCS-approved, integrated joint conventional command and control system used to plan and execute joint military operations. The system is used by both the President and Secretary of Defense, supported and supporting combatant commands, and Service headquarters. JOPES is made up of joint policies, procedures, personnel, training, and reporting structures supported by automated systems and applications. It is the single source used to plan, execute, and monitor mobilization, deployment, redeployment, and demobilization of US military forces. JOPES is important to the terminal operator in that it is the primary means for a combatant command to control force deployment flow, as it ties together force and sustainment movement requirements and carrier schedules. As the plan is executed, JOPES reflects near real time deployment flow.

3. Global Transportation Network

The **GTN** is an automated data and communication platform, a suite of information technologies that provides the centralized capability to gather and maintain timely and accurate movement data and an automated, integrated view of DTS movement data. The GTN incorporates the best methods, information, and technology available to the Department of Defense and the commercial industry to provide **ITV** information on personnel and cargo movements and transportation schedules within the DTS (see Figure VI-2). The source movement data is captured through a broad DOD network of AIS. As movement data is captured and stored, the GTN provides worldwide customers access, via the World Wide Web, to ITV to allow inquiries on in-transit unit and non-unit cargo and passengers. Requestors can query GTN using a wide variety of parameters such as requisition number, national stock number, transportation control number, or mission number. The scope of GTN, which was initially limited to the transportation systems and networks under the control of USTRANSCOM, is

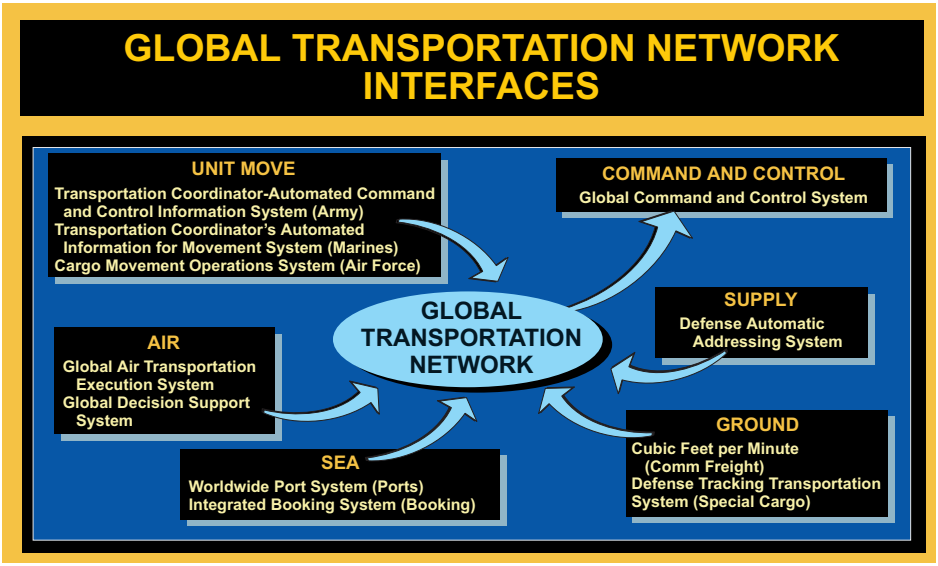


Figure VI-2. Global Transportation Network Interfaces

evolving to include systems operated by geographic combatant commanders and Services. This provides ITV from origin to final transportation activity destination during peace or war. Timely and accurate data incorporated from the following described systems is required for GTN to provide correct ITV.

a. **Supply logistic support systems** support the logistics community and terminal operators through the **Defense Automatic Addressing System (DAAS)**. DAAS is the DLA system used for tracking all DOD supply distributions from requisition through terminals to the final delivery point. It furnishes the GTN system with requisition, shipping, and receipt information. Current visibility capabilities (via GTN) include an air module providing visibility on cargo and passengers from APOE to APOD; and a sealift module providing visibility over surface cargo movements between water ports. GTN also receives a number of commercial carrier feeds across all modes. Figure VI-3 shows other applications that provide the differing modes with **movement data** information resources for GTN.

b. The Army, Marine Corps, and Air Force each utilize separate enabler systems to input movement information into GTN. The Army uses the Computerized Movement Planning and Status System (COMPASS). It satisfies Army unit movement planning requirements in support of force deployment for joint operations and helps the Transportation Coordinator's Automated Command and Control Information System (TC-ACCIS) to manage and monitor unit moves. COMPASS receives unit move data from Active and Reserve Component units and updates joint planning systems (e.g., JOPES). Transactions concerning cargo moving via surface routes go directly to the CONUS freight management application of GTN. Somewhat similar to TC-ACCIS, the TC-AIMS in use by the joint community, gives the capability to automate Service planning, organizing, coordinating, and controlling deployment, redeployment, and sustainment activities worldwide. The predominant user among the Services, the Marine Corps, uses TC-AIMS to manage and monitor its unit moves. Finally, the Air Force utilizes the CMOS for planning, documenting, and managing their inbound and outbound cargo shipments. CMOS executes transportation activities in a peacetime mode and in support of deployment and reception of military forces. CMOS is the standard automated information, execution, and reporting system for Air Force freight traffic management offices. Until the global fielding of TC-AIMS II, Services will be utilizing their respective transportation legacy systems. In support of improving the planning and execution phase of operations, TC-AIMS II will interface with the Joint Force Requirements Generator (JFRG) II. JFRG II will be the single feeder system to JOPES to provide operational TPFDD building and management functions.

4. Global Combat Support System

GCSS is the umbrella enabling system providing automation tools to empower the terminal operator with the visibility into worldwide deployment, employment, and sustainment information. GCSS captures relevant data from combat support functional areas (e.g., supply, transportation, finance, medical, personnel, and acquisition), interprets the shared data, and translates this data into decisionmaking information. Once full operational capability is reached, GCSS will integrate **JTAV** and **Global Status of Resources Training System** and be accessible along with GTN and GCCS from a single workstation. GCSS focuses on information needs associated with logistics, personnel, health affairs, acquisition, and finance. In contrast, the domain of GCCS is C4I, surveillance, and reconnaissance. Some functions such as deployment planning and

MOVEMENT INFORMATION RESOURCES FOR GLOBAL TRANSPORTATION NETWORK

The following applications provide the ground movement information:

- Military Traffic Management Command's (MTMC's) **Continental United States (CONUS) Freight Management System** automates CONUS freight movement and provides a Department of Defense (DOD)-wide centralized automated information system for the procurement of commercial freight transportation services from "installation to port" in peace and war. Emphasis is on service, economy, and readiness. The CONUS Freight Management System interfaces with multiple DOD transportation, logistics, supply, and financial systems. The interface provides capabilities including cost, carrier selection, movement documentation, prepayment audits, and visibility for shipments of all sizes and weight.
- The Naval Supply System Command, Navy Materiel Transportation Office, and Naval Ammunition Logistics Center operates the **Defense Transportation Tracking System (DTTS)**. DTTS is the DOD unclassified system for nea real time tracking of explosives and classes of supply I-IV, moving via truck or train within CONUS. DTTS receives location reports from trucks and trains using commercial satellite-based tracking systems and provides increased surveillance and security while in-transit from the CONUS consignor to the CONUS consignee.
- **Transportation Coordinator's Automated Information for Movement System II** is an emerging DOD system for supporting mobility and transportation of DOD passengers and cargo in peace and war. It is designed to enhance the efficiency and effectiveness of the Defense Transportation System (DTS); support planning for deploying and redeploying combat and support forces; enhance coordination, control, and management of force deployments, including in-transit visibility (ITV) and total asset visibility; provide for reception, staging, onward movement, and integration of deploying forces into the theater; and be Service-configurable to meet the needs of different organizational levels and business processes.
- **Regional ITV (RITV) Servers** are principal components of a radio frequency identification (RFID) network. When RFID tag databases are populated at the origin, supply and transportation or unit movement data are forwarded to an RITV server. The server creates a file for the tag. Starting at the origin and ending at the destination, nodal RFID interrogation systems remotely report the presence of tagged shipments to the RITV server. Logistics operators and managers can access historical nodal ITV data and the complete tag database. RITV servers also transmit the data to Global Transportation Network (GTN) as a source of ITV for all DOD users.

The following applications provide sea movement information:

- **Worldwide Port System (WPS)** is a MTMC system that provides automated support at both CONUS and outside the continental United States military water ports. It provides necessary cargo documentation, accountability, and management reporting for these ports. WPS provides GTN with specific information on cargo at a port awaiting sea shipment, cargo loaded on and unloaded from ships, ship sailing, and cargo that has departed from a port. The GTN and WPS interface gives GTN the capability to provide actual arrival, departure, and cargo manifest information for ocean surface vessels.
- **Integrated Booking System (IBS)** is an MTMC system that provides automated support for the booking of export ocean cargo for shippers throughout the Department of Defense. It interfaces with commercial carriers to provide cargo and ship scheduled data to MTMC. IBS passes information to GTN on cargo booked for ocean shipment and also provides schedules of ships that have been identified to move military cargo (except for unit moves).
- **Integrated Command, Control, and Communications System** passes scheduled and actual departure and arrival information, itineraries, and diversions and delays covering sea assets and traffic via GTN to Military Sealift Command.

Figure VI-3. Movement Information Resources for Global Transportation Network

MOVEMENT INFORMATION RESOURCES FOR GLOBAL TRANSPORTATION NETWORK (cont'd)

The following applications provide air movement information:

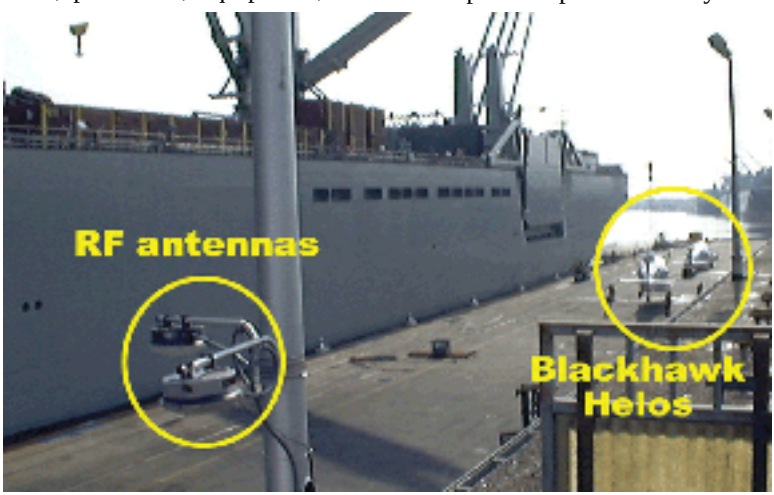
- **Global Decision Support System (GDSS)** is an Air Mobility Command system that provides specific information on aircraft asset status, airlift schedules, and actual airlift movement. GDSS furnishes the GTN system with itinerary progress of military air carriers and selected commercial flights. The GDSS and GTN interface gives the GTN system the capability to access actual GDSS arrival and departure, scheduling, and aircraft status information.
- **Global Air Transportation Execution System (GATES)** is the designated DOD transportation aerial port management automated information system supporting the Secretary of Defense's migration strategy. GATES provides commanders at all levels with near real time visibility of cargo and personnel moving through the air portion of the DTS through a direct interface with the GTN.

Figure VI-3. Movement Information Resources for Global Transportation Network (cont'd)

execution are applicable to and accessible by both.

a. JTAV is one of the first applications to be made available via GCSS. With links to GTN that provide ITV, JTAV will meet warfighters' data needs. Access to JTAV is web-based and access requires a login identification and a password.

- JTAV is the capability that provides combatant commands, the Military Services, and DOD components with timely and accurate information on the location, movement, status, and identity of units, personnel, equipment, and supplies. It also includes the capability to act upon that information to improve overall performance of DOD logistic practices. JTAV accesses data from national systems such as GTN, the Logistics Information Processing System, DAAS, and national inventory control point AIS. JTAV also facilitates the ability to use the information to improve the overall performance of DOD logistics practices.
- JTAV includes in-process, in-storage, and in-transit business processes. In-process assets are items that are either being repaired or procured. They include items



JTAV is the foundation upon which DOD-wide asset visibility and accessibility is based.

that are in repair at depot-level repair organizations, both organic and commercial; at intermediate-level repair organizations; or on order from DOD vendors. These assets are categorized as either "due in from maintenance" or "due in from procurement" in DOD inventory management systems.

- JTAV is the foundation upon which DOD-wide asset visibility and accessibility is based. The end state is a seamless information capability that replaces the traditional division of the logistic pipeline into wholesale, retail, and in-theater.

b. While JTAV includes in-process, in-storage, and in-transit functions, **ITV** specifically refers to the ability to track the identity, status, and location of DOD units and non-unit cargo, passengers, and medical patients from origin to the destination during peace, contingencies, and war. USTRANSCOM developed GTN to provide an AIS tool for C2 and business operations of the DTS. ITV is a by-product of these operations, and GTN provides ITV for all DOD customers. GTN gathers data from a number of DOD activities, Services, agencies, and commercial transportation systems to satisfy USTRANSCOM C2 needs and DOD ITV requirements. JTAV and ITV bring into focus the real time logistic picture to aid the terminal operators in managing the logistic picture to the satisfaction of the supported combatant commander.

c. The GCSS **COP** is a key tool for commanders in planning and conducting joint operations. The value of the COP is the display of detailed battlespace information in a graphical manner that other operational reports are unable to display. The GCSS strategy includes developing the combat support component of the COP that incorporates data from the JOPES, GTN, JTAV, and other systems. GCSS COP will be a primary logistic interface with operational systems. JTAV support to COP is key to the full integration of logistic information into the operational picture.

d. The end-state of the GCCS, GTN, and GCSS systems is a secure, intranet environment allowing terminal operators access to shared data and applications, regardless of location, supported by a robust information infrastructure to provide focused logistics.

MOVEMENT CONTROL IN KOREA

Repeatedly (recalling the experiences of World War II), supplies were landed in such an excess of tonnage over the capabilities of the local logistic organization to cope with it, that pretty soon many things could not be found at all. The next thing, the Zone of the Interior had to rush out a special shipload of something, which was right there in the theater — and always at a time when ships were worth their weight in gold. Soon the war moved on and supplies were left behind, which are still being gathered up and sorted out to this day [1953]. Two years after the Korean War started, I visited Pusan. They had been working hard, and by that time they had sorted out probably 75 percent of the supply tonnage there. Twenty-five percent of the tonnage on hand was not yet on stock record and locator cards; they did not know what it was or where it was.

SOURCE: Palmer, W.B.,
***The Quartermaster Review*, July-August 1953**

5. Automated Identification Technology

AIT encompasses a variety of data storage media that carry asset identification information. The information is transferred electronically to and from AIS that support DOD asset visibility and logistic operations. AIT improves logistic business processes and enhances warfighting capability.

6. Summary

Communication networks overlay and link every facet of military operations affecting the ability or inability of Armed Forces of the United States to communicate and influence the outcome of an armed conflict. The robustness of the DTS network will influence the overall operational effectiveness of distribution and the quality and timeliness of support. The systems that support the DTS network are GCSS, GTN, and GCCS. These systems are pillars of the C4I architecture and critical to focused logistics. Through their applications they provide a fused, real time, multidimensional view of the battlespace as well as the ability to coordinate laterally and throughout the chain of command, enabling time definite delivery to the joint force through the system of terminals.

APPENDIX A
PLANNING CHECKLISTS

Annex	A	Transportation Planning Checklist
	B	Water Terminal Planning Considerations
	C	Air Terminal Planning Considerations
	D	Land Terminal Planning Considerations
	E	JLOTS Terminal Planning Considerations
	F	Force Protection Requirements
	G	Environmental Planning Considerations

Intentionally Blank

ANNEX A TO APPENDIX A
TRANSPORTATION PLANNING CHECKLIST

1. General

a. The following checklist covers key considerations for commanders to use when planning and executing transportation operations. Inherent to the list is the abbreviated process that permits the DTS to function effectively during periods of national crisis or war. This checklist will assist commanders and their staff transportation planners and operators, at all levels of military operations, in establishing an effective transportation system to support committed US forces.

b. Section I highlights planning and execution considerations for senior transportation planners responsible for effectively mobilizing and deploying the force to an operational area at the strategic level of war. Section II lists operational and tactical levels of war transportation considerations that must be addressed by transportation planners responsible for the reception, onward movement, and sustainment of the deploying force. Section III lists key considerations that should be addressed during the development and execution of a theater movement program.

SECTION I. STRATEGIC TRANSPORTATION

2. General

a. What is the combatant command's and/or JTF commander's concept of operation and the J-4's concept of support?

- Are these concepts transportation supportable?
- Is there sufficient transportation capability included in the proposed force structure or available through other means?
- What means will be used to resolve shortfalls or prioritize use?

b. What are the common-user transportation requirements?

c. Will the combatant command establish a JMC?

- What is the JMC's scope of authority?
- Which Service components will have to provide staff augmentation or liaison to the JMC?

d. Is there multinational participation in the operation?

- Has the United States been assigned lead nation logistic responsibilities?
- Will US forces provide common-user transportation support to other national forces?
- What is the scope of support?
- What are the control mechanisms?
- Who coordinates support and priorities?
- Is multinational movement control required?

e. Is there a transportation supportable TPFDD? What is the allocation of strategic lift in terms of quantity, type, and frequency?

f. Will the capacities of theater transportation meet or exceed the capacities of strategic lift? If not, how will backlogs be handled?

g. How and when are transportation units phased?

- Does this phasing support theater transportation requirement?
- Will sufficient transportation forces be introduced early enough to open ports and provide onward movement based on the programmed arrival of forces?

h. If there are multinational forces, is there a combined TPFDD? What control mechanisms will de-conflict force arrivals at the PODs?

i. Have the capabilities of all ports and LOCs been analyzed?

- What are the shortfalls?
- What can be done to increase throughput?

j. What unified commands will provide support (forces and capabilities)? What coordinating mechanisms need to be established for this support?

k. Who will control each LOC? Have responsibilities been assigned?

l. How will ITV be maintained?

- What systems are available?
- What additional support is required?

m. How will sustainment flow? What control mechanisms are in place to ensure that the highest priority cargo moves first if the system becomes saturated?

n. Have port operators been identified? Have they been provided solid workload estimates from which to plan operating capability?

o. Will land-based or afloat pre-positioned materiel be used? Have pre-positioning discharge and issue operations been incorporated into the JRSOI plan?

p. What security and engineering requirements exist for transportation nodes?

- Are improvements required?
- Have they been incorporated in staff planning?
- Has responsibility been assigned?

q. What are the funding guidelines? Is local contracting required?

SECTION II. OPERATIONAL AND TACTICAL TRANSPORTATION

3. General

a. Is the combatant command's theater campaign plan and/or OPLAN provided to assist the implementers?

b. Are the necessary geospatial products (e.g., maps and charts) for implementing the plan available?

c. Is there a concise combatant command concept of support provided?

d. Does the plan describe how transportation support is to be provided?

e. Have the terrain and the threat been analyzed to determine the impact on transportation support?

f. What are the facility requirements to support the transportation system?

- Have these requirements been incorporated in engineer plans?

- Can any of the facility requirements be satisfied by HN facilities?

g. Is site preparation required?

h. Is there a combined TPFDD provided?

- Is it transportation supportable?

- Has it been properly analyzed to determine time phasing for introduction of transportation elements?

i. Have HNS transportation availability and risk been considered?

j. Who is the contracting authority in theater?

k. Will units and sustainment flow through staging areas?

- Where are they?

- Who operates and supports them?

l. Is there a requirement for area-oriented depots to arrange for special assignment airlift mission to expedite cargo distribution to the AO?

m. Are the transportation support systems for direct support system and air LOC described?

n. Is coastal LOC required (freight ships, landing craft, lighterage)?

o. Are there coastal restrictions?

p. Is a JLOTS operation required?

q. Have MHE and/or CHE requirements been addressed?

r. Are in-country highway, rail, air, and IWW mode requirements addressed?

s. What ports are available?

- What is access to or from the ports?

- What special port clearance requirements apply?

t. Is transportation movement priority provided?

u. What is the weather impact on ports, airfields, and highway nets?

v. What is the availability of DIA or MTMCTEA data or analysis regarding the country or area transportation infrastructure?

w. What are the transportation funding arrangements?

x. Are transportation account code requirements specified?

y. Are the SPOD, SPOE, APOD, and APOE specified?

z. Has the use of foreign-flagged sea or airlift been addressed?

aa. Is an intratheater, intertheater, and in country movement system for personnel and cargo specified?

bb. Are procedures for shipping supplies and equipment that arrive at the home station after units have deployed addressed?

cc. Have medical evacuation requirements been included in the plan?

dd. Has a nuclear, biological, and chemical (NBC) defense plan been prepared?

ee. Is refrigerated transportation required?

ff. What support do the HN, allies, or other Services provide?

gg. Is pipeline capability present?

- How much?
- Who is the operator?

hh. Are retrograde procedures spelled out for excess and unserviceable items?

ii. Are there provisions in the plan for maneuver and/or war damage resulting from transportation operations?

jj. Are special USDA and US Public Health Service cleaning requirements for retrograde equipment identified?

kk. What are diplomatic and technical clearance requirements for movement through other countries?

SECTION III. THEATER MOVEMENT PROGRAM

4. The Movement Program

a. Has the distribution pattern been analyzed?

- What is the commander's concept of operation?
- How many incoming units?
- What types of incoming units?
- What is the location of in-place units?
- What will be the location of arriving units?
- When will incoming units arrive?
- What is the throughput transportation requirement?
- What is the interzonal transportation requirement?

b. Has the transportation network been developed?

- What intelligence information is available?
- What engineer data is available regarding the transportation network?
- Has mission, enemy, terrain, troops, and time been evaluated?
- Have the locations of mode operators been assigned?
- Have the locations of terminals been assigned?
- Has the receiving, loading, and handling capabilities of shippers and receivers been determined?

c. Have the requirements for the transportation and/or distribution plan been determined?

- Have shipping forecasts been analyzed?
- Has the supply class, estimated weight, cube, and the RDD been analyzed?
- Is special handling required?
- Have personnel movement requirements (e.g., troops, civilians, patients, and EPW) been assessed?
- Are there any major subordinate command transportation requirements exceeding organic capability?

d. Have the mode operator capabilities been determined?

- What number, types, and equipment are available?

- Are HN transportation assets available?
- Are third country and US-contracted transportation assets available?
- What reception, MHE and/or CHE, and in-transit storage capabilities are available?
- Is there an intratheater US airlift and/or airdrop capability?

5. Reception and Onward Movement

a. What elements are being airlifted?

b. What elements are being sealifted?

c. What is the time-phasing of initial transportation capability into the area of operation (e.g., port opening packages and MCTs)?

d. How much transportation support is provided by the JTF?

e. Does the joint force require common-user transportation support from a single Service?

f. Are movements of personnel, equipment, and supplies included? Have adequate provisions been made for force protection during movements?

g. What is the concept of operation for petroleum support of transportation units?

h. Have arrangements been made for the transportation of ammunition within the theater?

i. What is the distribution requirement?

- Are unit and support locations identified?
- Has a distribution pattern been established?
- Are transportation units programmed to arrive at locations that support the distribution pattern?
- Are there tonnage estimates?
- Have these been balanced against unit requirements?
- Is there a plan to distribute pre-positioned materiel?

6. Movement Control

a. What is the combatant command's and/or Service component commander's concept for movement control?

b. When do movement control elements arrive?

c. Has an individual component commander been given responsibility for theater movement control? Has it been coordinated with other component commanders?

d. Has each component been given the responsibility for its own movement control?

e. Have joint-use transportation requirements been established?

f. Has a JTB been established?

g. Has a JMC been established to coordinate validation of transportation requests and ensure that theater common-user transportation resources are employed with maximum effectiveness?

h. What are the theater common-user transportation requirements and capabilities?

i. What HN transportation facilities and equipment are available?

j. Has JMC communications with JOPES been established to monitor and effect changes to the deployment of forces and supplies?

k. What automated transportation systems are available to support TAV and ITV?

- Have ITV requirements been defined for all modes and/or nodes?
- What fixed and/or deployable AIS are available?
- What AIT devices are available?
- What additional communications infrastructure is required to support AIS and/or AIT requirements?
- Which organizations and/or units are responsible for final manifesting and data capture?
- Are deploying units aware of requirement to provide ITV data to the appropriate organizations?
- How will data be exchanged? (Direct system interface, diskette transfer, other?)

l. Has a JMC and/or TAMCA been established?

m. Is there an MCC?

- How many movement control organizations are assigned and where?
- How many MCTs are assigned and where?
- Has theater airlift been allocated for logistic purposes?

7. Terminal Operations (General)

a. What terminal facilities are available, including ports, airfields, rail, and IWW? Have appropriate surveys been conducted?

b. For whom do terminal operators work?

c. Are tonnage forecasts available?

d. What type and number of terminal transfer units are required (rail, highway, port, and/or airfield)?

- What transportation units are required to support the operation?
- Who will operate each terminal?

e. Can ammunition be stored at each terminal? How much?

f. Who will provide air traffic control and/or harbormaster duties at each POD?

g. Are there HAZMAT restrictions at any terminal?

h. What are the local customs requirements?

i. Is sufficient MHE and/or CHE available?

j. Is sufficient blocking, bracing, and packing material available?

k. Are sufficient facilities available for source mail?

l. Has an NBC defense plan been prepared?

8. Fixed Port Terminal Operations

a. What fixed ports are available to support military marine terminal operations?

b. Is a port opening package required? What assets are required?

c. What is the draft of the port?

d. What type and quantities of MHE and/or CHE are available for use in support of military marine terminal operations?

e. How many berths and anchorages are available for use in support of military marine terminal operations?

f. What is the enemy's capability to interdict the ports?

g. What port security measures are currently in use?

h. What is the port's capability to handle containerized cargo and RO/RO cargo?

i. What routes access the ports? Is there any special port clearance requirements?

j. What IWWs access the port?

k. What is the current throughput capability of the port?

l. What are the characteristics and capabilities of the port's warehouse facilities and storage areas? What effect does weather and sea-states have on port operations?

m. What contract civilian and/or HN marine terminal personnel and equipment assets are available to support military terminal operations?

n. What is the present level of use of the ports?

o. What capability do government and local civilian contractors have to repair damage to port facilities?

p. What is the ammunition handling capability?

q. What is the heavy lift capability?

9. JLOTS Terminal Operations

a. What shorelines are conducive for JLOTS operations?

b. What types of roads access the shorelines?

c. What types of railroads access the shorelines?

d. What civilian contract or HN personnel and equipment assets are available to assist in JLOTS operations?

e. What are the predominant weather and sea-states conditions in the AO?

f. How much engineering support will be required to properly execute a JLOTS?

g. What type of JLOTS equipment will be required (e.g., landing craft, cranes, barges, and so on)?

h. What is the environmental impact, especially if "wet" JLOTS (POL) operations are required?

10. Air Terminal Operations

a. What airfields can be used? What are their capabilities?

b. Have A/DACG and/or air terminal movement control team requirements been satisfied?

c. Are pre-rigged projects available for on-call delivery?

- Are call forward procedures specified?

- Is airdrop resupply capability provided commensurate with the expected requirement?

d. What are the personnel and cargo reception capabilities of the airfield?

e. What is the current use of the airfield?

f. What are the characteristics and capabilities of the roads that access the airfield?

g. What contract civilian and HN personnel and equipment assets are available to assist in A/DACG operations?

h. What airfield facilities are available for military use during operations?

i. What impact does weather have on airfield operations?

j. What engineer assets are available to upgrade and maintain airfields?

k. Have AMC channel airlift requirements been specified?

l. Has support been planned for Air Force mobile aeromedical staging facilities?

m. Has a coordinating HQ been designated for all logistic airlift support?

11. Container Terminal Operations

a. What is the container policy?

- How far forward are the containers going to go?

- Is there CHE at all destinations?

- What is the maximum container length that can be supported at final destination?

b. What civilian contract or HN personnel and equipment assets are available to assist intermodal operations?

c. What is the capability of units and ports to handle container shipments?

d. Can containers be used with carrier delivery direct to the supply support activity?

e. Will other than 20-foot and 40-foot containers be used?

12. Highway

a. What truck units will support the AO?

b. From where do they plan to support?

c. What are their capabilities?

d. Have requirements been balanced against their capabilities?

e. Are truck unit types matched against terrain capabilities?

f. Is the highway net described? What are its capabilities and limitations?

g. What routes are available to support military operations?

h. What are the characteristics, capabilities, and capacities of the routes available to support military operations?

i. What are the convoy restrictions? Where are convoy support centers established and who is operating them?

j. What are the dimensions of tunnels along the routes?

k. What are the dimensions and classifications of bridges along the routes?

l. What capability does the government have to repair damaged segments of routes?

m. What engineer assets are available to maintain or upgrade routes?

n. What NBC reconnaissance assets are available to detect and mark contaminated routes?

o. What segments of the routes does the civilian populace heavily use?

p. What are the most likely routes fleeing refugees might use?

q. What is the best source for additional information on the routes?

r. What is the enemy's capability to interdict road movement operations?

s. What force protection arrangements have been made (e.g., MP escorts and air support)?

13. Rail

a. Is there a rail system available?

b. What rail lines are available to support military operations?

- Who coordinates?
- Who guards?
- Who pays?

c. What is the condition of the rail lines?

d. What is the gauge of the tracks?

e. What effect does the weather have on rail operations?

f. What rail assets are available to support military operations?

g. Are loading ramps available at rail yards and terminals?

h. What is the location and lifting capacity of railway cranes in the AO?

i. What is the enemy's ability to interdict the rail lines?

j. What capabilities do the government or local civilian contractors have to repair damaged track, bridges, and tunnels?

k. What are the characteristics and capabilities of the rail terminals and marshalling yard?

l. What is the present level of use of the rail lines?

m. What is the description (model number, wheel arrangement, horsepower, weight, tractive effort, and type coupler) of typical line-haul locomotives and switch engines currently in service in the AO?

n. What are the capacities dimensions (length), and age of typical rolling stock currently in service in the AO?

o. Is a track profile of the main line indicating the location, percent, and length of ruling grade available? Is a plan showing location and length of minimum radius curves together with any sections of multiple main line tracks available?

p. What are the location and length of passing tracks on the main line?

q. What is the current level of traffic (trains per day) using the main line in the AO?

r. What are the location, type, and capacity of rail yards in the AO?

s. What are the number and length of track in each yard?

t. What are the locations, description (type, construction, length, clearances, and Cooper rating), and condition of rail bridges and tunnels on the main line?

u. What are the location, description, and condition of station facilities supporting the operation of the main line?

v. What are the location, storage capacity, and condition of locomotive fueling facilities in the AO?

w. What are the location, capacity, and condition of engine houses and car repair shop facilities in the AO?

x. What are the location and quality of water supply on the main line?

y. What communications and signals are in use for train operations?

z. What is the weight (pounds per yard) of main line rail?

aa. What is the predominant type of cross tie used in the AO?

bb. What are the location and availability of spare parts for motive power and rolling stock?

cc. What type of wheel bearing is used on rolling stock?

14. Inland Waterways

a. What IWWs are available?

b. What are the capabilities and limitations of the IWWs?

c. What inland terminals are along the IWWs?

d. What are the characteristics and capabilities of the inland terminals?

e. What is the present use of the IWWs?

f. What is the enemy's capability to interdict the IWWs?

g. What effect does the weather have on the IWWs?

h. How accessible are the IWWs to roads and rail lines?

i. What intercoastal shipping assets have been identified to support shipping bulk fuels, ammunition, and dry cargo? Are they available?

j. What intercoastal shipping routes are currently in use?

k. What is the enemy's ability to interdict intercoastal shipping?

ANNEX B TO APPENDIX A
WATER TERMINAL PLANNING CONSIDERATIONS

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

1. 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/or longitude and latitude.

d. Military water terminal capacity and method of estimation.

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

f. Culturally sensitive sites.

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

h. Nearest US consul.

i. Port regulations.

j. Current tariffs.

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

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

m. Location of nearest towns, airports, and military installations.

n. Maintenance of navigational aids.

2. 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).

o. Description of approach to harbor.

3. Weather and Hydrography

Weather and hydrographic 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 (transferring materiel onto vehicles or railcars).

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.

4. 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 near-shore obstacles, what they are, and their distance and true bearing from the port.

5. Wharves

Essential information on wharves includes the following.

a. Types of quays and piers (e.g., wooden and 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, and 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.

6. 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.
- Maintenance and safety certification(s).

7. Materials Handling Equipment

Essential information on MHE includes the following.

a. Number, location, and type of MHE and CHE.

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

- Type of power.
- Lift capability.
- Dimensions.
- Make, model, and condition.
- Age and serviceability and maintenance record.

- Compatibility with military equipment lifting or handling points.
- Certification and characteristics for handling explosive and hazardous cargo.

8. Stevedores

Essential information on stevedores includes the following.

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. Special handling certifications (ammo and HAZMAT).

h. HNS.

i. Union considerations.

9. Watercraft

Essential information on watercraft includes the following.

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

b. Characteristics for each craft as follows.

- Size and capacity.
- Number of crew.
- Berthing spaces.
- Types of engines.
- Number of engines and number of propellers.
- Numbers and types 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 and 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.

10. Storage Facilities

Essential information on storage facilities includes the following.

a. HAZMAT and hazardous waste facilities.

b. Number and location of storage facilities.

c. Characteristics of each storage facility as follows.

- CHE and MHE accessibility.
- 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.
- HAZMAT facilities.

11. 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.

12. 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, sizes, and use of other buildings in the terminal.

e. Method for obtaining potable 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.

13. Lines of Communications Availability

Essential information on LOCs includes the following.

a. Primary and secondary roads.

- Type of primary roads (e.g., concrete, and asphalt).
- Primary and secondary roads that allow north-south and east-west movement.

- Capacity of intra-terminal 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 and the availability of alternate routes if these are blocked.
- 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, boxcars, and tankers).
- Ownership of rail network (private or government).
- Address and telephone number of rail network authorities.

14. Threat

Essential information on threat includes the following.

a. Enemy threat and capability in the operational area (e.g., air, naval, ground, or NBC, and special operations forces).

b. Description of local overt or covert organizations from which hostile action can be expected. Also, any anticipated terrorist activity from current intelligence or human intelligence sources.

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

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

e. Physical security characteristics of port area.

15. Community Information

Community information should include the following.

a. General

- HNS.
- 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. Availability of laborers. 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. Solid Waste, Sewage, and Industrial Waste Services

- Size, location, and condition of solid waste landfills.
- Availability and condition of solid waste handling equipment.
- Size, location, and condition of sewerage and sewage treatment systems.

f. 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 (e.g., immunization and inoculation prior to personnel deployment).
- Overall health and sanitary standards of the town and surrounding area.
- Method of reimbursement for health service support.

- Health services sources of support if HNS is not available.

g. Electricity

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

h. POL

- Condition of POL distribution system.
- 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).

i. Communications

- Address of telephone or telex office.
- Description of domestic telephone service in the area (e.g., type, condition, and number of lines, switching equipment, and use of landlines or microwave).
- Description of required US Military and USG communications services.

Refer to Appendix G, "J-6, Communication" in JP 5-00.2, Joint Task Force Planning Guidance and Procedures, *for a comprehensive description and checklists on JTF communications planning.*

16. Marshalling Yard Provisions and Considerations

Marshalling yard provisions and considerations include the following.

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. Traffic circulation plan showing movements 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 degraded port or bare beach JLOTS 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 storing 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.

17. Operational Planning Determinations for Terminal Units

Operational planning determinations for terminal units are important because they will help resolve the size and other special considerations of the force necessary. These considerations include the following.

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).

k. Arrangement for ammunition handling and storage.

Intentionally Blank

ANNEX C TO APPENDIX A
AIR TERMINAL PLANNING CONSIDERATIONS

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

1. General Airports Data

General information on airports includes the following.

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

b. Grid coordinates and/or longitude and latitude.

c. Military air terminal capacity and method of estimation.

d. Dangerous or endangered land animals in the area.

e. Culturally sensitive sites.

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

g. Nearest US consul.

h. Airport regulations.

i. Current tariffs.

j. Frequencies, channels, and call signs of the airfield and terminal control agencies.

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

l. Location of nearest towns, airports, and military installations.

m. Maintenance of navigational aids.

2. Specific Airport Data

Specific airport data includes the following.

a. Types of airports.

b. Lengths, widths, and weight bearing capacity of runways, taxiways, and parking ramps.

c. Location and description of navigational aids.

d. Location and height of hazards to navigation.

e. Description of terrain in the area.

f. Crash and fire rescue capability.

3. Weather and Geography

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

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

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

g. Effects of weather on the terrain.

h. Effects of weather on logistic operations (off-loading materiel).

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

j. Daylight charts.

4. Materials Handling Equipment

Essential information on MHE includes the following.

a. Number, location, and type of MHE.

b. Characteristics of MHE as follows.

- 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.

5. Terminal Workforce

Essential information on terminal workforce includes the following.

a. Number and size of gangs.

b. Efficiency of each gang.

c. Working hours of gangs.

d. Availability and condition of 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. Special handling certifications (ammo and HAZMAT).

h. HNS.

6. Storage Facilities

Essential information on storage facilities includes the following.

a. Number and location of storage facilities.

b. Characteristics of each storage facility as follows.

- 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.
- HAZMAT and hazardous waste facilities.

7. 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.

8. Aircraft Repair Facilities

Essential information on aircraft repair facilities includes the following.

a. Number and type of hangars and repair facilities.

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

c. Location, sizes, and use of other buildings in the terminal.

d. Method for obtaining potable water in the terminal.

e. Method for obtaining fuel, lube, and diesel oil in the terminal.

f. Medical personnel in terminal.

g. Electrical generating facilities or provisions for obtaining electricity from an external source.

9. Lines of Communications Availability

Essential information on LOCs includes the following.

a. Primary and secondary roads

- Type of primary roads (e.g., concrete, and asphalt).
- Primary and secondary roads that allow north-south and east-west movement.
- Capacity of intra-terminal 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 and plans for alternative routes if necessary.
- 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.

10. Threat

Essential information on threat includes the following.

a. Enemy threat and capability in the operational area (e.g., air, naval, ground, or NBC).

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 the airport operations, other primary targets in the area (e.g., military bases, key industrial activities, political and/or cultural centers, satellite communications facilities).

e. Physical security characteristics of airport area.

11. 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. Availability of laborers. 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 requiring special treatment before use, if any.

e. Solid Waste, Sewage, and Industrial Waste Services

- Size, location, and condition of solid waste landfills.
- Availability and condition of solid waste handling equipment.
- Size, location, and condition of sewerage and sewage treatment systems.

f. 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 services sources of support if HNS is not available.

g. 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.

h. 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).

i. Communications

- Address of telephone or telex office.
- Description of domestic telephone service in the area (e.g., type, condition, and number of lines, switching equipment, and use of landlines or microwave).
- Description of required US military and USG communications services.

Refer to Appendix G, "J-6, Communication" in JP 5-00.2, Joint Task Force Planning Guidance and Procedures, *for a comprehensive description and checklists on JTF communications planning.*

12. Marshalling Yard Provisions and Considerations

A marshalling yard is a central control and inspection point with multiple lanes for cargo and containers entering or exiting the facility. Considerations of a marshalling yard include the following.

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

b. Traffic circulation plan showing movements flow into, through, and out of the marshalling yard.

c. 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).

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

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

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

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

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

i. Covered facilities for stuffing and stripping containers and repackaging cargo.

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

k. Minor repair of damaged containers.

l. Equipment parking.

m. Unit maintenance of equipment.

n. Messing and comfort facilities.

13. Operational Planning Determinations for Terminal Units

Operational planning determinations for terminal units are important because they will help resolve the size and other special considerations of the force necessary. These considerations include the following.

a. Point of discharge.

b. Airport approach services.

c. Types of terminal units required.

d. Aircraft moving vehicle requirements (AMC 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.

ANNEX D TO APPENDIX A
LAND TERMINAL PLANNING CONSIDERATIONS

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

1. General Data

General information on land terminals includes the following.

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

b. Grid coordinates and/or longitude and latitude.

c. Terminal capacity and method of estimation.

d. Dangerous or endangered land animals in the area.

e. Culturally sensitive sites.

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

g. Nearest US consul.

h. Current tariffs.

i. Phone numbers of the terminal control agencies.

j. Complete description of the terrain within 25 miles of the terminal.

k. Location of nearest towns, airports, seaports, and military installations.

2. Specific Terminal Data

Specific terminal data includes the following.

a. Types of terminals (truck, rail, and combi).

b. Lengths and weight bearing capacity of roadways and parking ramps.

c. Description of terrain in the area.

3. Weather and Geography

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

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

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

g. Effects of weather on the terrain.

h. Effects of weather on logistic operations (off-loading materiels).

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

4. Cargo Handling Equipment

Essential information on cargo handling equipment includes the following.

a. Number, location, and type of CHE.

b. Characteristics of CHE:

- 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.

5. Terminal Workforce

Essential information on terminal workforce includes the following.

a. Number and size of gangs.

b. Efficiency of each gang.

c. Working hours of gangs.

d. Availability and condition of 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. Special handling certifications (ammo and HAZMAT)

h. HNS.

6. Storage Facilities

Essential information on storage facilities includes the following.

a. Number and location of storage facilities.

b. Characteristics of each storage facility as follows.

- 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.
- HAZMAT and hazardous waste facilities.

7. 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.

8. Vehicle Repair Facilities

Essential information on repair facilities includes the following.

a. Number and type of bays and repair facilities.

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

c. Location, sizes, and use of other buildings in the terminal.

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

e. Method for obtaining fuel, lube, and diesel oil in the terminal.

f. Medical personnel in terminal.

g. Electrical generating facilities or provisions for obtaining electricity from an external source.

9. Lines of Communications Availability

Essential information on LOCs 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 intra terminal 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 and the availability of alternate routes if necessary.
- 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., steam or diesel locomotives, flatcars, and boxcars).
- Ownership of rail network (private or government).
- Address and telephone number of rail network authorities.

10. Threat

Essential information on threat includes the following.

a. Enemy threat and capability in the operational area (e.g., air, naval, ground, or NBC).

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 terminal operations, other primary targets in the area (e.g., military bases, key industrial activities, political and/or cultural centers, and SATCOM facilities).

e. Physical security characteristics of the terminal area.

11. 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. Availability of laborers and/or services. 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 requiring special treatment before use, if any.

e. Solid Waste, Sewage, and Industrial Waste Services

- Size, location, and condition of solid waste landfills.
- Availability and condition of solid waste handling equipment.
- Size, location, and condition of sewerage and sewage treatment systems.

f. 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 services sources of support if HNS is not available.

g. 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.

h. 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).

i. Communications

- Address of telephone or telex office.
- Description of domestic telephone service in the area (e.g., type, condition, and number of lines, switching equipment, and use of landlines or microwave).
- Description of required US military and USG communications services.

Refer to Appendix G, "J-6, Communication" in JP 5-00.2, Joint Task Force Planning Guidance and Procedures, *for a comprehensive description and checklists on JTF communications planning.*

12. Marshalling Yard Provisions and Considerations

A marshalling yard is a central control and inspection point with multiple lanes for cargo and containers entering or exiting the facility. Considerations of a marshalling yard include the following.

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

b. Traffic circulation plan showing movements flow into, through, and out of the marshalling yard.

c. 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).

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

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

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

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

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

i. Covered facilities for stuffing and stripping containers and repackaging cargo.

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

k. Minor repair of damaged containers.

l. Equipment parking.

m. Unit maintenance of equipment.

n. Messing and comfort facilities.

13. Operational Planning Determinations for Terminal Units

Operational planning determinations for terminal units are important because they will help resolve the size and other special considerations of the force necessary. These considerations include the following.

a. Point of discharge.

b. Types of terminal units required.

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

d. Arrangements for terminal clearance, including transportation.

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

f. Security and safety requirements.

14. Inland Waterways

IWWs, where available, are important links in the terminal transportation LOC. The commander must consider the following.

a. Width of the waterway.

b. Average depths, speed, and shallow point of the water.

c. With a given cargo weight, how close to the shore will water depth allow vessels.

d. Capacity to conduct clearance operations by IWW.

e. Points at which tugs will be needed to support travel of vessel.

f. Points along the coast that are most suitable for different types of sea and/or land operations.

g. Types of channel markers.

h. Points that are most suitable for mining of waterway.

i. Effect that mining would have on ship passage.

j. Locations at which waterways narrow into choke points.

k. Other than choke points, locations where vessels are vulnerable to shore fire.

l. Security available for vessels underway, at anchor, or tied up to the pier.

m. Type of hostile special operations units that can threaten vessels.

n. Local shore security available to protect vessels once they are docked.

o. Type and number of local watercraft available to move cargo.

p. Maintenance capability that exists for these vessels.

q. Docks along the waterway.

r. Local regulations that govern IWW operations.

s. Addresses and telephone numbers of the waterway authorities, if any.

Intentionally Blank

ANNEX E TO APPENDIX A
JLOTS TERMINAL PLANNING CONSIDERATIONS

1. Combatant Commanders

Geographic combatant commanders have overall responsibility for JLOTS operations in their AOR but may delegate authority to a subunified commander or a JTF commander. To accomplish this, the supported and supporting combatant commanders should have the following responsibilities.

a. Supported combatant command

- Identifies potential requirements for JLOTS operations during the deliberate planning process and ensures force apportionment.
- Develops JLOTS concept of operations and initiating directive, if the JLOTS operations is controlled directly by the combatant command.
- Exercises COCOM of assigned forces.
- Ensures security of JLOTS operations within the AOR.
- Allocates resources.
- Designates the components to provide the JLOTS commander, if the JLOTS operations is controlled directly by the combatant command.
- Performs intelligence threat assessment during the planning phase and develops indications and warnings intelligence during execution of JLOTS operations.
- Provides necessary transportation intelligence on available means of inland communication, including roads, railroads, airfields, IWWs, and pipelines, for throughput of equipment and materiel discharged via JLOTS.

b. Supporting combatant commands

- Provide input to supported combatant command regarding concept of operations.
- Provide forces to the supported combatant command as directed.

c. Service component commanders normally support JLOTS operations as follows.

- Provide recommendations to the JFC on JLOTS operations.
- Provide, equip, and train active and reserve forces to meet required delivery timelines for the conduct of JLOTS operations.
- Develop implementing plans for JLOTS operational contingencies.
- Designate JLOTS commander, as tasked by the JFC.

2. Service Component Mission Responsibilities

The Army and the sea Services have personnel and equipment necessary for the conduct of JLOTS operations. During the planning for and execution of JLOTS operations, **each Service component will furnish such equipment and perform those tasks required by the combatant command's allocation of resource**s, as designated in the OPLAN and OPORD.

a. **US Army.** The primary responsibilities of the US Army in JLOTS operations are listed in Figure A-E-1.

b. **US Navy.** The primary responsibilities of US Navy forces in JLOTS operations are listed in Figure A-E-2.

c. **US Marine Corps Forces may require JLOTS logistic support ashore after exhausting their inherent MPF-based logistic capability.** They possess limited capability to augment JLOTS operations with shore-based tactical motor transport, MHE, bulk liquid, and C2 assets. The Marine Corps'



Figure A-E-1. Primary Responsibilities of the US Army in Joint Logistics Over-the-Shore



Figure A-E-2. Primary Responsibilities of the US Navy in Joint Logistics Over-the-Shore

primary responsibilities identified in Figure A-E-3 are valid in supporting JLOTS only until the MAGTF commander requires combat service support element units for follow-on Marine Corps missions.

d. The **US Coast Guard** is organized, trained, and equipped to provide port safety and security functions to the port area in a JLOTS environment. If requested, the Coast Guard may provide as a unit or as individual components of port security units, port safety and/or security boarding teams, and high endurance cutters or patrol boats. The teams that make up the details, depending on specialty, will assist the JLOTS commander

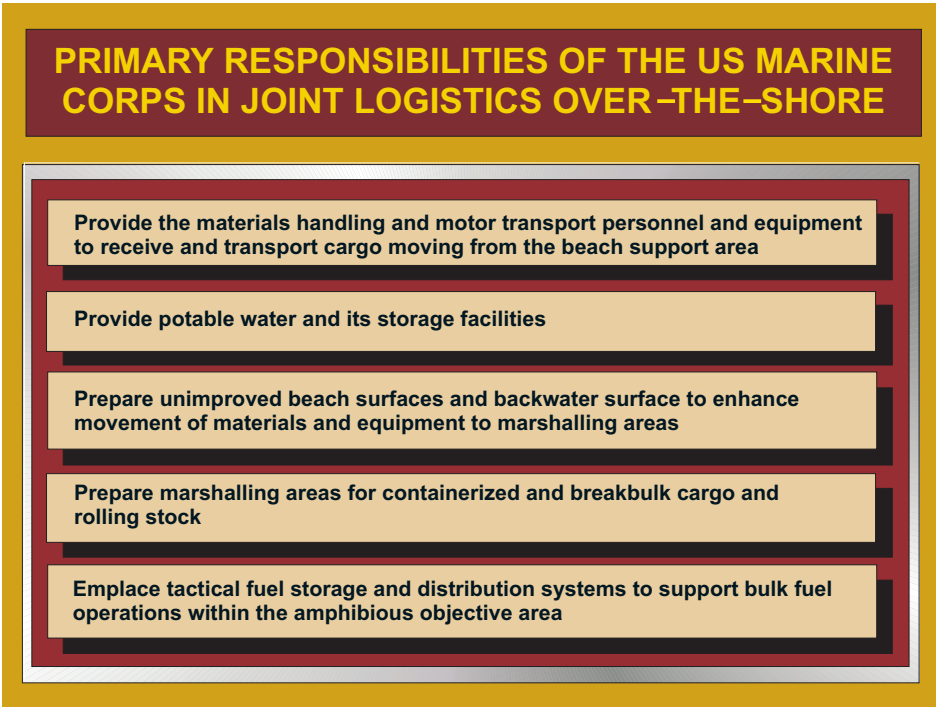


Figure A-E-3. Primary Responsibilities of the US Marine Corps in Joint Logistics Over-the-Shore

by providing elements trained in port security and port safety to help ensure the security of vessels, port facilities, and cargo as well as the safety of cargo operations during outload and off-load operations. Coast Guard JLOTS support assets should be included in a combatant command's deliberate planning process. JLOTS is considered an extension of the traditional deployed port operations, security, and defense mission. This mission includes protecting shipping and harbors from waterborne threats. JLOTS is an expeditionary port operation compared to normal Coast Guard missions. Coast Guard elements will require space for refueling of patrol craft and billeting space, if not deployed ashore, and normal logistic support. Coast Guard forces work in conjunction with mobile inshore undersea warfare units. At the terminal, across all levels of war, undersea warfare units provide surveillance and interdiction in the seaward operational area in accordance with naval coastal warfare doctrine contained in Naval Warfare Publication (NWP) 3-10, *Naval Coastal Warfare*, and NWP 3-10.3, *Inshore Undersea Warfare*. It should be noted that Coast Guard units and details are not self-sufficient and must be supported by the receiving commander, particularly when deployed OCONUS.

3. Command Relationships

C2 relationships are as prescribed by JP 0-2, *Unified Action Armed Forces (UNAAF)*. The following conditions apply.

a. In an amphibious operation, **command and inter-Service relationships** will be guided by JP 3-02, *Joint Doctrine for Amphibious Operations*.

b. In JLOTS operations, Service elements must **be integrated under one JLOTS commander** who normally has TACON

authority to task-organize elements as necessary. Service elements should be employed in a manner consistent with their training, unit, and job description. Responsibilities and details for all aspects of the JLOTS operation are provided in an OPORD or other appropriate document prepared by the JLOTS commander.

4. Magnitude

The magnitude of JLOTS operations extends from the reception of ships for off-load through the onward movement of equipment and materiel to inland marshalling and staging areas.

For more information concerning JLOTS see JP 4-01.6, *Joint Tactics, Techniques, and Procedures for Joint Logistics Over-the-Shore (JLOTS).*

5. Key Organizations

Two of the key organizations for SPOD operations are the PSA and the POG. Both are temporary military augmentation organizations that aid the port commander in receiving, processing, and clearing cargo. The PSA is under the OPCON of the port operator, whereas the POG remains under the OPCON of the landing force support party (LFSP) and/or combat service support element (CSSE). PSA and POG functions are as follows.

a. Receiving and staging unit equipment in marshalling areas.

b. Correcting configured equipment and cargo deficiencies.

c. Serving as vehicle operators.

d. Assisting with the servicing of self-deploying aircraft.

e. Providing necessary maintenance and recovery capability.

f. Assisting the port commander with cargo accountability.

g. Providing for security of sensitive and classified cargo.

Intentionally Blank

ANNEX F TO APPENDIX A
FORCE PROTECTION REQUIREMENTS

1. Force Protection Requirements

Transportation terminals are vulnerable to air and missile attacks, especially if US and allied forces have not established air superiority and sea control. They are also vulnerable to attacks by unconventional forces and to sabotage, terrorism, mining, espionage, cyber, and chemical or biological attacks. The rear area security commander includes these threats in the security plan. Some forces that may be used to provide protection for port facilities against water-borne threats may be found in Figure A-F-1.

POTENTIAL NAVAL COASTAL WARFARE RESOURCES

NAVY FORCES

Naval Coastal Warfare Groups

- Harbor Defense Units (Composite Navy and Coast Guard Units)
- Inshore Undersea Warfare Command and Control Detachment
- Mobile Inshore Undersea Warfare Units
- Inshore Boat Units

Explosive Ordnance Disposal (EOD) Forces

- EOD Groups
- EOD Mobile Units
- Mobile Diving and Salvage Units

Mine Warfare Command Forces (if assigned)
Naval Coordination and Protection of Shipping
Navy Air Surveillance (if assigned)
Law Enforcement and Physical Security Detachment

COAST GUARD FORCES

Port Security Units
Large Cutters
Patrol Boats
Visit, Board, Search, and Seize Teams
Aids to Navigation Forces (buoy tenders)
Coast Guard Air Surveillance (fixed-wing and helicopter)
National Environmental Strike Teams

SPECIAL OPERATIONS FORCES

Naval Special Forces Command Forces, including Special Boat Squadrons and Patrol Craft

ARMY FORCES

Military Traffic Management Command, including Port Security Companies, and other supported combatant commanders
Transportation Boat and Support Units and Detachments

Figure A-F-1. Potential Naval Coastal Warfare Resources

2. Command Relationships

Expeditionary naval coastal warfare (NCW) units, OCONUS, will normally be directed by the responsible JFC, by including specific NCW tasks in an OPLAN, or by an either a Presidential or Secretary of Defense-approved crisis response planning, warning, alert, or execute order. In combat scenarios, NCW operations usually support joint rear area operations and require coordination with the joint rear area operations center. HN contributions to the NCW mission will include those forces, services, and C2 resources assigned by the HN for harbor and coastal defense as determined by individual agreement between nations. Expeditionary NCW operations can be conducted across the operational spectrum, in support of a deliberately planned major theater war, lesser regional contingency, small-scale contingency, or in support of MOOTW. In any case, the unified, subunified, or JTF commander responsible for the operation is responsible for the NCW mission.

ANNEX G TO APPENDIX A
ENVIRONMENTAL PLANNING CONSIDERATIONS

This annex identifies the environmental planning considerations for terminal operations. The JTF staff should plan the operation to achieve mission objectives while minimizing the environmental effects and observing environmental requirements.

1. Operations in the United States

All joint operations within the United States and its territories and possessions will be conducted in compliance with applicable Federal, state, or local environmental laws and regulations. The National Environmental Policy Act (NEPA) requires environmental planning for major Federal actions that have the potential for a significant environmental impact. It requires that commanders make environmental considerations an integral part of the mission planning and decisionmaking process. NEPA mandates procedures for environmental planning, but does not mandate decisions. Other Federal statutes, such as the Clean Water Act, Clean Air Act, Resource Conservation and Recovery Act, and the Comprehensive Environmental Response, Compensation, and Liability Act, establish environmental requirements that may impact on joint operations. During MOOTW, all legal requirements imposed by various jurisdictions during peacetime may still apply. In many cases, US environmental laws allow for national security exemptions for specified activities, but only upon action by the President. Expert legal assistance is required to determine the specific applicabilities to specific operations of the diverse combination of US, international and HN law, agreements, conventions, and treaties.

2. Operations Outside the United States

All joint operations outside US territory will be conducted IAW applicable international treaties, conventions, SOFAs, and other international agreements, as well as applicable US environmental laws. In the absence of definitive environmental guidance within applicable international agreements, geographic combatant commands will establish OPLAN guidance and standards that will protect the force, be consistent with mission goals, limit adverse health impacts, and consider the US liability. In addition to requirements contained in international agreements, the following references provide guidance and requirements that may impact joint operations beyond US territory and, as appropriate and applicable, should be considered.

a. DODD 6050.7, *Environmental Effects Abroad of Major Department of Defense Actions.* This directive implements Executive Order 12114, provides definition of key terms, establishes review procedures, and describes in detail documentation requirements for the environmental impact analysis process.

b. Department of Defense Instruction (DODI) 4715.5, *Management of Environmental Compliance at Overseas Installations*. This instruction establishes environmental compliance standards for protection of human health and the environment at DOD installations in foreign countries and provides for designation of DOD Environmental Executive Agents. DODI 4715.5 specifically does not apply to off installation operational and training

deployments. However, the Overseas Environmental Baseline Guidance Document (OEBGD) and Final Governing Standards (FGS) developed under this directive are excellent tools for planning and conducting joint operations. Appropriate consideration of the effects of such operations on human health and environment should be used to develop the Environmental Consideration Annex.

c. DODI 4715.8, *Environmental Remediation Policy for DOD Activities Overseas.* This instruction implements policy, assigns responsibilities, and prescribes procedures for remediation of environmental contamination on DOD installations or facilities or caused by DOD operations outside the United States. DODI 4715.8 specifically **excludes** operations connected with actual or threatened hostilities, security assistance programs, peacekeeping missions, or relief operations. However, it may provide valuable information that could be used in operational planning.

d. NWP 4-11, *Environmental Protection*. This publication provides guidance to Navy operational commanders and their staffs during maritime operations during peacetime, MOOTW, and war. It provides guidance on the development of Annex L to an OPORD and/or OPLAN.

e. Air Force Handbook 10-222, Volume 4, *Environmental Guide for Contingency Operations.* This handbook presents practices that can minimize adverse impacts to human health and the environment and facilitate compliance during contingency operations. These strategies are designed to reduce or eliminate negative impact on mission accomplishment caused by health hazards and regulatory non-compliance. It outlines these strategies for exercises, deployments, MOOTW, and armed conflict within the US, at overseas DOD installations, and at overseas non-DOD installations.

f. Marine Corps Reference Publication 4-11 B of February 1999 (Army FM 3-100.4) provides excellent guidance and philosophy in applying appropriate environmental considerations during military operations. It also provides doctrine that applies to Army and Marine Corps commanders and staffs.

g. HNS agreements and SOFAs are bilateral or multilateral agreements that affect the conduct of military operations within host nations. Although in the past these agreements have not always addressed environmental protection, HNs have recently reflected greater concern with environmental issues associated with military operations within their borders. Joint forces are expected to comply with these agreements.

h. The OEBGD and environmental FGS. The OEBGD specifies criteria and management practices for environmental compliance at DOD installations in overseas locations. It is designed to protect human health and the environment and reflects generally accepted environmental standards applicable to DOD installations, facilities, and actions in the United States. It also incorporates requirements of US law that apply to DOD installations and activities outside the United States and its territories. Designated DOD environmental executive agents (EEAs) (See DODI 4715.5, Attachment 3) use the OEBGD to develop and update country-specific FGS for all DOD components. To develop and update the FGS, the EEAs compare OEBGD standards with the requirements of applicable international agreements (including SOFAs) and relevant local, regional, and national HN standards. The EEAs normally incorporate in the FGS those standards that provide more protection to human health and the environment. The OEBGD applies in countries where no FGS have been established. Neither FGS nor the OEGBD apply to the operations of US military vessels, the operations of US military aircraft, or to off-installation operational and

training deployments. However, FGS or the OEBGD (in countries where no FGS exists) does apply to support functions for US military vessels and aircraft. Although the OEBGD and FGS are not applicable to the operation of US military vessels, the operations of US military aircraft or to off-installation operational and training deployments, they are excellent tools for environmental planning and can aid the conduct of joint operations.

i. International Regulations, Treaties, and Conventions. An increasing number of environmental international regulations, treaties, and conventions apply to joint military operations. For example, management and processing of hazardous wastes for disposal overseas may be affected by the Basel Convention, an international agreement governing the trans-boundary shipment and disposal of hazardous wastes. Similarly, the Rotterdam Convention controls movement of specified HAZMAT through the jurisdictions of third party nations that are not parties to the original shipping or final receipt. Another international convention that may impact a joint operation is the London Dumping Convention that precludes the dumping at sea of wastes generated ashore. Maritime operations will be affected by the International Maritime Convention for the Prevention of Pollution from Ships. The JFC should consult the Staff Judge Advocate (SJA) regarding these requirements and their potential impact on operations.

j. Law of Armed Conflict. The law of armed conflict is derived from customary international and treaty law. It establishes certain limits on the means and methods of warfare that could impact upon civil engineering operations. The SJA can provide specific advice on the applicability of the law of armed conflict.

k. All organizations are responsible for fulfilling environmental and environmental health requirements related to their operations and impacts. JP 4-04, *Joint Doctrine for Civil Engineering Support*, identifies the engineer function as the principal source of environmental management support services (e.g., expert consulting, design, construction, special studies, leadership of initial environmental baseline surveys, and similar activities).

3. Considerations

Although not all of the following elements will be applicable to all operations (e.g., some, such as identification of alternatives to obtaining objectives, are not required for operations overseas), they may prove helpful during planning.

a. Identification of operational objectives and the activities that are proposed to obtain these objectives, including logistics and identification of hazardous materials that may be used.

b. Identification of potential alternative means of obtaining operational objectives. Alternatives include such ideas as computer simulation or use of new technologies to minimize impact on the environment.

c. Identification of the environmental requirements that are applicable to the operational area.

d. Identification of adverse environmental health and environmental impacts that may result from conducting the operation.

e. Establishment of formal relationships and coordination with other disciplines with roles in environmental planning and operations (e.g., medical and legal).

f. Identification of the characteristics of the environment potentially affected.

g. Identification of possible contingencies that may occur during the operation, such as accidental spills.

h. Determination of how the contingency would affect the environment in the area of operation and how it could be prevented or mitigated should it occur.

i. Determination of the environmental and operational risk associated with the operation. If risks are unacceptable, identify alternatives that will mitigate associated risks.

j. Negotiation of applicable agreements to allow for the unimpeded transit of hazardous waste by military and contracted assets for environmentally sound treatment or disposal.

k. Determination of contractor status, to include privileges and immunities in support of the operation.

4. Key Environmental Factors

Commanders should consider environmental and force health protection during each phase of an operation. In planning and conducting joint operations, regardless of geographic location, commanders should give appropriate consideration to the following.

a. Preexisting environmental conditions impacting site selection and environmental health vulnerabilities.

b. Air emissions.

c. Endangered species and marine mammals.

d. Hazardous materials including pesticides.

e. Hazardous waste. (Appropriate disposition could include recovery, treatment, or disposal within the AO or, where necessary, transit to another country for these purposes.)

f. Oil and hazardous substance spills prevention and controls.

g. Medical and infectious wastes.

h. Solid waste.

i. Water and waste water, to include sanitary wastewater.

j. Natural resources to include endangered or threatened species.

k. Historic and cultural resources.

l. Noise abatement.

m. Resource and energy conservation through pollution prevention practices.

n. Camp closure and site cleanup prior to redeployment.

o. Transportation of excess material and equipment from the tactical area in an environmentally sound manner. Contractors and contractor vehicles need to be assured unhindered transit of international borders.

APPENDIX B
TERMINAL UNITS

Annex	A	Army Terminal Units
	B	Navy Terminal Units
	C	Marine Corps Terminal Units
	D	Air Force Terminal Units

TERMINAL UNITS

Army elements of a transportation group, NAVCHAPGRU and NCHBs, Marine elements of the TSBn, and Air Force liaison offices are included in Annexes A through D. Specifics on the Maritime Administration (National Shipping Authority) are located in JP 4-01.2, *Joint Tactics, Techniques, and Procedures for Sealift Support to Joint Operations*.

ANNEX A TO APPENDIX B
ARMY TERMINAL 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 MCC for terminal clearance.
- Developing requirements for communications and ADP 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 IWWs. While assigned to the TA 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, harbor craft, truck, cargo documentation, and security. 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. A personnel service company must support this unit for personnel and financial support and area health services for medical support.

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

- Providing C2 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 HQ 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 harbormaster, 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, 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 a 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 short tons (STONs) during JLOTS 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 and 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 C2, 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 C2, but may be assigned to a theater transportation command or a 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 JLOTS 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 TA 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 transportation cargo transfer company can transship an average of 3,000 STONs of breakbulk cargo or 450 containers per day when CHE 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 STONs of breakbulk cargo or 200 containers a day. The unit can redocument transshipped cargo or containers as required, and stuff or un-stuff containers on a limited basis.

6. MTMC Transportation Terminal Brigade or Battalion

a. **Mission and Assignment.** MTMC transportation brigades or battalions are US Army RC 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. They may be deployed OCONUS to expand the number or capabilities of terminals 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. The CAA determines command arrangements for OCONUS operations between the supported combatant commander and USTRANSCOM. The organization of a transportation terminal battalion or brigade will vary depending on the terminals they are assigned to operate. At a minimum, each has a commander and staff element to supervise movement operations, contracts, cargo documentation, physical security, and the flow of information.

b. **Capabilities.** The capabilities of the transportation 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, capability 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. The Army normally operates 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 [LCM]) and the heavy-boat company (landing craft, utility [LCU]). Also, several separate watercraft teams are designed to perform special marine service support in operating coastal, harbor, and IWW 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 augments Navy craft in conducting joint amphibious operations. The medium-boat company can transport an average of 1,600 STONs of non-containerized 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 that make them highly maneuverable, and a vehicle 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 that make them highly maneuverable. This class 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 IWW 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 capacities 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 operates 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.

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

- **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 IWWs, intracoastal, inter-island, and on open seas. The LSV will also assist in RO/RO or JLOTS operations, particularly with CHE, vehicular, and other oversized or overweight cargo.

8. Army Port Construction Companies

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

For additional information on JLOTS see JP 4-01.6, Joint Tactics, Techniques, and Procedures for Joint Logistics Over-the-Shore. *Additional Army, Navy, and Marine Corps information is located in Annex E to Appendix A, "JLOTS Terminal Planning Considerations."*

ANNEX B TO APPENDIX B
NAVY TERMINAL UNITS

1. Mission and Assignment

NAVCHAPGRU (Active Component) and NCHBs (RC) are quick response, multi-mission tasked units comprised of 8 officers and 260 enlisted personnel (NAVCHAPGRU), or 14 officers and 180 enlisted personnel (NCHB) respectively, plus basic organic unit equipment required to provide technical and supervisory cargo handling capability. NAVCHAPGRU and NCHBs operate most effectively when employed solely on ship loading and discharge operations and when each of their seven-man hatch teams is augmented by unskilled or stevedore personnel provided by the supported unit or activity. When augmented with 7 personnel per hatch team, a NAVCHAPGRU or NCHB can achieve a ship discharge rate of approximately 2,880 MTONs per day pier-side, and approximately 1,920 MTONs per day discharge rate in-stream. If not augmented, then the discharge rate must be reduced by 50 percent (1440 MTONs pier-side and 960 MTONs in-stream). Cargo documentation is an organic capability of NAVCHAPGRU and the NCHBs. At a site where NAVCHAPGRU and multiple NCHBs are operating or operate for extended periods, a freight terminal company from an NSSB may be assigned for documentation support.

2. Capability

The specific tasks of NAVCHAPGRU and NCHBs 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

NAVCHAPGRU and NCHBs may bring a variety of equipment packages tailored to support specific missions. CHE 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 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 NAVCHAPGRU or one NCHB with the capability to work two shifts or eight hatches at one location. 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 ABFCs.

- Troop transportation vehicle.
- Truck tractor equipment.
- Trailer equipment.
- Vehicle service equipment.
- 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 NAVCHAPGRU or an NCHB in establishing a limited ocean terminal and/or augmenting a port cargo operation for all categories of cargo, including hazardous material and munitions. Due to its size and scope, this component is not designed to be air deployable. This component contains the following ABFCs.

- MHE-austere detachment.
- MHE-electric.
- MHE-air cargo.
- 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 NAVCHAPGRU or an NCHB in establishing or augmenting a limited ocean terminal. This component contains the following sub-components.

- MHE-heavy containers.
- Weight handling equipment-30 ton crane.
- Weight handling equipment-90 ton crane. The weight handling equipment-90 ton crane component should be provided to an NCHB in ports where mobile cranes and heavy-lift CHE are not locally available.

f. The Services and support component provides a complete field kitchen, commodities, and food supplies to support long term operations of NAVCHAPGRU or a NCHB living in an austere expeditionary tent camp.

g. Other component packages that 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°F).
- Small fuel package (greater than 32°F).
- Large fuel package (less than 32°F).
- Small fuel package (less than 32°F).
- Lighting equipment.
- Power distribution equipment-basic.

- Power distribution equipment-expanded.

- Water production and distribution capability plus sanitary sewage disposal may also be needed and require engineering support.

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

Tied to the Navy's concept for ship off-load is the establishment of naval ALSSs and FLSs.

a. An ALSS is a location that is used as the primary transshipment point for materiel 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 place for conducting throughput operations for all airlift and sealift coming into and out of the theater. When fully stood up, an ALSS is generally a blend of HNS 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 materiel 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, and 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. 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 AOR. 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 logistic 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 logistic units.

Intentionally Blank

ANNEX C TO APPENDIX B
MARINE CORPS TERMINAL UNITS

1. General

Transportation Support Battalion. The TSBn provides motor transport and landing support to the MEF and smaller MAGTFs. TSBn can provide the personnel and equipment from which an LFSP or CSSE is task-organized. The TSBn has the assets required to support all types of Navy and Marine Corps operations. Typically, it provides general support during amphibious, MPF, and terminal operations.

2. Mission and Concepts

The Marine Corps terminal units provide tactical throughput support and associated C2 for the MEF to facilitate the distribution of personnel, equipment, and supplies by air, ground, and sea.

a. **Tasks**

- Provide centralized C3 of landing support, distribution, and throughput functions (including port and terminal operations), material handling, air delivery support, convoy operations, and transportation during operations conducted by the MEF or MAGTFs smaller than the MEF.
- Provide selected heavy equipment lift augmentation in support of the MEF.
- Transport personnel, equipment, and supplies within organic lift capabilities.
- Provide throughput and distribution of bulk, liquid, containerized, and dry cargo.
- Provide port and terminal operations at ports, beaches, airheads, railheads, and cargo terminals, and management of freight and passenger as well as breakbulk and container cargo throughput.
- Provide air delivery support for MEF operations.
- Perform basic engineer tasks required for landing support operations to include austere site preparations, construction and/or removal of obstacles and barriers, and establishment of routes of egress from the beach when properly augmented.
- From organic assets, provide a nucleus for the task organization of a LFSP or arrival and assembly operations group (AAOG), to provide C2 structure for the landing support and distribution for initial combat service support for MEF operations.
- Provide force protection for organic units.

b. **Concept of Organization.** The battalion is organized to plan, coordinate, and supervise the throughput and for operations distribution functions in support of MEF operations. It is structured to facilitate task organization conducted by the battalion in support of the MEF.

c. **Concept of Employment.** The battalion is structured to facilitate task organization for landing support and throughput operations conducted in support of the MEF. It is equipped to provide medium through heavy cargo transportation to the MEF. Additionally, the battalion provides the initial source for centralized combat service support for sustained MEF operations.

3. Capabilities

a. **Headquarters and Service Company**

- **Mission.** Provide C2, administration, and command support functions for TSBn, FSSG.

- **Tasks**

  •• Provide command support functions, to include supply, ordnance, information management, and food service support for the battalion.

  •• Provide organizational maintenance for ordnance and communication-electronic equipment.

  •• Provide support for the battalion's local security.

- **Concept of Organization.** The company is organized to plan, coordinate, and supervise the command support functions for the battalion. It is structured to facilitate task organization for operations conducted by the battalion in support of MAGTF operations.

- **Concept of Employment.** The company provides the command support functions to plan, coordinate, and supervise the general intermodal transportation, landing support, and throughput functions conducted by the battalion in support of the MAGTF.

b. **Support Company**

- **Mission.** Provide MHE, container handling support, general support, and organizational maintenance support for engineer and motor transport assets of the battalion in support of MAGTF operations.

- **Tasks**

  •• Provide MHE support for the MAGTF beyond the organic capability of supported units.

  •• Provide specialized MHE and container-handling support for the management of container and cargo throughput operations on beaches, at ports, railheads, airheads, and cargo terminals.

  •• Provide organizational (1st, 2nd echelon) maintenance support for engineer and motor transport equipment organic to the battalion.

- **Concept of Organization.** The company is organized to plan, coordinate, and supervise the command support functions of the company. It is structured to facilitate task organization for throughput operations conducted by the battalion in support of the MAGTF.

- **Concept of Employment.** The company provides centralized support to expedite throughput operations in support of the MAGTF. It is equipped with tactical engineering cranes, buckets, graders, forklifts, and light sets to facilitate operations. The company can be task-organized to provide landing support equipment to the MAGTF.

c. **Beach and Terminal Operations Company**

- **Mission.** Provide general transportation support to coordinate throughput operations for the MAGTF.

- **Tasks**

•• Provide personnel and equipment for the loading, unloading, and movement of supplies and equipment at ports, beaches, railheads, airheads, cargo terminals, dumps, and depots.

•• Provide air delivery support to the MAGTF.

- **Concept of Organization.** The company is organized to support MAGTF throughput operations. It provides management and operation of ports, airheads, railheads, and other cargo and passenger terminal operations, including aerial delivery support.

- **Concept of Employment.** When directed, the company assumes responsibility for the throughput operations after control of beaches, ports and terminals is passed to the CSSE. It provides aerial delivery support and, when augmented by other elements of the CSSE, controls air terminals in support of MAGTF operations, to include conducting A/DACG operations.

d. **Landing Support Company**

- **Mission.** Provide direct support for landing and throughput operations in support of the MAGTF(s) at helicopter landing zones, assault beaches, and airfields.

- **Tasks**

•• Provide shore party and/or helicopter support teams in direct support of assault and sustained operations conducted by the MAGTF(s).

•• Prepare, mark, and control assault landing beaches or zones as required.

•• Establish multi-class supply storage sites ashore for the sustainment of the MAGTF.

•• Coordinate the unloading of supplies and equipment from landing craft, ships, and helicopters through designated assault beaches and helicopter landing zones in support of MAGTF operations.

•• Coordinate transportation support for the evacuation of casualties, noncombatants, and EPWs.

•• Provide A/DACG to control and coordinate the loading and unloading of units deploying or redeploying by fixed-wing aircraft.

- **Concept of Organization.** The company is organized to provide the nucleus of personnel and equipment required for an LFSP or AAOG, for the initial combat service support of the MAGTF.

- **Concept of Employment.** The company provides direct landing support to the MAGTF in support of amphibious and helicopter-borne operations. When reinforced with battalion assets and elements of the Naval Beach Group, it provides the nucleus for the LFSP and AAOG that provides initial throughput and sustainment for the MAGTF. Upon establishment of the CSSE, operational control of the LFSP passes to the CSSE commander for the continuation of direct landing support as required. The company coordinates local security for colored beaches. The company can provide A/DACG to support deploying and redeploying units.

e. **General Support Motor Transport Company**

- **Mission.** Provide general support and medium and heavy lift transportation support for throughput and sustainment operations in support of the MAGTF.

- **Tasks**

  •• Provide line haul and distribution of bulk water (class I) and bulk fuel (class III and III(A)) for the MAGTF.

  •• Provide medium and heavy lift motor transport for the movement of bulk dry cargo, class V and V(A), and heavy equipment for the MAGTF.

  •• Provide unit and supply point distribution of bulk water and fuel for the MAGTF as required.

  •• Augment the motor transport and supply distribution capabilities of the direct support motor transport company, TSBn, FSSG, as required in support of the MAGTF.

- **Concept of Organization.** The company is organized to plan, coordinate, and supervise the command, supply, and transportation support functions for the company. It is structured to facilitate task organization for operations conducted by the battalion in support of MAGTF operations.

- **Concept of Employment.** The company provides medium and heavy lift motor transport and bulk liquid distribution support to the MAGTF in sustained operations. The company normally deploys as part of the assault follow-on echelon. It is employed in general support of the MAGTF to transport cargo, equipment, and personnel over extended distances for sustained periods of time. Organic equipment includes 5-ton tactical cargo trucks, logistics vehicle systems (LVSs), and 40- and 70-ton semi-trailers.

f. **Direct Support Motor Transport Company**

- **Mission.** Provide direct and general support, medium and heavy lift transportation support, and supply support for throughput and sustainment operations of the CSSE in support of the MAGTF.

- **Tasks**

  •• Provide line haul and distribution of bulk water (class I) and bulk fuel (class III and III(A)) for the CSSE.

  •• Provide medium and heavy lift motor transport for the movement of bulk dry cargo, class V and V(A), and heavy equipment in support of CSSE operations.

  •• Augment the personnel lift capability, as required, of elements of the MAGTF.

- **Concept of Organization.** The company is organized to plan, coordinate, and supervise the command, supply, and transportation support functions for the company in support of the CSSE's mission. It is equipped with 5-ton tactical cargo trucks, LVS, and sixcon fuel and water modules.

- **Concept of Employment.** The company is structured to provide sustained, direct support transportation and supply support to the CSSE and general support transportation and supply support to the MAGTF. It transports cargo, equipment, fuel, water, and personnel over extended distances for sustained periods of time.

ANNEX D TO APPENDIX B
AIR FORCE TERMINAL UNITS

1. General

This annex describes the key Air Force organizations that support operations at air terminals.

2. Mission and Assignment

a. TALCE is an element of an AMOG or a stand-alone organization within a geographic combatant command. As such, a TALCE may be deployed to any worldwide location where airlift command, control, and mission support is required but nonexistent. An officer that is certified as a TALCE commander commands a TALCE. A TALCE operations center serves as the focal point for deployed C3. TALCEs are limited to aerial port functions that impact on mission planning, preparation, and execution of airlift operations. All areas shown below are not required for every operation and a TALCE may include additional MSEs, as required. The TALCE will:

- Control aircraft movements, communications, technical supervision of aircraft loading and off-loading operations, aeromedical evacuation, and marshalling of aircraft;
- Coordinate all Air Force operational aspects of the airlift mission; and
- Provide continuous liaison with all interested parties to ensure that the operation is proceeding according to plan.

b. MSEs perform maintenance and flying safety in support of TALCEs or existing AMC and/or non-AMC operations throughout the world. They also provide weather, aerial port, and intelligence support. When deployed with a TALCE, the MSE is under direct command of the TALCE commander. When deployed to augment an existing operation, an MSE may be under the command of HQ AMC TACC.

c. MSTs are deployed to locations where airlift command, control, and mission support is required but nonexistent, and where a full TALCE is not required. A MST will provide the air movement coordinating activities of a TALCE. MSTs perform maintenance, aerial port, and related support functions as required. MSTs will not have a TOC; however, as an extension of airlift C2, an MST will provide minimum C2 reporting consistent with mission requirements. MSTs perform the same functions as TALCEs, but are managed by enlisted supervisors.

d. **Aerial Ports and Air Terminals.** Although most aerial ports are under AMC control, some are not. In most cases, designated aerial ports are regular or special foreign clearance bases as defined in the DOD *Foreign Clearance Guide*. Air terminals are facilities that function as air transportation hubs and accommodate loading and unloading of aircraft and in-transit processing of traffic. The airfield on which an air terminal is located may or may not be designated an aerial port. The focal point for aerial ports or air terminals is the ATOC.

e. **Air Terminal Operations Center.** The ATOC serves as the control center for all air transportation related activities. An MSE and/or MST, fixed aerial port, or air terminal will have an ATOC function. The A/DACG will coordinate with the ATOC for all deploying unit requirements. ATOCs normally consist of information controllers, ramp coordinators, load planners, capability forecasting, record section, and duty officer. The ATOC will:

- Validate all load plans, cargo, and passenger manifests;
- Supervise all functional areas of the aerial port;
- Provide technical assistance to airlifted unit;
- Coordinate airflow information and control airlift aircraft and any mission support load teams that may be involved;
- In conjunction with the deploying unit and A/DACG, coordinate the inspection of cargo offered for airlift to ensure that it is movement ready; and
- Provide appropriate MHE and operators when MHE is not organic to the unit being transported or to the airfield operator.

Mobility forces consist of one of the following: a TALCE, an MSE, an MST, a fixed aerial port, or air terminal.

f. Many organizations share the responsibility for activities at joint aerial port terminals. Figure B-D-1 lists some of these units, their parent organizations, and their major functions.

ORGANIZATIONS AND FUNCTIONS AT JOINT AERIAL PORT TERMINALS		
Organization or Activity	**Parent Organizations**	**Major Functions**
Aerial Mobility Support Squadron, Aerial Port Flight, Aircraft Maintenance Flight, Command and Control Flight	US Transportation Command (USTRANSCOM) Air Mobility Command (AMC)	Plan aircraft loads, process and document personnel and cargo, load and service airlift aircraft
Aeromedical Evacuation Liaison Team	USTRANSCOM (AMC)	Communicate and coordinate aeromedical evacuation requirements between medical facilities and the Global Patient Regulating Center
Tanker Airlift Control Element (TALCE)	USTRANSCOM (AMC)	Control, coordinate, and monitor US airlift operations
Arrival/Departure Airfield Control Group	Army and Marine Component Command	Coordination with the TALCE, clear arrival and departure airfield
Port Movement Control Detachment	Movement Control Agency	Assist deploying units with onward movement from port. Resolve problems with frustrated cargo
Area Support Group (ASG) Liaison Element	Theater Support Command	Coordinate ASG support at port. Establish the nuclear, biological, and chemical (NBC) warning and reporting system and assume command and control of NBC defense units in the seaport of debarkation/aerial port of debarkation
Noncombatant Evacuation Operation Liaison Element	Army Component Command	Coordinate all movements of noncombatants
Aircraft Maintenance Team	Army Component Command	Provide technical assistance to Army aviation units deploying through the joint aerial port complex
Postal Operations Terminal	Air Force or Army Component Command	Process inbound or outbound mail shipments
Port Security	Air Force Component Command, Army Component Command outside airfield	Provide physical security for the airfield and port complex
Airlift Clearance Authority	Air Force Component Command	Provide clearance for theater airlift of Air Force cargo from aerial port complex
Host-Nation Support Elements	Host Nation	Operate airfield, load and unload aircraft, service aircraft, provide local transportation, provide security, provide air defense
Navy Overseas Air Terminal	Naval Expeditionary Logistics Support Force	Operate expeditionary air cargo terminals; operate air terminal operations centers and Remote Consolidated Aerial Port System; certify hazardous materiel cargo; tracks depot level reparables

Figure B-D-1. Organizations and Functions at Joint Aerial Port Terminals

Intentionally Blank

APPENDIX C
HOST-NATION SUPPORT

1. Host-Nation Support

Use of HNS for US forces assists the combatant commander in accomplishing the mission while reducing the requirement for US personnel, materiel, and services. HNS applies to war, MOOTW, and to 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 the 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 C2 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.

JP 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 is available.

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.
- Operations 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 DIA.

- 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.

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, HQs, 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, thereby 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 in situations where the operation is close to ongoing combat operations.

4. Activities Inappropriate for HNS

a. Some functions and services are inappropriate for an HN to provide. Usually, the decision is based on security reasons and the need for national control.

b. 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.

- C2 of health service support, supply, service, maintenance, replacement, and communications.
- Triage, treatment, and hospitalization of the sick, injured, and wounded.
- Veterinary subsistence inspection.
- Law and order operations (US forces).
- Control and maintenance of nuclear and chemical ammunition.
- US prisoner confinement operations.
- Accountability and security of EPWs retained in US custody.
- Medical supply accountability.
- Identification and burial of the US dead.
- Repair of nuclear weapons delivery sites.
- 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 SOFAs 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.

Intentionally Blank

APPENDIX D
REFERENCES

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

1. US Government Publications

Title 10, USC.

2. DOD Publications

a. DODD 6050.7, *Environmental Effects Abroad of Major Department of Defense Actions.*

b. DODI 4715.5, *Management of Environmental Compliance at Overseas Installations.*

c. DODI 4715.8, *Environmental Remediation Policy for DOD Activities Overseas.*

d. DODR 4500.9-R, *Defense Transportation Regulation Parts I-V.*

e. DODR 5030.49-R, *Customs Inspections.*

f. *DOD Implementation Plan for Logistics Automated Identification Technology*.

3. Joint Publications

a. JP 1, *Joint Warfare of the Armed Forces of the United States.*

b. JP 0-2, *Unified Action Armed Forces (UNAAF).*

c. JP 1-0, *Doctrine for Personnel Support to Joint Operations*.

d. JP 1-01, *Joint Doctrine Development System.*

e. JP 1-01.1, *Compendium of Joint Doctrine Publications.*

f. JP 1-02, *Department of Defense Dictionary of Military and Associated Terms*.

g. JP 2-0, *Doctrine for Intelligence Support to Joint Operations.*

h. JP 2-01, *Joint Intelligence Support to Military Operations.*

i. JP 3-0, *Doctrine for Joint Operations.*

j. JP 3-02, *Joint Doctrine for Amphibious Operations.*

k. JP 3-07, *Joint Doctrine for Military Operations Other Than War.*

l. JP 3-07.2, *Joint Tactics, Techniques, and Procedures for Antiterrorism.*

m. JP 3-10, *Joint Doctrine for Rear Area Operations*.

n. JP 3-11, *Joint Doctrine for Operations in a Nuclear, Biological and Chemical (NBC) Environment*.

o. JP 3-16, *Joint Doctrine for Multinational Operations*.

p. JP 3-17, *Joint Doctrine and Joint Tactics, Techniques, and Procedures for Air Mobility Operations*.

q. JP 3-33, *Joint Force Capabilities.*

r. JP 3-35, *Joint Deployment and Redeployment Operations*.

s. JP 3-54, *Joint Doctrine for Operations Security*.

t. JP 3-56.1, *Command and Control for Joint Air Operations*.

u. JP 3-61, *Doctrine for Public Affairs in Joint Operations.*

v. JP 4-0, *Doctrine for Logistic Support of Joint Operations.*

w. JP 4-01, *Joint Doctrine for the Defense Transportation System.*

x. JP 4-01.2, *Joint Tactics, Techniques, and Procedures for Sealift Support to Joint Operations*.

y. JP 4-01.3, *Joint Tactics, Techniques, and Procedures for Movement Control.*

z. JP 4-01.4, *Joint Tactics, Techniques, and Procedures for Joint Theater Distribution.*

aa. JP 4-01.6, *Joint Tactics, Techniques, and Procedures for Joint Logistics Over-the-Shore (JLOTS).*

bb. JP 4-01.7, *Joint Tactics, Techniques, and Procedures for Use of Intermodal Containers in Joint Operations*.

cc. JP 4-01.8, *Joint Tactics, Techniques, and Procedures for Joint Reception, Staging, Onward Movement, and Integration*.

dd. JP 4-02, *Joint Doctrine for Health Service Support in Joint Operations.*

ee. JP 4-02.1, *Joint Tactics, Techniques, and Procedures for Health Service Logistics Support in Joint Operations.*

ff. JP 4-02.2, *Joint Tactics, Techniques, and Procedures for Patient Movement in Joint Operations*.

gg. JP 4-03, *Joint Bulk Petroleum and Water Doctrine*.

hh. JP 4-04, *Joint Doctrine for Civil Engineering Support*.

ii. JP 4-05, *Joint Doctrine for Mobilization Planning.*

jj. JP 4-05.1, *Joint Tactics, Techniques, and Procedures for Manpower Mobilization and Demobilization Operations: Reserve Component (RC) Callup*.

kk. JP 4-06, *Joint Tactics, Techniques, and Procedures for Mortuary Affairs in Joint Operations*.

ll. JP 4-07, *Joint Tactics, Techniques, and Procedures for Common User Logistics During Joint Operations*.

mm. JP 4-08, *Joint Doctrine for Logistic Support of Multinational Operations.*

nn. JP 4-09, *Joint Doctrine for Global Distribution.*

oo. JP 5-0, *Doctrine for Planning Joint Operations.*

pp. JP 5-00.2, *Joint Task Force Planning Guidance and Procedures*.

4. Chairman of the Joint Chiefs of Staff Publications

a. CJCSI 3110.01A, *Joint Strategic Capabilities Plan (JSCP)*.

b. CJCSI 3110.11B, *Mobility Supplement to the Joint Strategic Capabilities Plan.*

c. CJCSI 4120.01, *Uniform Materiel Movement and Issue Priority System- CJCS Project Codes and Materiel Allocation Policies During Crisis and War*.

d. CJCSM 3122.01, *Service Logistics Joint Operation Planning and Execution System Vol I: (Planning Policies and Procedures)*.

e. CJCSM 3122.03, *Joint Operation Planning and Execution System Vol II: (Planning Formats and Guidance).*

5. Air Force Publications

a. AFDD-2, *Organization and Employment of Aerospace Power*.

b. AFDD-2-4, *Combat Support*.

c. AFDD 2-6, *Air Mobility Operations*.

d. AFDD- 2-6.1, *Airlift Operations*.

e. AFDD 2-6.2, *Air Refueling*.

f. AFDD- 2-6.3, *Air Mobility Support*.

g. AFJI 24-109, *Air Terminals and Aerial Ports*.

h. Air Force Instruction 32-7006, 29 Apr 1994, *Environmental Program in Foreign Countries*.

i. Air Force Pamphlet 10-219, Volume 5, 1 June 1996, *Bare Base Conceptual Planning Guide*.

j. Air Force Pamphlet 10-222, Volume 1, 1 July 1996, *Guide to Bare Base Development*.

k. Air Force Pamphlet 10-1403, 1 March 1998, *Air Mobility Planning Factors*.

l. AMC Regulation 55-3, *Contingency and Wartime Deployable Airfield Operations Management*.

m. AMCI 24-204, *AMC Mobility Guidance for Deploying Forces.*

n. AMCMD 710, *Air Mobility Operations Groups and Squadrons.*

6. Army Publications

a. FM 3-0, *Operations*.

b. FM 3-11.34, *Multi-Service Tactics, Techniques, and Procedures for NBC Defense of Theater Fixed Sites, Ports, and Airfields.*

c. FM 3-100.4, *Environmental Considerations in Military Operations.*

d. FM 55-1, *Transportation Operations*.

e. FM 55-9, *Unit Air Movement Planning*.

f. FM 55-10, *Movement Control*.

g. FM 55-17, *Cargo Specialists' Handbook.*

h. FM 55-50, *Army Water Transport Operations.*

i. FM 55-60, *Army Terminal Operations.*

j. FM 55-65, *Strategic Deployment*.

k. FM 55-80, *Army Container Operations*.

l. FM 63-4, *CSS Operations, Theater Army Area Command*.

m. FM 100-10, *CSS Operations*.

n. FM 100-16, *Army Operational Support*.

o. FM 100-17, *Mobilization, Deployment, Redeployment, Demobilization.*

p. FM 100-17-1, *Army Prepositioned Afloat Operations.*

q. FM 100-17-3, *Reception, Staging, Onward Movement, and Integration.*

r. Center for Army Lessons Learned (CALL), *Reception, Staging, Onward movement & Integration, Tactics, Techniques and Procedures*, CALL Newsletter, No. 97-7, Feb. 97.

s. FORSCOM/ARNG Regulation 55-1, *Transportation and Travel Unit Movement Planning*, October 1997.

7. Marine Corps Publications

a. MCDP 1-2, *Campaigning*.

b. MCDP 4, *Logistics.*

c. MCRP 5-12D, *Organization of Marine Corps Forces.*

d. MCWP 3-32, *Maritime Prepositioning Force (MPF) Operations* (DRAFT).

e. MCWP 4-1, *Logistics Operations*.

f. MCWP 4-11.3, *Transportation Operations*.

8. Navy Publications

a. NDP 4, *Naval Logistics*.

b. NWP 3-2.3, *Maritime Prepositioning Force (MPF) Operations.*

c. NWP 3-10, *Naval Coastal Warfare.*

d. NWP 3-10.3, *Inshore Undersea Warfare*.

e. NWP 4-01, *Naval Transportation.*

f. NWP 4-01.1, *Naval Expeditionary Shore-based Logistics Support and RSOI Operation*.

g. NWP 4-08, *Naval Supply Operations*.

h. NWP 4-11, *Environmental Protection.*

9. Other

a. Institute for Defense Analyses (IDA), *US Army Transportation School Force Deployment Rock Drill - Read-Ahead*, Nov 1996.

b. *Joint Total Asset Visibility Strategic Plan* Draft Dated 14 July 1998.

c. Joint Warfighting Center (JWFC), *JTF Commander's Handbook for Peace Operations*, 28 Feb 95.

d. 3d TMCA RSOI Briefing, Sept 1996.

e. Military Traffic Management Command, Transportation Engineering Agency, Newport News, Virginia, MTMCTEA 94-700-2, *Logistics Handbook for Strategic Mobility Planning*, April 1994.

f. Military Traffic Management Command, Transportation Engineering Agency, Newport News, Virginia, MTMCTEA, *Rail Training Handbook*, July 1987.

g. FM 3-4-1/MCWP 3-37.5 Coordinating Draft, *Multiservice Procedures for NBC Defense of Fixed Sites, Ports, and Airfields*, Final Coordinating Draft, May 1999.

h. United States Transportation Command Handbook 24-2, *Understanding the Defense Transportation System*.

APPENDIX E
ADMINISTRATIVE INSTRUCTIONS

1. User Comments

Users in the field are highly encouraged to submit comments on this publication to: Commander, United States Joint Forces Command, Joint Warfighting Center Code JW100, 116 Lake View Parkway, Suffolk, VA 23435-2697. These comments should address content (accuracy, usefulness, consistency, and organization), writing, and appearance.

2. Authorship

The lead agent for this publication is the Commander in Chief, United States Transportation Command (STC-J5SR). The Joint Staff doctrine sponsor for this publication is the Director for Logistics (J-4).

3. Supersession

This publication supersedes JP 4-01.5, 21 June 1996, *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//TCJ5/SR//
INFO: JOINT STAFF WASHINGTON DC//J7-JDETD//

Routine changes should be submitted to the Director for Operational Plans and Joint Force Development (J-7), JDETD, 7000 Joint Staff Pentagon, Washington, DC 20318-7000, with info copies to the USJFCOM JWFC.

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 listed below (initial contact) or the USJFCOM JWFC in the event that the joint publication is not available from the Service.

b. Only approved joint publications and joint test publications 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 Attaché Office) to DIA Foreign Liaison Office, PSS, PO-FL, Room 1A674, Pentagon, Washington, DC 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*.

Army:	US Army AG Publication Center SL 1655 Woodson Road Attn: Joint Publications St. Louis, MO 63114-6181
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:	Commander (Attn: Publications) 814 Radford Blvd, Suite 20321 Albany, GA 31704-0321
Coast Guard:	Commandant Coast Guard (G-OPD), US Coast Guard 2100 2nd Street, SW Washington, DC 20593-0001
	Commander USJFCOM JWFC Code JW2102 Doctrine Division (Publication Distribution) 116 Lake View Parkway Suffolk, VA 23435-2697

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, *Information Security Program*.

GLOSSARY

PART I — ABBREVIATIONS AND ACRONYMS

AABFS	amphibious assault bulk fuel system
AAOG	arrival and assembly operations group
ABFC	advanced base functional component
ACSA	acquisition cross-Service agreement
A/DACG	arrival/departure airfield control group
ADP	automated data processing
AHA	alert holding area
AIS	automated information system
AIT	automated identification technology
ALSS	advanced logistic support site
AMC	Air Mobility Command
AMOG	air mobility operations group
AMSS	air mobility support squadron
AO	area of operations
AOR	area of responsibility
APOD	aerial port of debarkation
APOE	aerial port of embarkation
ASCC	Army Service Component Command
ATOC	air terminal operations center
C2	command and control
C3	command, control, and communications
C4	command, control, communications, and computers
C4I	command, control, communications, computers, and intelligence
CA	civil affairs
CAA	command arrangement agreements
CAP	civil augmentation program
CCA	central contracting authority
CDI	cargo disposition instructions
CEDI	commercial electronic data interface
CESE	civil engineering support equipment
CFR	Code of Federal Regulations
CHE	cargo handling equipment
CJCS	Chairman of the Joint Chiefs of Staff
CJCSI	Chairman of the Joint Chiefs of Staff Instruction
CJCSM	Chairman of the Joint Chiefs of Staff Manual
CMOS	Cargo Movement Operations System
COA	course of action
COCOM	combatant command (command authority)
COMAFFOR	commander, Air Force forces
COMPASS	Computerized Movement Planning and Status System
CONUS	continental United States
COP	common operating picture

COSCOM	corps support command
CSC	convoy support center
CSSE	combat service support element
CULT	common-user land transportation
DAAS	Defense Automatic Addressing System
DESC	Defense Energy Support Center
DIA	Defense Intelligence Agency
DIRMOBFOR	director of mobility forces
DLA	Defense Logistics Agency
DOD	Department of Defense
DODD	Department of Defense directive
DODI	Department of Defense instruction
DODR	Department of Defense regulation
DOT	Department of Transportation
DST	deployment support team
DTR	Defense Transportation Regulation
DTS	Defense Transportation System
EEA	environmental executive agent
EPW	enemy prisoner of war
FAA	Federal Aviation Administration
FEMA	Federal Emergency Management Agency
FEPP	foreign excess personal property
FGS	Final Governing Standards
FHA	foreign humanitarian assistance
FLS	forward logistic site
FM	field manual
FMCC	force movement control center (USMC)
FSSG	force service support group (USMC)
GATES	Global Air Transportation Execution System
GCCS	Global Command and Control System
GCSS	Global Combat Support System
GDSS	Global Decision Support System
GTN	Global Transportation Network
HAZMAT	hazardous material
HN	host nation
HNS	host-nation support
HQ	headquarters
IAW	in accordance with
IBS	Integrated Booking System
IC3	Integrated Command, Control, and Communications System
ICC	Interstate Commerce Commission

ICODES	Integrated Computerized Deployment System
IMDG	international maritime dangerous goods
IO	international organization
IPDS	inland petroleum distribution system
ITV	in-transit visibility
IWW	inland waterway
IWWS	inland waterway system
J-4	logistics directorate of a joint staff
JFC	joint force commander
JFRG	joint force requirements generator
JLOTS	joint logistics over-the-shore
JMC	joint movement center
JMCG	joint movement control group
JOA	joint operations area
JOPES	Joint Operation Planning and Execution System
JP	joint publication
JPAV	joint personnel asset visibility
JPEC	joint planning and execution community
JPO	Joint Petroleum Office
JRAC	joint rear area coordinator
JRSOI	joint reception, staging, onward movement, and integration
JSCP	Joint Strategic Capabilities Plan
JTAV	joint total asset visibility
JTB	Joint Transportation Board
JTF	joint task force
LASH	lighter aboard ship
LCM	landing craft, mechanized
LCU	landing craft, utility
LFA	lead Federal Agency
LFSP	landing force support party
LOC	line of communications
LOGMARS	logistics applications of automated marking and reading symbols
LO/LO	lift on/lift off
LSV	logistics support vessel
LT	large tug
LVS	logistics vehicle system
MAGTF	Marine air-ground task force
MARAD	Maritime Administration
MCC	movement control center
MCT	movement control team
MEF	Marine expeditionary force
MHE	materials handling equipment
MOG	maximum (aircraft) on ground

MOOTW	military operations other than war
MOU	memorandum of understanding
MP	military police
MPF	maritime pre-positioning force
MPS	maritime pre-positioning ship
MSC	Military Sealift Command
MSCO	Military Sealift Command Office
MSE	mission support element
MSR	main supply route
MST	mission support team
MTMC	Military Traffic Management Command
MTMCTEA	Military Traffic Management Command Transportation Engineering Agency
MTON	measurement ton
NATO	North Atlantic Treaty Organization
NAVCHAPGRU	Navy Cargo Handling and Port Group
NBC	nuclear, biological, and chemical
NCAPS	naval coordination and protection of shipping
NCC	Navy component command
NCHB	Navy cargo handling battalion
NCW	naval coastal warfare
NEO	noncombatant evacuation operation
NEPA	National Environmental Policy Act
NEW	net explosive weight
NGO	nongovernmental organization
NIMA	National Imagery and Mapping Agency
NWP	Naval Warfare Publication
OCCA	ocean cargo clearance authority
OCONUS	outside the continental United States
OEBGD	Overseas Environmental Baseline Guidance Document
OPCON	operational control
OPDS	offshore petroleum discharge system
OPLAN	operation plan
OPORD	operation order
ORP	ocean reception point
POD	port of debarkation
POE	port of embarkation
POG	port operations group
POL	petroleum, oils, and lubricants
PREREP	pre-arrival report
PSA	port support activity
PSC	port security company

RC	Reserve Component
RDD	required delivery date
RO/RO	roll-on/roll-off
RSOI	reception, staging, onward movement, and integration
SAAM	special assignment airlift mission
SATCOM	satellite communications
SEABEE	sea barge
SECTRANS	Secretary of Transportation
SJA	Staff Judge Advocate
SMO	strategic mobility officer
SOFA	status-of-forces agreement
SOP	standing operating procedure
SPM	single port manager
SPOD	seaport of debarkation
SPOE	seaport of embarkation
STON	short ton
TA	theater Army
TAA	tactical assembly area
TACC	tanker/airlift control center (USAF)
TACON	tactical control
TALCE	tanker airlift control element
TAMCA	theater Army movement control agency
TAV	total asset visibility
TC-ACCIS	Transportation Coordinator's Automated Command and Control Information System
TC-AIMS	Transportation Coordinator's Automated Information for Movement System
TCC	transportation component command
TCMD	transportation control and movement document
TEU	twenty-foot equivalent unit
T-JTB	theater-joint transportation board
TOC	tanker airlift control center (TALCE) operations center
TPFDD	time-phased force and deployment data
TSBn	transportation support battalion (USMC)
TTP	trailer transfer point
UCP	Unified Command Plan
USAID	United States Agency for International Development
USC	United States Code
USCINCTRANS	Commander in Chief, United States Transportation Command
USDA	United States Department of Agriculture
USG	United States Government
USTRANSCOM	United States Transportation Command

WMD	weapons of mass destruction
WPS	Worldwide Port System
WRM	war reserve materiel

aerial port. An airfield that has been designated for the sustained air movement of personnel and materiel as well as an authorized port for entrance into or departure from the country where located Also called APORT. (JP 1-02)

Air Mobility Command. The Air Force transportation component command of the US Transportation Command. Also called AMC. (JP 1-02)

area of responsibility. The geographical area associated with a combatant command within which a combatant commander has authority to plan and conduct operations. Also called AOR. (JP 1-02)

civil augmentation program. Standing, long-term contacts designed to augment Service logistic capabilities with contract support in both preplanned and short notice contingencies. Examples include US Army Logistics Civilian Augmentation Program, US Air Force Contract Augmentation Program, and US Navy Construction Capabilities Contract. (JP 1-02)

coordinating authority. A commander or individual assigned responsibility for coordinating specific functions or activities involving forces of two or more Military Departments, two or more joint force components, 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. (JP 1-02)

Defense Transportation System. That portion of the Nation's transportation infrastructure that supports Department of Defense common-user transportation needs across the range of military operations. It consists of those common-user military and commercial assets, services, and systems organic to, contracted for, or controlled by the Department of Defense. Also called DTS. (JP 1-02)

deployment database. The Joint Operation Planning and Execution System database containing the necessary information on forces, materiel, and filler and replacement personnel movement requirements to support execution. The database 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. (JP 1-02)

dominant user. The Service or multinational partner who is the principal consumer of a particular common-user logistic supply or service within a joint or multinational operation. The dominant user will normally act as the lead Service to provide this particular common-user logistic supply or service to other Service components, multinational partners, other governmental agencies, or nongovernmental agencies as directed by the combatant commander. (JP 1-02)

environmental considerations. The spectrum of environmental media,

resources, or programs that may impact on, or are affected by, the planning and execution of military operations. Factors may include, but are not limited to, environmental compliance, pollution prevention, conservation, protection of historical and cultural sites, and protection of flora and fauna. (JP 1-02)

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

Global Combat Support System. A strategy that provides information interoperability across combat support functions and between combat support and command and control functions through the Global Command and Control System. Also called GCSS. (JP 1-02)

Global Transportation Network. The designated Department of Defense (DOD) in-transit visibility system, providing customers with the ability to track the identity, status, and location of DOD units and non-unit cargo, passengers, patients, forces, and military and commercial airlift, sealift, and surface assets from origin to destination across the range of military operations. The Global Transportation Network (GTN) collects, integrates, and distributes transportation information to combatant commanders, Services, and other DOD customers. GTN provides the US Transportation Command with the ability to perform command and control operations, planning and analysis, and business operations in tailoring customer requirements throughout the requirements process. Also called GTN. (JP 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. (JP 1-02)

host nation. A nation which receives the forces and/or supplies of allied nations, coalition partners, and/or NATO organizations to be located on, to operate in, or to transit through its territory. Also called HN. (JP 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. Also called HNS. (JP 1-02)

in-transit visibility. The ability to track the identity, status, and location of Department of Defense units, and non-unit cargo (excluding bulk petroleum, oils, and lubricants) and passengers; medical patients; and personal property from origin to consignee or destination across the range of military operations. Also called ITV. (JP 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. (JP 1-02)

joint logistics over-the-shore operations. Operations in which Navy and Army logistics over-the-shore (LOTS) forces conduct LOTS operations together under a

joint force commander. Also called JLOTS operations. (JP 1-02)

joint movement center. The center established to coordinate the employment of all means of transportation (including that provided by allies or host nations) to support the concept of operations. This coordination is accomplished through establishment of transportation policies within the assigned operational area, consistent with relative urgency of need, port and terminal capabilities, transportation asset availability, and priorities set by a joint force commander. Also called JMC. (JP 1-02)

joint task force. A joint force that is constituted and so designated by the Secretary of Defense, a combatant commander, a subunified commander, or an existing joint task force commander. (JP 1-02)

joint total asset visibility. The capability designed to consolidate source data from a variety of joint and Service automated information systems to provide joint force commanders with visibility over assets in-storage, in-process, and in-transit. Also called JTAV. (JP 1-02)

logistics over-the-shore operations. The loading and unloading of ships without the benefit of deep draft-capable, fixed port facilities in friendly or non-defended territory, and, in time of war, during phases of theater development in which there is no opposition by the enemy; or as a means of moving forces closer to tactical assembly areas dependent on threat force capabilities. Also called LOTS operations. (JP 1-02)

Military Sealift Command. A major command of the US Navy, and the US Transportation Command's component command responsible for designated common-user sealift transportation services to deploy, employ, sustain, and redeploy US forces on a global basis. Also called MSC. (JP 1-02)

Military Traffic Management Command. A major command of the US Army, and the US Transportation Command's component command responsible for designated continental United States land transportation as well as common-user water terminal and traffic management service to deploy, employ, sustain, and redeploy US forces on a global basis. Also called MTMC. (JP 1-02)

movement control. 1. The planning, routing, scheduling, and control of personnel and cargo over lines of communications. 2. An organization responsible for the planning, routing, scheduling, and control of personnel and cargo movements over lines of communications. (This term and its definition modify the existing term and its definition and are approved for inclusion in the next edition of JP 1-02.)

operational control. 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) and may be delegated within the command. When forces are transferred between combatant commands, the command relationship the gaining commander will exercise (and the losing commander will relinquish) over these forces must be specified by the Secretary of Defense. Operational control 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; it does not, in and of itself, include authoritative direction for logistics or matters of administration, discipline, internal organization, or unit training. Also called OPCON. (JP 1-02)

port of debarkation. The geographic point at which cargo or personnel are discharged. This may be a seaport or aerial port of debarkation; for unit requirements, it may or may not coincide with the destination. Also called a POD. (JP 1-02)

port of embarkation. The geographic point in a routing scheme from which cargo or personnel depart. This may be a seaport or aerial port from which personnel and equipment flow to port of debarkation; for unit and nonunit requirements, it may or may not coincide with the origin. Also called POE. (JP 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. (JP 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. (JP 1-02)

single port manager. Through its transportation component commands, US Transportation Command is the Department of Defense-designated single port manager for all common-user aerial and sea ports worldwide. The single port manager performs those functions necessary to support the strategic flow of the deploying forces' equipment and sustainment from the aerial and sea port of embarkation and hand-off to the combatant commander in the aerial and sea port of debarkation (APOD and SPOD). The single port manager is responsible for providing strategic deployment status information to the combatant commander and to manage workload of the APOD and SPOD operator based on the commander's priorities and guidance. The single port manager is responsible through all phases of the theater aerial and sea port operations continuum, from an unimproved airfield and bare beach deployment to a commercial contract supported deployment. Also called SPM. (JP 1-02)

strategic airlift. The common-user airlift linking theaters to the continental United States (CONUS) and to other theaters as well as the airlift within CONUS. These airlift assets are assigned to the Commander in Chief, United States Transportation Command. Due to the intertheater ranges usually involved, strategic airlift is normally comprised of the heavy, longer range, intercontinental airlift assets but may be augmented with shorter range aircraft when required. Also called intertheater airlift. (JP 1-02)

strategic sealift. The afloat pre-positioning and ocean movement of military materiel in support of US and multinational forces.

Sealift forces include organic and commercially acquired shipping and shipping services, including chartered foreign-flag vessels and associated shipping services. (JP 1-02)

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

terminal operations. The reception, processing, and staging of passengers; the receipt, transit storage and marshalling of cargo; the loading and unloading of modes of transport conveyances; and the manifesting and forwarding of cargo and passengers to destination. (This term and its definition modify the existing term and its definition and are approved for inclusion in the next edition of JP 1-02.)

theater airlift. That airlift assigned or attached to a combatant commander other than Commander in Chief, US Transportation Command, which provides air movement and delivery of personnel and equipment directly into objective areas through air landing, airdrop, extraction, or other delivery techniques; and the air logistic support of all theater forces, including those engaged in combat operations, to meet specific theater objectives and requirements. Also called intratheater airlift. (JP 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. (JP 1-02)

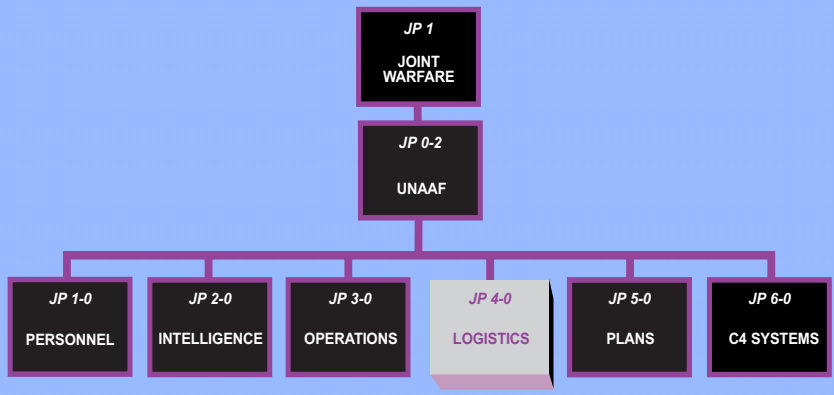
time-phased force and deployment list. Appendix 1 to Annex A of the operation plan. It identifies types and/or actual units required to support the operation plan and indicates origin and ports of debarkation or ocean area. It may also be generated as a computer listing from the time-phased force and deployment data. Also called TPFDL. (This term and its definition modify the existing term and its definition and are approved for inclusion in the next edition of JP 1-02.)

transportation component command. The three component commands of United States Transportation Command: 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. (JP 1-02)

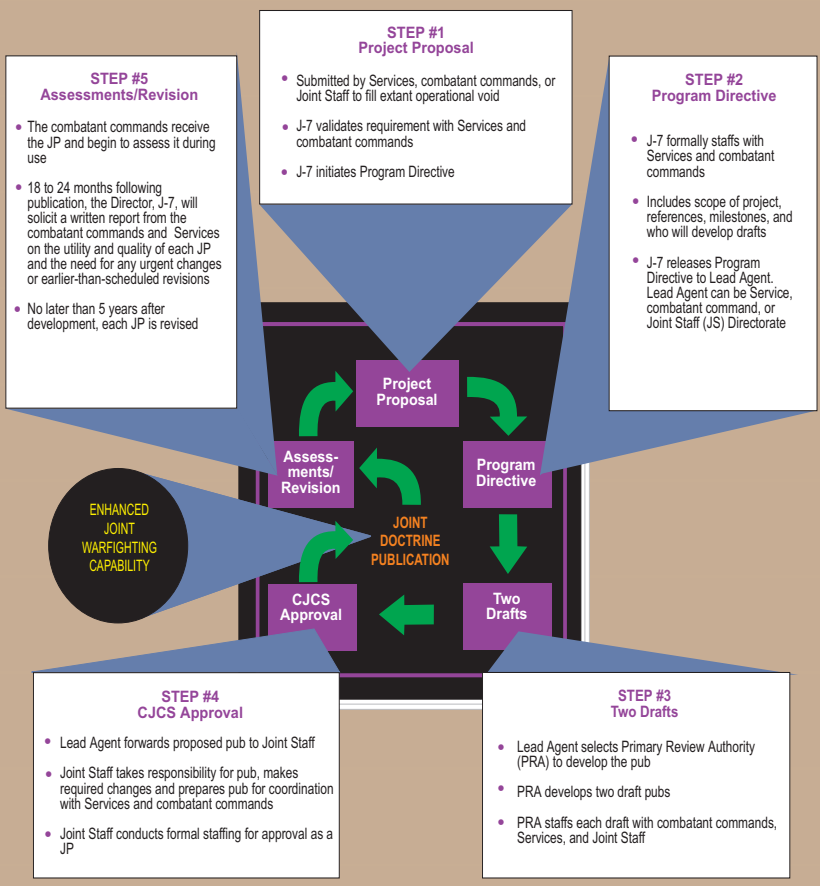
water terminal. A facility for berthing ships simultaneously at piers, quays, and/ or working anchorages, normally located within sheltered coastal waters adjacent to rail, highway, air, and/ or inland water transportation networks. (JP 1-02)

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 a quay. (JP 1-02)

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 Publication (JP) 4-01.5** is in the **Logistics** series of joint doctrine publications. The diagram below illustrates an overview of the development process:




JOINT
CHIEFS OF STAFF