

Joint Pub 4-01.2



**Joint Tactics, Techniques,
and Procedures for
Sealift Support
to Joint Operations**



9 October 1996



PREFACE

1. Scope

This publication provides a comprehensive overview of several key areas of sealift that are considered essential for the successful employment of sealift in support of national military strategy. These areas are the contribution of sealift to the execution of national military strategy; the sealift mission and its functions in the area of strategic mobility; sealift forces, current sealift assets and programs; the joint and Service organizations for sealift; Service relationships with the United States Transportation Command regarding sealift forces; the command and control system for employment of sealift forces; sealift support of the geographic combatant commander and, responsibility for planning, programming, and budgeting for sealift forces to meet national military objectives.

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 and prescribes doctrine and selected tactics, techniques, and procedures for joint operations and training. It provides

military guidance for use by the Armed Forces in preparing their appropriate plans. It is not the intent of this publication to restrict the authority of the joint force commander (JFC) from organizing the force and executing the mission in a manner the JFC deems most appropriate to ensure unity of effort in the accomplishment of the overall mission.

3. Application

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

b. The guidance in this publication is authoritative; as such, this doctrine (or JTTP) will be followed except when, in the judgment of the commander, exceptional circumstances dictate otherwise. If conflicts arise between the contents of this publication and the contents of Service publications, this publication will take precedence for the activities of joint forces unless the Chairman of the Joint Chiefs of Staff, normally in coordination with the other members of the Joint Chiefs of Staff, has provided more current and specific guidance. Commanders of forces operating as part of a multinational (alliance or coalition) military command should follow multinational doctrine and

procedures ratified by the United States. For doctrine and procedures not ratified by the United States, commanders should evaluate and follow the multinational command's doctrine and procedures, where applicable.

For the Chairman of the Joint Chiefs of Staff:



DENNIS C. BLAIR
Vice Admiral, US Navy
Director, Joint Staff

TABLE OF CONTENTS

	PAGE
EXECUTIVE SUMMARY	vii
CHAPTER I	
INTRODUCTION	
• Purpose	I-1
• Sealift Support of National Military Strategy	I-2
• The Sealift Trident	I-3
CHAPTER II	
ORGANIZATION AND RESPONSIBILITIES	
• General	II-1
• Forces and Authority	II-1
• Service-Unique, Theater-Assigned Transportation	II-1
• Organizations and Responsibilities	II-1
CHAPTER III	
PLANNING	
• General	III-1
• Sealift Asset Planning	III-1
• Other Considerations	III-2
CHAPTER IV	
SEALIFT ASSETS	
• General	IV-1
• Ship Types	IV-1
• Sealift Ship Programs	IV-7
• Sealift Enhancement Features	IV-13
• Logistics Over-The-Shore	IV-14
CHAPTER V	
VESSEL ACQUISITION AND ACTIVATION PROGRAMS AND PROCEDURES	
• General	V-1
• Government-Owned/Controlled Assets	V-1
• Commercial Assets	V-4

CHAPTER VI

EMPLOYMENT OF SEALIFT FORCES

• General	VI-1
• Execution Planning	VI-1
• Execution	VI-2
• Command, Control, Communications, and Computer (C4) Systems	VI-3
• Basic Cargo Planning Concepts	VI-7
• Intermodal Operations	VI-9
• Protection of Shipping	VI-10
• Operations Security	VI-11
• Logistic Support	VI-12
• Amphibious/Expeditionary Operations	VI-12

CHAPTER VII

NAVAL CONTROL OF SHIPPING

• General	VII-1
• Mission and Functions	VII-1
• Command Structure	VII-1
• Implementing NCS	VII-3

CHAPTER VIII

TRANSITION FROM PEACE TO CONFLICT

• General	VIII-1
• Sealift Force Structure	VIII-1

APPENDIX

A Merchant Ship Naval Augmentation Program	A-1
B References	B-1
C Administrative Instructions	C-1

GLOSSARY

Part I Abbreviations and Acronyms	GL-1
Part II Terms and Definitions	GL-4

FIGURE

I-1 Strategic Mobility Triad	I-1
I-2 Advantages and Disadvantages of Elements of the Strategic Mobility Triad	I-2
I-3 Phases of Strategic Mobility	I-3
I-4 The Sealift Trident	I-4
II-1 Service-Unique or Theater-Assigned Transportation Sealift Assets	II-2

II-2	Responsibilities of the Commander in Chief, US Transportation Command	II-4
III-1	Strategic Transportation Problem	III-2
IV-1	Types of Dry Cargo Ships	IV-2
IV-2	Types of Liquid Cargo Carriers	IV-6
IV-3	Sealift Ship Programs	IV-7
V-1	Sealift Acquisition and Activation Plan	V-2
V-2	Ready Reserve Force Activation Process for Contingency Deployments of Common-User Ships	V-4
V-3	National Defense Reserve Fleet Activation/Ship Requisition Process	V-5
V-4	Sealift Readiness Program/Voluntary Tanker Agreement Activation Process	V-7
VI-1	Measures of Ship Capacity	VI-8
VI-2	Cargo Planning Factors	VI-9
VI-3	Sealift Planning Factors	VI-9
VII-1	Naval Control of Shipping Command Structure	VII-2
VIII-1	Sealift Asset Availability Times	VIII-1

Intentionally Blank

EXECUTIVE SUMMARY

COMMANDER'S OVERVIEW

- **Discusses Sealift Support of the National Military Strategy**
- **Covers the Organization of and Responsibilities for Sealift Support to Joint Operations**
- **Presents General Sealift Asset Planning and Other Considerations**
- **Addresses Sealift Assets Including Ship Types, Sealift Ship Programs, Sealift Enhancement Features, and Logistics**
- **Discusses Vessel Acquisition and Activation Programs and Procedures**
- **Covers the Employment of Sealift Forces**
- **Describes Naval Control of Shipping**
- **Discusses the Transition from Peace to Conflict**

Introduction to Sealift Support

Successful response to regional contingencies depends upon sufficient strategic mobility assets to deploy combat forces rapidly and sustain them in a theater of operations as long as necessary in order to meet US military objectives.

The strategic mobility triad of airlift, sealift, and pre-positioning (PREPO) provides the capability to respond to contingencies. Each element of the triad has its own unique advantages and disadvantages. In general, **airlift** transports light, high priority forces and supplies, including personnel and equipment required to rapidly form units with pre-positioning elements' equipment and supplies. In most cases, **sealift** accounts for the majority of the total cargo delivered to a theater of operations. To meet these requirements, **sealift forces are employed in the three phases of strategic mobility, which are: PREPO, deployment (or surge), and sustainment.** As the principal means for delivering equipment and logistic support, sealift impacts the ability to conduct sustained operations and may influence the outcome of the operation being conducted.

Organization and Responsibility

The national security strategy depends heavily upon our ability to transport personnel, equipment, and supplies worldwide.

The **Department of Defense (DOD)** is responsible to the President for the execution of the national military strategy and any other missions the President may direct. The **Chairman of the Joint Chiefs of Staff** provides procedures for the submission of transportation requirements, prescribes a movement priority system, and apportions and/or allocates strategic lift assets. The **Secretaries of the Military Departments** maintain the duty and authority to organize, train, and equip forces for assignment to the Commander in Chief, US Transportation Command (USCINCTRANS). **USCINCTRANS** provides the Department of Defense with common-user air, land, and sea transportation across the range of military operations, less theater-assigned or Service-unique assets. **USCINCTRANS** is the DOD single manager for transportation. **Military Traffic Management Command** is responsible for providing responsive traffic management, terminal services, and transportation and transportability engineering. Responsibilities of the **Military Sealift Command (MSC)** include operating and maintaining MSC forces as directed and serving as the Navy administrative commander for MSC forces. The **Maritime Administration** is responsible for promoting the development of a merchant marine. The **Joint Transportation Board** ensures that common-user transportation resources assigned or available to the Department of Defense are allocated to achieve the maximum benefit in meeting DOD objectives. The **supported combatant commander** has primary responsibility for all aspects of a task assigned by the Joint Strategic Capabilities Plan or other joint operation planning authority. The **US Coast Guard** assures the safety and security of US ports and waterways and its assets may be assigned to a Naval Coastal Warfare Commander overseas for similar functions in ports of debarkation.

Planning

The actual or contemplated use of sealift assets during a crisis or conflict involves significant operational considerations, each of which must be the subject of detailed planning.

The **objective** of transportation planning is to **deliver the total prioritized movement requirements** at the appropriate time. Deliberate planning is designed to produce a detailed operation plan or operation plan in concept format. Crisis action planning is conducted during crisis and uses procedures that parallel that of deliberate planning, but is a more flexible system that responds to the demands of changing events. Crisis action planning produces an executable operation order (OPORD) directly and much faster, but may lack some of the details. There are **four steps** to solving the strategic

transportation problem: to **determine** the cargo and sustainment movement requirement; to **state** the requirement in the appropriate units of measure; to **simulate** the deployment using available forces; and to **confirm** that the plan is transportation-feasible.

Sealift Assets

Sealift forces are those militarily useful merchant-type ships available to the Department of Defense (DOD) to execute sealift across the range of military operations.

The sealift force is composed of shipping from some or all of the following sources, depending on the DOD sealift requirement at that specific time: active government-owned or controlled shipping; government-owned reserve or inactive shipping; US privately owned and operated commercial shipping; US privately owned, foreign flag commercial shipping; and foreign-owned and operated commercial shipping. **Sealift shipping falls into three broad categories** and carries the following during joint operations: **dry cargo ships or freighters** carry equipment and supplies; **liquid cargo carriers or tankers** carry refined petroleum, oils, and lubricants; and **passenger ships** carry backup troops or provide noncombatant or sealift medical evacuation. The conventional sealift assets cannot meet all strategic sealift and sealift-related requirements. Various **Sealift Ship Programs**, including Fast Sealift Ships, Auxiliary Crane Ships, Heavy Lift Ships, Aviation Logistics Support Ships, Hospital Ships, and Afloat Pre-positioning Forces have been established. **Sealift Enhancement Features** consist of special equipment and modifications that adapt merchant-type dry cargo ships and tankers to specific military missions. **Logistics-over-the-shore** operations enable sealift to achieve an over-the-shore discharge capability that matches cargo deliveries in an amphibious objective area or other expeditionary operating area.

Vessel Acquisition and Activation Programs and Procedures

Most vessels required to support military operations are not under DOD control during peacetime.

To acquire ships not under DOD control, some type of lease agreement or operating agreement, also known as a charter, must be effected between the Department of Defense and the owning and controlling organizations. **There are three types of charters: bareboat, voyage, and time.** Time and voyage charters are most commonly used to acquire sealift shipping to meet short-term military requirements. **Shipping that is directly owned by the government** (including active and inactive assets) is the most readily available source for unit equipment sealift. **Commercial ships** will be required to fill sealift requirements in virtually every major crisis situation

and include US flag ships, effective US-controlled shipping, and foreign flag ships.

Employment of Sealift Forces

The employment of sealift begins in the execution planning phase of the Joint Operation Planning and Execution System crisis action planning procedures.

The employment of sealift forces must be undertaken with extreme care and diligence. The execution planning period may be weeks, days, or even hours in length, depending on the political situation and scenario. **The US Transportation Command and its component commands** are responsible for ensuring that adequate common-user transportation is available to support the OPOD when executed, for developing feasible transportation schedules, establishing initial and follow-on requirements for sealift capability, resolving transportation shortfalls, adjudicating transportation allocation conflicts, and publishing transportation coordinating instructions. In a crisis, strategic sealift divides into **two broad categories: surge shipping during initial mobilization and resupply or sustainment shipping**. The execution phase starts with the National Command Authorities (NCA) decision to choose the military option for resolution of the crisis and to execute the OPOD. The inherent worldwide dispersal of sealift forces mandates that **sealift command, control, communications, and computer systems** be fully interoperable with the Global Command and Control System. Several **basic concepts of cargo handling and stowage** must be understood by the joint planner and will include different measures of ship capacity; broken stowage; stowage factor or cargo density; and units of cargo measurement. Intermodal operations provide flexibility by incorporating various combinations of sealift, airlift, rail, and trucking operations to facilitate rapid, efficient cargo movement. The protection of ships, operations security, logistic support, and amphibious and expeditionary operations must be coordinated in order to ensure successful sealift support to joint operations.

Naval Control of Shipping

Naval Control of Shipping Organization tactically routes merchant ships, reports their movements, and arranges for their protection.

The **mission** of the Naval Control of Shipping Organization (NCSORG) is to **provide for the safe movement of merchant shipping under its authority in a contingency situation**, or in time of war or national emergency. The NCSORG does not determine the destination of ships or the cargoes they carry, does not control escort forces, and is not responsible for control of merchant ships sailing in military convoys. The NCSORG command structure includes the NCA, geographic combatant commander, area commander, operational control authority, shipping control teams, and naval liaison officers. The

procedures for implementing naval control of shipping are simpler for sealift shipping than for shipping engaged in commercial trade.

Transition from Peace to Conflict

The transition from peace to conflict represents a critical period for sealift.

Management of the transition during this period will have a significant effect on the success of deployment and sustainment missions assigned to sealift. Transition from a peacetime transportation role to a military deployment role requires significant changes that affect every portion of the sealift forces. The first and most obvious change in sealift during transition is that **the number of ships under USCINCTRANS and MSC control will rapidly and substantially increase**. Depending on the mode of acquisition, ships may be delayed for significant time periods before they can be considered as active sealift assets.

CONCLUSION

This publication provides guidance on the planning and employment of sealift across the range of military operations. Sealift forces are responsible for the majority of the total cargo delivered to a theater of operations. Cargo includes the majority of unit equipment and supplies as well as some personnel. The relationships and responsibilities of the various commands and agencies involved in providing sealift support to joint operations are discussed. The objective of planning for the use of sealift assets is to deliver the total prioritized movement requirement at the appropriate time.

Intentionally Blank

CHAPTER I INTRODUCTION

"You can't have any more of anything than you can haul."

Colonel J. Monroe Johnson, USA

1. Purpose

This document describes the role of sealift in the US national military strategy. It identifies, describes, and defines the sealift forces; organization for command and control (C2) of sealift forces; responsibilities for sealift support of the Chairman of the Joint Chiefs of Staff (CJCS) and combatant commands; procedures and responsibilities for the generation of sealift force assets and requirements; and doctrine for sealift planning, employment, and transition across the range of military operations. **Successful response to regional contingencies depends on sufficient strategic mobility assets** in order to deploy combat forces rapidly and sustain them in a theater of operations

as long as necessary to meet US military objectives. **The strategic mobility triad of airlift, sealift, and pre-positioning (PREPO)** is shown in Figure I-1. Each element of the triad has its own unique advantages and disadvantages, as shown in Figure I-2. In general, **airlift transports light, high priority forces as well as supplies**, including personnel and equipment required to rapidly form units with PREPO elements' equipment and supplies. As an operation progresses, **sealift delivers the heavy combat units and their support equipment as well as the vital sustainment for deployed forces.**

In most cases, sealift accounts for the majority of the total cargo delivered to a

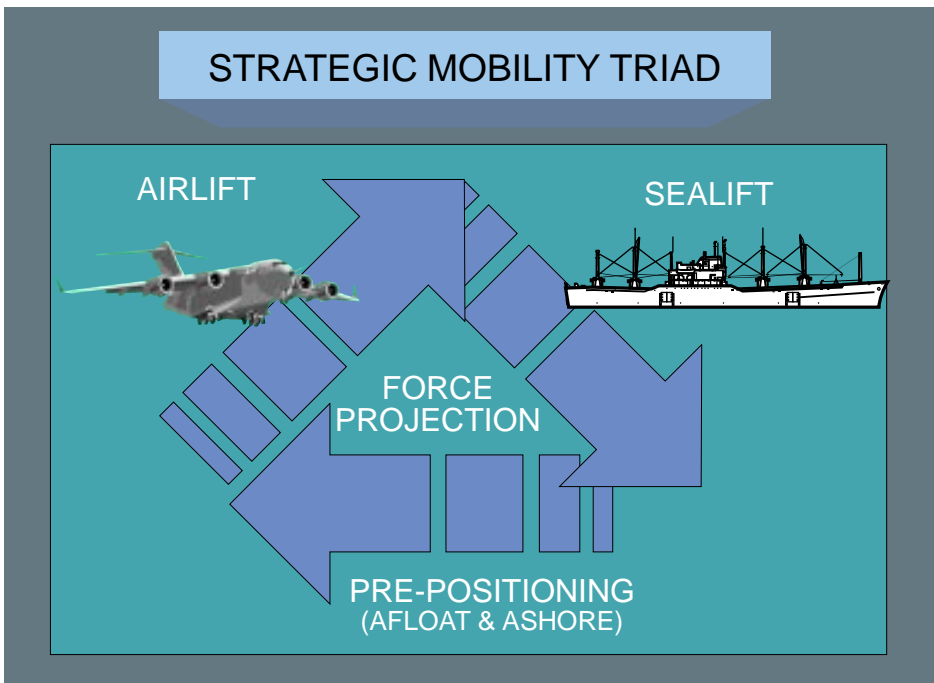


Figure I-1. Strategic Mobility Triad

Advantages and Disadvantages of Elements of the Strategic Mobility Triad	
ADVANTAGES	DISADVANTAGES
AIRLIFT	
<ul style="list-style-type: none"> * Rapid deployment of light combat and supporting units; * Flexibility of employment. 	<ul style="list-style-type: none"> * Small sustained delivery capacity; * Airline dependent; * Dependent on availability of major airfields; * Requires cooperation of foreign governments.
PREPO (Ashore)	
<ul style="list-style-type: none"> * Rapid deployment of heavy combat and supporting units; * Reduces movements required for deployment and redeployment. 	<ul style="list-style-type: none"> * Lacks flexibility; * Airlift dependent; * Fixed sites may be easily targeted for attack; * Requires cooperation of foreign governments; * Finite capability.
PREPO (Afloat)	
<ul style="list-style-type: none"> * Rapid deployment of heavy combat and supporting units; * Reduces movements required for deployment; * Flexibility of employment. 	<ul style="list-style-type: none"> * Dependent upon suitability of port facilities and debarkation locations; * Sealane dependent; * Airlift dependent.
SEALIFT	
<ul style="list-style-type: none"> * Sustained delivery of heavy combat and supporting units and their sustainment; * Flexibility of employment. 	<ul style="list-style-type: none"> * Seaport dependent (less MPS/AWR 3); * Sealane dependent.

Figure I-2. Advantages and Disadvantages of Elements of the Strategic Mobility Triad

theater of operations. To meet these requirements, sealift forces are employed in the **three phases of strategic mobility**, which are: **PREPO, deployment (or surge), and sustainment**. The relationship of each phase to the others in terms of time and quantities of material delivered is shown in Figure I-3.

2. Sealift Support of National Military Strategy

The United States is a nation with global interests and requires a military strategy that achieves national security objectives across the range of military operations. **The**

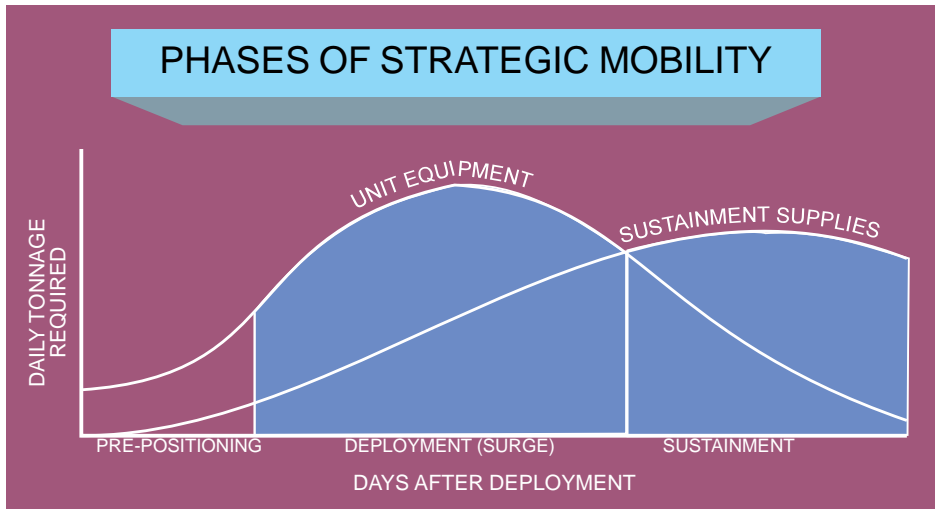


Figure I-3. Phases of Strategic Mobility

strategy employed is based on three main components: peacetime engagement; deterrence and conflict prevention; fight and win our Nation's wars. This strategy cannot be executed without forward presence, power projection, and the ability to sustain forces during an operation and redeploy forces when the operation is terminated. As one of the principal means for delivering equipment and logistic support, **sealift impacts the ability to conduct sustained operations and may influence the outcome of the operation being conducted.** To the extent that sealift limits deployment of forces or logistic support, geographic combatant and subordinate joint force commanders (JFCs) and their components are constrained in the strategic, operational, and tactical options that they might choose and the forces they can employ. **Flexible, assured sealift support permits JFCs to expand the strategic, operational, and tactical options available.** The current national military strategy of the United States is to deter aggression through overseas presence and effective power projection. In order to provide the pre-positioned, surge, and sustainment equipment and supplies necessary to support our forward-deployed forces, sealift may be the movement mode of necessity as well as choice.

3. The Sealift Trident

During large strategic deployment operations, sealift support is typically conducted in **three phases** as depicted in Figure I-4. **PREPO afloat is made up of ships from the Afloat Pre-positioning Force (APF) of the Military Sealift Command (MSC).** APF ships are discussed in greater detail in Chapter IV, "Sealift Assets." The flexibility inherent in the APF makes this force a key element in joint operation planning; the APF is capable of supporting the plans for the entire range of military operations. Pre-positioned cargoes aboard APF shipping include the capability to provide humanitarian assistance with food rations, medical supplies, habitability sets (i.e., tents), potable water-making machinery, engineer support equipment, and motor transport. To enable the early delivery of combat power to a theater of operations, additional equipment such as tanks and artillery are pre-positioned. Elements of the APF may be temporarily moved to take up position close to a potential employment area, either to signal national resolve during an evolving crisis or enhance the timely delivery of supplies and equipment upon the decision to deploy a decisive force.

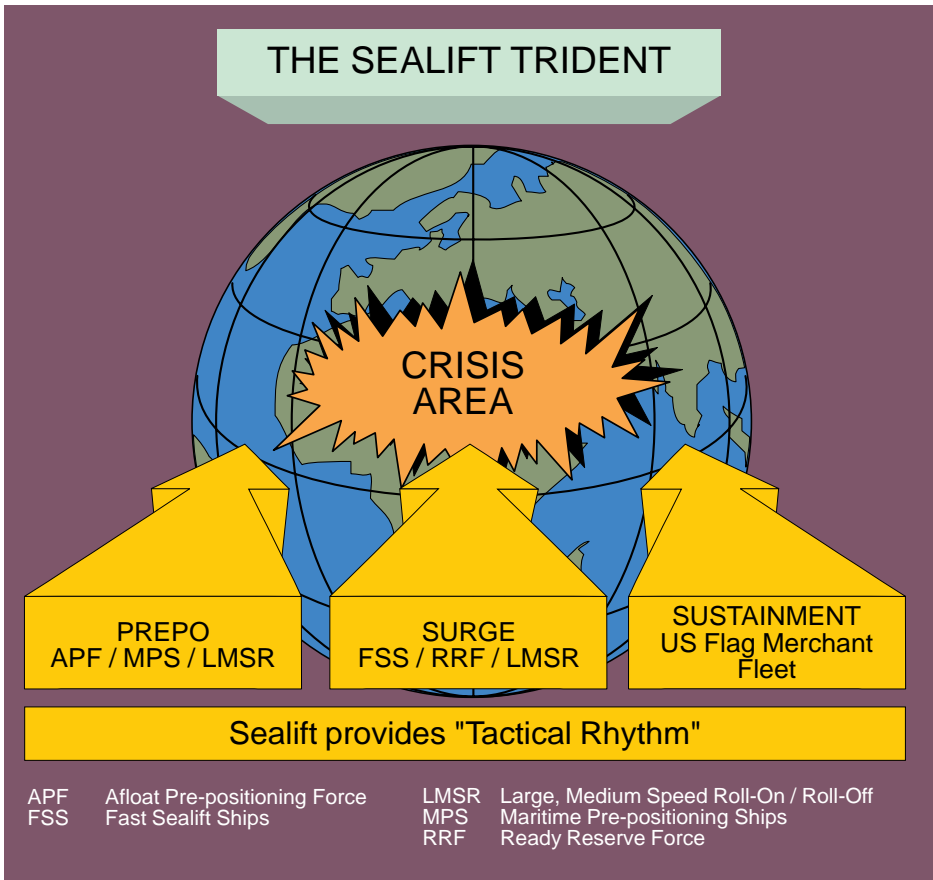


Figure I-4. The Sealift Trident

“Surge” includes ships from the US Transportation Command (USTRANSCOM)-controlled fleet; for example, the Fast Sealift Ships (FSS), the Ready Reserve Force (RRF), Large, Medium Speed Roll-On/Roll-Off (LMSR) vessels, and the commercial market (when contracted by USTRANSCOM for support of US forces). Surge shipping types are discussed in detail in Chapter V, “Vessel Acquisition and Activation Programs and Procedures.” Surge shipping delivers the heavy combat power and accompanying supplies in order to facilitate the deployment of predominantly continental US (CONUS)

based forces to anywhere in the world. Finally, **“sustainment” refers to shipping provided by the US merchant fleet,** mostly containerships, to deliver large quantities of resupply and ammunition to forward-deployed forces augmented as necessary by the RRF. Sustainment shipping considerations are discussed in greater detail in Chapter VI, “Employment of Sealift Forces.” **Although all three portions of the sealift trident are distinct entities, they provide a synergistic effect;** removing a segment of the trident denies JFCs the full range of sealift support options.

SEALIFT IN SUPPORT OF THE PERSIAN GULF

Key to the buildup and sustainment of forces was the workhorse of the strategic mobility triad sealift. Sealift in Operations DESERT SHIELD and DESERT STORM was composed of ships under MSC operational control as well as domestic and foreign ships under charter to MSC. The size and swiftness of the buildup required the United States to use almost every element of its sealift capability. Almost all Navy sealift elements were involved in the operation and they were supplemented by large numbers of chartered domestic and foreign ships. During the entire operation, 385 ships delivered unit equipment, related support, and petroleum products.

The sealift logistics deployment and sustainment effort took place in two phases. The first sealift phase extended from August to November [1990] and was designed to deploy and sustain forces to deter further Iraqi aggression. During that period, sealift moved the equipment of more than four Army divisions along with sustainment for the initial defensive support requirements. By September, more than 100 of TRANSCOM's MSC-controlled ships had delivered the equipment and sustainment for the 100,000 US military personnel who had deployed to the theater. When the first sealift phase ended, more than 180 ships were assigned or under charter to MSC and nearly 3.5 million tons of fuel and 1.2 million tons of cargo had been delivered.

The second phase began in December and extended until the end of the conflict. By 15 January [1991], the total number of US forces deployed in the theater had more than doubled. From the beginning, while deploying a unit, ships were also loaded with sustainment supplies required by the forces in theater. By March, an average of 4,200 tons of cargo arrived in theater daily. The average one-way voyage for the Operations DESERT SHIELD and DESERT STORM sealift covered nearly 8,700 miles.

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

Intentionally Blank

CHAPTER II

ORGANIZATION AND RESPONSIBILITIES

“A shipload of war material delivered safely overseas [is] wasted if half the cargo consists of filler items not needed immediately.”

Richard Leighton and Robert Coakley
(on efficiency in transportation vs. effective supply)
Global Logistics and Strategy 1940-1943

1. General

The Department of Defense (DOD) force structure is based on a highly trained, well-equipped, and mobile military force. The national security strategy depends heavily on our ability to transport personnel, equipment, and supplies worldwide. To ensure the Department of Defense’s ability to carry out its transportation missions effectively, **the Commander in Chief of the United States Transportation Command (USCINCTRANS) provides common-user air, land (CONUS only), and sea transportation to the Department of Defense** across the range of military operations.

2. Forces and Authority

DOD Directive 5158.4, 8 January 1993, “United States Transportation Command,” designates **USCINCTRANS as the DOD single manager for transportation** for other than Service-unique or theater-assigned transportation assets. This directive also directs the Secretaries of the Military Departments (after coordination with the Chairman of the Joint Chiefs of Staff) to assign the Military Traffic Management Command (MTMC), MSC, and the Air Mobility Command, in time of peace and war, to USCINCTRANS under USCINCTRANS’ combatant command (command authority) (COCOM). The authority and duty to organize, train, and equip forces for assignment to USCINCTRANS, and the associated

programming and budgeting function, shall remain with the Secretaries of the Military Departments. With respect to sealift, USCINCTRANS is delegated authority to procure commercial transportation services (including lease of transportation assets) and to activate, with the approval of the Secretary of Defense (SecDef), the RRF and the Sealift Readiness Program (SRP). Additionally, USCINCTRANS shall control the transportation accounts of the Defense Business Operations Fund (DBOF).

3. Service-Unique, Theater-Assigned Transportation

As used in DOD Directive 5158.4, “United States Transportation Command,” Service-unique or theater-assigned transportation means sealift assets that are shown in Figure II-1.

4. Organizations and Responsibilities

It is DOD policy that traffic management and transportation single manager responsibilities be aligned to achieve optimum responsiveness, effectiveness, and economy both in time of peace and time of war. Specific sealift responsibilities follow.

a. **Department of Defense.** Under the Secretary of Defense, the Department of Defense is responsible to the President for the execution of the national military strategy and any other missions that the President may

SERVICE-UNIQUE OR THEATER-ASSIGNED TRANSPORTATION SEALIFT ASSETS

- Assigned to the Department of the Army as Army afloat PREPO ships (prior to the initial discharge of cargo);
- Assigned to the Department of the Navy as:
 - The special mission support force of missile range instrumentation ships, ocean survey ships, cable ships, oceanographic research ships, acoustic research ships, and naval test support ships;
 - The naval fleet auxiliary force of fleet ammunition ships, submarine surveillance ships, fleet stores ships, fleet ocean tugs, ballistic missile submarine support ships, and fleet oilers;
 - Hospital ships;
 - Marine Corps intermediate maintenance activity ships or;
 - Prior to initial discharge of cargo, maritime PREPO ships.
- Assigned to the Department of the Air Force as Air Force afloat PREPO ships (prior to the initial discharge of cargo); or
- Assigned to the combatant command (command authority) of a unified command (including the US Special Operations Command) other than Commander in Chief, US Transportation Command.

Figure II-1. Service-Unique or Theater-Assigned Transportation Sealift Assets

direct. To perform these missions effectively, the Department of Defense is organized in two functional areas. These are: first, **the administration, equipping, training, and support of military forces; and second, C2 of military forces**. Related specific responsibilities include establishing and overseeing implementation of overall policy for effective and efficient use of DOD and commercial transportation resources, and

establishing overall policy guidance governing the transportation account of the DBOF.

b. **Chairman of the Joint Chiefs of Staff.** Under DOD policy, the Chairman of the Joint Chiefs of Staff is responsible as follows.

- Prescribe procedures for the submission of transportation requirements by the DOD components to USTRANSCOM.

- Prescribe a transportation movement priority system that will ensure responsiveness to the requirement of supported combatant commanders (CINCS).
- Apportion and/or allocate strategic lift assets.

c. Secretaries of the Military Departments.

Secretaries of the Military Departments **maintain the duty and authority to organize, train, and equip forces for assignment** to USCINTRANS, under USCINTRANS' COCOM, and along with the associated programming and budgeting functions. Specifically, with respect to sealift, the Secretaries are responsible as follows.

- The Secretary of the Army will establish and control such installation and port activities as may be necessary for the operation and administration of MTMC. Other tasks include:
 - Providing acquisition authority to MTMC by designating Commander, MTMC as Head of Contracting Activity to support USCINTRANS.
 - Providing litigation and legal support for actions arising from contracts issued or administered by MTMC in support of USCINTRANS.
- The Secretary of the Navy (SECNAV) will establish, organize, train, and equip MSC as a jointly staffed major command of the US Navy for assignment to USCINTRANS' COCOM in times of peace and war. The SECNAV will obtain USCINTRANS' approval on organizational changes within MSC that may impact the ability of USCINTRANS to carry out assigned responsibilities. The SECNAV will coordinate with

USCINTRANS on the assignment of new missions to MSC and ensure MSC is able to meet its assigned USTRANSCOM functions without degradation. Other tasks include:

- Coordinating with USCINTRANS' Navy requirements for shipping support to be drawn from the RRF.
- Providing acquisition authority to MSC by designating Commander, Military Sealift Command (COMSC) as Head of Contracting Activity to support USCINTRANS.
- Providing litigation and legal support for actions arising from contracts issued by MSC in support of USCINTRANS.
- Assigning to MSC Service-unique missions or assets.

d. **Commander in Chief, US Transportation Command.** USCINTRANS shall be the **DOD single manager for transportation**, other than Service-unique or theater-assigned assets. USCINTRANS is responsible for the items listed in Figure II-2.

e. **Military Traffic Management Command.** MTMC is responsible for **providing responsive traffic management, terminal services, and transportation and transportability engineering** in order to provide for safe and secure movement of units and personnel when and where needed. MTMC's common-user assets in CONUS include military owned and operated water terminals and heavy capacity flat cars used to transport main battle tanks and similar equipment to the seaport of embarkation (SPOE). MTMC consists of the headquarters, area commands, Transportation Engineering Agency, and MTMC terminals. **Sealift-related responsibilities, subject to the direction and control of USTRANSCOM, are as follows:**

RESPONSIBILITIES OF THE COMMANDER IN CHIEF, US TRANSPORTATION COMMAND

- ✓ Exercise COCOM of sealift forces, to include organizing and employing forces to carry out missions in support of other unified commands
- ✓ Coordinate and implement Defense Business Operations Fund-Transportation operational procedures in association with component comptrollers of Military Departments and Office of the Secretary of Defense; provide guidance for standardization of rates, regulations, operational policies, and procedures
- ✓ Apply apportioned / allocated strategic sealift resources as directed by the National Command Authorities, ensuring effective use
- ✓ Procure commercial transportation services (including lease of transportation assets) in accordance with applicable laws as necessary to conduct the USTRANSCOM mission
- ✓ Establish and maintain relationship between the DOD and the commercial transportation industry to develop concepts, requirements, and procedures for the Sealift Readiness Program; these procedures take effect upon the approval of the SecDef
- ✓ With the approval of the SecDef, activate strategic sealift reserve / mobilization programs including the RRF, SRP, and the Volunteer Tanker Agreement
- ✓ Coordinates and provides oversight for the joint logistics-over-the-shore exercise program
- ✓ Coordinate with the Maritime Administration and provide guidance on requirements issues as necessary
- ✓ In coordination with other agencies, provide direction and oversight for all matters dealing with the transportation of hazardous material
- ✓ Have the authority to provide management support for Service-unique or theater-assigned transportation assets as requested by the Secretaries of the Military Departments and the commanders of unified commands at the direction of SecDef or when USCINTRANS and the Service Secretary or commander concerned so agree
- ✓ Make recommendations to the Service Secretaries via the Chairman of the Joint Chiefs of Staff concerning the capability, characteristics, design, and other requirements for mobility assets needed for USCINTRANS' mission
- ✓ Designate CONUS seaports of embarkation and debarkation for deploying / redeploying forces and sustainment during planning and execution; make recommendations to the geographic combatant commanders for designation of seaports outside CONUS that might be used in military operations

Figure II-2. Responsibilities of the Commander in Chief, US Transportation Command

- Providing deliberate and crisis action planning support to USCINTRANS to ensure effective use of CONUS common-user ocean terminals and other CONUS transportation assets.
- Providing traffic management, CONUS surface transportation, and CONUS common-user ocean terminal support to supported CINCs as directed by USCINTRANS.

- Recommending diversions of cargo and passengers within the Defense Transportation System (DTS).
- Evaluating cargo throughput capability of CONUS common-user ocean terminals to be used for unit deployment.
- As the single port manager for common-user water terminals worldwide, MTMC provides those functions necessary to control the strategic flow of cargo and information between SPOE and hand-off to the geographic combatant commander. As port manager, MTMC assigns workloads to the port operator based on the CINC's priorities. Some responsibilities include operating the Worldwide Port System, contracting for port services, and documentation.
- Providing freight traffic management services and obtaining freight transportation rates and services from commercial for hire transportation companies, including inland waterway and coastal carriers. Providing routing, rates, and performance quality control.
- Providing ocean cargo booking for DOD components and Contract Administrative Services for sealift cargo for DOD components under authority delegated by COMSC.
- The Transportation Engineering Agency (TEA) serves as the Army transportability agent and manages that portion of the DOD Engineering for Transportability Program assigned to the Army, to include land transportation, Army air, logistics over-the-shore (LOTS), and ocean terminals. The TEA conducts transportation and/or traffic engineering infrastructure system capability studies on highway and rail networks and at installations and ports worldwide.
- f. **Military Sealift Command.** MSC consists of the headquarters, area commands, subarea commands, field offices, operational commands, and liaison offices. **MSC functions include operating and maintaining MSC forces as directed and serving as the Navy administrative commander for MSC forces.** MSC-specific sealift tasks, subject to the direction and control of USTRANSCOM, are as follows:
 - Providing deliberate and crisis action planning support to USTRANSCOM, ensuring effective use and control of common-user sealift.
 - Providing ocean transportation and support services to DOD components as required by USCINCTRANS.
 - Ensuring effective use and control of government- and commercial-owned ocean transportation services for the Department of Defense.
 - Informing USCINCTRANS and MTMC as to the availability of commercial and MSC controlled lift capability.
 - Negotiating ocean and intermodal rates and procuring ships and related services to meet DOD ocean and intermodal transportation requirements.
 - Recommending to USCINCTRANS activation of the RRF ships and activation of the SRP.
 - Preparing forecasts of ocean and maritime common-user transportation services based on DOD component requirements.
 - Acting as USCINCTRANS scheduling authority for sealift support of DOD requirements.
 - On behalf of USCINCTRANS, administrating and executing the SRP,

- exercising operational oversight of the RRF in concert with Maritime Administration (MARAD) and over ships requisitioned, and exercising mission control of those forces when transferred to USCINTRANS.
 - Coordinating MSC operations with appropriate port authorities.
 - Providing sealift for passengers on government-owned and/or -controlled or commercial ships as required.
 - In coordination with USTRANSCOM, developing program and budget submissions for strategic sealift system requirements.
 - Performing missions and tasks as directed by USCINTRANS. Keeping USCINTRANS informed of Service-assigned missions and employment use of strategic sealift assets.
- g. **Maritime Administration. MARAD is an agency within the Department of Transportation (DOT), responsible for promoting the development of a merchant marine** sufficient to meet the needs of national defense and the domestic and foreign commerce of the United States. MARAD functions include maintenance of ships in MARAD custody; administration of subsidy programs and other financial aids to shipping; maritime research and development; and training of merchant marine officers.

FAST SEALIFT SHIPS

The Fast Sealift Ships (FSS) performed particularly well [during DESERT SHIELD and DESERT STORM] in their part of the overall logistics effort, doing more relative to their numbers than any other type of sealift asset. FSSs have both RO/RO and limited container capabilities and are a rapid and versatile transportation means for unit equipment. They have a larger capacity than breakbulk ships and require less time to load and unload. However, there are only eight FSS ships, thus availability was limited. Unfortunately, one FSS, the *Antares*, failed off the East coast of the United States with a considerable amount of the 24th Infantry Division (Mechanized) equipment aboard. The ship was towed to Spain. Some of the cargo was airlifted to Saudi Arabia but most had to be unloaded and reloaded aboard another FSS returning from her initial voyage. This cargo arrived about three weeks later than planned. (Before the war, the *Antares* had been scheduled for major overhaul, but this was delayed. Thus a degree of risk was accepted in the decision to use *Antares* to speed the deployment.)

The FSS size and speed allowed the remaining seven ships to deliver more than 13 percent of the total cargo of the unit equipment. FSS carried the 90,000 short tons of equipment for the 24th Infantry Division (Mechanized) at average speeds of 27 knots. Although normally on 96-hour standby, the first FSS was ready to deploy in 48 hours. The typical FSS load included more than 700 Army vehicles such as M-1 tanks, M-2 fighting vehicles, and fuel trucks. By comparison, 116 World War II Liberty Ships would have been required to move the same tonnage in the same period.

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

MARAD also functions as the National Shipping Authority (NSA) of the United States, the emergency shipping operations agency tasked to acquire and manage merchant shipping for government service in time of war or in defense-related emergencies. In peacetime, MARAD provides ship inventory and characteristics information as well as estimates of ship forecasts for use in DOD planning. In turn, the Department of Defense provides MARAD with information on defense shipping requirements. In a contingency, the Department of Defense advises MARAD of time-phased requirements for ships by type. MARAD provides the Department of Defense with the required ships by activation of reserve vessels and through various government programs, including the Voluntary Tanker Agreement (VTA) and requisitioning. In a North Atlantic Treaty Organization (NATO) crisis, MARAD would be responsible for obtaining the NATO ships committed under the NATO Reinforcement Shipping Agreement.

h. **Joint Transportation Board (JTB).**

The JTB is composed of the Vice Directors of the Joint Staff (J-3, J-4, J-5, and J-7) and each Service's Director of Transportation. The JTB is responsible to the Chairman of the Joint Chiefs of Staff for seeing that **common-user transportation resources assigned or available to the Department of Defense are allocated to achieve the maximum benefit in meeting DOD objectives.** Specifically, the JTB will adjudicate between supported CINCs when disputes over movement priorities arise that are beyond USCINTRANS' ability to resolve.

i. **Supported CINCs.** The supported CINC is the commander having primary

responsibility for all aspects of a task assigned by the Joint Strategic Capabilities Plan (JSCP) or other joint operation planning authority. In the context of joint operation planning, this term refers to the commander who prepares operation plans (OPLANS), campaign plans, or operation orders (OPORDs) in response to the requirements of the Chairman of the Joint Chiefs of Staff. **Subordinate component commanders determine their specific force, supply, and personnel requirements** that are then time-phased for pickup at ports of embarkation (POE) and delivered to ports of debarkation (POD). To ensure that USTRANSCOM and MSC can provide required sealift support in a timely manner, the supported CINC should ensure that all passengers and cargo offered for movement are properly forecasted, documented, and prepared in accordance with Joint Pub 5-03.1, "Joint Operation Planning and Execution System, Vol I: (Planning Policies and Procedures)," and DOD Directive 4500.32R, "Military Standard Transportation and Movement Procedures."

j. **Coast Guard.** The US Coast Guard (USCG), an agency of DOT, is a Military Service with law enforcement authority. **In CONUS, the USCG is responsible for assuring the safety and security of US ports and waterways** and provides the following services: enforcing vessel cargo and waterfront facility regulations; inspecting vessels, including vessels of the RRF; licensing of mariners; enforcing customs laws; establishing and servicing aids to navigation; regulating and administering bridges over navigable waterways; port emergency response; search and rescue; and operation of vessel traffic services in selected ports and establishing safety and security zones.

Intentionally Blank

CHAPTER III PLANNING

“Much of the difficulties and past inefficiency of our national transportation in wartime can be traced to: (1) A lack of understanding on the part of transportation authorities of the problem of command; and (2) A lack of understanding on the part of command as to the problems of transportation.”

Henry E. Eccles
Logistics in the National Defense

1. General

The actual or contemplated use of sealift assets during a crisis or conflict and the period leading up to that stage involves significant operational considerations, each of which must be the subject of detailed planning. **Operational considerations** lead to a great many combinations of ships that may be considered for prompt delivery of unit equipment and other cargo to their destinations. Numerous factors enter into the determination of which combination, from several possible combinations of vessels, can deliver the total movement requirement in the shortest time period. The amount of time available significantly influences the planning process. **Deliberate planning** is the process used when time permits the total participation of the commanders and staffs of the Joint Planning and Execution Community (JPEC). The development of the plan, coordination among supporting commanders, reviews by the Joint Staff, and communications between the members of the JPEC take many months. **Crisis action planning** is conducted during crisis and uses procedures described in Joint Pub 5-03.1, “Joint Operation Planning and Execution System Vol I: (Planning Policies and Procedures).” The overall process of crisis action planning parallels that of deliberate planning, but it is a more flexible system that responds to the demands of changing events. Deliberate planning is designed to produce a detailed OPLAN, or operation plan in concept format (CONPLAN), which is easily

transformed into an OPORD for execution. Crisis action planning produces an executable OPORD directly and much faster, but may lack some of the details. **Solving the strategic transportation problem is a four-step process**, as shown in Figure III-1. The four steps are: (1) to determine the cargo and sustainment movement requirement; (2) to state the requirement in the appropriate units of measure; (3) to simulate the deployment using available forces; and (4) to confirm that the plan is transportation feasible. The planning process for both deliberate and crisis action planning is more fully described in the Joint Pub 5-03 series on the Joint Operation Planning and Execution System (JOPES).

2. Sealift Asset Planning

CJCSI 3110.11, “Annex J, JSCP, Mobility,” presents information and guidance on sealift assets for two nearly simultaneous major regional contingencies and their capability to support time-phased transportation requirements. Shipping is divided into two broad categories: common-user and noncommon-user. Common-user assets are available for joint support of all Services’ movement requirements. Noncommon-user vessels are reserved for specific purposes and not generally available to transport joint movement requirements. Planning for ships designated as Navy Combat Logistics Force as well as other sealift planning factors are covered in the JSCP Mobility Supplement.

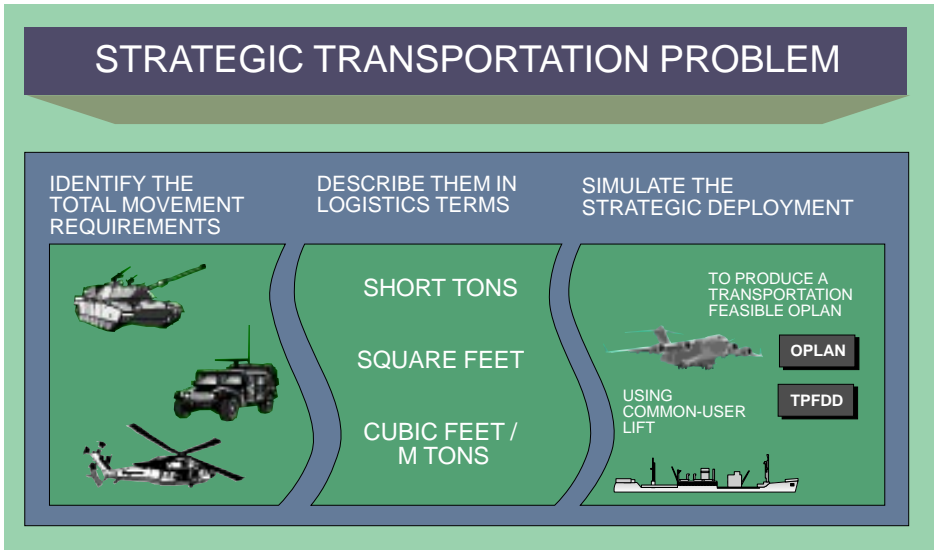


Figure III-1. Strategic Transportation Problem

3. Other Considerations

As mentioned in Chapter II, “Organization and Responsibilities,” **MSC and MTMC interface in the area of water terminal operations.** It is also important to note that **USTRANSCOM will determine the POE**

in CONUS. Selection will be based on various factors of which the maximization of the arrival and marshalling and movement of deploying forces through a water terminal complex will be prime considerations. Other factors include Service requirements and proximity of networks to the ports.

CHAPTER IV SEALIFT ASSETS

*"The Liner, she's a lady, and if a war should come,
The Man-o-War's 'er 'usband, and 'e'd bid 'er stay at 'ome;
But, oh, the cargo-boats that fill with every tide!
'E'd 'ave to up an' fight for them for they are England's pride."*

Rudyard Kipling
The Liner She's a Lady, 1895

1. General

Sealift forces are those militarily useful merchant-type ships available to the Department of Defense to execute the sealift requirements of the national military strategy across the range of military operations. **Called "common-user shipping,"** these ships will be engaged in the transportation of cargoes for two or more Services from one seaport to another or to a location at sea in the theater of operations pending a decision to move the cargo embarked ashore. The sealift force is composed of shipping from some or all of the following sources, depending on the DOD sealift requirement at that specific time: (1) active government-owned or controlled shipping; (2) government-owned reserve or inactive shipping; (3) US privately owned and operated commercial shipping; (4) US privately owned, foreign flag commercial shipping; and (5) foreign owned and operated commercial shipping. The precise nature of each type of shipping and how it is acquired for DOD use is discussed in Chapter V, "Vessel Acquisition and Activation Programs and Procedures." This chapter will describe those ships and ship characteristics that are most useful for DOD missions, discuss the advantages and disadvantages of common merchant ship types for military operations, and provide a general overview of DOD sealift ship and sealift support programs.

2. Ship Types

Sealift shipping falls into three broad categories: dry cargo ships or freighters, liquid cargo carriers or tankers, and passenger ships. During joint operations, dry cargo ships transport the equipment and supplies required to conduct and sustain the operation; tankers carry the refined petroleum, oils, and lubricants (POL) so critical to an operation's success; and passenger ships provide troop carrying (strategic or assault follow-on echelon [AFOE]) capability and noncombatant or sealift medical evacuation capability.

a. **Dry Cargo Ships.** In general, a dry cargo ship is considered to be usable for military purposes if it has a minimum carrying capability of 2,000 long tons (LT) of cargo and the ability to carry, without significant modification, unit equipment, ammunition or sustaining supplies. The major types of dry cargo ships are listed in Figure IV-1 and described below.

- **Breakbulk.** The term "breakbulk ships" refers to ships characterized by large open hatches and fitted with boom-and-winch gear or deck cranes. They are primarily used at ports which, either because of low cargo volumes or local economic factors, lack the modern facilities and inland rail/



Figure IV-1. Types of Dry Cargo Ships

highway connections required to support efficient containership operations. In competition with containerships, **breakbulk ships are no longer commercially viable**. Fewer of these ships are being built each year, and none has been built for US flag owners in recent years. The military **advantages** of general cargo or breakbulk ships include flexibility in the load composition afforded by open decks and multiple

cargo holds and the ability to discharge cargo without the use of port facilities. Their military **disadvantages** include time-consuming cargo operations and the requirement for large numbers of trained personnel to load and unload.

- **Roll-On/Roll-Off Ships.** A RO/RO ship is **specifically designed to carry wheeled and tracked vehicles** as all or most of its cargo. Vehicles are driven or towed on and off the ship by means of either the ship’s own ramps or shore-based ramps. Because it is designed to accommodate cargoes which cannot be stacked but which vary in height, below-deck space and volume utilization is generally less efficient than on a containership. RO/RO ships are thus commercially viable only in certain specialized trades. However, the RO/RO is the **preferred ship type for deployment of military unitequipment**. The military **advantages** of RO/RO ships include the capability for rapid loading and discharge of military vehicles and non-self-deployable aircraft, and open deck areas well suited to the carriage of outsized military cargo. Their military **disadvantages** include their



General cargo and breakbulk ships, while dated in terms of cargo loading and unloading operations, are militarily useful because of great flexibility and the capability to operate effectively through austere ports.



Roll-on/Roll-off ships, such as the Cape Wrath, are the preferred ship type for military deployments.

relative unsuitability for carriage of sustaining supplies and ammunition (in comparison with general cargo and containerships) and their limited availability, because their market sector is much reduced compared with containerships.

- **Containerships.** Containerships are **specifically designed to carry all of their cargo in standard ocean shipping containers**, which are loaded into vertical “cells” below deck and stacked and lashed on deck. They rely on shore-based cranes or Auxiliary Crane Ships for cargo loading and discharge. Standard ocean shipping containers are weatherproof, made of steel or similar material, constructed to withstand the high forces to which they may be subjected in heavy seas, and usually designed and sized to permit their efficient interchange for connecting with intermodal systems for inland rail or highway movement. **Shipping containers are available in a variety of configurations** that include end opening, side opening, half heights, open top, flatrack, refrigerated, liquid bulk (tank), and modular (quadcon/tricon). Except in highly specialized trades, **cargo**

containers generally conform to US and international standards that have been developed by the American National Standards Institute and the International Organization for Standardization (ISO) respectively. The size standards for outer dimensions of shipping containers are 20' or 40' length, 8' width, and 8' or 8'6" in height. To increase revenues, “high cube” containers with heights of 9'6" have come into common use. Fortunately, most containerships can carry containers of mixed heights without significant difficulty. Depending on cargo density, a standard 20' container can carry up to 15-20 short tons (STs) or 29 measurement tons (MT) (MT of 40 cubic feet) of cargo. Containerships generally carry a mix of 20' and 40' containers, and some are fitted for deck stowage of 45' and 48' lengths. Containership capacity is normally expressed in Twenty-foot Equivalent Units (TEU), which is defined as the number of 20' x 8' x 8'6" containers it can carry; or, similarly, in Forty-foot Equivalent Units. **Containerships vary considerably in size.** Some of those serving major ports have capacities exceeding 5,000 TEU. Some recently

built for feeder service (i.e., serving small outports from a major port) have capacities of 400 TEU or less. The military **advantages** of containerships include their large cargo capacity, excellent suitability for carriage of sustaining supplies and ammunition, rapid and efficient cargo operations, and the high likelihood of their availability due to the large numbers of containerships in the world. Movements by containers also provide greater degrees of cargo security, reduce instances of pilferage and damage to cargo, reduce cargo handling costs, and result in faster more efficient deliveries. Their military **disadvantages** include near total dependence on specialized shoreside equipment for cargo loading and discharge, and general unsuitability for carriage of large vehicles and oversized cargo unless modified to utilize heavy duty flatracks. Further information on intermodal use is available in Joint Pub 4-01.7, "Joint Tactics, Techniques, and Procedures for Use of Intermodal Containers in Joint Operations."

- **Barge Ships.** Barge ships are **designed to carry specially designed barges (lighters) or a combination of such barges and containers**. Thus, they are necessarily large ships with a large heavy lift capability. Their design was intended to combine the flexibility and self-sustained cargo handling capability of the general cargo ship with the rapid port turnaround time of the RO/RO and containership. This combination, however, has not proved commercially viable in most trades.

- **Lighter Aboard Ship (LASH).** The **LASH is a single-decked vessel with large hatches, wing tank arrangements, and a clear access to the stern**. The LASH has a gantry crane with a cargo handling capacity of approximately 450 LT. The function of this crane is to convey barges or lighterage from the stowed location aboard the ship to the stern region and to lower the barges or lighterage into the water. Some LASH ships are equipped with container gantry cranes for the handling of the onboard complement of containers. Different classes of LASH ships have



The LASH, Green Harbour, is part of the Afloat Pre-positioning Force and is designated for Army PREPO.



The LASH vessel is part of the Air Force PREPO force at Diego Garcia.

capacities ranging from 64 to 89 barges or a mixture of LASH barges and military lighterage.

- **SEABARGE (SEABEE).** The SEABEE is arranged much differently from the LASH in that it has **three decks on which the cargo barges or container flats are stowed**. Barges are brought to each deck level by a stern elevator and are moved internally within the ship by the Transporter (conveyor) System. Two barges can be loaded or discharged in a cycle of about 40 minutes. SEABEE barge ships can carry up to 38 sea barges (97'6" long x 35' wide x 16'11" high). The elevator capacity is 2,000 LT. The SEABEE ship is the preferred ship to transport landing craft, utility, and lighter, amphibious resupply, cargo 60 ton. The military **advantages** of barge carriers include their suitability to carry either unit equipment, sustaining supplies, or ammunition; the ability to carry amphibious lighterage; and the capability to preload the barges before ship arrival and to discharge cargo from the barges at relatively austere port facilities, after the ship has sailed. Their military **disadvantages** include a complete dependence on a single, very complicated

mechanical system for barge discharge; the barge's dependence, once afloat, upon the availability of towage; and the overall unsuitability of the barges for towing outside harbors or other protected waters.

- **Dry Bulk Carriers.** Dry bulk carriers are **designed to carry grain or similar cargoes in bulk** (i.e., material that can be dumped, sucked, pumped, or blown). Loading and discharge are normally performed at specialized terminals, using cargo handling systems that are designed for specific commodities. Gravity is often used for loading; the various discharge methods include the use of pneumatic systems, conveyors, and excavation-type machinery. Most dry bulk carriers are not considered to be militarily useful. However, some are fitted with deck cranes so that, in some cases, their characteristics are similar to those of a general cargo ship.

- b. **Liquid Cargo Carriers.** Liquid cargo ships, or tankers, are **specifically designed to transport liquid cargoes in bulk**. Although tankers differ greatly in size, their cargo handling equipment is similar. **Specific features of the cargo handling**

equipment differ, however, based on the intended cargo. These differences may limit the capability of the ship to carry cargo other than that for which it was designed. Tanker capacities are stated in terms of cargo deadweight (DWT) or barrels (BBL). DWT is measured in LT of 2,240 pounds and 1 BBL equals 42 US gallons. The parameters that define a militarily useful tanker are the capability of carrying POL, a capacity within the range of 2,000 to 100,000 DWT, and a sustained speed in excess of 12 knots. **Tankers are classed by size and type of cargo.** The major types of liquid cargo carriers are listed in Figure IV-2 and described below. In general, smaller tankers carry “clean” cargoes (refined products, such as gasoline, diesel fuel, or jet fuel). Large

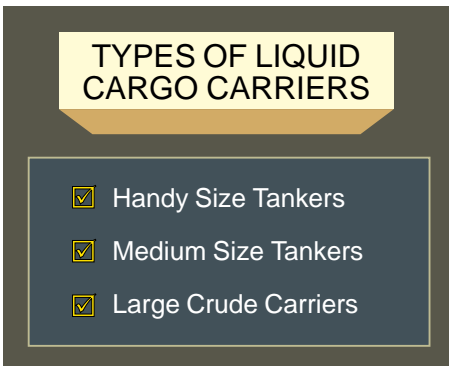


Figure IV-2. Types of Liquid Cargo Carriers



The Oiler Guadalupe is a Henry J. Kaiser class replenishment oiler.

tankers generally carry “dirty” (black oil or crude oil) cargoes. A tanker carrying dirty cargoes will require about 2 weeks of manual labor to clean its tanks and piping before carrying clean cargo.

- **Handy Size Tankers.** The handy size tanker (6,000 to 35,000 cargo DWT, or approximately 48,000 to 280,000 BBLs) is the **most militarily useful**. These generally carry clean or refined products, although some may carry black oil, chemicals and, occasionally, bulk grain. The term “handy size tanker equivalent,” refers to a tanker of 200,000 BBL or approximately 25,000 DWT. The military **advantages** of handy size tankers include their ability to enter most of the world’s tanker ports, the relatively short time required for tank cleaning when required, and their overall flexibility with regard to the numbers of different cargoes they can carry. Their military **disadvantages** include the comparatively small capacity and limited availability in the commercial market.
- **Medium Size Tankers.** The medium size tanker ranges in capacity from 35,000 to 100,000 DWT (or approximately 280,000 to 800,000 BBLs). As a general

rule, those under 60,000 DWT can carry “clean” cargoes while those over 80,000 DWT will, almost exclusively, carry crude oil or other “dirty” cargoes. The military **advantages** of medium size tankers are that they are more readily available than handy size tankers and are capable of delivering large quantities of POL. Their military **disadvantage** is that it is difficult and time consuming (1-2 weeks) to clean the tanks and piping of tankers that have been transporting either crude oil or other “dirty” cargoes, so that they can be used to transport refined POL products.

- **Large Crude Carriers.** Large crude carriers are the largest tanker class and are **solely dedicated to the transportation of crude oil**. Very Large Crude Carriers range in capacity from 100,000 to 400,000 DWT, while Ultra Large Crude Carriers have even greater capacities. None of these ships are considered militarily useful.

c. **Troop/Passenger Ships.** Although government-owned ready reserve troop ships are specifically designed to transport troops for combat missions, the mission has changed significantly. Troops are generally airlifted to safe landing areas in locale of combat. **Troop ships are used for movement of military troops** to and from combat and safe areas where troops embark or debark military and commercial aircraft; **passenger ships also serve for rest and recreation for troops** during long periods of combat; these ships are generally foreign flag privately owned passenger vessels equipped with amenities not available in the traditional troop ship. **Ready reserve troop ships are generally converted state maritime academy training vessels** that have been enhanced to enable the transport of troops for combat missions. These ships have limited cargo space; they carry between 480 to 800 troops. When the

number of troops increases, the use of folding canvas cots, and berthing on deck and in designated holds is required. Commercial privately owned US and foreign flag passenger ships are traditional cruise or converted ferry vessels equipped with the necessary comforts; vessel capacity varying with the capability for messing and berthing.

3. Sealift Ship Programs

The conventional sealift assets discussed above cannot meet all strategic sealift and sealift-related requirements alone. These requirements include the rapid deployment of heavy Army combat units and Marine Corps forces, containership discharge where port facilities are damaged or nonexistent, expeditionary aviation maintenance support, state-of-the-art medical care for expeditionary forces, and PREPO of combat and support equipment and supplies. **To meet these**

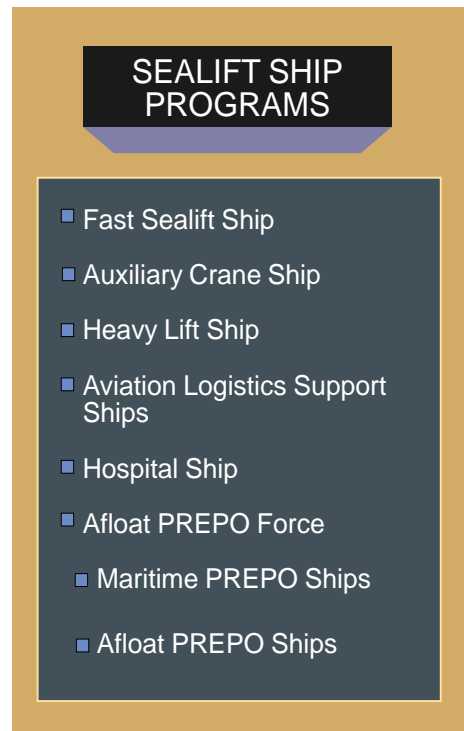


Figure IV-3. Sealift Ship Programs



The fleet of eight fast sealift ships (T-AKR Algor shown) is capable of lifting over 90 percent of a Mechanized Division.

requirements, various Sealift Ship Programs have been established as shown in Figure IV-3 and described below.

CONUS East and Gulf Coast ports in a 4-day Reduced Operational Status (ROS), each maintained by a crew of 18.

a. **Fast Sealift Ship.** The FSSs are former containerships, purchased by the Navy and converted to a **RO/RO configuration**. The present eight ships have a joint, **one-time lift capability of approximately 1.3 million sq ft**, and also have a container capability. They are capable of a sustained speed in excess of 30 knots. The FSSs are berthed at

b. **Auxiliary Crane Ship (ACS).** ACSs are **converted containerships on which two or three twin-boom revolving heavy-lift cranes have been mounted**. These cranes are able to offload containerships and provide a heavy lift capability in locations where port facilities are nonexistent, inadequate, or damaged. ACS are capable of handling lifts up to 110



The Keystone State is the oldest of the RRF Auxiliary Craneships (ACS).



The heavy lift ship American Cormorant uses Float-on/Float-off capability to handle oversized military cargo.

LT, containers of all sizes, and wheeled and tracked vehicles. In addition to this unique offload capability, each ACS is able to carry between 200 and 500 containers, seasheds, and/or flatracks (depending on configuration), and its main deck is also outfitted to carry amphibious lighterage. The ACS are part of the RRF, which is maintained by MARAD, and are berthed on all three CONUS seacoasts.

c. **Heavy Lift Ships.** These specialized vessels, also known as Float-on/Float-off (FLO/FLO) or semisubmersible ships, **provide the capability to load, transport and offload outsized military cargo independent of port equipment traditionally used** for handling large or extremely heavy cargo, such as tug boats, barges, landing craft, floating cranes, and single anchor leg mooring systems. Lifts range from approximately 50 to as much as 45,000 tons. These ships are designed to take on ballast water in floodable tanks that partially submerges the vessel. Cargo is then floated over the submerged portion of the vessel which then deballasts and surfaces under the cargo. After the vessel is full afloat, the cargo is secured for transport. One FLO/FLO ship is currently assigned to

the PREPO Force carrying Army lighterage and terminal service support equipment. Heavy lift ships are commercial vessels, under contract, with unique characteristics that provide military usefulness. Another is planned in the future.

d. **Aviation Logistics Support Ships (T-AVBs).** There are **two T-AVBs that provide dedicated and rapid sealift** for critical movement of the Marine Corps aviation sustainment forces of the Marine air-ground task force aviation combat element (MAGTF ACE). **The T-AVBs are operationally controlled by MSC and maintained in ROS-5 status by MARAD.** There is one T-AVB berthed on the East and West coasts of CONUS. The aviation sustainment forces deploy and work in standard 8x8x20 ISO containers called mobile facilities (MF). The MFs provide the necessary work space for personnel, support equipment, technical publications, and special tools authorized in individual contingency support packages defined under the Marine aviation logistic support program. **The T-AVB can be deployed in three modes of operation: support, transport, and combination.** In the support mode,



Hospital ships enable medical facilities to be positioned in or near the joint force area of operations.

approximately 340 MFs and 325 US Marine Corps (USMC) personnel can be embarked to provide selected seabased support for the MAGTF ACE while loaded aboard ships. In the transport mode, approximately 680 MFs and minimum USMC personnel can be embarked to provide maximum landbased support for the MAGTF ACE when offloaded ashore. In the combination mode, a tailored mix of MFs and USMC personnel can be loaded aboard the T-AVB to optimize the seabased and landbased support for the MAGTF ACE.

e. **Hospital Ship (T-AH).** The T-AHs are converted tankers equipped with 12 operating rooms and 1,000 patient beds. The two T-AHs in the Navy ship inventory are berthed on the East and West Coasts and maintained in a 5-day ROS by an average crew of 13 civilian and 43 military personnel. **The ships are operated by MSC.** The US Navy, Chief of the Bureau of Medicine and Surgery, provides manning for the hospital facilities.

f. **Large Medium Speed Roll-On/Roll-Off Ships.** A LMSR is similar to any other RO/RO ship in that it is specifically designed to carry wheeled and tracked vehicles as all or most of its cargo (see Roll-On/Roll-Off

Ships). **A LMSR differs from most other RO/RO ships in that it is faster and larger.** By design, a LMSR is capable of sustaining a transit speed of at least 24 knots. LMSR will be PANAMAX ships (950' length, 105' beam, 34-35' draft), with two to three times the stowage capacity of the average RO/RO. The LMSR ship type is being built or converted specifically for military use. There are currently no commercial equivalents.

g. **Afloat Pre-positioning Force (APF).** Afloat PREPO combines two elements of the strategic mobility triad, **PREPO** and **sealift**. This program, which involves the forward deploying of equipment and supplies aboard ships, **improves sealift response time in a crisis** while adding flexibility and security to pre-positioned ships. These ships are chartered commercial vessels or activated RRF vessels. Some of these ships have useful features that the owners provided to enhance their value to the military, but they are not a specific ship type. The APF consists of the maritime pre-positioning ships (MPS) and afloat pre-positioning ships (APS).

- **Maritime Pre-positioning Ships.** Maritime PREPO is a **strategic deployment option** that quickly



MPS forward-deploy MAGTF equipment and supplies.

combines the substantial PREPO equipment and supplies loaded aboard the ships of an MPS Squadron with a Maritime air-ground task force (MAGTF) to establish a formidable combined arms force capable of sustained operations. The MAGTF and Navy Support Element (NSE) personnel, selected equipment, and combat aircraft are flown into the objective area where the MPS operations occur. **The 13 MPS are specifically constructed or modified RO/RO ships** that are forward-deployed in three self-

contained squadrons. Each squadron carries the unit equipment and 30 days of supplies for one brigade-size MAGTF. Each ship carries a spread load of unit equipment, supplies, POL, and potable water. Additionally, **each ship is outfitted with NSE equipment** consisting of the camp support and lighterage needed to discharge cargo over unimproved ports or over the beach. MPS Squadron 1 (four ships) is positioned in the Mediterranean; MPS Squadron 2 (five ships) is positioned in the Indian Ocean (Diego Garcia);



The Buffalo Soldier, a reflagged French cargo ship, carries Air Force PREPO equipment.

and MPS Squadron 3 (four ships) is positioned in the Western Pacific (Guam and Saipan). MPS cargo may be discharged pierside or “in stream” by NSE personnel composed of Navy Beach Group and Cargo Handling Battalion personnel, as well as Marine Corps personnel airlifted to the objective area.

- **Afloat Pre-positioning Ships.** The APS (also called PREPO ships) are **government-owned and commercially chartered ships on which pre-positioned military equipment and munitions and/or supplies are stored** to meet rapid deployment requirements of various Services. These ships are forward-deployed with heavy combat equipment, combat support equipment, and sustainment to support the airlift of personnel and initial increments of light combat forces. The APS includes **dry cargo ships** and tankers. The dry cargo ships carry Army and Air Force ammunition, Army combat support

equipment and sustaining supplies, and a Navy fleet hospital. The **tankers** carry POL for all Services and may carry potable water when required. All ships are capable of self-discharge in the objective area. **The Army has developed a comprehensive program of PREPO**, both ashore and afloat, in response to the Congressionally Mandated Mobility Requirements Study and the Army Strategic Mobility Program. Crucial to this concept has been the afloat PREPO of 2x2 brigade sets of combat equipment with a full slice of combat service support (CSS) and the sustainment to support three divisions for 30 days. This force is basically self-supportive, with the port opening and materials handling equipment necessary to run austere ports or limited joint logistics over-the-shore (JLOTS). The **Army War Reserve-3** was initiated in FY 1994 and included seven RO/ROs from the RRF, one ACS, three LASH ships, one Heavy Lift PREPO Ship,

AFLOAT PRE-POSITIONING SHIPS

During the 1980s, the Army established afloat pre-positioning of equipment in support of Southwest Asia. These ships are referred to as Afloat Pre-positioning Ships (APS) and, when the [Persian Gulf] war started, consisted of 12 ships (eight dry cargo and four tanker). Two tankers were already being used in a fleet support role. These vessels were located at Diego Garcia, and one ship was in the Mediterranean. This program involved storage of cargo on four Army APS, which would be strategically positioned and could be moved to support CENTCOM contingencies carrying equipment, fuel, and supplies for the Army.

During Operations DESERT SHIELD and DESERT STORM, these ships sailed from forward bases in Diego Garcia to the Middle East, and the first APS arrived in Saudi Arabia on 17 August. The war reserve cargo on board these ships included subsistence, general supplies and equipment, packaged fuel, construction and barrier material, ammunition, and medical supplies. One semisubmersible heavy lift vessel carried port operating equipment (e.g., tugboats, floating cranes, utility landing craft, rough terrain forklifts, containers, and support parts). These ships proved to be indispensable during the operation's first days providing a readily available source of supplies.

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

and two container ships. Currently, the ships are under the administrative control of the MPS Squadron Commanders.

4. Sealift Enhancement Features

Sealift enhancement features (SEFs) consist of **special equipment and modifications that adapt merchant-type dry cargo ships and tankers to specific military missions**. They are typically installed on ships of the RRF or on ships under MSC control. The SEFs fall into three categories: productivity, operational, and survivability enhancements.

a. **Productivity Enhancements.** A number of productivity enhancements **expand the capabilities of merchant ships to carry military cargoes**. Examples include heavy duty flatracks, LASH lift beams, alongside refueling systems, the installation of 20' container hardpoints in 40' container cells, and installation of vehicle tie-downs (D-rings and cloverleaves) on deck. Other productivity enhancements provide the necessary interfaces with ship-to-shore cargo handling systems. Examples include main deck fittings and rails for the transport of amphibious lighterage and alongside lighter mooring systems.

- **Flatracks.** Heavy duty flatracks also provide a **capability to carry oversized cargo** and **maximize containerships' capability to transport military cargo**. Flatracks are portable open-top, open sided containers that provide the capability to stow aircraft, vehicles, and outsized breakbulk cargo that cannot be placed into containers. There are three types of flatracks (type I, II, and III). Refer to FC 55-50 for specific dimensions and weight capabilities of each flatrack type. **Flatracks may be used as individual units or combined horizontally** with an integral folding

flap to form a flush, temporary deck when the flatracks are placed side by side. This temporary deck arrangement enables more than one flatrack at a time to be stowed on, provides the capability to drive from one flatrack to the next, or allows a single item of cargo to occupy several adjacent flatracks. For example, three adjacent flatracks can accommodate two M-1 tanks. When tiered, at least one flatrack must be removed from an upper level to provide access to cargo on the next lower level. Currently, heavy duty flatracks are pre-positioned at Bayonne, NJ; Charleston, SC; and Port Hueneme, CA.

- **LASH Lift Beam.** The LASH Lift Beam, also known as the Cantilever Lift Frame, is a **special lifting device** that attaches to a LASH's gantry crane. It enables the crane to lift loads with dimensions up to about 90' x 60' and weights up to 200 STs without ship modification. When equipped with this lift beam, LASH vessels are ideally suited to handle amphibious lighterage, and can carry up to 30 90' lighterage sections.

b. **Operational Enhancements.** Operational enhancements are equipment and systems that enable merchant ships to operate with, and provide logistic support to, Navy warships and support units. These features include **communications equipment** operated by embarked military personnel, which provides the capability for classified message traffic, and **Merchant Ship Naval Augmentation Program enhancements** for underway replenishment (UNREP). The UNREP systems are discussed more fully in Appendix A, "Merchant Ship Naval Augmentation Program."

c. **Survivability Enhancements.** Survivability enhancements include internal communications and nuclear, biological, and chemical washdown systems.

5. Logistics Over-The-Shore

Strategic sealift also includes the requirement to achieve an **over-the-shore cargo discharge capability** that matches cargo deliveries in an amphibious objective area or other expeditionary operating area. This is known as LOTS. While logistic support of major joint forces requires the use of established port facilities, **LOTS operations** are intended to provide minimum sustainment to expeditionary forces for not more than 60 days. LOTS

operations are conducted over unimproved shorelines or in ports that are inaccessible to deep draft shipping or that are damaged or otherwise inadequate. By agreement among the Services, the Navy is responsible for ship-to-shore movement of Marine Corps cargo, and the Army is responsible for ship-to-shore movement of Army and Air Force requirements. LOTS systems and doctrine are discussed in Joint Pub 4-01.6, “Joint Tactics, Techniques, and Procedures for Joint Logistics Over-the-Shore (JLOTS).”



The American Osprey provides Offshore Petroleum Discharge System capabilities during Logistics-Over-the-Shore operations.

CHAPTER V

VESSEL ACQUISITION AND ACTIVATION PROGRAMS AND PROCEDURES

"We have at this moment to distinguish carefully between running an industry or a profession, and winning the war."

Winston Churchill
Memorandum for First Sea Lord, 1939

1. General

The vast majority of vessels required to support military operations are not under DOD control during peacetime. To acquire these ships, **some type of lease agreements or operating agreements must be effected between the Department of Defense and the owning and controlling organizations** (either commercial firms or US and allied government agencies). In maritime terminology, **leasing agreements are known as charters**. Although their terms and conditions differ widely, charters are of **three basic types: bareboat, voyage, and time**. A **bareboat charter** is a contract whereby the charterer gets the rights and obligations of "ownership." The fixed duration of this type of charter is generally for a number of years. The charterer pays in advance for the entire ship on a monthly or semiannual basis even if the vessel is laid up or carries less than its full capacity. Under a bareboat charter, the charterer assumes total responsibility for operating the ship, including manning, provisioning, maintenance, navigation, and logistic support. Under a **voyage charter**, the charterer specifies type of vessel required, cargo to be loaded, and where the vessel is to load and discharge. The charterer pays for either part or all of the carrying capacity of the vessel, usually in one payment. The shipowner provides vessel, crew, fuel, stores, and commits the vessel to being capable of making a given speed. A **time charter** is a contract for the service of the vessel, i.e., its cargo carrying ability, for an agreed period

of time. As with a bareboat charter, the charterer pays for the entire carrying capacity of the vessel on a per-day rate, even if the vessel is laid up or carries less than its full capacity. Additionally, the charterer determines where the ship goes and what it carries while paying for port charges and the vessel's fuel. **Time and voyage charters** are most commonly used to acquire sealift shipping to meet short-term military requirements. A significant amount of military cargo moves in the **US flag liner ships through liner agreements**. MSC moves the majority of peacetime military cargo using commercial liner service. Military cargo is offered to carriers in less than full shipload lots, and moves along established trade routes. This would include overseas movement of household goods and vehicles of US Government employees. The sealift acquisition and activation decision flow is detailed in Figure V-1.

2. Government-Owned/ Controlled Assets

Shipping that is directly owned by the government is the most readily available source of unit equipment sealift. However, **the number of ships in this category is limited**, and they are expected to support only the very early stages of a major military deployment.

a. **Active Assets.** The active government-owned and controlled sealift forces are MSC common-user point-to-point shipping and the APF. **Common-user ships** are owned by or

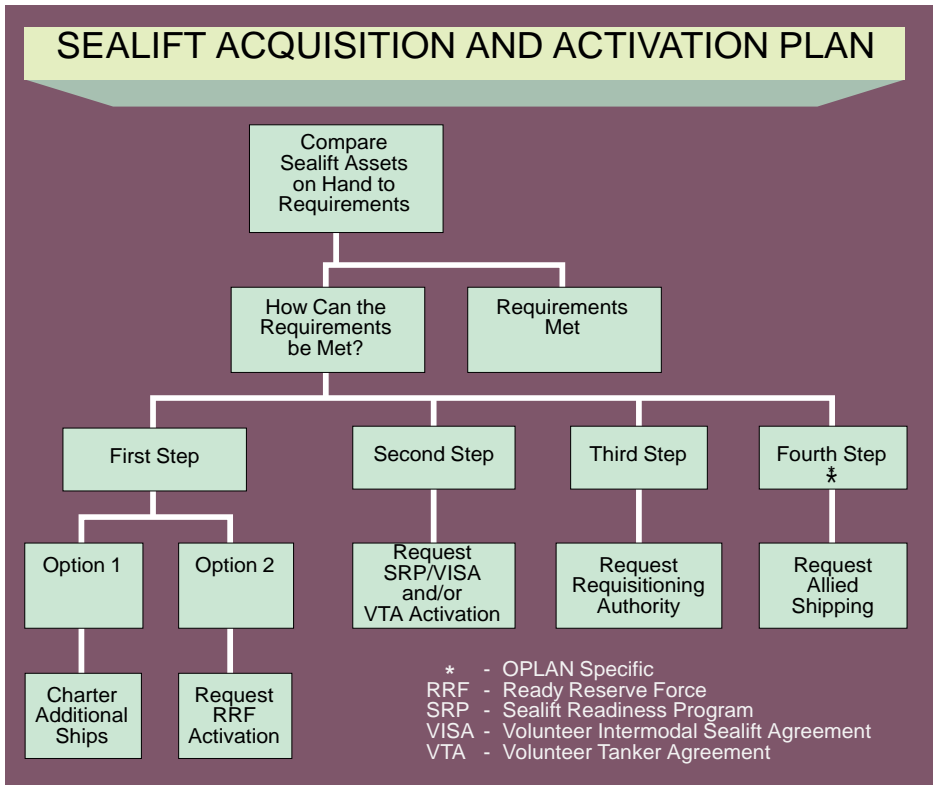


Figure V-1. Sealift Acquisition and Activation Plan

under long-term time charter to MSC and are employed in providing sealift to all DOD agencies on a nondedicated basis. In a crisis, these ships may be immediately diverted to a SPOE to load deploying military cargo. However, **MSC common-user shipping** involved in peacetime sealift missions may be distant from CONUS SPOEs and thus may not be immediately available. The ships of the APF will execute their missions at the time and place required by the JFC under whose command the specific ships have been placed.

b. **Inactive Assets.** Inactive or reserve sealift assets consist of **Navy-owned ships** maintained by the Navy in ROS and **ships acquired and maintained by MARAD** for use in a contingency. The latter are known as the **RRF** and its larger set, **the National Defense Reserve Fleet (NDRF)**. With very few exceptions, title to RRF and other NDRF ships is vested in MARAD's parent

organization, the DOT. The exceptions are vessels owned by the Services that have been placed in MARAD custody at NDRF sites, but which the owning Service can unilaterally activate whenever required. The RRF is a quick-response subset of the NDRF but, because RRF activation procedures differ from those for the NDRF, they will be considered separately.

- **Reduced Operational Status.** Because ROS ships are maintained by cadre crews in CONUS ports, they are the **first sealift shipping available in a crisis** and are expected to be ready to execute their mission within 96-120 hours of the activation order. These ships' readiness, while measured in terms of hours, is expressed in terms of days. For example, a ROS 3 ship is expected to be under way within 72 hours; a ROS 4 ship within 96 hours. **The Department of**

Defense is not required to coordinate with any other agency to order activation of DOD ROS ships. The Navy-owned and maintained ROS ships include the FSSs, T-AHs, and T-AVBs.

- **Ready Reserve Force.** The RRF is the **most significant source of government-owned early deployment shipping** in terms of both the number of ships and overall cargo-carrying capability. RRF ships are maintained by MARAD in various specified states of readiness. Most are berthed on the three CONUS sea coasts; there are five Offshore Petroleum Discharge System (OPDS) tankers of which two are activated as part of the APF with the other three in an inactive status in CONUS. There are three small shallow draft T1 tankers in the RRF that are maintained in a ROS status in Yokohama, Japan. These ships are activated pursuant to presidential action or as otherwise authorized under law. The specific procedures are discussed below.

- **Status.** Currently, the RRF consists of 94 ships, including general cargo ships, RO/ROs, barge carriers, tankers, troop ships (currently used as maritime academy training ships), and Strategic Sealift Ship Program ships. The last category includes the ACS, dry cargo ships, tankers outfitted for UNREP, and tankers outfitted with the OPDS.

- **Ship Acquisition.** RRF ships are acquired and maintained by MARAD using funds appropriated from the Department of Defense for that purpose.

- **Activation Process.** USTRANSCOM, with SecDef approval, **requests the activation of RRF ships by MARAD for contingency deployments.** Upon activation, the ships are committed to USCINCTRANS and are under the

mission control of COMSC. The SECNAV will request Service-unique or theater-assigned ships. **The ships are manned, provisioned, operated, and maintained by commercial shipping companies** under agreements with MARAD. The activation process is shown in Figure V-2.

- **National Defense Reserve Fleet.** The NDRF (excluding its quick-response subset, the RRF) contains **older dry cargo ships, tankers, troop transports, and other types of vessels** (tugs and other such types) that are maintained in MARAD custody under **minimal preservation.** Current planning considers NDRF vessels strategic sealift resources suitable for use as replacements for combat losses, for sustainment, and for economic support. Because of their relatively low level of readiness, NDRF ships would require a minimum of 30 to 120 days to activate. They are berthed at MARAD Reserve Fleet sites in the James River (Ft. Eustis), VA; Beaumont, TX; and Suisun Bay (Vallejo), CA.

- As of 29 February, 1996, the NDRF consisted of 222 cargo ships (94 in the RRF, 73 dry cargo, 20 tankers, 11 troop ships, and 24 military and other type vessels). Of the non-RRF cargo ships, nearly one-half are ready for scrapping. The NDRF size is expected to decline further as the disposal of older ships continues.

- **Activation Process.** NDRF ships are made available to the Department of Defense whenever the President proclaims that the security of the nation makes it advisable or during any national emergency declared by proclamation of the President. A flow diagram of the activation process is shown in Figure V-3.

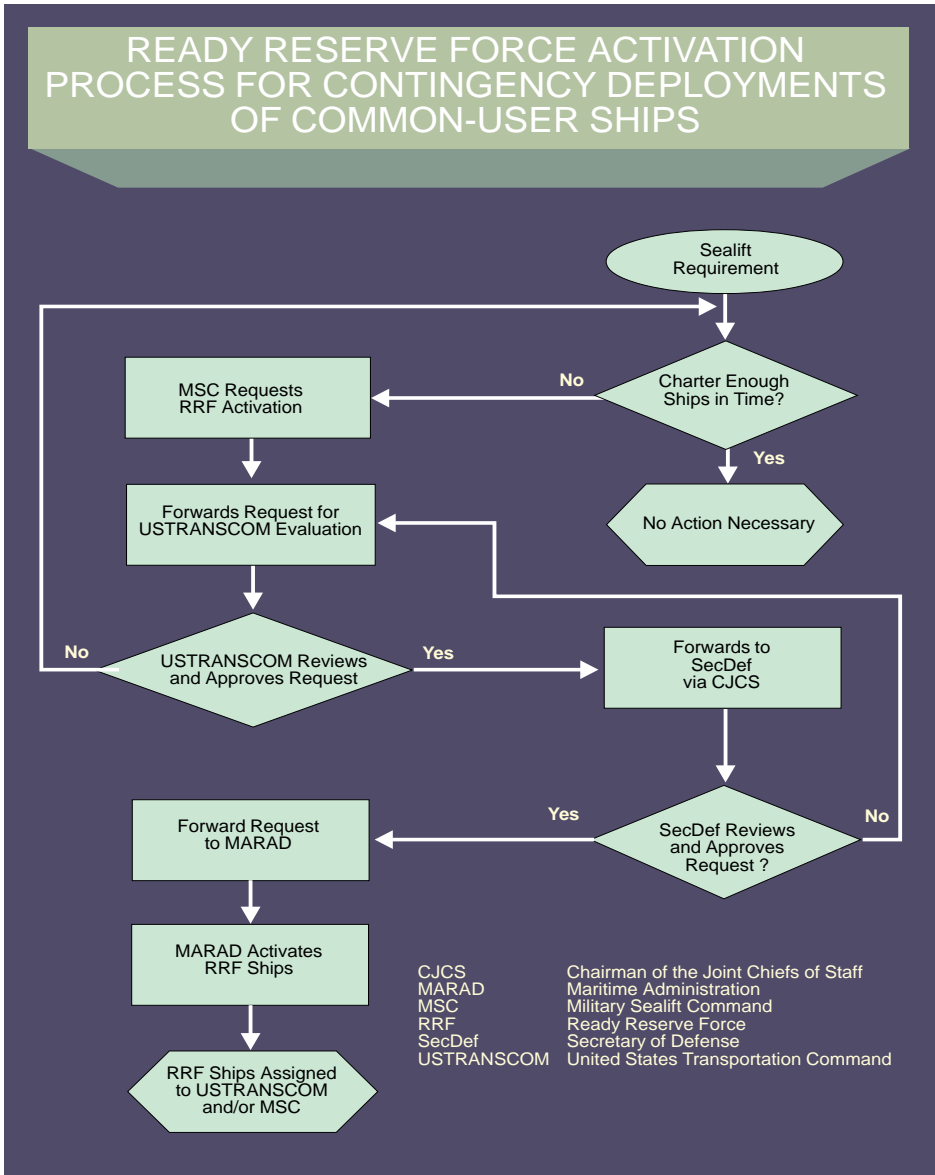


Figure V-2. Ready Reserve Force Activation Process for Contingency Deployments of Common-User Ships

3. Commercial Assets

Commercial ships will be required to fill sealift requirements in virtually every major crisis situation. The Department of Defense can obtain commercial shipping from the following sources: (1) US Flag Commercial Charters and Liner Service, (2)

Foreign Owned and Operated Ships, used in accordance with existing laws and policies, (3) Ships/capacity committed to the Sealift Readiness Program/Voluntary Tanker Agreement, (4) US-owned ships, registered under certain flags, known as the Effective US Control (EUSC) fleet, (5) Militarily useful US flag ships which are subject to

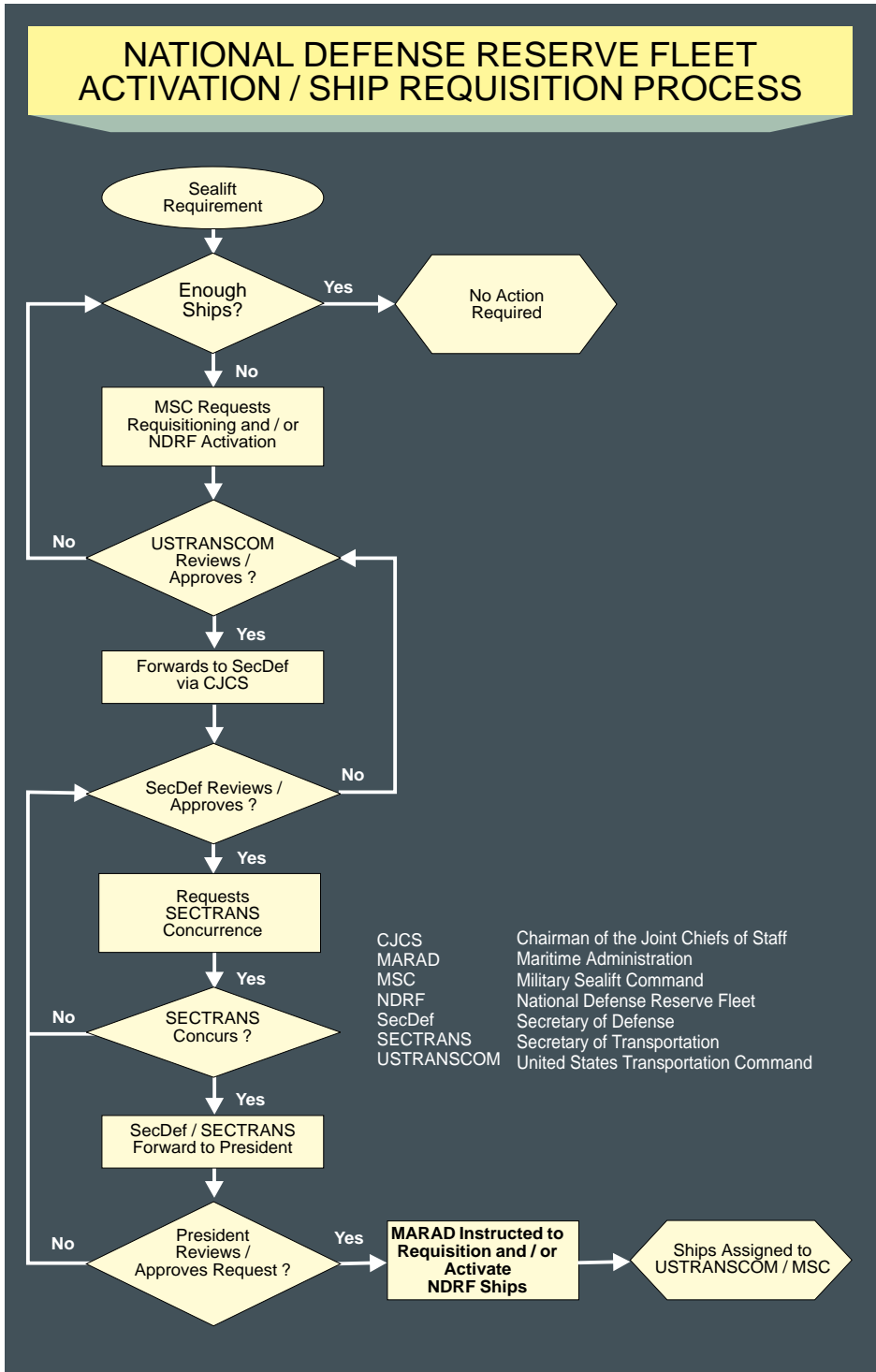


Figure V-3. National Defense Reserve Fleet Activation/Ship Requisition Process

requisitioning. Registry procedures between certain nations allow EUSC ships under the registries to be available to the US Government in a national emergency. Additionally, shipping may be obtained through Allied Agreements.

a. **US Flag Ships.** The US flag fleet is generally considered to be the commercial shipping sector **most responsive to DOD requirements**. However, the number of militarily useful US flag ships is steadily declining, with no reversal forecast.

- **Status.** Active, privately owned, oceangoing US flag ships numbered 292 as of 1 January 1996, of which 207 were militarily useful compared to almost 5,000 in 1945 and about 1,200 in 1950.

- **DOD Acquisition Procedures.** The Department of Defense can acquire US flag shipping by four methods: **commercial or open market charters, liner agreements for schedules containerized service, VTA and/or SRP/VISA, and requisitioning.**

- **Commercial Charter.** MSC frequently charters US and foreign flag ships during peacetime to provide additional sealift capacity. **Chartering is a routine commercial transaction** that can be accomplished in as little as two days. However, all chartered ships may not be immediately available in time of crisis. Depending on ship location, the amount of time required to arrive at the designated loading port may be as much as 30 days.

- **Sealift Readiness Program.** **The SRP is a formal agreement, pursuant to the Merchant Marine Act of 1936, between US flag ships and the Department of Defense for the acquisition of ships.** Commitments to this program come from two sources. First, under Public Law any ship receiving a

federal subsidy must be enrolled in the SRP. Second, as a precondition for eligibility to participate in the movement of DOD cargo, 50 percent of the carrier's fleet must be enrolled. Upon joint concurrence between the Secretary of Defense and the Secretary of Transportation (SECTRANS) for program execution, the SRP ships are made available to the Department of Defense. The political and economic ramifications of disrupting commercial shipping make it advisable that **RRF ships be in service, or under activation and committed to service, before activation of the SRP**. Any requirement to withdraw a substantial number of ships from commercial service in US domestic and foreign trades could seriously disrupt some sectors of the civilian economy, negatively impact some component of the national industrial base, and/or cause a long-term loss of commercial market share by the affected shipping companies. **These considerations might lead the SECTRANS to recommend requisitioning authority over activation of the SRP.** The decision flow for activation of the SRP is shown in Figure V-4.

- **Liner Agreements.** A significant amount of military cargo moves in US flag liner ships. **Liner operators are common carriers operating ships on scheduled sailings over established trade routes.** They provide service to all on a first-come, first-served basis. Military cargo offered by MSC to liner carriers usually is offered in less-than-full shipload lots. This method helps share space with cargo shipped by private sector business. Since the advent of intermodal transportation, the most common practice is for shipments from a variety of DOD sources to be consolidated in containers under military auspices for delivery to commercial

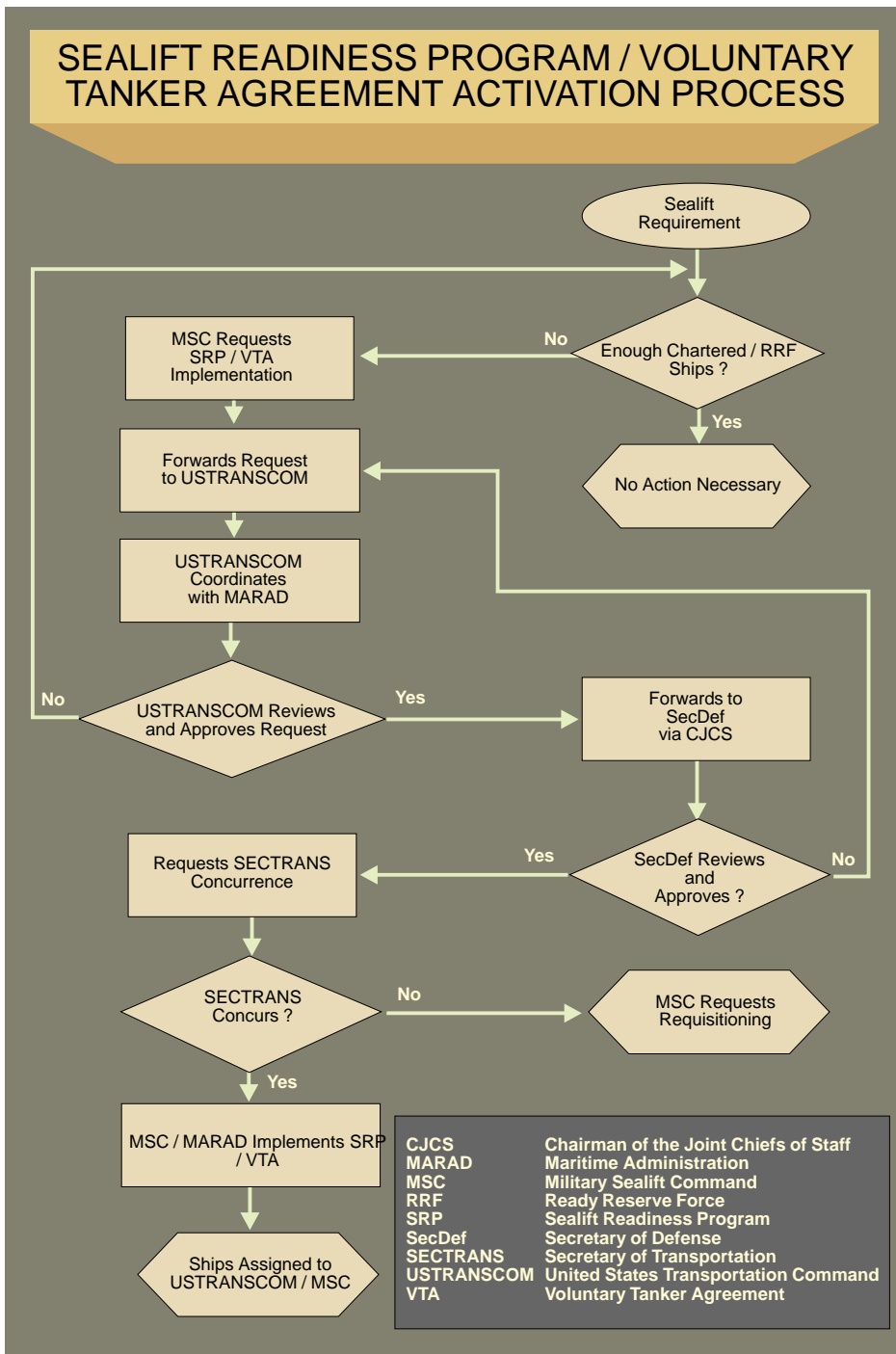


Figure V-4. Sealift Readiness Program/Voluntary Tanker Agreement Activation Process

terminals. There, the containers are loaded onto container ships and carried under terms and conditions set forth in an MSC container agreement or contract. **MSC agreements or contracts contain uniform terms and conditions** for carrying military cargo between the United States and foreign countries. Agreements or contracts are competitively solicited. Rates are proposed in response to Requests for Proposals and are finalized by negotiation between MSC and the interested carriers.

•• **Voluntary Intermodal Shipping Agreement (VISA).** The objective of VISA is to provide the Department of Defense with assured access to US flag assets, both vessel capacity and intermodal systems, to meet DOD contingency requirements. VISA should eventually replace the current SRP. This new concept is modeled after the DOD Civil Reserve Air Fleet program. Carriers will contractually commit specified portions or capacities of their fleet to meet time-phased DOD contingency requirements.

•• **Voluntary Tanker Agreement. The VTA, established by MARAD, provides for tanker owners to voluntarily make their vessels available to satisfy DOD needs.** The VTA will be activated if the Maritime Administrator finds: (1) that a tanker capacity emergency affects the national defense; (2) that defense requirements cannot be met by chartering; and (3) that defense requirements can be met more efficiently by activating the VTA than by requisitioning ships. **Tanker capacity provided under the VTA is for point-to-point transport of military POL.** The agreement is designed to meet contingency or war requirements, not to

deal with shortages of capacity in connection with peacetime resupply operations. The decision flow for activating the VTA is the same as that shown in Figure V-4.

•• **Requisitioning Shipping.** Under authority of Section 902(a) of the Merchant Marine Act of 1936, as amended, 46 USC 1242, **the SECTRANS is authorized to requisition any vessel which is majority owned by US citizens**, whether registered under the US flag or foreign flag, whenever the President proclaims that the security of the nation makes it advisable or during any national emergency declared by proclamation of the President (and/or concurrent resolution of the Congress). The requisitioning process is essentially the same as that for activating the NDRF, shown in Figure V-3.

b. **Effective US-Controlled Shipping.** EUSC ships are majority owned by US citizens or corporations, but are registered and operated under the flags of the Marshall Islands, Liberia, Panama, Honduras, the Bahamas, or other governments that will **permit their ships to be made available** (by chartering or, if necessary, by requisitioning) **to the US Government in time of emergency.**

- **Status.** The EUSC fleet numbers over 100 ships; but these are primarily tankers and dry bulk carriers and are almost entirely crewed by foreign nationals.
- **DOD Acquisition Procedures.** EUSC ships may either be **chartered commercially** or **requisitioned**. The chartering and requisitioning process is the same as that for US flag ships. The same requisitioning authority applies to all US-owned ships registered under other flags.

c. **Foreign Flag Ships.** As a general rule, **foreign-owned and operated shipping will be acquired through commercial charter.** However, there are some shipping agreements with our allies. These include a pool of approximately 600 ships, of which 400 are counted on for planning, pursuant to an agreement among the NATO members. This agreement, however, is applicable only in a NATO conflict.

- **Status of the World Fleet.** The world commercial fleet totals over 23,000 ships with a total DWT in excess of 655,000,000 tons. Six of a total of 139 countries make up 50 percent of the total world tonnage. These six largest fleets in order of descending size are Liberia, Panama, Greece, Norway, Cyprus, and Japan. The current US privately owned fleet of 292 ocean going ships and over 14 million DWT is the ninth largest fleet in the world.
- **DOD Acquisition Procedures.** After it has been determined that there is not sufficient voluntary US flag sealift capacity to meet requirements, the foreign flag ships may be chartered.
- **Commercial Charter.** Ships are normally obtained through commercial

charter. The procedure is the same as for US flag ships.

•• **Allied Shipping Agreements. Ships are committed by individual NATO countries** (other than the United States) **to augment US common-user sealift** for the rapid reinforcement of Europe by US forces. NATO member nations have made commitments to provide 400 dry cargo ships for this purpose. To provide a high level of confidence in the availability of at least 400 dry cargo ships, more ships are nominated than the commitment requires. Only 400 ships are available for deliberate planning. Tankers capable of carrying clean products are also nominated toward meeting NATO POL requirements, and passenger ships are nominated toward meeting troop requirements (including AFOE). These assets form the **NATO Sealift Ships List**. The lists are updated semiannually by the NATO Planning Board for Ocean Shipping. These assets would become available only after a North Atlantic Council decision to reinforce NATO. There is also a commitment by the Republic of Korea (ROK) to provide a small group of ROK ships for contingencies involving the Korean peninsula.

Intentionally Blank

CHAPTER VI

EMPLOYMENT OF SEALIFT FORCES

“Co-equal with the security of flanks, the maintenance and full use of the line of communications to the rear are of major concern to the commander. It is his responsibility that the incoming supply is equal to the needs of his deployments and that the supporting arms and fires which have been promised him keep their engagements or if they do not, he must raise hell about it.”

BGEN S.L.A. Marshall
Men Against Fire, 1947

1. General

The employment of sealift begins in the execution planning phase of JOPES crisis action planning, in which an OPORD is developed for execution by using or modifying an existing OPLAN, expanding an existing CONPLAN, or building an OPORD when no plans exist. **Employment continues until the operation is terminated by proper authority or is completed**, including retrograde movement of forces and materiel. The employment of sealift must be undertaken with extreme care and diligence. Errors of judgment in acquiring, scheduling, and determining C2 of sealift assets may result in late delivery of units and supplies essential to the successful conduct of the operation. A complete understanding of the organizational responsibilities for sealift employment is, therefore, essential.

2. Execution Planning

This period may be weeks, days, or even hours in length depending on the political situation and scenario. During this period, USTRANSCOM and its component command MSC are **identifying the sealift forces required** for execution of the OPORD and **tentatively scheduling the sealift** to move the earliest deploying units. In general, USTRANSCOM and its component commands are responsible for ensuring that adequate transportation is available to support

the OPORD when executed, developing feasible transportation schedules, establishing initial and follow-on requirements for sealift capability, resolving transportation shortfalls, adjudicating transportation allocation conflicts with the JTB, and publishing transportation coordinating instructions.

a. **Sealift Application.** In a crisis, strategic sealift divides into two broad categories: (1) surge shipping during initial mobilization and (2) resupply or sustainment shipping. **Surge shipping** must be capable of handling outsized and heavy items of unit equipment. These include large numbers of wheeled and tracked vehicles and helicopters for which RO/RO ships are most suitable. Containerships should not be overlooked in surge operations as they have the capability to transport combat support (CS) and CSS equipment. **Resupply and sustainment shipping** moves the equipment, parts, and supplies necessary to sustain the force. It is largely breakbulk cargo, which is readily convertible to containerized storage, or POL products.

b. **Service Requirements.** The methods by which forces are introduced into an operational area vary from Service to Service. **Sealift of accompanying supplies for Army and/or Air Force units is normally point-to-point**, so that any sealift asset assigned by MSC to move cargo from SPOE to seaport of debarkation (SPOD) is

satisfactory if the CINC's force closure requirements can be met. However, this is not always true for Marine Corps forces.

Amphibious capable Marine Corps units may not always be employed promptly upon arrival in theater. In fact, during Operation DESERT STORM, the greatest value of the deployed amphibious forces was the capability they possessed to launch an attack from the sea against the Kuwait coastline. The threat of attack from the sea caused the enemy to devote considerable forces to the coastline and away from the area of the coalition forces planned main attack. Whenever amphibious units of a significant size MAGTF are employed, AFOE sealift must be provided for long-term operations; short-term or voyage charters will not suffice. The AFOE is more fully explained in paragraph 10 below.

c. **Resource Capability.** When arranging the duration of supporting sealift assets, it is very important to **match sealift asset capabilities with Service orientation.** For example, some RRF ships are self-sustaining, meaning that they can discharge to lighterage offshore. It follows that these RRF ships are highly suitable for amphibious operations and may be assigned to operate with Marine Corps forces. Furthermore, because they are government owned, their assured availability makes it feasible to plan and train with them in preparation for a contingency. On the other hand, the several large RO/ROs in MSC's peacetime controlled fleet as well as the FSS with their RO/RO capabilities are better suited for immediate assignment and point-to-point delivery to move Army forces, which have a high density of tracked and wheeled vehicles.

d. **Mobility and Transportation Planning.** The JSCP Mobility Supplement, Enclosure C, provides **planning guidance to CINCs** regarding strategic sealift. Specific questions regarding asset availability and responsibilities for planning certain facets of

sealift (Marine Corps AFOE, for example) can be answered by consulting the JSCP.

3. Execution

This phase starts with the NCA decision to choose the military option for resolution of the crisis and to execute the OPORD.

Acting on the authority and direction of the Secretary of Defense, the Chairman of the Joint Chiefs of Staff will issue an Execute Order that directs the supported CINC to carry out the OPORD. The supported CINC then issues Execute Orders to subordinate and supporting commanders directing they execute their supporting OPORDs. During this phase, **changes to the OPORD may be necessary for some or all of the following reasons:** strategic, operational, tactical, or intelligence considerations; force and nonunit cargo availability; availability of shipping; CONUS transportation system throughput capabilities; and POE and/or POD throughput capabilities.

a. **Execution Requirements.** Because the OPORD will probably require adjustment as it is executed, **ongoing refinement and adjustment of deployment activities are required.** At the time of execution, the OPORD time-phased force and deployment data (TPFDD) should include, at a minimum, properly identified combat, CS, and CSS units. The area of movement control in joint operations is covered in Joint Pub 4-01.3, "JTTP for Movement Control."

- **US Transportation Command Responsibilities.** Throughout the execution of an OPORD, **USTRANSCOM is responsible for coordinating with the supported CINC** the validation of transportation requirements and for developing, monitoring, and adjusting transportation schedules. USTRANSCOM reports the progress of the deployment to the supported CINC and the Chairman of the Joint

Chiefs of Staff and identifies lift shortfalls or other transportation-related problems accordingly.

- **Supported CINC Responsibilities.**

The supported geographic combatant commander must ensure that USTRANSCOM and its transportation component commands clearly understand theater transport requirements. While developing requirements and priorities, **the supported geographic combatant commander coordinates with USTRANSCOM** to ensure that the movement control system will be ready to manage strategic movement. **The supported geographic combatant commander establishes a theater movement control organization** that has a communications link with the strategic movement system. He also establishes POD support activities. These include the Arrival/Departure Airfield Control Group (A/DACG), Port Support Activity (PSA), and movement control organization.

- **Supporting CINC Responsibilities.**

Certain situations may require that a combatant commander support another geographic combatant commander. This support may range from the deployment of forces to the provision of sustainment. Regardless of the mission, **the supporting commander should establish a movement control system** similar to USTRANSCOM's system. **A joint movement center**, with supporting component movement cells, manages all moves and assures compliance with the supported geographic combatant commander's priorities. **For deployments to another theater, the supporting combatant commander establishes POE activities.** These include the A/DACG, PSA, and movement control organization.

b. **Resolution of Resource Allocation Conflicts.** If several CINC OPOORDs are executed simultaneously, or nearly simultaneously, resource allocation conflicts between the executed OPOORDs may occur. **CJCS policy is to allocate support forces such as sealift in proportion to the allocation of combat forces.** Through this mechanism, each CINC is provided a share of the available resources consistent with national priorities. Therefore, each supported CINC will have the same percentage shortfall of sealift assets versus requirements. If the strategic situation requires the assignment of a greater percentage of assets to one supported CINC than another, **the CINC desiring additional support may request that the Chairman of the Joint Chiefs of Staff reallocate resources from other CINCs.** If an agreement between the CINCs directly involved cannot be reached, the matter will be referred to the JTB for final resolution. The JTB's final resolution is subject to the approval of the Chairman of the Joint Chiefs of Staff and the National Command Authorities (NCA).

4. Command, Control, Communications, and Computer (C4) Systems

Modern warfare is characterized by increased pressure on commanders and their staffs to respond to crises very rapidly. Of particular importance to sealift force commanders is the ability to marshal and position their forces as directed during warning time. A key ingredient to the success of every scenario involving sealift operations is the judicious use of preconflict measures designed to shorten the response time. Of equal importance is the ability to quickly modify, redirect, or terminate sealift operations in all levels of conflict. The inherent worldwide dispersal of sealift forces mandates that **sealift C4 systems be fully interoperable with the Global Command**

and Control System (GCCS). GCCS is built on an open-systems concept such that interoperability with existing systems can be attained. GCCS will incorporate the policies, procedures, reporting structures, trained personnel, automated information processing system, and communications connectivity to provide the information necessary in order to effectively plan, deploy, sustain, redeploy, and employ sealift forces. The sealift C4 system, in its simplest form, must enable the sealift operational commander to monitor the situation, conduct assessments, develop estimates, plans, and schedules, issue orders and directives, and report status to higher authority.

a. **Concept of Command and Control.** C2 of all common-user shipping (under USTRANSCOM COCOM) is the **responsibility of MSC** as the Service component commander assigned operational control (OPCON) of those ships. Protection of shipping under MSC OPCON is the responsibility of the **Navy component commander** of geographic combatant commanders when operating in their respective areas of responsibility. This responsibility is normally executed through the exercise of tactical control (TACON) over merchant shipping when such authority is delegated by MSC to the respective Navy component commanders. This concept requires **close coordination between MSC and the Navy component commanders** to ensure that merchant shipping is adequately protected while transiting areas of hostile activity (refer to Naval Control of Shipping materials in Chapter VII, “Naval Control of Shipping”).

b. **Control of Sealift Forces.** MSC, with its area commands, subarea commands, and offices, **exercises C2 of merchant ships under MSC control.** When, in the opinion of the MSC area or subarea commander, the threat to shipping under MSC OPCON presents an unacceptable risk of loss or

damage to ships and cargo, the ships will be placed under the TACON of the Navy component commander of the geographic combatant commander. TACON of the ships may then be delegated to the commander of the appropriate Naval Control of Shipping Organization (NCSORG) unit. Upon the departure of the ships from the danger area, control over the ships will revert to MSC.

c. **Global Command and Control System.** **GCCS will become the primary means of command and control for the NCA** over all military forces, including sealift forces. The GCCS will provide air, land, and sea transportation information for the Department of Defense, both in time of peace and war. GCCS is the cornerstone of command, control, communications, computers, and intelligence (C4I) for the Warrior establishing interoperability among forces, with a focus on the joint warfighter. **GCCS will be a deployable C2 system** that will support forces for joint and multinational operations throughout the spectrum of conflict anytime and anywhere in the world with compatible, interoperable, and integrated C4I systems. In GCCS, components will update JOPES via the Secret Internet Protocol Router Network. Of the many elements of GCCS, **the JOPES is of primary interest to the sealift operator.**

- **Joint Operation Planning and Execution System.** Integrated joint conventional C2 system used to support sealift operation monitoring, planning, and execution activities. JOPES is used to track requirements, departures, and arrivals in the much larger DTS.
- **JOPES Data Base.** The deployment data base in JOPES **consists of requirements that are time-phased and prioritized** according to stated needs. This information is detailed and includes unit or commodity, size, weight, origin, destination, and required delivery date,

and is updated by the planners as directed by the Chairman of the Joint Chiefs of Staff. The deliberate planners provide the requirements and priorities. In the next phase, USTRANSCOM planners input the time-phased requirements into automated data processing programs (ADP) that provide transportation schedules for the particular plan. When an Execute Order is given, USTRANSCOM and its components enter into the JOPES data base loaded for that plan. As units and supplies move from bases or depots to load ports, each component updates the data base with real time data for their leg of the transportation issue.

- **Sealift Transportation Movement.** The unit move begins with an Execute Order sent out by the Chairman of the Joint Chiefs of Staff. Once notified, the installation transportation officer coordinates with the MTMC Area Command to coordinate the movement requirements for deploying units. The MTMC Area Command inputs or updates movement requirements in JOPES and adds the actual departure data. The MTMC Area Command uses its automated data base programs to configure these requirements into ship loads along with other requirements going to the same port and having the same available to load dates. This updated and coordinated requirements and shipload information is passed through JOPES to the command in need of this information. This information is exchanged in the JOPES system. MSC identifies a ship type based on the specific requirements for the unit. If MSC has insufficient chartered or government owned sealift to satisfy the requirement, USCINCTRANS passes a request to MARAD to activate an RRF ship, invoke the SRP, or requisition US flag and EUSC ships.

- The request is received by MARAD via secure fax or AUTODIN message (not by the JOPES system). In the event of a NATO contingency, if no acceptable US or EUSC ship is available, then MARAD as the NSA intercede with the Civil Sealift Group for the request of a NATO flag ship. Once the ship is found, MARAD nominates the ship to MSC headquarters. When MSC accepts it and assumes OPCON, the ship information is passed to the MSC Area Command, complete with berth availability information. This happens before the unit reaches the load port and, if timed correctly, the unit moves into the seaport by rail and proceeds to the piers where the ship is prepared to receive it. As noted above, the time-phased requirements listing is updated as directed by the Chairman of the Joint Chiefs of Staff. This enables the supported CINC to reprioritize the forces based on the threat and allows USTRANSCOM to adjust these requirements based on strategic lift available. The systems currently under development include those listed below.

- **Global Transportation Network (GTN).** GTN is the **automated command and control support** necessary for USTRANSCOM to perform its mission providing global air, sea, and land transportation for the Department of Defense in peace and war. GTN provides scheduled and actual in-transit movement data to the joint community. GTN integrates cargo, passenger, unit, and patient data with schedules and mission and voyage numbers and also integrates supply requisition information with cargo movement data. A GTN prototype is currently operational. The network is dependent on defense, Service, and transportation component command source systems for accurate and timely data. When fully operational, GTN will

provide force movement data from the Transportation Component Command System and the Service Transportation Coordinator's Automated Information for Movements System (TC-AIMS).

•• **Transportation Coordinator's Automated Information for Movement System.**

The purpose of TC-AIMS is to improve base-level transportation activities through the application of **proven, modern automation techniques**. By performing activities common to both unit and nonunit movements with TC-AIMS equipment, transportation personnel can improve overall productivity while maintaining proficiency on the unit deployment system. Because TC-AIMS offers more timely and accurate information to the joint deployment community, movement planning and execution can be far more efficient than is currently possible.

•• **Dynamic Analysis and Replanning Tool (DART).**

DART was developed to **rapidly manipulate a TPFDD and flow it for transportation feasibility analysis**. All TPFDD manipulations are done off-line. DART is a prototype that has been fielded to all USTRANSCOM component commanders and the geographic combatant commanders. When fully refined and fielded, **DART is expected to expedite processing of ADP reports** describing the parameters of the sealift requirement in the TPFDD. This will avoid TPFDD processing formerly done on-line. Interfacing of DART with the Joint Flow and Analysis System for Transportation (JFAST) will enable transportation planners to duplicate and evaluate sealift analysis by supported CINCs and USTRANSCOM, thereby enhancing teamwork in devising recommendations for shortfall resolution. The goal is to trouble-shoot earlier in the planning process than was previously possible. Once DART is fully operational,

a shortfall related to a given unit can be identified and studied early on.

•• **Joint Flow and Analysis System for Transportation.**

This is a transportation feasibility evaluation tool resident in a microcomputer. **JFAST is capable of scheduling transportation assets against a TPFDD**. This allows planners to download specific movement requirements from JOPES and identify specific problem areas in meeting latest arrival dates at the PODs. JFAST will employ the **Notional Requirements Generator** which, drawing from a standardized data base, creates notional movement requirement data for transportation analysis in a no plan crisis situation.

d. **Sealift Communications.** Communications systems are critical to the flow of orders and directives from the sealift commander to subordinates, and of their status reports to the commander. However, **the procedures for communicating with the sealift force are unique to military operations** because of the heavy reliance on commercial maritime systems. Hence, sealift communications are extremely vulnerable to exploitation by information warfare. Communications among the military organizations involved in C2 of sealift will take place through the normal military communication channels.

• **Merchant Ship Communications Capabilities.**

Long-range communications capabilities in strategic sealift ships range from advanced military communications and on-line cryptographic systems on some military-owned sealift ships to conventional high frequency (HF), single side band voice and medium frequency (MF), continuous wave Morse code capabilities. **The vast majority of US-owned merchant ships that would make up the sealift force are today equipped with commercial satellite systems** that provide both voice and data

communications capability 24 hours a day. Those ships not so equipped communicate with other ships and organizations ashore through commercial coastal radio stations, using conventional HF and MF voice and Morse code communications. Further, those ships operating conventional merchant ship communications suites are manned by radio officers for only 8 hours a day while under way and shut down when the ship is in port. Unless they have had a **Naval Embarked Advisory Team** communications team placed aboard, merchant ships hold no cryptographic systems and are incapable of receiving or handling classified information. Merchant ships may be provided limited capability for handling classified information through use of MSC-provided secure telephone unit systems that can be interfaced with satellite communications systems.

- **Interface Between Commercial and Military Communications Systems.** For naval commands to communicate rapidly and effectively with merchant ships, **interfaces between commercial and military satellite communications systems have been established.** However, in most circumstances requiring direct communication between military authorities and merchant ships, **unclassified messages will be transmitted via commercial channels.** This requires understanding of the communications capabilities of each ship and establishes procedures for voice communications and delivery of message traffic to the ship.

e. **Operation Orders and Reports.** To ensure that assigned sealift missions are accomplished efficiently and with the desired results, **operational C2 is implemented through a system that relies on standard orders and reports.** These orders and

reports are designed to provide a complete, accurate, and timely flow of essential information in both directions in the chain of command. COMSCINST 3121.9, “Standard Operating Manual,” specifies reporting requirements and procedures.

5. Basic Cargo Planning Concepts

Several **basic concepts of cargo handling and stowage** must be understood by the joint planner before proceeding with sealift planning. These are: different measures of ship capacity; broken stowage; stowage factor or cargo density; and units of cargo measurement.

a. **Measures of Ship Capacity.** The cargo-carrying ability of a vessel may be expressed in one or more of the following units of measure (see Figure VI-1).

b. **Broken Stowage.** Broken stowage is **cargo space left unoccupied** after the ship is considered “fully” loaded. This occurs because cargo sizes and shapes do not conform to those of the ship’s cargo compartments and because of the space required for cargo bracing and tie-down to prevent cargo shifting and damage during the voyage. **It is expressed as a percentage of the total volume available for cargo stowage (bale cubic).** For general cargo, broken stowage is normally estimated to be 25 percent, indicating that the cargo actually occupies 75 percent of the volume of the cargo holds in which it has been stowed, even though the holds may be “full.”

c. **Stowage Factor.** Stowage factor is the number of cubic feet (ft³) occupied by 1 LT (2,240 pounds) of any given cargo, without allowance for broken stowage. For a given item or commodity, **it is computed as follows:**

$$\text{Cargo Stowage Factor (ft}^3\text{/LT)} =$$

$$\frac{\text{Cargo Density (lb/ft}^3\text{)}}{2,240 \text{ lb/LT}}$$

MEASURES OF SHIP CAPACITY

BALE CUBIC

Bale cubic is the internal volume of the below-deck cargo compartments available for general or "package" cargo. It is expressed either in cubic feet (ft³) or in measurement tons (MTs) of 40 ft³ per ton.

CARGO DEADWEIGHT

Cargo deadweight is the weight of cargo that the ship can carry when fully crewed, fueled, and provisioned (when loaded, in salt water, to the summer freeboard marks). It is measured in long tons (LTs) of 2,240 pounds.

SQUARE FOOTAGE

Square footage is the total of those deck areas that are considered usable for the stowage of cargo, expressed in square feet.

LIQUID VOLUME

Liquid volume is the total internal volume of the ship's liquid cargo tanks, expressed in standard barrels (BBLs) of 42 US gallons.

Figure VI-1. Measures of Ship Capacity

The stowage factor, in combination with the estimated percentage of broken stowage, can be used to estimate either the space required for loading a given cargo, or the amount of cargo that can be loaded aboard a given ship. It can also be used to maximize the utilization of both the cargo space (bale cubic) and weight capacity (cargo deadweight) of available shipping. **General cargo ships are typically designed to be "full and down" when loaded with cargoes having an average stowage factor of 40 cubic feet per LT (or 1 MT per LT).** Cargoes with relatively high stowage factors (i.e., low densities) will fill the ship by volume before

its weight capacity is reached; conversely, cargoes with relatively low stowage factors (high densities) will bring the ship "down" to its deepest allowable draft before it is "full."

d. **Units of Cargo Measurement.** In determining sealift transportation requirements, **the appropriate units of measurement will vary with cargo type and stowage factor.** See Figure VI-2. For vehicles and other nonstackable cargo, area square feet is the relevant measurement. For stackable cargoes, stowage factors will determine whether weight (LT) or volume (MT) is the more appropriate.

CARGO PLANNING FACTORS

AREA: Vehicles and nonvehicular cargo that cannot be stacked. For example:

- o Tanks,
- o Trucks, or
- o Generators.

WEIGHT: Nonvehicular, stackable cargo with a stowage factor less than 40. For example:

- o Dumb bombs, or
- o Artillery ammunition.

VOLUME: Nonvehicular stackable cargo with a stowage factor greater than or equal to 40. For example:

- o Food, or
- o Spare parts.

Figure VI-2. Cargo Planning Factors

SEALIFT PLANNING FACTORS

BREAKBULK:

- o 10,000 dwt, or
- o 15,000 MT, or
- o 600,000 FT³

BARGE CARRIER:

- o 30,000 dwt, or
- o 30,000 MT, or
- o 1,200,000 FT³

RO/RO:

- o 150,000 FT³

CONTAINERSHIP:

- o 2,400 TEU

Figure VI-3. Sealift Planning Factors

e. **Sealift Planning Factors.** For planning purposes, **ships of various types may be assumed to have, on the average, the notional cargo capacities shown in Figure VI-3.** As noted above, cargo characteristics will determine whether area, weight, or volume is the appropriate consideration in loading general-purpose vessels (the breakbulk ship and barge carrier). However, a single criterion applies to each of the more specialized designs; area, in the case of the RO/RO, and volume, for the containership.

6. Intermodal Operations

Intermodal operations provide flexibility by incorporating various combinations of sealift, airlift, rail, and trucking operations to facilitate rapid, efficient cargo movement. In the context of commercial shipping, “intermodal” operations refer primarily to the efficient interchange of standardized shipping containers between ocean and land carriers, sophisticated systems of container handling and storage in marine terminals, or container freight stations and

computerized tracking of shipments. These are perhaps epitomized by the US **“Land Bridge” operations** in which containerized cargoes moving between Far Eastern and European seaports cross this country on dedicated “unit trains” rather than utilizing the all-water route via the Panama Canal. The advantages include savings in transit time and delivered cost, and the arrival of perishables in better condition because of reduced transit times. The existence of this commercial infrastructure has promising implications for military use, particularly in moving large numbers of containers.

a. **Container Requirements.** Current commercial sealift trends favor a **heavy emphasis on the use of containers**. The supported CINC’s ability to manage containerized cargo from SPODs and aerial ports of debarkation (APODs) to the troops in the field depends on the sophistication of the **host country’s infrastructure** and the **expeditionary capability** the deployed force has brought with it.

b. **Theater Support Planning.** During execution planning, it is particularly important to **consider the theater’s existing transportation infrastructure and capabilities**, so as to make maximum use of its potential for intermodal operations. Selecting SPODs and/or APODs close to major highway systems, rail networks and civilian logistic support is important even when modern, sophisticated intermodal infrastructures do not exist.

c. **Sustaining the Force.** Sustaining the force is as important as deploying it. For this reason, **intermodal operations must be planned in depth** to allow for transportation infrastructure damage from enemy action and/or sabotage. Planning also must take into account the need for additional manpower, vehicles, and other logistic support over time, especially during redeployment. Initial **host-nation support** may eventually be withdrawn

as that nation attempts to reestablish normal commercial transportation operations in support of its own economy.

7. Protection of Shipping

Merchant ships have virtually no self-protection capability, particularly against nuclear, biological, or chemical agents. This lack is of little consequence in peacetime or during transit through low threat areas. However, during a crisis or conflict, **unprotected merchant ships are faced with the extreme risk of loss of ship, cargo, and personnel** while operating in any area where a credible military threat exists. Therefore, **military forces must be assigned** either to eliminate the threat so that merchant ships can transit unopposed at any time or to provide direct protection during transits of threat environments. An environment contaminated by nuclear, biological, or chemical agents may preclude transit by merchant ships. As directed by their geographic combatant commanders, the **Navy component commanders are tasked with establishing and implementing plans to provide surface and air escort** for the protection of merchant shipping. While merchant ships are under escort of military forces, TACON is delegated by the MSC area or subarea commander to the appropriate Navy component commander, who may then retain or further delegate TACON over the merchant shipping in question (refer to Chapter VII, “Naval Control of Shipping”). However, throughout the escort mission effective OPCON of the shipping remains with MSC. **Protection of shipping may be loosely divided into two distinct areas; en route or underway operations and port security.**

a. **En Route Protection of Shipping.** The traditional, and still very effective, means of directly protecting shipping transit is a through **escort by naval combatants**. However, protection of shipping does not consist simply of those actions required to assemble and

protect groups of merchant ships. Other offensive actions that eliminate threats to sealift shipping also may eliminate the need for naval escort and be a more efficient use of resources. These actions may involve the use of **air, land, or naval power**, as appropriate. Whatever the means, the desired end remains the safe, uninterrupted passage of shipping and the delivery of the cargoes to their destinations.

b. **Port Security.** Threats to shipping in seaports are different from those found en route. While the en route threat is primarily from conventional air, surface, and subsurface units and mines, **the port threat is generally from unconventional or special operations forces, as well as terrorist organizations** whose purpose is the calculated use of violence or the threat of violence, often political or ideological in nature. USCG is responsible for the security of ports in the United States. Port security functions involve the safeguarding of vessels and waterfront facilities (including key assets) within the port from internal and external subversive acts, accidents, thefts, or other causes of similar nature. **Principal port security activities include:** (1) monitoring port operations; (2) conducting harbor patrols to detect suspicious activity and determining if the level of security measures taken by vessel and facility owners and operators are adequate and sufficient to meet the threat level; (3) surveying waterfront facilities to provide baseline data of facility capability that would be useful in emergency response; (4) establishing and enforcing security zones to safeguard vessels and port areas; (5) developing steps and measures to be taken to prevent acts of maritime terrorism; (6) developing and maintaining maritime counterterrorism plans and responding to maritime emergencies involving terrorism; (7) carrying out the Special Interest Vessel Program to safeguard US ports from external threats of sabotage and espionage; and (8) preparing for mobilization and national defense,

including providing waterside security and limited landside security if required. The Navy, Federal Bureau of Investigation, MTMC, Forces Command, Federal Emergency Management Agency, and other agencies, as well as commands acting with and through port readiness committees, play roles in port security and harbor defense depending on the particular crisis, situation, or geographic location. Therefore, **protection of shipping in port will require close coordination and cooperation** among intelligence agencies and commands.

8. Operations Security

Sealift has several significant operations security aspects. The first and possibly most obvious problem is the presence of a large number of fully loaded merchant ships at anchor in a major port. Such a gathering over several days is **an obvious indication that a convoy or major operation is being planned** and is almost impossible to keep secure. Somewhat more subtle, but still obvious, is the gathering of large numbers of sealift ships at a forward base, particularly those ships which can be identified with an AFOE. The key point here is that, while a large mass of merchant shipping can be regarded as a target in and of itself, the presence of certain types of merchant ships can reveal the presence of a major military operation even when the “military” end of the operation has scrupulously observed operations security measures. Although not an exhaustive list of operations security measures for sealift, **the following should be considered as guidelines:** (1) Avoid massing of shipping if possible. If it cannot be avoided, minimize the assembly time involved and limit the numbers of ships in any one location; (2) Be aware of the inferences that can be drawn from the presence of certain combination of cargoes and specific ship types; and (3) Use deceptive routing and other, similar techniques where possible, avoiding patterns in vessel operations and routing, and routing shipping

away from the “normal” sea lanes to avoid detection by neutral or other shipping.

9. Logistic Support

In general, **merchant ships will be logistically supported by their owner and/or operators** within the terms of their charters or other agreements when the ships are using commercial seaports for loading and discharge of military cargo. Merchant ships are normally provisioned at the beginning of every voyage with between 60 and 90 days of consumable items. This will usually be sufficient for a ship to make the round-trip between POE and POD, including the required cargo discharge time at the POD. The exception to this is that **merchant ships under military COCOM are generally supplied with fuel from military sources.**

This may take the form of direct payment for fuel from commercial sources or actual transfer of military fuels to merchant ships. The latter is most likely to occur in the supported CINC’s area of responsibility as the ships deliver their cargoes after a long voyage. On shorter voyages the ships may be able to return without refueling. Other in-theater logistic support to merchant shipping will usually be limited to assistance in treatment and repatriation of sick or injured crew members, expediting the arrival of crew replacements and high priority spare parts, mail delivery, and arranging or providing tugs, pilots, and nautical charts and publications when required. **Should vessel repairs be required in-theater, commercial facilities, when available, should be used** due to their familiarity with merchant ships requirements and in order to keep naval repair facilities available to naval combatants.

10. Amphibious/Expeditionary Operations

An amphibious task force (ATF) is the task organization formed for the purpose of

conducting an amphibious operation. The amphibious task force always includes Navy forces and a landing force (LF) with their organic aviation, and may include MSC-provided ships and Air Force forces when appropriate. Navy elements in an ATF include various types and classes of ships to include combatant and strategic sealift and support units from various warfare specialties. The LF is comprised of a C2 headquarters, aviation and/or ground combat units, and CS/CSS units and is assigned to conduct the amphibious assault. **The LF is divided into two echelons, assault echelons (AEs) and the AFOE.** The AE is the element of the LF that is scheduled for initial assault on the objective area. The AE is those troops, vehicles, aircraft, equipment, and supplies required to initiate the assault. The AE is normally embarked on amphibious shipping. The AFOE is that echelon of assault troops, vehicles, aircraft, equipment, and supplies which, though not needed to initiate the assault, are required to support and sustain the assault. In order to accomplish its purpose, it is normally required in the objective area no later than 5 days after commencement of the assault landing. Portions of the AFOE may be required ashore sooner because of the tactical situation. As part of the LF, the AFOE also should be embarked on amphibious assault shipping. Given the number of Navy and amphibious ships available today, only the AE is expected to be embarked on amphibious assault shipping. The AFOE is normally embarked on strategic sealift shipping. The AE and AFOE are integral, inseparable components of the LF. **An integral part of the ATF is the NSE.** The NSE consists of cargo handling, beach, and lighterage groups, equipped and trained to discharge ships in stream and at pier side. Doctrine regarding the employment of sealift in amphibious operations is contained in Joint Pub 3-02, “Joint Doctrine for Amphibious Operations,” and NWP 3-02.22M (old NWP

22-8), “MSC Support of Amphibious Operations.”

a. **Employment of Assault Follow-On Echelon Shipping. The AFOE consists of additional combat troops, vehicles, non-self-deployable aircraft, equipment and supplies** that, though not essential to initiate the assault, are required to support and sustain the assault. This organization is not to be confused with Marine Corps units deployed by MPS, which will be addressed below. When an ATF is being formed by the supported CINC, **USTRANSCOM allocates shipping for the AFOE mission to the supported CINC.** These ships are then integrated into the Navy component commander’s operations and incorporated with the forces of the commander, amphibious task force (CATF). AFOE sealift assets will be positioned and loaded at port facilities, generally where ATF support cargo and personnel can be most expeditiously and efficiently loaded to meet AFOE mission requirements. Loadout of AFOE shipping will be nearly simultaneous with the loadout of AE shipping. **The AFOE will deploy in accordance with the CATF’s amphibious operation plan.** The AFOE must be discharged swiftly and safely in sufficient time to support the landing force. When a ship of the AFOE has completed discharging its cargo, it may be returned by the supported CINC to the USTRANSCOM common-user shipping pool. OH 7-8, “Deployment of the Assault Follow-on Echelon (AFOE),” discusses AFOE concepts and procedures in detail.

b. **Transfer of Afloat Pre-positioning Force to Common-User Status. Strategic sealift in the APF will be transferred to common-user status when released by the supported CINC.** However, it may be necessary for the supported CINC to retain Afloat PREPO or, more probably, MPS ships

as theater support assets to meet specific operational requirements. A prime example arose during Operations DESERT SHIELD and DESERT STORM when suitable AFOE ships could not be acquired for a Marine expeditionary brigade. Upon arrival in-theater, MPS ships were retained by the CINC for use as AFOE shipping. When the APF ships are transferred to the common-user pool, their support is coordinated through USCINCTRANS and MSC in the same manner as for all other common-user ships.

c. **Logistics Over-The-Shore.** This section provides only general, nontechnical descriptions of various LOTS systems. For more detailed discussion of system description, capabilities, limitations, and requirements, Joint Pub 4-01.6, “JTTP for Joint Logistics Over-the-Shore,” should be consulted.

The major naval systems for instream cargo offload and discharge is the **Cargo Offload and Discharge System (COLDS)**. COLDS has two major sub-systems; for dry cargo, the **Cargo Offloading and Transfer System**, and for liquid cargo the **Off-Shore Bulks Fuel System**. Navy COLDS equipment and facilities include lighterage causeway ferries, floating piers, the RO/RO Discharge Facilities, and Elevated Causeway expeditionary pier. Liquid cargo offload is supported by the Amphibious Assault Bulk Fuel/Water System and OPDS. Army JLOTS equipment includes Terminal Service Unit handling equipment, barge-mounted and shorebased Reverse Osmosis Water Purification Units, shorebased water storage systems, and the Tactical Petroleum Terminal. JLOTS operations can be conducted over unimproved shorelines, through fixed-ports not accessible to deep draft vessels, and through fixed-ports that are inadequate without the use of JLOTS capabilities.

Intentionally Blank

CHAPTER VII

NAVAL CONTROL OF SHIPPING

“Our ships are our natural bulwarks.”

Woodrow Wilson

1. General

The mission and command structure of the NCSORG are described below, as well as the procedures for implementing naval control of shipping (NCS) for sealift shipping and for commercial shipping.

2. Mission and Functions

The mission of the NCSORG is to provide for the **safe movement of merchant shipping** under its authority either in a contingency situation or in time of war or national emergency.

a. **Functions Performed by the NCSORG.**

The NCSORG tactically routes merchant ships, reports their movements, and arranges for their protection.

b. Related Functions Performed by Other Organizations. The NCSORG does not determine the destination of ships nor the cargoes they carry; these functions are performed by **USTRANSCOM** and **MSC** for common-user sealift shipping sailing under NCS, by the **NSA** (the **MARAD** within the **DOT**) for US commercial shipping sailing under full NCS, and by **civilian owners and operators** for commercial shipping when full NCS has not been implemented. The NCSORG coordinates the rendezvous of merchant ships and their escort forces but does not control escort forces, which is a related but separate function of naval commanders. In addition, the NCSORG is not responsible for control of merchant ships sailing in military convoys (i.e., ATF forces).

3. Command Structure

The command structure for the US NCSORG is shown in Figure VII-1. Note: In the event that Naval Control of Shipping is implemented by NATO, the US NCSORG becomes a part of the NATO NCSORG. The NATO NCSORG command structure and doctrine are set forth in ATP 2, Volume 1 “Naval Control of Shipping Manuals” and Volume 2 “Allied Guide to Masters.” There are certain bilateral and multilateral agreements for NCS to which the US NCSORG is a party. Those agreements prescribe the applicable command structure should NCS be implemented.

a. National Command Authorities. The NCA is **responsible for approving implementation of US NCS** for US and foreign flag commercial shipping, based on requests for such action from geographic combatant commanders, the **SECTRANS** (for US commercial flag shipping), or the Secretary of State (for foreign flag shipping).

b. Geographic Combatant Commanders. Geographic combatant commanders (Commander in Chief, US Atlantic Command; US Commander in Chief, Europe; Commander in Chief, US Central Command; Commander in Chief, US Pacific Command; and Commander in Chief, US Southern Command) **initiate requests to implement NCS** for commercial shipping, establish overall responsibility, and allocate escort forces.

c. Area Commander. Area commanders (Commander in Chief, Atlantic Fleet [CINCLANTFLT], Commander in Chief, US

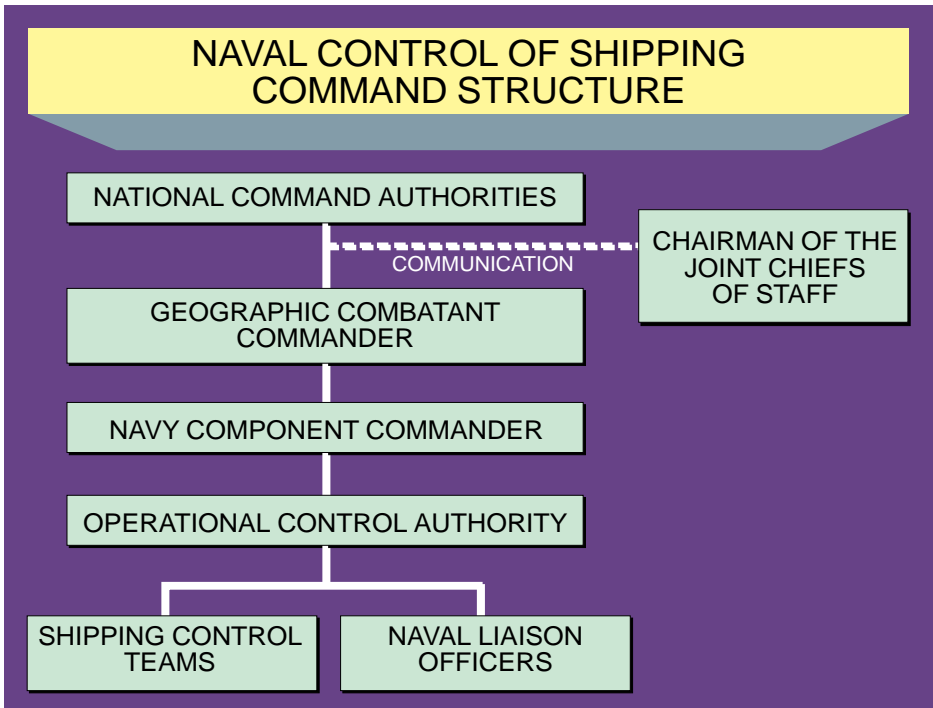


Figure VII-1. Naval Control of Shipping Command Structure

Naval Forces Europe, [CINCUSNAVEUR], Commander, US Naval Forces Central Command, [COMUSNAVCENT], Commander in Chief, Pacific Fleet [CINCPACFLT]) **conduct NCS operations** in accordance with the policies of their respective geographic combatant commander.

d. **Operational Control Authority (OCA).** **OCAs exercise control over movements of merchant ships sailing in escorted groups or independently, maintain shipping plots, and direct actions of their subordinate Shipping Control Teams (SCT).** CINCLANTFLT's subordinate OCAs are Commander, Ocean Atlantic in Norfolk, Virginia; Commander, US Eastern Atlantic in London, United Kingdom; and Naval Activities Caribbean in Roosevelt Roads, Puerto Rico. CINCUSNAVEUR's subordinate OCA is Commander, Fleet Air Mediterranean in Naples, Italy. COMUSNAVCENT's subordinate OCA is Commander, Middle Eastern Forces located afloat in the Persian

Gulf. CINCPACFLT functions as its own OCA.

e. **Shipping Control Teams.** SCT **exercise control** of merchant shipping in the vicinity of their assigned port locations, **conduct ship boardings** to brief ships' masters and officers, **issue sailing instructions** pursuant to guidance provided by their cognizant OCAs, **report arrivals and departures** of shipping, and may **detail Naval Liaison Officers (NLOs)** to embark on escorted or independently sailed ships as required. The number of personnel assigned to a SCT staff will vary depending on the volume of shipping sailing under naval control from the assigned port or ports.

f. **Naval Liaison Officers (Afloat).** If merchant ships are formed into escorted groups, **NLOs may embark on ships in the group** to assist with tactical maneuvering and communications. **NLOs may also embark on independently sailed merchant ships** to

provide advice on threat conditions, routing, communications procedures, and other matters.

4. Implementing NCS

The procedures for implementing NCS are simpler for sealift shipping than for shipping engaged in commercial trade.

a. **Sealift Shipping. The decision to sail US sealift shipping** (including foreign flag shipping under charter to MSC) **under NCS resides with the geographic combatant commanders for the geographic areas through which such shipping sails.** Because the decision to sail shipping under NCS may affect arrival times, the geographic combatant commander should consult with the supported commander and with USCINTRANS before implementing NCS. **If the NCSORG has been activated to control commercial shipping, it generally will be most efficient to implement NCS for sealift shipping as well.** The commander responsible for shipping protection then would have to interface only with the NCSORG, not both the MSC and NCSORG together. When NCS is implemented for common-user sealift shipping, the NCSORG assumes TACON of such shipping, but OPCON resides with MSC and COCOM

resides with USTRANSCOM. Under this arrangement, the NCSORG unilaterally can alter the routes of such shipping, but may not alter destination ports or arrival dates without prior consultation with MSC and/or USTRANSCOM.

b. **Commercial Shipping.** The decision to sail US and foreign flag commercial shipping under the US NCSORG **requires the approval of NCA.** Because of the potential impact on delivery times, insurance rates, and other factors, the NSA should be consulted prior to recommending an offer of NCS. **Foreign flag commercial shipping can only be placed under NCS on a voluntary basis** either by the ship's owner or the flag state. The Chief of Naval Operations (CNO), as the NCSORG program sponsor, will maintain liaison with the NSA and other civilian authorities to coordinate the exchange of information with the NCSORG concerning implementation of NCS and dissemination of threat and other information to US and foreign-flag commercial shipping. Upon approval by the NCA of a recommendation to implement NCS, the CNO will arrange for the NSA and/or the Department of State to promptly broadcast an NCS implementation message or messages to merchant ships subject to US control.

Intentionally Blank

CHAPTER VIII

TRANSITION FROM PEACE TO CONFLICT

“Tis time to leave the books in dust, and oil the unused armor’s rust.”

Andrew Marvell, 1621-1678

1. General

The transition from peace to conflict represents a critical period for sealift. Indeed, management of the transition during this period will have a significant effect on the success of deployment and sustainment missions assigned to sealift. Lost time is rarely made up, and **it is particularly during the transition period that time is lost.** Lost time can be attributed to misperceptions about the speed with which the DTS in general, and sealift in particular, can transition from a relatively small peacetime force to a major military force. **Transition from a peacetime transportation role to a military deployment role requires significant changes that affect every portion of the sealift forces.**

2. Sealift Force Structure

The first and most obvious change in sealift during transition is that **the number of ships under USTRANSCOM and MSC control will rapidly and substantially increase.** It

should be noted that the number of ships under MSC OPCON may not be an accurate measure of ships performing the sealift mission. Depending on the mode of acquisition, **ships may be delayed for significant time periods before they can be considered as active sealift assets.** For planning purposes, the time periods shown in Figure VIII-1 will be required to obtain shipping from each source or method of acquisition. The elapsed times represent the period between the first request for that type of shipping and the arrival of ships at berth, ready for loadout. These include the time required to take all of the actions discussed in Chapter V, “Vessel Acquisition and Activation Programs and Procedures,” activation time (if ROS, RRF, or NDRF) or the time necessary to make the ship ready for a military cargo (if a charter, SRP, and/or VTA or requisition) and transit to the desired SPOE. In the expansion of the sealift force, **several factors may further complicate the rapid accumulation of sufficient shipping,** particularly the acquisition of ships from the RRF and NDRF.

SEALIFT ASSET AVAILABILITY TIMES	
ROS SHIPPING: 4-7 Days (depending on location)	SRP and/or VTA: 21-75 Days (depending on location)
Charter: 4-30 Days (depending on location)	Requisitioning: 14-45 Days (depending on location)
RRF: 5-20 Days (depending on readiness and/or location)	NDRF: 45-135 Days

Figure VIII-1. Sealift Asset Availability Times

These are: (1) frequency of reserve ship test activations and exercises; (2) maintenance effort expended on reserve shipping; (3) shipyard capacity to activate large numbers of ships; (4) availability of trained crews, spare parts, and logistic support; (5) availability of militarily useful shipping on the world charter market; and (6) restrictions on the activities of foreign-flag ships by their respective national governments.

MARITIME PREPOSITIONING

The Navy-USMC maritime prepositioning program was begun in the late 1970s as a result of a DOD strategic mobility enhancement initiative to improve response times for SWA contingencies. Until the full Maritime Prepositioning Force (MPF) capability (specially built or converted ships) was achieved in the mid 1980s, an interim measure known as Near-Term Prepositioning Ships (NTPS) was created in 1980 to provide an initial response capability. The NTPS ships were on station at Diego Garcia by July 1980 and contained the equipment and 30 days of supplies for a USMC Brigade. By early 1985, the first combination RO/RO and breakbulk ships specifically built or converted for the Navy had been commissioned and were loaded with prepositioned vehicles, equipment, and supplies. By 1987, 13 ships organized in three squadrons had been commissioned, crewed with civilian mariners, loaded, and deployed.

The ships were more than just floating warehouses. Each of the three ships carried equipment for a Marine Expeditionary Brigade (MEB), along with enough supply sustainment for at least 30 days. The squadrons were associated with a specific MEB to ensure effective planning and training. MPS-1, associated with the 6th MEB and stationed at Camp Lejeune, NC, was deployed in the western Atlantic; MPS-2, associated with the 7th MEB in California, was anchored at Diego Garcia; and MPS-3, associated with the Hawaii-based 1st MEB, was home ported at Guam and Saipan. Together, each squadron and its associated MEB become an MPF.

The MPF concept performed largely as expected during the crisis, due to an aggressive training, exercise, and maintenance program carried out during the 1980s. Exercises had established planning goals of about 250 strategic airlift sorties to deploy a MEB; this figure was confirmed by the 7th MEB, which deployed to Saudi Arabia using 259 sorties. (The additional nine sorties reflected the addition of an infantry battalion and more helicopter antitank assets to the MEB.) The expected time of 10 days to unload ships and marry equipment with arriving units was met by all three MPFs. In fact, 7th MEB combat elements occupied defensive positions near Al-Jubayl in August within four days of their arrival. The only problem encountered during initial deployment of the 7th MEB centered on refueling support to Marine fixed-wing aircraft flying from CONUS, which competed for scarce assets with other Service aircraft. Elements of 1st MEB and II MEF, although deployed using MPF concepts, did not do so as complete units. Instead, their air, ground, and logistics elements were deployed and integrated into I MEF as they arrived, drawing their equipment from their associated MPS ships.

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

APPENDIX A

MERCHANT SHIP NAVAL AUGMENTATION PROGRAM

1. General

Merchant Ship Naval Augmentation Program (MSNAP) features and equipment are designed to enable specific merchant-type ships to augment and, when needed, act as CLF vessels during a crisis or conflict. These ships are CINC-allocated assets in service with MSC or maintained in the RRF to support Navy ships. Ships modified with MSNAP systems will be activated and deployed to US or overseas ports for loadout. They will resupply fleet ships with ordnance, other dry stores, or POL. The major MSNAP systems are the Underway Replenishment Consolidation (UNREP CONSOL) System, Vertical Replenishment decks (VERTREP), Modular Cargo Delivery System (MCDS), Modular Fuel Delivery System (MFDS), and Astern Refueling Rigs.

2. Underway Replenishment Consolidation Systems

UNREP CONSOL systems provide a capability for merchant ships to transfer dry cargo and ammunition to Navy CLF ships. These rigs have been installed on nine RRF ships. Included in the installations are sliding padeyes, materials handling equipment, cargo tie-down systems, safety equipment, and communications equipment.

3. Vertical Replenishment

VERTREP is provided by adding an elevated deck at the stern of the ship. This installation has been done on three Consol and six MCDS ships. The deck is approved for daylight hours, hover-only operations. The helicopters are from ships being resupplied. Helicopters up to the size of a CH-53E can use this system. Strike-up and

pre-stage from the ship's hold to the VERTREP deck capability is provided.

4. Modular Cargo Delivery System

The MCDS enables dry cargo merchant ships to perform limited Standard Tensioned Replenishment Alongside Method (STREAM) UNREP operations with all naval ships equipped with a dry cargo UNREP receiving station. The MCDS is a self-contained Navy Standard dry cargo STREAM station. Modifications include those similar to the consolidation system for cargo handling cargo stowage. Additionally, two MCDS units are installed over hatches, one forward and one aft of the ships superstructure. Installations have been made on seven RRF ships.

5. Modular Fuel Delivery System

The MFDS enables MSC, RRF, or commercial US flag tankers to deliver POL to Navy oilers and other ships via a modularized, alongside delivery system. The tanker modification provides two delivery stations plus one dry cargo, receive-only station. MFDS has been installed on two tankers that operate with MSC's peacetime fleet.

6. Astern Refueling Rigs

Astern refueling rigs permit tankers to provide limited POL transfer underway to US and allied combatant ships. Selected tankers are being modified for this system, which involves installation of deck mounting pads, piping modifications, manifolds, valves, and electrical power leads to connect the normal discharge

system to a manifold at the stern refueling installation of a reel-mounted astern station. This will permit the contingency refueling rig.

APPENDIX B

REFERENCES

The development of Joint Pub 4-01.2 is based upon the following primary references.

1. DOD Directive 4500.32-R “Military Standard Transportation and Movement Procedures.”
2. DOD Directive 5158.4, “United States Transportation Command,” 8 January 1993.
3. Joint Staff, SM 712-93, “Unified Command Plan.”
4. Joint Pub 0-2, “Unified Action Armed Forces (UNAAF).”
5. Joint Pub 1-01, “Joint Publication System, Joint Doctrine and Joint Tactics, Techniques, and Procedures Development Program.”
6. Joint Pub 1-02, “Department of Defense Dictionary of Military and Associated Terms.”
7. Joint Pub 3-0, “Doctrine for Joint Operations.”
8. Joint Pub 3-02, “Joint Doctrine for Amphibious Operations.”
9. Joint Pub 3-02.1, “Joint Doctrine for Landing Force Operations.”
10. Joint Pub 3-02.2, “Joint Doctrine for Amphibious Embarkation.”
11. Joint Pub 3-07, “Joint Doctrine for Military Operations Other Than War.”
12. Joint Pub 4-01, “Joint Doctrine for the Defense Transportation System.”
13. Joint Pub 4-01.3, “Joint Tactics, Techniques, and Procedures for Movement Control.”
14. Joint Pub 4-01.5, “Joint Tactics, Techniques, and Procedures for Water Terminal Operations.”
15. Joint Pub 4-01.6, “Joint Tactics, Techniques, and Procedures for Joint Logistics Over-the-Shore (JLOTS).”
16. Joint Pub 4-01.7, “Joint Tactics, Techniques, and Procedures for Use of Intermodal Containers in Joint Operations.”
17. Joint Pub 5-03.1, “Joint Operation Planning and Execution System, Vol I: (Planning Policies and Procedures).”
18. AFSC Pub 1, “The Joint Staff Officer’s Guide.”

19. NDP 4, “Naval Logistics.”

20. NWP 4-01.2M (old NWP 80), “Strategic Sealift Planning and Operations Doctrine of the US Navy.”

21. ATP2, “Allied Naval Control of Shipping Manual: Vol. 1, Merchant Ship Direction and Control” and “Vol. II, Guide to Masters.”

22. NWP 4-01.3M (old NWP 22-10/FMFM 1-5), “Maritime Prepositioning Force (MPF) Operations.”

23. NWP 3-02.23M TP/OH 7-8, “Deployment of the Assault Follow-On Echelon (AFOE).”

24. NWP 22-8, “MSC Support of Amphibious Operations.”

25. CJCSM 3122.02, “Crisis Action Time-Phased Force and Deployment Data Development and Deployment Execution.”

APPENDIX C

ADMINISTRATIVE INSTRUCTIONS

1. User Comments

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

2. Authorship

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

3. Change Recommendations

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

TO: USCINCTRANS SCOTT AFT IL//TCJ5-S//
INFO: JOINT STAFF WASHINGTON DC//J4/J7-JDD//

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

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

c. Record of Changes:

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

4. Distribution

- a. Additional copies of this publication can be obtained through Service publication centers.
- b. Only approved pubs and test pubs are releasable outside the combatant commands, Services, and Joint Staff. Release of any classified joint publication to foreign governments or foreign nationals must be requested through the local embassy (Defense Attache Office) to DIA Foreign Liaison Office, PSS, Room 1A674, Pentagon, Washington, D.C. 20301-7400.
- c. Additional copies should be obtained from the Military Service assigned administrative support responsibility by DOD Directive 5100.3, 1 November 1988, "Support of the Headquarters of Unified, Specified, and Subordinate Joint Commands."

By Military Services:

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

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

GLOSSARY

PART I—ABBREVIATIONS AND ACRONYMS

A/DACG	arrival/departure airfield control group
ACS	Auxiliary Crane Ship
ADP	automated data processing
AE	assault echelon
AFOE	assault follow-on echelon
APF	afloat prepositioning force
APOD	aerial port of debarkation
APS	afloat prepositioning ship(s)
ATF	amphibious task force
BBL	barrel (42 US gallons)
C2	command and control
C4	command, control, communications, and computers
C4I	command, control, communications, computers, and intelligence
CATF	commander, amphibious task force
CINC	commander of a combatant command
CINCLANTFLT	Commander in Chief, Atlantic Fleet
CINCPACFLT	Commander in Chief, Pacific Fleet
CINCUSNAVEUR	Commander in Chief, Naval Forces Europe
CJCS	Chairman of the Joint Chiefs of Staff
CNO	Chief of Naval Operations
COCOM	combatant command (command authority)
COLDS	Cargo Offload and Discharge System
COMSC	Commander, Military Sealift Command
COMUSNAVCENT	Commander, United States Navy, Central Command
CONPLAN	operation plan in concept format
CONUS	continental United States
CS	combat support
CSS	combat service support
DART	dynamic analysis and replanning tool
DBOF	defense business operations fund
DOD	Department of Defense
DOT	Department of Transportation
DTS	Defense Transportation System
DWT	deadweight tons (in long tons of 2,240 pounds)
EUSC	effective United States control/controlled
FLO/FLO	float-on/float-off
FSS	fast sealift ship(s)
ft ³	cubic feet

Glossary

GCCS	Global Command and Control System
GTN	Global Transportation Network
HF	high frequency
ISO	International Organization for Standardization
JFAST	Joint Flow and Analysis System for Transportation
JFC	joint force commander
JLOTS	joint logistics-over-the-shore
JOPEX	Joint Operation Planning and Execution System
JPEC	Joint Planning and Execution Community
JSCP	Joint Strategic Capabilities Plan
JTB	Joint Transportation Board
LASH	lighter aboard ship (barge carrier design)
LF	landing force
LMSR	large, medium speed roll-on/roll-off
LOTS	logistics over-the-shore
LT	long ton (2,240 pounds)
MAGTF	Marine air-ground task force
MAGTF ACE	Marine air-ground task force aviation combat element
MARAD	Maritime Administration
MCDS	Modular Cargo Delivery System
MF	medium frequency
MFDS	Modular Fuel Delivery System
MPS	maritime prepositioning ship(s)
MSC	Military Sealift Command
MSNAP	Merchant Ship Naval Augmentation Program
MT	measurement ton (40 cubic feet)
MTMC	Military Traffic Management Command
NATO	North Atlantic Treaty Organization
NCA	National Command Authorities
NCS	naval control of shipping
NCSORG	Naval Control of Shipping Organization
NDRF	National Defense Reserve Fleet
NDSF	National Defense Sealift Fund
NLO	naval liaison officer(s)
NSA	National Shipping Authority
NSE	Navy support element
OCA	operational control authority
OPCON	operational control
OPDS	offshore petroleum discharge system
OPLAN	operation plan
OPORD	operation order

POD	port of debarkation
POE	port of embarkation
POL	petroleum, oils, and lubricants
PREPO	prepositioning
PSA	port support activity
RO/RO	roll-on/roll-off
ROK	Republic of Korea
ROS	reduced operational status
RRF	Ready Reserve Force
SCT	shipping control teams
SecDef	Secretary of Defense
SECNAV	Secretary of the Navy
SECTRANS	Secretary of Transportation
SEF	sealift enhancement feature(s)
SPOD	seaport of debarkation
SPOE	seaport of embarkation
SRP	Sealift Readiness Program
ST	short ton (2,000 pounds)
STREAM	standard tensioned replenishment alongside method
T-AH	hospital ship
T-AVB	aviation logistics support ship
TACON	tactical control
TC-AIMS	Transportation Coordinator's Automated Information for Movement System
TEA	Transportation Engineering Agency
TEU	twenty-foot equivalent units
TPFDD	time-phased force and deployment data
UNREP	underway replenishment
UNREP CONSOL	underway replenishment consolidation
USCG	United States Coast Guard
USCINCTRANS	Commander in Chief, United States Transportation Command
USMC	United States Marine Corps
USTRANSCOM	United States Transportation Command
VERTREP	vertical replenishment
VISA	Voluntary Intermodal Shipping Agreement
VTA	Voluntary Tanker Agreement

PART II—TERMS AND DEFINITIONS

active sealift forces. Military Sealift Command active common-user sealift and the afloat positioning force, including the required cargo handling and delivery systems, and necessary operating personnel. (Approved for inclusion in the next edition of Joint Pub 1-02.)

afloat positioning force. Shipping maintained in full operational status to afloat preposition military equipment and supplies in support of combatant commanders' operation plans. The afloat positioning force consists of the three maritime positioning ships squadrons and the afloat positioning ships. (Approved for inclusion in the next edition of Joint Pub 1-02.)

afloat positioning ships. Forward deployed merchant ships loaded with tactical equipment and supplies to support the initial deployment of military forces. (Approved for inclusion in the next edition of Joint Pub 1-02.)

amphibious task force. The task organization formed for the purpose of conducting an amphibious operation. The amphibious task force always includes Navy forces and a landing force, with their organic aviation, and may include Military Sealift Command-provided ships and Air Force forces when appropriate. Also called ATF. (Joint Pub 1-02)

assault echelon. The element of a force that is scheduled for initial assault on the objective area. In an amphibious task force, it consists of Navy amphibious ships and the assault troops, vehicles, non-self-deployable aircraft, equipment, and supplies required to initiate the assault landing. (This term and its definition modifies the existing term and definition

and is approved for inclusion in the next edition of Joint Pub 1-02.)

assault follow-on echelon. In amphibious operations, that echelon of the assault troops, vehicles, aircraft equipment, and supplies which, though not needed to initiate the assault, is required to support and sustain the assault. In order to accomplish its purpose, it is normally required in the objective area no later than five days after commencement of the assault landing. (Joint Pub 1-02)

combatant command (command authority). Nontransferable command authority established by title 10 ("Armed Forces"), United States Code, section 164, exercised only by commanders of unified or specified combatant commands unless otherwise directed by the President or the Secretary of Defense. Combatant command (command authority) cannot be delegated and is the authority of a combatant commander to perform those functions of command over assigned forces involving organizing and employing commands and forces, assigning tasks, designating objectives, and giving authoritative direction over all aspects of military operations, joint training, and logistics necessary to accomplish the missions assigned to the command. Combatant command (command authority) 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. Combatant command (command authority) provides full authority to organize and employ commands and forces as the combatant commander considers necessary to accomplish assigned missions.

Operational control is inherent in combatant command (command authority). Also called COCOM. (Joint Pub 1-02)

command and control. The exercise of authority and direction by a properly designated commander over assigned and attached forces in the accomplishment of the mission. Command and control functions are performed through an arrangement of personnel, equipment, communications, facilities, and procedures employed by a commander in planning, directing, coordinating and controlling forces and operations in the accomplishment of the mission (Joint Pub 1-02)

common-user sealift. The sealift services provided on a common basis for all Department of Defense agencies and, as authorized, for other agencies of the US Government. The Military Sealift Command, a transportation component command of the US Transportation Command, provides common-user sealift for which users reimburse the transportation accounts of the Defense Business Operations Fund. (Approved for inclusion in the next edition of Joint Pub 1-02.)

common-user ocean terminals. A military installation, part of a military installation, or a commercial facility operated under contract or arrangement by the Military Traffic Management Command which regularly provides for two or more Services terminal functions of receipt, transit storage or staging, processing, and loading and unloading of passengers or cargo aboard ships (Joint Pub 1-02)

effective US control. Merchant ships, majority owned by US citizens or corporations that are operated under Liberian, Panamanian, Honduran, Bahamian, and Marshall Islands registries. These ships are considered requisitionable

assets available to the US Government in time of national emergency and therefore under the effective control of the US Government. (Approved for inclusion in the next edition of Joint Pub 1-02.)

fly-in echelon. Includes the balance of the initial assault force, not included in the assault echelon, and some aviation support equipment. (Approved for inclusion in the next edition of Joint Pub 1-02.)

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

maritime prepositioning ships. Civilian-crewed, Military Sealift Command-chartered ships which are organized into three squadrons and are usually forward-deployed. These ships are loaded with prepositioned equipment and 30 days of supplies to support three Marine Expeditionary Brigades. Also called MPS. (Joint Pub 1-02)

National Command Authorities. The President and the Secretary of Defense or their duly deputized alternates or successors. Also called NCA. (Joint Pub 1-02)

National Shipping Authority. The organization within each allied government responsible in time of war for the direction of its own merchant shipping. (Approved for inclusion in the next edition of Joint Pub 1-02.)

naval control of shipping. Control exercised by naval authorities of movement, routing, reporting, convoy organization, and tactical diversion of allied merchant shipping. It does not include the

employment or active protection of such shipping. (Joint Pub 1-02)

naval control of shipping organization. The organization within the Navy which carries out the specific responsibilities of the Chief of Naval Operations to provide for the control and protection of movements of merchant ships in time of war. (Joint Pub 1-02)

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

operational control authority. The naval commander responsible within a specified

geographical area for the operational control of all maritime forces assigned to him and for the control of movement and protection of all merchant shipping under allied naval control. (Joint Pub 1-02)

reduced operational status. Applies to the Military Sealift Command ships withdrawn from full operations status (FOS) because of decreased operational requirements. A ship in reduced operational status is crewed in accordance with shipboard maintenance and possible future operational requirements with crew size predetermined contractually. The condition of readiness in terms of calendar days required to attain full operational status is designated by the numeral following the acronym ROS (i.e., ROS-5). Also called ROS. (Joint Pub 1-02)

sealift readiness program. A program requiring commitment by US ship owners either under Public Law or as a precondition for carriage of military cargo for US flag merchant ships to be made available to the Department of Defense in a prescribed number of days after call-up by the Secretary of Defense, in coordination with the Secretary of Transportation. (This term and its definition modifies the existing term and definition and is approved for inclusion in the next edition of Joint Pub 1-02.)

strategic mobility. The capability to deploy and sustain military forces worldwide in support of national strategy. (Joint Pub 1-02)

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

tactical control. Command authority over assigned or attached forces or commands, or military capability or forces made available for tasking, that is limited to the detailed and, usually, local direction and control of movements or maneuvers necessary to accomplish missions or tasks assigned. Tactical control is inherent in operational control. Tactical control may be delegated to, and exercised at any level at or below the level of combatant command. Also called TACON. (Joint Pub 1-02)

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

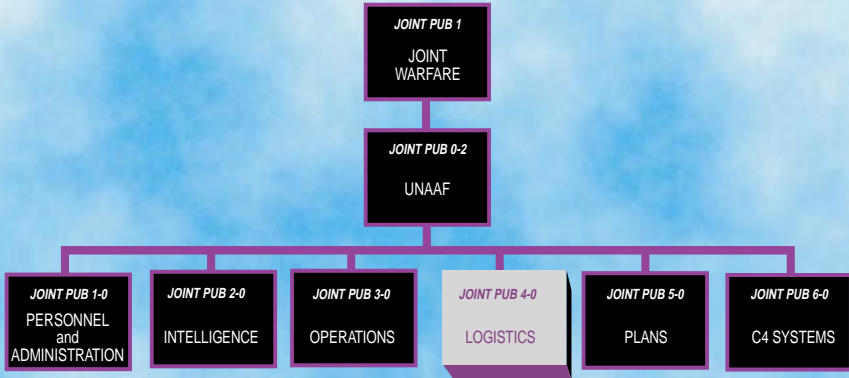
type command. An administrative subdivision of a fleet or force into ships or units of the same type, as differentiated from a tactical subdivision. Any type command may have a flagship, tender, and aircraft assigned to it. (Joint Pub 1-02)

unified command. A command with a broad continuing mission under a single commander and composed of forces from two or more Military Departments, and which is established by the President, through the Secretary of Defense with the advice and assistance of the Chairman of the Joint Chiefs of Staff. (Joint Pub 1-02)

voluntary tanker agreement. An agreement established by the Maritime Administration to provide for US commercial tanker owners and operators to voluntarily make their vessels available to satisfy the Department of Defense needs. It is designed to meet contingency or war requirements for point-to-point petroleum, oil and lubricants movements, and not to deal with capacity shortages in resupply operations. (Approved for inclusion in the next edition of Joint Pub 1-02.)

Intentionally Blank

JOINT DOCTRINE PUBLICATIONS HIERARCHY



All joint doctrine and tactics, techniques, and procedures are organized into a comprehensive hierarchy as shown in the chart above. **Joint Pub 4-01.2** is in the **Logistics** series of joint doctrine publications. The diagram below illustrates an overview of the development process:

