MCWP 4-1

Logistics Operations

U.S. Marine Corps

PCN: 143 000058 00

To Our Readers

Changes: Readers of this publication are encouraged to submit suggestions and changes that will improve it. Recommendations may be sent directly to Commanding General, Marine Corps Combat Development Command, Doctrine Division (C 42), 3300 Russell Road, Suite 318A, Quantico, VA 22134-5021 or by fax to 703-784-2917 (DSN 278-2917) or by E-mail to **smb@doctrine div@mccdc**. Recommendations should include the following information:

- Location of change
  - Publication number and title
  - Current page number
  - Paragraph number (if applicable)
  - Line number
  - Figure or table number (if applicable)
- Nature of change
  - Add, delete
  - Proposed new text, preferably double-spaced and typewritten
- Justification and/or source of change

Additional copies: A printed copy of this publication may be obtained from Marine Corps Logistics Base, Albany, GA 31704-5001, by following the instructions in MCBul 5600, *Marine Corps Doctrinal Publications Status.* An electronic copy may be obtained from the Doctrine Division, MCCDC, world wide web home page which is found at the following universal reference locator: **http://www.doctrine.quantico.usmc.mil**.

Unless otherwise stated, whenever the masculine or feminine gender is used, both men and women are included.

DEPARTMENT OF THE NAVY
Headquarters United States Marine Corps
Washington, D.C. 20380-1775

15 April 1999

FOREWORD

1. PURPOSE

Marine Corps Warfighting Publication (MCWP) 4-1, *Logistics Operations*, expands on the themes developed in Marine Corps Doctrinal Publication (MCDP) 4, *Logistics*, and provides essential information needed to understand the conduct of logistics planning and operations in a joint environment. *Logistics Operations* provides commanders and logisticians with a broad perspective on the Marine Corps' logistics missions and objectives. It addresses the Marine Corps' core logistics capabilities at the strategic, operational, and tactical levels of war. This publication describes how activities at each level of war interact with and support activities at other levels of war, ensuring that effective logistics support exists down to the tactical commander.

2. SCOPE

MCWP 4-1 introduces the Marine Corps logistics organization and support structure, depicts an overview of the processes used to plan and execute logistics support, and discusses how emerging operational concepts impact logistics. MCWP 4-1 builds on the foundation established in MCDP 4, and it should be read by all Marine officers.

MCWP 4-1 provides an overview of Marine Corps logistics at all levels of war. Detailed information on the conduct of logistics at each level of war will be found in follow-on, logistics warfighting publications: MCWP 4-11, *Tactical Logistics* (and subordinate functional publications in the 4-11 series); MCWP 4-12, *Operational Logistics*; and MCWP 4-13, *Strategic Logistics*. These publications in conjunction with MCDP 4, *Logistics*; Joint Publication 4-0, *Doctrine for Logistic Support of Joint Operations*; and Naval Doctrine Publication 4, *Naval Logistics*, provide the information and background necessary to effectively plan and execute logistics operations at all echelons.

3. SUPERSESSION

None.

4. CERTIFICATION

Reviewed and approved this date.

BY DIRECTION OF THE COMMANDANT OF THE MARINE CORPS

J. E. Rhodes

J.E. RHODES
Lieutenant General, U.S. Marine Corps
Commanding General
Marine Corps Combat Development Command

DISTRIBUTION: 143 000058 00

Logistics Operations

Table of Contents

		Page
Chapter 1.	**Overview of Marine Corps Logistics**	
1001	Service Responsibility	1-1
1002	Marine Corps Logistics Mission	1-1
1003	Logistics Core Capabilities	1-2
1004	The Levels of Logistics and the Logistics Pipeline	1-3
1005	Principles of Logistics Support	1-5
1006	Functional Areas of Marine Corps Logistics	1-6
Chapter 2.	**Marine Corps Logistics Responsibilities and Organization**	
2001	Logistics Responsibilities	2-1
2002	Command Relationships and Other Authorities	2-3
2003	Headquarters, Marine Corps	2-6
2004	Staff Cognizance and Logistics Support	2-8
2005	Operating Forces	2-10
2006	Marine Corps Reserve	2-16
2007	Supporting Establishment	2-16
2008	War Materiel Support	2-18
Chapter 3.	**Command and Control of Logistics**	
3001	Command and Control Organization and Architecture	3-1
3002	Command and Control Organizations and the Levels of War	3-2
3003	Command and Control Information Systems	3-5
3004	Information Management and Technology Improvements	3-8
3005	Considerations for Joint or Multinational Command and Control of Logistics	3-12
Chapter 4.	**Logistics Planning**	
4001	Planning at the Levels of War	4-1
4002	Administrative and Operational Planning	4-2
4003	Planning for Resources	4-2
4004	Principles and Considerations	4-2
4005	Mission and Task Analysis	4-5
4006	Factors Affecting Logistics Planning	4-6
4007	Coordination in Planning	4-7
4008	Planning Systems	4-7
4009	Planning Procedures	4-9

Chapter 5. Logistics Execution

5001	Expeditionary Operations	5-1
5002	Predeployment Actions	5-2
5003	Deployment	5-4
5004	Entry	5-8
5005	Enabling and Decisive Actions	5-14
5006	Power Projection From the Sea and Amphibious Operations	5-15
5007	Redeployment	5-16
5008	Joint or Multinational Operations	5-17

Appendices

A	Emerging Concepts	A-1
B	Acronyms	B-1
C	References	C-1

Chapter 1

Overview of Marine Corps Logistics

As defined in Joint Publication (Joint Pub) 1-02, *Department of Defense Dictionary of Military and Associated Terms*, logistics is "the science of planning and carrying out the movement and maintenance of forces." In its most comprehensive sense, logistics provides materiel support, health service support, facilities support, and service support. Materiel support is the design development, acquisition, storage, movement, distribution, maintenance, evacuation, and disposition of materiel. Health service support is the movement, evacuation, and hospitalization of personnel. Facilities support is the acquisition or construction, maintenance, operation, and disposition of facilities. Service support is the acquisition or furnishing of services. Specific logistics needs are tailored to meet the conditions and the level of war under which a military force operates.

1001. Service Responsibility

United States Code, Title 10, assigns each Service responsibility for organizing, training, and equipping forces for employment in the national interest. Joint Pub 4-0, *Doctrine for Logistic Support of Joint Operations*, states that each Service is responsible for the logistics support of its own forces. Joint Pub 4-0 further clarifies logistics support responsibilities for forces assigned to combatant commanders. The combatant commander may then delegate the responsibility for providing or coordinating support for all Service components in the theater or designated area to the Service component that is the dominant user. However, each Service retains its basic logistics responsibilities except when logistics support agreements or arrangements are established with national agencies, allies, joint forces, or other Services.

1002. Marine Corps Logistics Mission

On the basis of United States Code, Title 10, and joint doctrine, the Marine Corps, in coordination and cooperation with the Navy, has made logistical self-sufficiency an essential element of Marine air-ground task force (MAGTF) expeditionary warfighting capabilities. This means that the Marine Corps' logistics mission, at all command and support levels, is to generate MAGTFs that are rapidly deployable, self-reliant, self-sustaining, and flexible and that can rapidly reconstitute. This goal leads to further corollaries:

- Rapid deployment demands that MAGTF organizations, equipment, and supplies be readily transportable by land, in aircraft, and on ships.
- A self-reliant MAGTF is task-organized to support itself logistically with accompanying supplies for specific timeframes without undue concern for resupply or developed infrastructure ashore.
- A MAGTF's logistics capabilities and accompanying supplies enable it, depending on size, to self-sustain its operations for up to 60 days while external resupply channels are organized and established.
- Marine Corps maneuver warfare philosophy demands that a MAGTF maintain battlefield flexibility, organizational adaptability, and the ability to react to the changing operational situation.

- A MAGTF's inherent self-sustainment and rapid deployability capabilities allow it to reconstitute itself rapidly and permit rapid withdrawal from a completed operation and immediate re-embarkation for follow-on missions.

1003. Logistics Core Capabilities

At all levels of war, logistics core capabilities provide the commander with the ability to accomplish the defined functions of logistics. The Marine Corps' core capabilities are the individual, functional logistics operating systems that exist at each level of war and are tied together by command and control. Marine Corps logistics core capabilities are essential to the expeditionary character that distinguishes MAGTFs from other military organizations. See figure 1-1.

a. Logistics Operating Systems

Marine Corps doctrinal publication (MCDP) 4, *Logistics*, indicates that fundamental to all logistics operating systems are distribution systems that consist of functional resources and procedures. Functional resources consist of bases, organizations, people, assets, equipment, and facilities. Procedures include functional processes that not only distribute resources where they are needed but also apply those resources to generate logistic capability. Logistic operating systems joined with command and control address all logistics functions (both functional resources and processes) at every level of war.

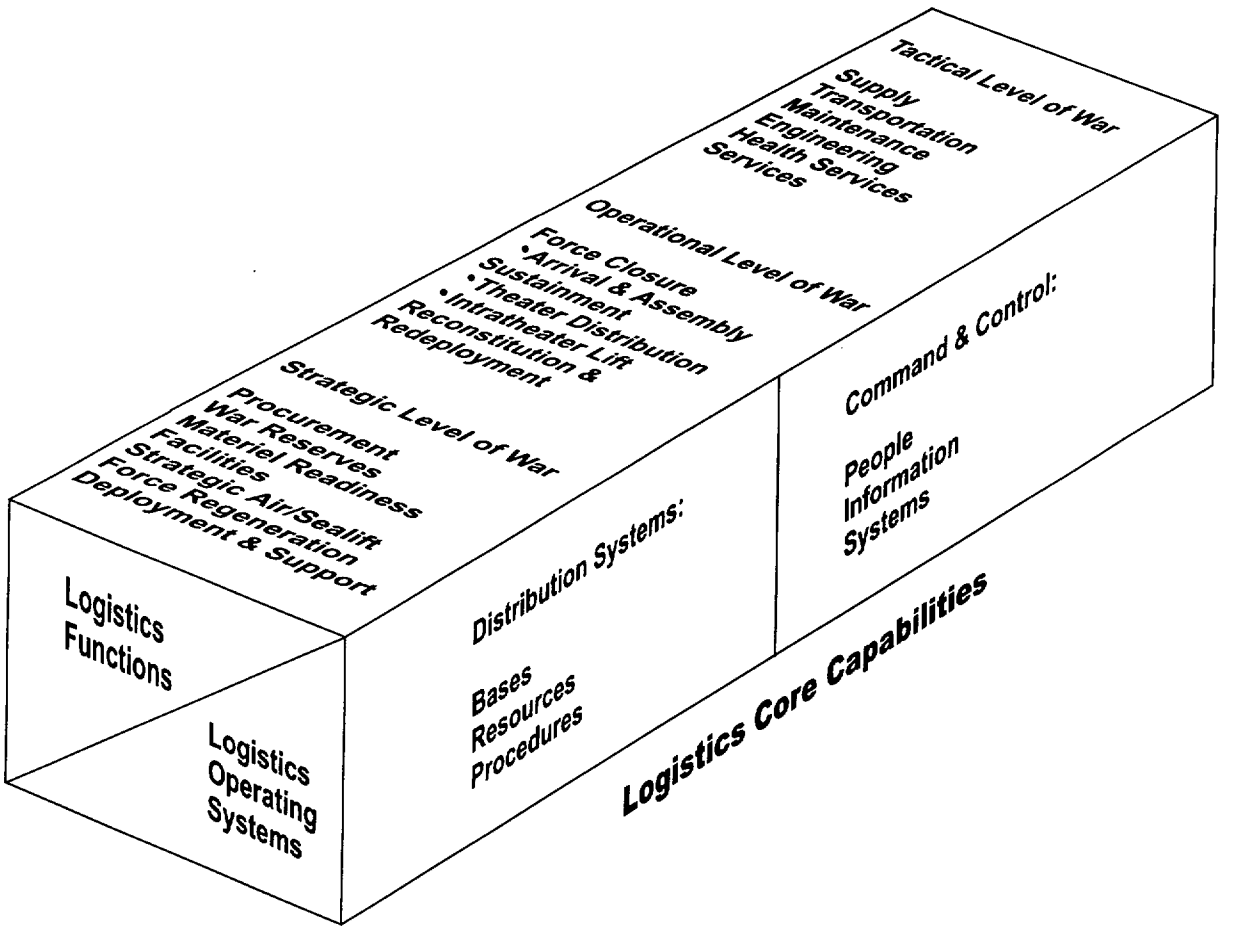


Figure 1-1. Logistics Core Capabilities.

b. Command and Control of Logistics

MCDP 4 states that command and control of logistics enables the commander to recognize requirements and provide the required resources. Command and control must provide visibility of both capabilities and requirements. This visibility allows the commander to make decisions regarding the effective allocation of scarce, high-demand resources. Additionally, command and control facilitates the integration of logistics operations with other warfighting functions so that the commander's time for planning, decision, execution, and assessment is optimized. Only when command and control effectively supports the logistics effort can logistics effectively and efficiently support the mission, manage distribution of capabilities, provide a shared real-time picture of the battlespace, anticipate requirements, allocate resources, and effect the timely distribution of resources. See chapter 3 for more information on command and control.

1004. The Levels of Logistics and the Logistics Pipeline

The strategic, operational, and tactical levels of logistics function as a coordinated whole, rather than as separate entities. Although the Marine Corps generally focuses on the tactical level of logistics, it is imperative that all Marines understand the interaction of all three logistics levels. These levels interconnect like sections of a pipeline, tying together logistics support at the strategic, operational, and tactical levels. See figure 1-2 (on page 1-4).

The joint staff, individual Services, and associated national agencies (Defense Logistics Agency and Office of the Secretary of Defense) address strategic logistics issues. The Services coordinate their required strategic and operational logistics interfaces. Combatant commanders and their logistics staffs—supporting and supported—manage both strategic and operational logistics issues that affect their assigned missions. Service components and the subordinate commander, their logistics staffs, and logisticians down to the individual, small-unit level deal with operational and tactical logistics responsibilities.

a. Strategic Logistics

Strategic logistics supports organizing, training, and equipping the forces that are needed to further the national interest. It links the national economic base (people, resources, and industry) to military operations. The combination of strategic resources (the national sustainment base) and distribution processes (our military deployment components) represents our total national capabilities. These capabilities include the Department of Defense (DOD), the Military Services, other Government agencies as necessary or appropriate, and the support of the private sector. Strategic logistics capabilities are generated based on guidance from the National Command Authorities and logistics requirements identified by the operating forces. Lead times to coordinate and plan strategic logistics vary, ranging from up to a decade or more for equipment development and fielding, to 2 years for fiscal and routine operational contingency planning, to mere days for positioning forces around the globe in crisis response.

The combatant commander and his staff (principally the J-4, Logistics Directorate) plan and oversee logistics from a theater strategic perspective. They assign execution responsibilities to Service components unless a joint or multinational functional command is formed to perform theater strategic logistics functions. The joint staff and combatant commanders generate and move forces and materiel into theater and areas of operations where operational logistics concepts are employed.

Headquarters, Marine Corps and the Marine Corps supporting establishment, augmented by the Marine Corps Reserve, plan and conduct Marine Corps strategic logistics support (with the exception of aviation-peculiar support). Headquarters, Marine Corps uses information from and coordinates with Marine Corps operating forces and the Marine Corps Reserve, the joint staff, and the supported or supporting combatant commanders to establish and effect strategic logistics.

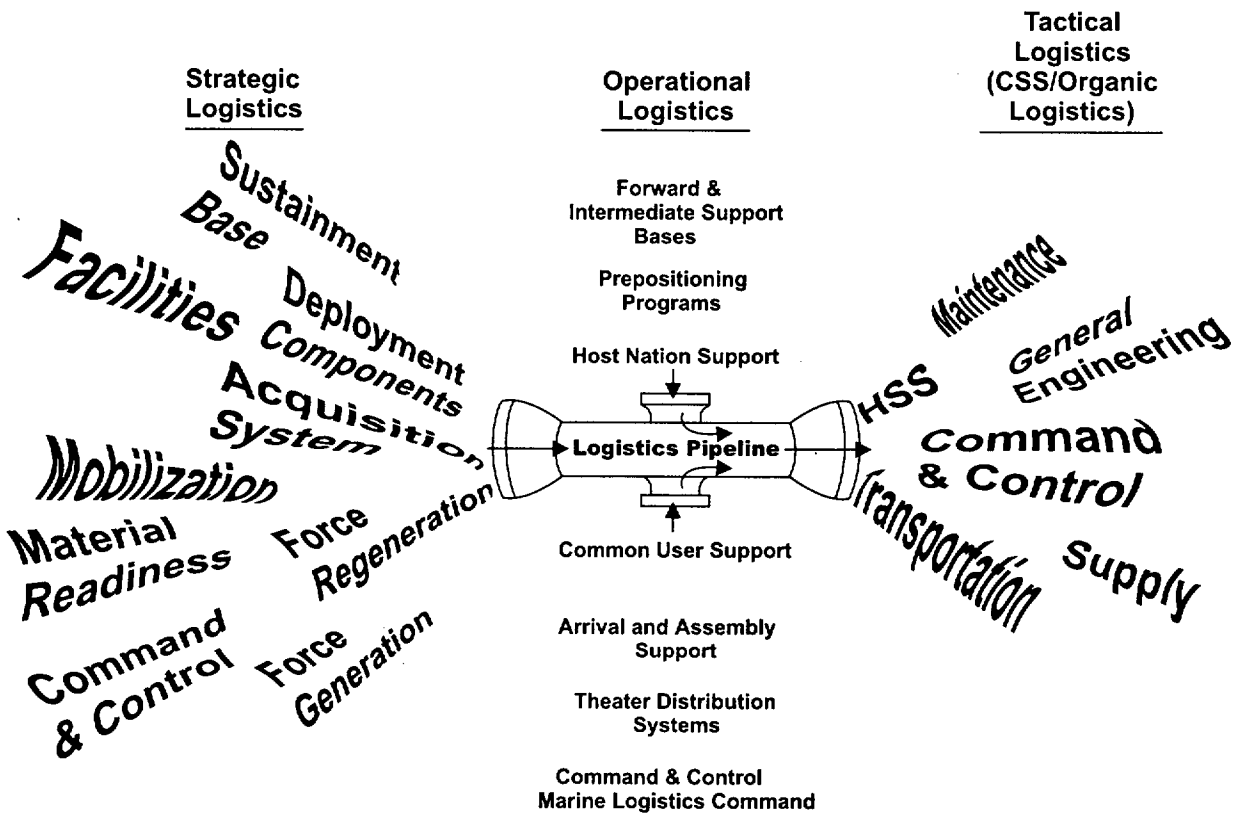


Figure 1-2. Logistics Core Capabilities.

At the strategic level, the Marine Corps—

- Procures weapons and equipment (except aircraft and class V[A]).
- Recruits, trains, and assembles forces.
- Establishes facilities, bases, and stations to house and maintain forces and stockpile resources.
- Mobilizes forces.
- Oversees and coordinates employment of strategic-level transportation assets.
- Regenerates forces.
- Provides command and control to manage the flow of resources from the strategic to the tactical level.

b. Operational Logistics

Operational logistics links tactical requirements to strategic capabilities in order to accomplish operational goals and objectives. It includes the support required to sustain campaigns and major operations. Operational logistics supports conducting campaigns and providing theater-wide logistics support, generally over periods of weeks or months. Operational logisticians assist in resolving tactical requirements and coordinate the allocation, apportionment, and distribution of resources within theater. They interface closely with operators at the tactical level in order to identify theater shortfalls and communicate these shortfalls back to the strategic source. At the operational level, the concerns of the logistician and the operator are intricately interrelated.

The Marine Corps' operating forces, assisted by Headquarters, Marine Corps and the supporting establishment, are responsible for operational logistics. Commander, Marine Corps Forces, or the senior MAGTF command element in the absence of an in-theater Marine component commander performs operational logistics support functions. Commander, Marine Corps Forces, may establish

a theater Marine Logistics Command for the purpose of performing operational logistics functions to support tactical logistics requirements in the area of operations.

The focus of operational logistics is to balance the MAGTF deployment, employment, and support requirements to maximize the overall effectiveness of the force. Marine Corps operational logistics orients on force closure, sustainment, reconstitution, and redeployment of Marine forces in theater, which includes—

- Providing operational-level command and control for effective planning and management of operational logistics efforts.
- Establishing intermediate and forward support bases.
- Supporting employment of geoprepositioned and maritime prepositioned assets.
- Supporting arrival and assembly of forces in theater, and their reception, staging, onward movement, and integration.
- Coordinating logistics support with joint, other-Service, and host nation agencies.
- Reconstituting and redeploying MAGTFs and maritime prepositioning forces (MPFs) for follow-on missions.

c. Tactical Logistics

Tactical logistics includes organic unit capabilities and the combat service support (CSS) activities necessary to support military operations. Its focus is to support the commander's intent and concept of operations while maximizing the commander's flexibility and freedom of action.

Tactical logistics involves the coordination of functions required to sustain and move units, personnel, equipment, and supplies. These functions must deliver flexible and responsive combat service support to meet the needs of the forces engaged in operations. Therefore, the response time of tactical logistics is necessarily rapid and requires anticipatory planning to provide responsive support. Supply and maintenance activities generate materiel readiness; transportation resources move personnel, equipment, and supplies within the tactical area of operations; and general engineering support, health service support, and general services support contribute to mission accomplishment.

The MAGTF is specifically designed to possess the organic CSS organizations that it needs to accomplish assigned missions. Although no single element of the MAGTF has all of the operational and logistics capabilities needed to operate independently, each element has the capability for at least some basic self-support tasks. The combat service support element (CSSE) provides general ground logistics support to the command element (CE), ground combat element (GCE), and aviation combat element (ACE). The ACE possesses unique aviation logistics support capabilities essential for aircraft operations. Typically, the MAGTF deploys with accompanying supplies that enable it to conduct operations that range from 15 to 60 days (the period when resupply channels are being established and flow of supplies initiated).

1005. Principles of Logistics Support

There are seven principles of logistics support that apply to all three levels of logistics, and attaining these principles is essential to ensuring operational success. These principles, like the principles of war, are guides for planning, organizing, managing, and executing. They are not rigid rules, nor will they apply at all times. As few as one or two may apply in any given situation. Therefore, these principles should not be interpreted as a checklist, but rather as a guide for analytical thinking and prudent planning. These principles require coordination to increase logistics effectiveness. They are not stand-alone characteristics. The application of these principles by effective logisticians requires flexibility, innovation, and in maneuver warfare, boldness.

a. Responsiveness

Responsiveness is the right support in the right place at the right time. Among the logistics principles, responsiveness is the keystone. All other principles become irrelevant if logistics support does not support the commander's concept of operations.

b. Simplicity

Simplicity fosters efficiency in both the planning and execution of logistics operations. Mission-type orders and standardized procedures contribute to simplicity. Establishment of priorities and preallocation of supplies and services by the supported unit can simplify logistics support operations.

c. Flexibility

Flexibility is the ability to adapt logistics structure and procedures to changing situations, missions, and concepts of operation. Logistics plans and operations must be flexible to achieve both responsiveness and economy. A commander must retain command and control over subordinate organizations to maintain flexibility. The principle of flexibility also includes the concepts of alternative planning, anticipation, reserve assets, redundancy, forward support of phased logistics, and centralized control with decentralized operations.

d. Economy

Economy is providing sufficient support at the least cost without impairing mission accomplishment or jeopardizing lives. At some level and to some degree, resources are always limited. When prioritizing limited resources and allocating them sufficiently to achieve success without imbalance or inordinate excess, the commander is, in effect, applying economy.

e. Attainability

Attainability (or adequacy) is the ability to provide the minimum, essential supplies and services required to begin combat operations. The commander's logistics staff develops the concept of logistics support; completes the logistics estimate; and initiates resource identification on the basis of the supported commander's requirements, priorities, and apportionment. An operation should not begin until minimum essential levels of support are on hand.

f. Sustainability

Sustainability is the ability to maintain logistics support to all users throughout the area of operations for the duration of the operation. Sustainability focuses the commander's attention on long-term objectives and capabilities of the force. Long-term support is the greatest challenge for the logistician, who must not only attain the minimum, essential materiel levels to initiate combat operations (readiness), but also must maintain those levels for the duration to sustain operations.

g. Survivability

Survivability is the capacity of the organization to protect its forces and resources. Logistics units and installations are high-value targets that must be guarded to avoid presenting the enemy with a critical vulnerability. Since the physical environment typically degrades logistics capabilities rather than destroys them, it must be considered when planning. Survivability may dictate dispersion and decentralization at the expense of economy. The allocation of reserves, development of alternative sources, and phasing of logistics support contribute to survivability.

1006. Functional Areas of Marine Corps Logistics

Logistics is normally categorized in six functional areas: supply, maintenance, transportation, general engineering, health services, and services. Logistics systems and plans are usually developed to address each functional area and logisticians commonly discuss support requirements and concepts in terms of these commodity areas. However, while each logistics functional area is essential in and of itself, all functions must be integrated into the overall logistics support operation to ensure total support of MAGTF operations.

Table 1-1. Classes of Supply.

Class of Supply	Description
I	Subsistence, which includes gratuitous health and welfare items and rations.
II	Clothing, individual equipment, tentage, organizational tool sets and tool kits, hand tools, administrative and housekeeping supplies, and equipment.
III	Petroleum, oils, and lubricants (POL), which consists of petroleum fuels, lubricants, hydraulic and insulating oils, liquid and compressed gases, bulk chemical products, coolants, de-icing and antifreeze compounds, preservatives together with components and additives of such products, and coal.
IV	Construction, which includes all construction material; installed equipment; and all fortification, barrier, and bridging materials.
V	Ammunition of all types, which includes, but is not limited to, chemical, radiological, special weapons, bombs, explosives, mines, detonators, pyrotechnics, missiles, rockets, propellants, and fuzes.
VI	Personal demand items or nonmilitary sales items.
VII	Major end items, which are the combination of end products assembled and configured in their intended form and ready for use (e.g., launchers, tanks, mobile machine shops, vehicles).
VIII	Medical/dental material, which includes medical-unique repair parts, blood and blood products, and medical and dental material.
IX	Repair parts (less class VIII), including components, kits, assemblies, and subassemblies (reparable and nonreparable), required for maintenance support of all equipment.
X	Material to support nonmilitary requirements and programs that are not included in classes I through IX. For example, materials needed for agricultural and economic development.

a. Supply

The six functions of supply are—

- Requirements determination: routine, preplanned, or long-range.
- Procurement.
- Distribution.
- Disposal.
- Storage.
- Salvage.

Supply is separated into general categories, or classes, based on a physical characteristic or purpose. Table 1-1 identifies the classes of supply.

b. Maintenance

Maintenance involves those actions taken to retain or restore materiel to serviceable condition. The purpose and function of equipment maintenance are universally applicable, but the Marine Corps has developed distinct applications for the support of ground-common and aviation-unique equipment. Maintenance includes eight functions:

- Inspection and classification.
- Servicing, adjusting, and tuning.
- Testing and calibration.
- Repair.
- Modification.

- Rebuilding and overhaul.
- Reclamation.
- Recovery and evacuation.

Joint Pub 1-02 identifies three levels of maintenance: depot, intermediate, and organizational. These levels are applicable to both ground and aviation maintenance. All maintenance activity is contained within these three levels. However, there is a difference between ground and aviation maintenance and the activities performed in each echelon of maintenance. Tables 1-2 and 1-3 reflect ground and aviation activities at each level.

Table 1-2. Levels and Echelons of Ground Equipment Maintenance.

Levels of Maintenance	Echelons of Maintenance[1]
Organizational—Authorized at, performed by, and the responsibility of the using unit. Consists of cleaning, servicing, inspecting, lubricating, adjusting, and minor repair.	**First**—Limited action performed by crew or operator as prescribed by applicable manuals. **Second**—Limited action above the operator level performed by specialist personnel in the using unit.
Intermediate—Performed by designated agencies in support of the using unit or, for certain items of equipment, by specially authorized using units. Includes repair of subassemblies, assemblies, and major end items for return to lower echelons or to supply channels.	**Third**—Component replacement usually performed by specially-trained personnel in owning or CSS units. **Fourth**—Component and end item overhaul and rebuilding performed by CSS units at semipermanent or fixed sites.
Depot—Major overhaul and complete rebuilding of parts, subassemblies, assemblies, and end items.	**Fifth**—End item overhaul and rebuilding performed by industrial-type activities using production line techniques, programs, and schedules.
[1]Equipment technical manuals and stock lists specify echelon of repair for each item.	

Table 1-3. Levels of Aviation Equipment Maintenance Activities.

Levels of Maintenance	Maintenance Activities		
Organizational	Tactical and training squadrons and Marine Corps air stations with aircraft assigned.		
Intermediate	MALS in the following locations:	1st MAW	Okinawa, JA Iwakuni, JA Element in Kaneohe Bay, HI
		2d MAW	Cherry Point, NC New River, NC (2) Beaufort, SC
		3d MAW	Miramar, CA (2) Camp Pendelton, CA Yuma, AZ
Depot	Naval aviation depots, contract maintenance depot activities. Each MALS has limited depot-level capability.		

Table 1-2 shows the levels of ground maintenance subdivided by echelon. Organizational-level maintenance (1st and 2d echelons) is performed by the using unit on its organic equipment in both ground and aviation units. Intermediate-level maintenance (3rd and 4th echelons) is conducted by the MAGTF CSS units (and non-CSS organizations that may possess intermediate-level maintenance capabilities) for ground equipment and by a Marine aviation logistics squadron (MALS) for aviation equipment. Depot-level maintenance for ground equipment, particularly Marine Corps-specific items, is performed at Marine Corps multi-commodity maintenance centers at Albany, Georgia, and Barstow, California.

The Commander, Naval Air Systems Command, coordinates aviation, depot-level maintenance needs. Aviation maintenance support for a Marine expeditionary force (Forward) (MEF [Fwd]) may come from an intermediate maintenance activity or may be provided through a combination of maritime prepositioning ships (MPS) assets, fly-in support packages, and/or off-the-shelf spares or organic repair support from an aviation logistics support ship. While a MAGTF is aboard amphibious shipping, its aircraft maintenance support is provided by the ship's aircraft maintenance department, augmented by personnel from one or more of the MALS. Smaller MAGTFs draw support from MALS allowance lists (aviation consolidated allowance lists, consolidated allowance lists), fly-in support packages, and/or contingency support packages in a variety of combinations.

c. Transportation

Transportation is moving from one location to another using highways, railroads, waterways, pipelines, oceans, or air. For a MAGTF, transportation is defined as that support needed to put sustainability assets (personnel and materiel) in the correct location at the proper time in order to start and maintain operations. A major disruption of transportation support can adversely affect a MAGTF's capability to support and execute the attributes of maneuver, flexibility, boldness, and sustainability—key elements to battlefield success. The transportation system that supports an expeditionary MAGTF not only includes the means of transportation but also the methods to control and manage those transportation means. The functions of transportation include—

- Embarkation.
- Landing support.
- Motor transport.
- Port and terminal operations.
- Air delivery.
- Material handling equipment.
- Freight or passenger transportation.

d. General Engineering

General engineering supports the entire MAGTF. It involves a wide range of tasks performed in the rear area that serve to sustain forward combat operations (e.g., vertical or horizontal construction, facilities maintenance).

The functions of general engineering include—

- Engineer reconnaissance.
- Horizontal and vertical construction.
- Facilities maintenance.
- Demolition and obstacle removal.
- Explosive ordnance disposal.

Most general engineering support for MAGTF ground units comes from the engineer support battalion (ESBn), force service support group (FSSG). The combat engineer battalion (CEBn) provides combat and combat support engineering. Similar engineering capabilities are also inherent in MAGTF aviation units and are found in the Marine wing support squadron (MWSS) to include explosive ordnance disposal capability. The MWSS also has the engineering capabilities needed to perform rapid runway repairs and vertical takeoff and landing (VTOL) or helicopter landing zone clearing operations (for large-scale projects, the ESBn may augment MWSS engineers). If MAGTF construction needs exceed a MAGTF's inherent engineering capabilities, augmentation may be received from a naval construction force (NCF).

e. Health Services

The objective of health services is to minimize the effects of wounds, injuries, and disease on unit effectiveness, readiness, and morale. This objective is accomplished by a proactive, preventive medicine program and a phased health care system (levels of care) that extends from actions taken at the point of wounding, injury, or illness to evacuation to a medical treatment facility that provides more definitive treatment. Health service support deploys smaller, mobile, and capable elements to provide essential care in the theater. Health service support resources are flexible and adaptable and can be tailored to missions ranging from major theater wars to military operations other than war. The major components of casualty care and management are first response, prehospitalization treatment, forward resuscitative surgery, tailorable hospital care, and en route care. The functions of health services are—

- Health maintenance: routine sick call, physical examination, preventive medicine, dental maintenance, record maintenance, and reports submission.
- Casualty collection: selection of and manning of locations where casualties are assembled, triaged, treated, protected from further injury, and evacuated.
- Casualty treatment: triage and treatment (self-aid, buddy aid, and initial resuscitative care).
- Temporary casualty holding: facilities and services to hold sick, wounded, and injured personnel for a limited time (usually not to exceed 72 hours). The medical battalion, FSSG, is the only health service support unit staffed and equipped to provide temporary casualty holding.
- Casualty evacuation: movement and ongoing treatment of the sick, wounded, or injured while in transit to medical treatment facilities. All Marine units have an evacuation capability by ground, air, or sea.

f. Services

Joint Pub 4-0, Naval doctrine publication (NDP) 4, *Naval Logistics*, and MCDP 4 discuss a variety of nonmateriel and support activities that are identified as services. These services are executed in varying degrees by each of the military Services, the Marine Corps supporting establishment, and the MAGTF. An understanding of the division of labor and interrelationship of the responsibilities and staff cognizance for specific services is essential to accomplish services as a function.

Typically, within the Marine expeditionary force (MEF), the FSSG provides the following services:

- Disbursing.
- Postal.
- Legal.
- Security support.
- Exchange.
- Civil affairs.
- Graves registration.

Centralization of these capabilities within the FSSG does not imply sole logistic staff cognizance for execution of the task. For example, disbursing, postal, and legal services capabilities are task-organized to support all elements of the MEF, and their function is executed under the cognizance of the supported element personnel officer (G-1/S-1) and the commander, not the logistics officer (G-4/S-4). Security support is an operational concern reflecting potential rear area security missions that might be assigned to the FSSG's military police company by the rear area commander, although each element of the MEF possesses an organic military police capability and could be similarly tasked. Civil affairs and graves registration capabilities are limited to units in the reserve establishment (4th FSSG), assisted by logistics capabilities, and augmented by units of other military Services. Exchange and civil affairs functions require management and distribution of class VI and X supply items held by the supply battalion, FSSG. However, execution of civil affairs tasks is typically an operational concern. Graves registration functions are fully integrated with the G-1 for casualty reporting and notification. Support of both civil affairs and graves registration functions is a shared responsibility and is dependent on augmentation capabilities external to the MEF.

Chapter 2

Marine Corps Logistics Responsibilities and Organization

Successful deployment, sustainment, employment, and redeployment of a MAGTF are the result of well-coordinated logistics support activities conducted at the strategic, operational, and tactical levels. This chapter describes the logistics responsibilities, organization of forces, and materiel support responsibilities that are the foundation of effective Marine Corps logistics. The organization of forces, materiel support, and assigned logistics responsibilities are structured with one goal—to logistically support MAGTF operations. They provide logisticians with the capability to respond quickly to changing support requirements. Initially, logistics support is drawn from internal Marine Corps/Navy resources located within the operating forces, the Marine Corps Reserve, and the supporting establishment. Specific operational requirements dictate the extent to which additional logistics support is drawn from other Services, non-DOD resources, and multinational resources.

The structural organization of the Marine Corps consists of Headquarters, Marine Corps; operating forces; the Marine Corps Reserve; and the supporting establishment. Each category has inherent logistics capabilities and specific logistics responsibilities at the strategic, operational, and tactical levels of war. The primary mission of Headquarters, Marine Corps and the supporting establishment is to provide manpower and logistics support to the operating forces. Table 2-1 (on page 2-2) shows how each major organization functions at each level of war to provide a continuum of logistics support. Responsibilities and capabilities overlap because no organization or level of support can function effectively without extensive, continuous coordination between supported and supporting organizations.

2001. Logistics Responsibilities

United States Code, Title 10, specifies logistics responsibilities within DOD. Within the Department of the Navy, the Commandant of the Marine Corps is responsible for Marine Corps logistics. The Commandant ensures that Marine Corps forces under the command of a combatant commander or Marine Corps forces under the operational control of a unified, subunified, or joint task force (JTF) commander are trained, equipped, and prepared logistically to undertake assigned missions.

a. Marine Corps Service Responsibilities

Marine Corps service responsibilities generally are exercised through administrative control channels. The Marine Corps' logistics responsibilities include—

- Preparing forces and establishing reserves of equipment and supplies for the effective prosecution of war.
- Planning for the expansion of peacetime components to meet the needs of war.
- Preparing budgets for submission through the Department of the Navy based on input from Marine forces and Fleet Marine Force commanders assigned to unified commands (input must be in agreement with the plans and programs of the respective unified commanders).
- Conducting research and development and recommending procurement of weapons, equipment, and supplies essential to the fulfillment of the combatant mission assigned to the Marine Corps.

Table 2-1. Organizational Responsibilities for Logistics.

Organizations	Levels	Functions
Headquarters, Marine Corps Supporting establishment MARCORMATCOM Bases, stations, etc.	Strategic Logistics	Procurement War reserves Materiel readiness Mobilization Facilities Strategic air/sealift Force regeneration Deployment & support
Operating forces (Marine Corps Forces, Pacific; Marine Corps Forces, Atlantic; and Marine Corps Forces, Marine Corps Reserves)	Operational Logistics	Force closure Arrival & assembly Intratheater lift Sustainment Redeployment Reconstitution
MLC MEF FSSG Division MAW	Tactical Logistics (CSS/Organic Logistics)	Supply Transportation Maintenance Engineering Health services Services

- Developing, garrisoning, supplying, equipping, and maintaining bases and other installations.
- Providing administrative and logistics support for all Marine Corps forces and bases.
- Ensuring that supported unified commanders are advised of significant changes in Marine Corps logistics support, including base adjustments, that would impact plans and programs.

b. Joint Responsibilities

The Commandant, as a member of the Joint Chiefs of Staff, ensures that the Marine Corps—

- Prepares integrated logistics plans, which include assignment of logistics responsibilities.
- Prepares integrated plans for military mobilization.
- Reviews major personnel, materiel, and logistics requirements in relation to strategic and logistics plans.
- Reviews the plans and programs of commanders of unified and specified commands to determine their adequacy, feasibility, and suitability for the performance of assigned missions.

c. Subordinate Commander's Responsibilities

The Commandant vests in Marine Corps commanders, at all levels of command, the responsibility and authority to ensure that their commands are logistically ready for employment and that logistics support operations are efficient and effective. This responsibility and authority is exercised through administrative command channels for routine matters of logistics readiness and service planning. Designated commanders (usually at the Marine Corps forces component and/or MAGTF level) are also under the operational command of unified, subunified, and/or JTF commanders for planning and conducting specified operations. Marine Corps forces, MAGTF commanders, and their subordinate commanders exercise the

appropriate logistics responsibilities and authority derived from the joint force commander of a specified operation. Operational assignments do not preclude Service administrative command responsibilities and obligations. Commanders in the operating forces, supporting establishment, and the Marine Corps Reserve delegate authority for logistics matters to designated subordinates.

2002. Command Relationships and Other Authorities

A commander must understand the distinction between command relationships and other authorities, particularly in the area of logistics support. Command relationships consist of combatant command, operational control, tactical control, and support. Other authorities consist of administrative control, coordinating authority, and direct liaison authority. See Joint Pub 0-2, *Unified Action Armed Forces (UNAAF)*, for detailed information. See figure 2-1 (on page 2-4).

a. Combatant Command

Combatant command (COCOM) is nontransferable command authority established by United States Code, Title 10, Section 164. It is exercised only by commanders of unified or specified combatant commands unless otherwise directed by the National Command Authorities. COCOM is the authority of a combatant commander to perform, over an assigned force, those functions of command necessary to accomplish the missions assigned to the command. These functions include organizing and employing commands and forces, assigning tasks, designating objectives, and giving authoritative direction over all aspects of military operations, joint training, and logistics.

COCOM cannot be delegated. It should be exercised through the commanders of subordinate organizations. Normally, this authority is exercised through subordinate joint force commanders, Service commanders, or functional component commanders. COCOM provides full authority to organize and employ commands and forces as the combatant commander considers necessary to accomplish the assigned mission. Operational control is inherent in COCOM. COCOM includes the authority to exercise directive authority for logistics matters (or delegate directive authority for a common support capability). A combatant commander's directive authority for logistics includes the authority to issue directives, including peacetime measures, to subordinate commanders when authority is necessary to ensure the following:

- Effective execution of approved operation plans.
- Effectiveness and economy of operation.
- Prevention or elimination of unnecessary duplication of facilities and overlapping of functions among Service component commands.

The exercise of directive authority for logistics by a combatant commander is designed to enhance wartime effectiveness. It does not discontinue Service responsibility for logistics support or override peacetime limitations imposed by legislation, DOD policy or regulations, budgetary considerations, local conditions, and other specific conditions prescribed by the Secretary of Defense or the Chairman, Joint Chiefs of Staff.

b. Operational Control

Operational control (OPCON) is transferable command authority that may be exercised by commanders at any echelon at or below the level of combatant command (command authority). It includes authoritative direction over all aspects of military operations and the joint training necessary to accomplish the assigned mission. OPCON normally provides full authority to organize commands and forces and to employ those forces as the commander deems necessary. OPCON, in and of itself, does not include directive authority for logistics or matters of administration, discipline, internal organization, or unit training. These are elements of COCOM, and they must be specifically delegated by the combatant commander.

OPCON should be exercised through the commanders of subordinate organizations, typically

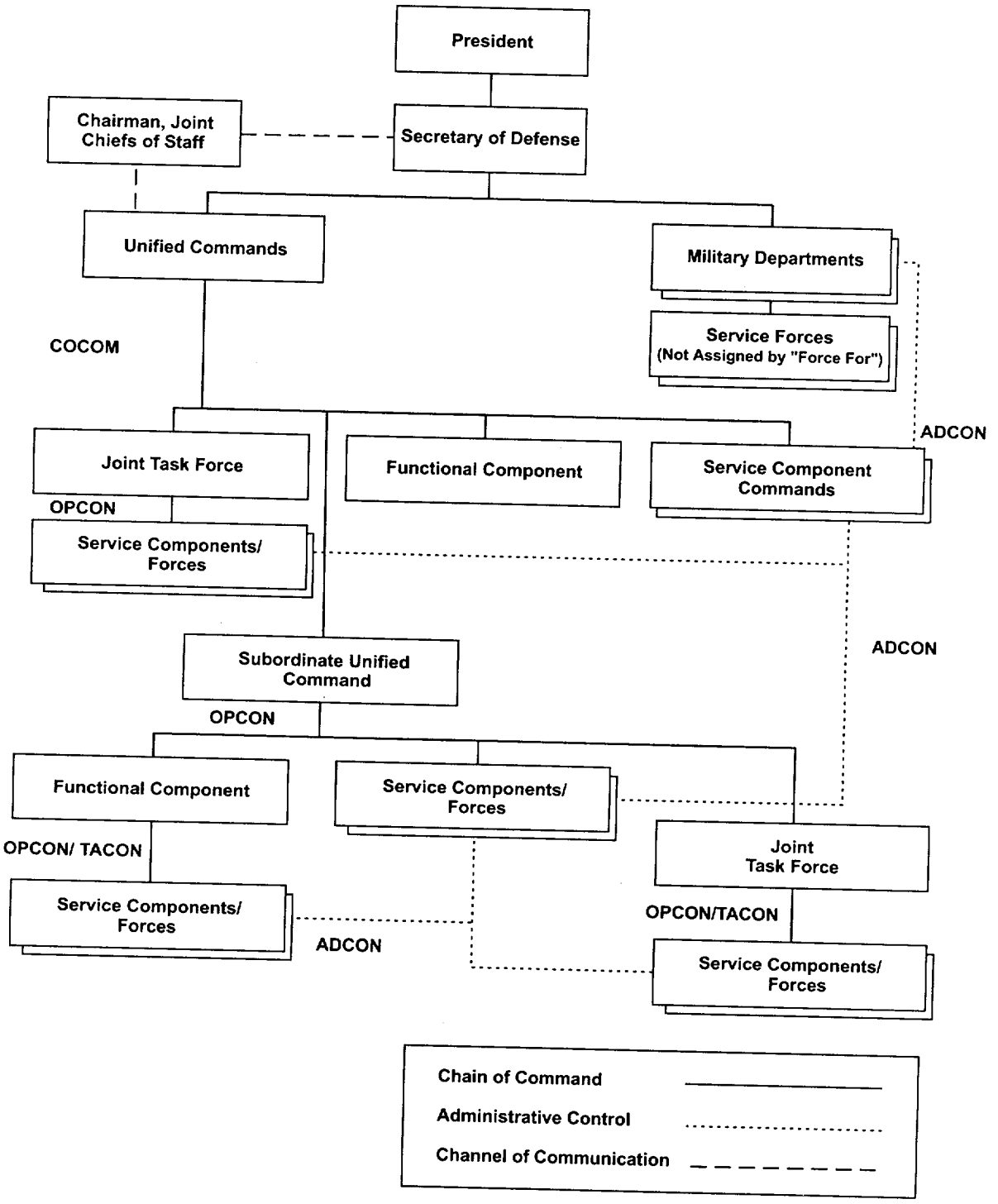


Figure 2-1. Command Relationships.

subordinate joint force commanders, Service commanders, or functional component commanders. Normally, the operational control channel directs operational employment of assigned forces, including the conduct of logistics support operations at the operational and tactical levels of war.

Commanders in the operating forces and the Marine Corps Reserve normally exercise OPCON over subordinate organizations through established chains of command. Specified Marine forces and/or MAGTF commanders are assigned to designated joint force commanders for tactical employment.

c. Tactical Control

Tactical control (TACON) is the command authority over assigned or attached forces or commands or a military capability made available for tasking that is limited to the detailed and usually local direction and control of movements or maneuvers necessary to accomplish assigned missions or tasks. TACON may be delegated to and exercised by commanders at any echelon at or below the level of combatant command. It is inherent in OPCON.

d. Support

Support is a command authority. A support relationship is established by a superior commander between subordinate commands when one organization should aid, protect, complement, or sustain another organization. Support relationships can be further categorized in terms of general support, mutual support, direct support, and close support.

Support may be exercised by commanders at any echelon at or below the level of combatant command. The establishing authority is responsible for ensuring that both the supported and supporting commanders understand the degree of authority the supported commander is granted. The National Command Authorities have the authority to designate a support relationship between two combatant commanders. The designation of a supporting relationship is important because it conveys priorities to commanders and staffs who are planning or executing joint operations.

e. Administrative Control

Administrative control (ADCON) is used for routine, noncombat administration matters. It is the authority through which the Commandant exercises Title 10 responsibilities to prepare Marine organizations for possible operational employment under a unified, subunified, or JTF commander. The Marine Corps' administrative control channel flows from the Commandant to all subordinate commanders in the operating forces, the Marine Corps Reserve, and the supporting establishment. The Commandant also directs the operations of the supporting establishment.

The administrative control channel generates and maintains operational capability through the functions of organizing, training, equipping, and sustaining operational forces. ADCON includes direction or exercise of authority over subordinate or other organizations with respect to administration and support. This includes organization of Service forces, control of resources and equipment, personnel management, unit logistics, individual and unit training, readiness, mobilization, demobilization, discipline, and other matters not included in the operational missions of subordinate or other organizations.

f. Coordinating Authority

Coordinating authority is a consultative relationship, not an authority. It is more applicable to planning than to operations. Coordinating authority may be exercised by commanders or individuals at any echelon at or below the level of combatant command. Coordinating authority is delegated to a commander or individual for coordinating specific functions and activities involving forces of two or more military departments or forces of the same Service. Commanders have the authority to require consultation between parties, but not to compel agreement.

g. Direct Liaison Authorized

Direct liaison authorized (DIRLAUTH) is authority granted by a commander to a subordinate to directly consult or coordinate an action with a command or agency within or outside of the granting authority. It is more applicable to planning than operations and always carries the requirement of keeping the granting authority informed. It is a coordination relationship, not an authority through which command is exercised.

2003. Headquarters, Marine Corps

Headquarters, Marine Corps staffs, departments, and divisions discussed in the following subparagraphs are responsible to the Commandant for administrative management, policy generation, and provision of operational guidance for the operating forces, the Marine Corps Reserve, and the supporting establishment.

a. Installation and Logistics Department

The Commandant delegates authority for designated matters of Marine Corps logistics policy and management to the Deputy Chief of Staff, Installations and Logistics (I&L) Department. This authority includes liaison and coordination for logistics action with Headquarters, Marine Corps staff principals, Marine Corps commanders, sister-Services, the Joint staff, and DOD agencies. Within the I&L Department, there are functional divisions responsible for plans, policies, and strategic mobility (Code LP); facilities and services (Code LF); and contracting (Code LB).

Note: At the time of publication, responsibility for Marine Corps life cycle management was in transition from Headquarters, Marine Corps cognizance to the recently created Marine Corps Material Command (MARCORMATCOM) (see par. 2007b). Logistics issues pertaining to the infrastructure management process and articulation of Service logistics policy will be retained by Headquarters, Marine Corps I&L Department. As specific responsibilities are realigned between Deputy Chief of Staff, I&L Department, and Commander, MARCORMATCOM, they will be incorporated as a change to this publication.

The following functions are executed by the division indicated in parentheses:

- Formulating Marine Corps strategic mobility policy and programs (Code LP).
- Coordinating Marine Corps sustainability policy and programs (Code LP).
- Coordinating Marine Corps logistics information systems issues with Marine Corps users, the Office of the Secretary of Defense, and the joint community (Code LP).
- Coordinating with other Services/agencies on inter-Service logistics matters that affect the Marine Corps (Code LP).
- Developing logistics ground equipment resource reporting, policy, and criteria (Code LP).
- Providing policy guidance and technical direction in the management of Marine Corps supply and maintenance systems (Code LP).
- Sponsoring structure for the MAGTF CSSE (Code LP).
- Sponsoring, formulating, justifying, managing, and executing the Operation & Maintenance, Marine Corps Division of the Navy Working Capital Fund, Marine Corps Industrial Fund, and the Marine Corps portion of Family Housing Navy and Military Construction Navy appropriations (Codes LP and LF).
- Developing and managing facilities policy, acquisition, construction, leasing, encroachment protection, technical inspections, and real property maintenance (Code LF).
- Providing oversight of Marine Corps installation programs worldwide (Code LF).
- Disposing of facilities and real property (Code LF).
- Providing oversight of the food service, laundry, and dry cleaning plants (Code LF).
- Providing oversight of transportation and traffic management (Code LF).
- Managing garrison mobile equipment and property programs (Code LF).
- Providing contingency, crisis support transportation management office, and subsistence support for deploying forces (Code LF).
- Providing support and oversight of the contracting function Marine Corps-wide (Code LB).
- Procuring supplies, equipment, and services (less military construction and weapons

systems/equipment for operating forces) (Code LB).

- Establishing contractual liaison with organizational elements of the Marine Corps, Department of the Navy, DOD, and other Government agencies, as necessary (Code LB).

b. Aviation Department

The Aviation Department is responsible for designated matters of logistics policy and management. It coordinates logistics action with other agencies as part of its responsibility for Marine Corps aviation.

Specific functions within the purview of the Aviation Logistics Support Branch, Aviation Department, include—

- Coordinating the aviation logistics and aviation ground support requirements relative to maritime and/or land prepositioning.
- Assisting the Chief of Naval Operations and other support agencies in the distribution of aeronautical and related material to ensure adequate outfitting of Marine Corps aviation units.
- Developing logistics plans and programs for aviation units and representing Marine Corps aviation in the development of naval aviation maintenance and supply policies and procedures.
- Representing Marine Corps aviation in the development and execution of maintenance plans, test equipment master plans, and integrated logistics support plans for aeronautical weapons systems and related equipment subsystems and ordnance.
- Representing the Marine Corps in developing naval aviation maintenance and aviation supply policies and procedures.
- Providing comments, directions, and recommendations on logistics support for aviation weapons systems and associated equipment that are under development or in procurement.
- Coordinating the aviation logistics and aviation ground support requirements relative to deployment and employment and maritime and/or land prepositioning.
- Developing plans and programs and implementing, in conjunction with cognizant commands and offices, Marine Corps aviation needs for expeditionary airfield equipment and operations including, but not limited to, arresting gear, lighting systems, mobile facilities, weather services, cold weather equipment, shelters, work spaces, clothing, aircraft fire and rescue, and aviation ground support.
- Determining priority of aviation ground support equipment during PPBS (Planning, Programming, and Budgeting System) processes.
- Sponsoring aviation-peculiar Marine Corps-funded ground support equipment procurement.
- Developing and monitoring plans and programs on aviation ordnance.
- Coordinating logistics support needs for airborne armament and armament-handling equipment.
- Supervising and monitoring the Aviation Explosive Safety Program and conventional ammunition.
- Supervising and monitoring the Marine Corps portion of the Navy Targets and Range Program and its associated instrumentation.
- Functioning as the occupational field specialists in aviation maintenance, avionics, ordnance, supply, airfield services, and weather services military occupational specialties (MOSs).
- Monitoring and analyzing aircraft readiness data and making recommendations on appropriate actions.
- Assisting in planning, developing, and programming the aviation portion of the Military Construction and Facilities Project Programs.

- Identifying, monitoring, and resolving aviation installation, encroachment, air installation compatible use zone, and airfield and facility criteria issues and problems.
- Reviewing activity master plans, site evaluation reports, advance base functional components, aviation war reserve materiel (WRM) plans, and range and target air space management requirements.
- Assisting Chief of Naval Operations and other support agencies in the planning, programming, development, and fielding of automated data processing equipment and software to support Marine aviation logistics.
- Providing program direction for the Marine aviation logistics support program (MALSP) within approved aviation plan requirements.
- Coordinating with Chief of Naval Operations, Naval Air Systems Command and subordinate Department of the Navy activities in matters pertaining to MALSP policy and requirements

c. Programs and Resources Department

The Programs and Resources Department has various responsibilities for developing Marine Corps warfighting capabilities. It coordinates the development and documentation of Marine Corps programs. It is responsible for generating the Marine Corps portion of the biennial Department of the Navy Program Objective Memorandum (POM) in the PPBS. The Planning, Programming, and Budgeting System controls both Marine Corps logistics support requirements (based on the funded levels of forces and equipment) and logistics capabilities (based on authorized operations and maintenance funding levels, fielded forces, and equipment being supported). Tasks performed by the Programs and Resources Department include, but are not limited to, the following:

- Serving as the Headquarters, Marine Corps principal point of contact for all program planning aspects of the DOD Planning, Programming, and Budgeting System within military department channels.
- Monitoring and reviewing the execution of Marine Corps programs and assessing the attainment of objectives as reflected in the Department of the Navy POM and the DOD future years defense program.
- Coordinating and publishing such guidance as is required for development of the Marine Corps POM and portions of the Department of the Navy POM.
- Providing principal Headquarters, Marine Corps staff representation to Navy programming forums.
- Coordinating staff action in developing data for inclusion in the POM and submitting the approved data to the Department of the Navy.
- Providing a capability for analyzing existing and proposed Marine Corps policies and programs to identify potential effects on fiscal, manpower, and materiel resources.
- Providing interface with external program analysis efforts of concern to the Marine Corps.

2004. Staff Cognizance and Logistics Support

Commanders normally delegate authority for logistics matters to members of their staffs and subordinate commanders as discussed in the following subparagraphs.

a. G-4/S-4 (Logistics Officer)

The G-4/S-4 determines logistics and CSS requirements, to include the aviation-peculiar ground logistics support provided by the Marine wing support group (MWSG) and the MWSS. The logistics officer advises the commander on the readiness status of major equipment and weapons systems, identifies requirements, and recommends priorities and allocations for logistics support in all functional logistics areas. The G-4/S-4 coordinates logistics support operations

within a command and between supported and supporting commands.

Specific responsibilities include—

- Advising the commander and the G-3/S-3 on the readiness status of major equipment and weapons systems.
- Developing policies and identifying requirements, priorities, and allocations for logistics support.
- Integrating organic logistics operations with logistics support from external commands or agencies.
- Coordinating and preparing the nonaviation-peculiar logistics and CSS portions of plans and orders.
- Supervising the execution of the commander's orders regarding logistics and combat service support.
- Ensuring that the concept of logistics support clearly articulates the commander's vision of logistics and CSS operations.
- Ensuring that the concept of logistics supports the tactical concept of operations and the scheme of maneuver.
- Identifying and resolving support deficiencies.
- Collating the support requirements of subordinate organizations.
- Identifying the support requirements that can be satisfied with organic resources and passing nonsupportable requirements to the appropriate higher/external command.
- Supervising command support functions traditionally associated with garrison logistics support, food services, maintenance management, ordnance, ammunition, and real property management.
- Coordinating with the amphibious task force (ATF) N-4 and the MAGTF G-4/S-4 for the aviation-specific support provided under ACE G-4/S-4 cognizance.

b. G-3/S-3 (Operations Officer) of Logistics Organizations

The G-3/S-3 of organizations provide ground-common or aviation-peculiar logistics support to other organizations plans and supervise logistics support operations. Specific functions of the G-3/S-3 include—

- Coordinating with the G-3/S-3 of supported organizations during the development of their concepts of operation and schemes of maneuver to ensure that they are supportable.
- Coordinating with both the G-3/S-3 and G-4/S-4 of supported organizations to identify logistics support requirements and develop estimates of supportability for their concepts of operation.
- Recommending the composition and organization of supporting organizations based on guidance from higher headquarters and the concepts of operation and schemes of maneuver of supported organizations.
- Coordinating and supervising execution of the command's logistics support operations and providing liaisons elements to the supported commands. (The CSSE is the primary agency for ground-common logistics support operations in the MAGTF. The ACE is responsible for aviation-specific support.)

c. Assistant Chief of Staff, Aviation Logistics Department Officer, and Commanding Officer, Marine Aviation Logistics Squadron

The Assistant Chief of Staff, Aviation Logistics Department Officer, and the Commanding Officer, Marine Aviation Logistics Squadron, are responsible for maintaining aircraft in a combat-ready status. These officers coordinate with the organizations that possess aircraft. They plan and supervise the functions of aviation maintenance, aviation ordnance, aviation supply, and avionics.

The aviation logistics department officer and the Marine logistics squadron commanding officer—

- Determine the ACE's aviation-specific logistics support requirements, assign priorities, and allocate logistics resources for the ACE and those areas under their cognizance.
- Coordinate with the appropriate Navy activities/agencies when the resources to support an ACE (in those areas under their cognizance) are to be provided in whole or in part by Navy units/agencies.
- Coordinate with the MAGTF G-4/S-4, the CSSE G-3/S-3, and the ACE G-4/S-4 on integration of organic capabilities of ACE logistics support organizations under their cognizance.
- Coordinate with the ATF N-4 and the MAGTF G-4/S-4 for aviation-peculiar support under their cognizance.
- Prepare and supervise applicable portions of the ACE operation order and operation plan relating to logistics functions under their cognizance.

d. Comptroller

The comptroller is responsible for matters pertaining to financial management. The comptroller has cognizance over budgeting, accounting, disbursing, and internal review. In organizations not authorized a comptroller, fiscal matters may be assigned to one or more staff sections. Normally, comptroller responsibilities are assigned to the G-4/S-4, and disbursing responsibilities are assigned to the G-1/S-1 (personnel officer). Functions performed by the comptroller include, but are not limited to, the following:

- Budgeting, which includes—
  - Preparing guidance, instructions, and directives for budget matters.
  - Reviewing resource requirements and justifications for command financial programs.
  - Compiling annual, exercise, and operation budgets.
- Accounting, which includes—
  - Maintaining records, including records of obligations and expenditures against allotments and project orders.
  - Preparing financial accounting reports.
  - Supervising cost accounting functions.
- Disbursing, which includes—
  - Managing payrolls, travel and per diem allowances, and public vouchers.
  - Preparing disbursing reports and returns.
- Internal review, which includes—
  - Designing new and improving existing audit policies, programs, methods, and procedures.
  - Testing the reliability and usefulness of accounting and financial data.
  - Examining the effectiveness of control provided over command assets and making appropriate recommendations.

2005. Operating Forces

The operating forces constitute the forward presence, crisis response, and fighting power available to joint force commanders. Marine Corps operating forces are primarily composed of Marine Corps Forces Atlantic (II MEF) under the Commander, Marine Corps Forces, Atlantic, and Marine Corps Forces, Pacific (I and III MEF) under the Commander, Marine Corps Forces, Pacific. Each commander of Marine Corps forces is assigned or designated as the Marine Corps component to the unified command to which his forces are assigned. The commander of Marine Corps forces is responsible for the coordination and management of strategic and operational support issues.

a. Marine Corps Forces Component

All joint forces with Marine Corps forces assigned will include a Marine Corps component headquarters (e.g., Marine Corps Forces, Atlantic; Marine Corps Forces, Pacific; Marine Corps Forces, Europe). There are also standing subordinate joint command-level Marine Corps component headquarters at selected subordinate unified

commands (e.g., U.S. Forces Korea and U.S. Forces Japan). Regardless of the command level, the Marine Corps component commander deals directly with the joint force commander in matters that affect assigned Marine Corps forces. The Marine Corps component commander is responsible for training, equipping, and sustaining Marine Corps forces assigned to the joint force. The Marine Corps component commander retains and exercises control of Marine Corps logistics support, except for Service support agreements, or as directed by the joint force commander. Regardless of how the joint force commander conducts operations, the Marine Corps component commander provides administrative and logistics support for the MAGTFs.

b. Marine Logistics Command

The commander of Marine Corps forces may establish a Marine logistics command to support the functions of force closure, sustainment, and reconstitution/redeployment. The Marine logistics command establishes the Marine Corps theater support structure to facilitate reception (arrival/assembly), staging, onward movement, and integration operations. On order, the Marine Corps logistics command provides operational logistics support to Marine forces as the Marine component operational-level logistics agency in theater. It is a task organization option, not a permanent organization. The commander of Marine Corps forces may choose to assign a specific FSSG responsibility for Marine logistics command functions. The commander of Marine Corps forces assigns Marine component resources to an FSSG for detailed task organization and conduct of Marine logistics command support operations in theater based on the operational situation, theater geography, C2 (for both tactical operations and logistics), and infrastructure requirements.

c. Navy and Marine Corps Type Commanders

Naval operating forces are assigned to type commanders for the purposes of training, employment, and logistics support. The duties of this assignment complement, rather than conflict with, concurrent duties as a component commander. Commanding General, Fleet Marine Force, Pacific, and Commanding General, Fleet Marine Force, Atlantic, have type commander status for the Marine Corps to include class V(A) materiel, except for Marine Corps aviation. The Commander, Naval Air Force, Atlantic; the Commander, Naval Air Force, Pacific; and the Commander, Naval Air Force, Marine Corps Reserve, are the type commanders for Marine Corps aircraft and aviation support, except for aviation ammunition. Aviation ammunition support resides with Commanding General, Fleet Marine Forces, Atlantic, and Commanding General, Fleet Marine Forces, Pacific. Commanding General, Fleet Marine Forces, Pacific, and Commanding General, Fleet Marine Forces, Atlantic, also exercise administrative control in assignment, employment, and logistics support of aircraft and engines as specified by the Chief of Naval Operations.

d. Marine Air-Ground Task Force

The MAGTF is specifically designed to meet mission-oriented requirements of amphibious warfare and expeditionary operations. It addresses the needs for interoperability and mutual support with other elements of the fleet as well as with joint/multinational forces. The MAGTF is formed following a building block concept (the joint force/fleet commander's operational requirement or mission is analyzed and type units are drawn from a Marine division, aircraft wing, and FSSG). It is placed under the command of one commander to form an air-ground team that will accomplish the mission.

There are three types of MAGTFs: Marine expeditionary force (MEF), Marine expeditionary unit (MEU), and special purpose MAGTF (SPMAGTF). The resulting MAGTF may be of any size, and the composition of its component elements will vary depending on mission, enemy, terrain and weather, troops and support available, time available (METT-T). However, in each type of MAGTF there is a command element, a GCE, an ACE, and a CSSE (see fig. 2-2 on page 2-12). In addition to the three types of MAGTFs, Marine Corps forces can also be structured as an air contingency MAGTF. MAGTFs are designed to deploy with accompanying supplies for up to 60

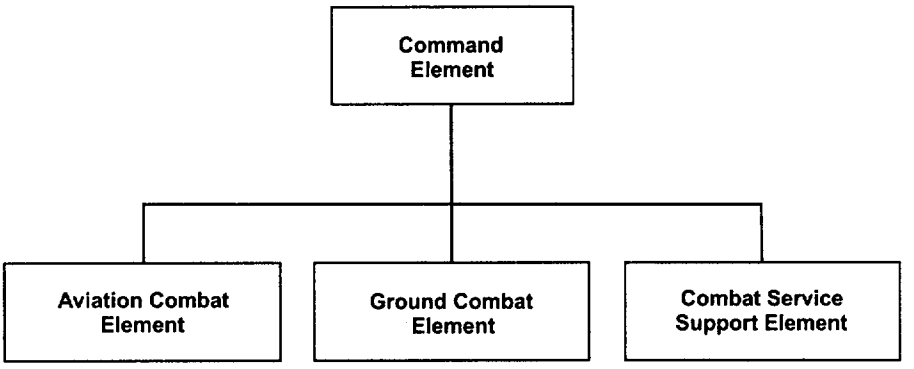


Figure 2-2. Marine Air-Ground Task Force.

days of expeditionary operations independent of resupply.

(1) Marine Expeditionary Force. The MEF provides its own headquarters element (normally supported by at least one FSSG as the CSSE), at least one division as the ground combat element, and a Marine aircraft wing as the ACE. In addition to the logistics support capabilities that each MEF possesses, the MEF is designed to deploy with accompanying supplies to support its initial operations for 60 days.

The MEF command element provides the command and control necessary for the effective planning and execution of all MAGTF operations. Its headquarters has some limited self-support. It is not logistically self-sufficient and is supported by the FSSG.

The CSSE is task-organized to provide a full range of support functions from sea bases aboard naval shipping or from expeditionary bases ashore. The CSSE provides sustainment for the MAGTF. The FSSG is the MEF's CSSE. It is a grouping of functional battalions that provides tactical-level ground CSS support to all elements of the MEF. The FSSG can also provide theater-level operational logistics support to the Marine component of a joint command, when designated the Marine logistics command. FSSG organizations are structured to provide task-organized groups to support independently deployed battalions, regiments, and MAGTFs or geographically separated units in garrison. The FSSG is the embodiment of a fundamental principle—economy of operations through centralization of logistics resources and decentralization in executing support operations. The FSSG was designed in a conscious effort to attain efficient use of scarce logistics resources (personnel, supplies, and equipment) and to effect a rational, aggressive assignment of work priorities. On the basis of METT-T, the FSSG task-organizes the appropriate capability into smaller combat service support groups/detachments in direct support of specific task-organized units of the MEF for temporary operations or for more prolonged garrison support in isolated locations. It also sources MEU service support groups, the CSSE of a MEU, from its organic CSS capability (see fig. 2-3).

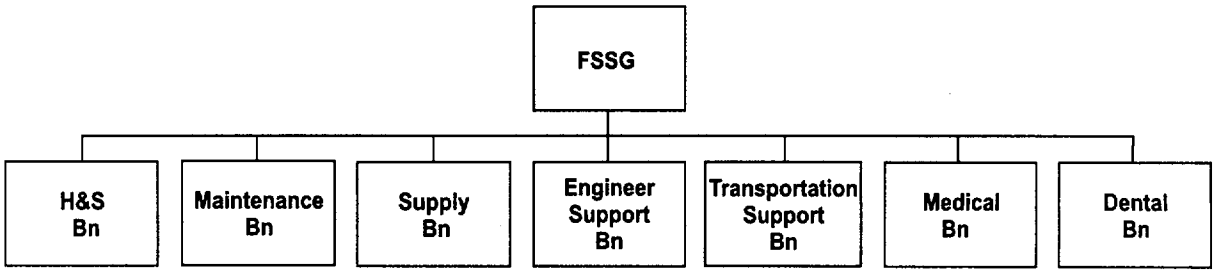
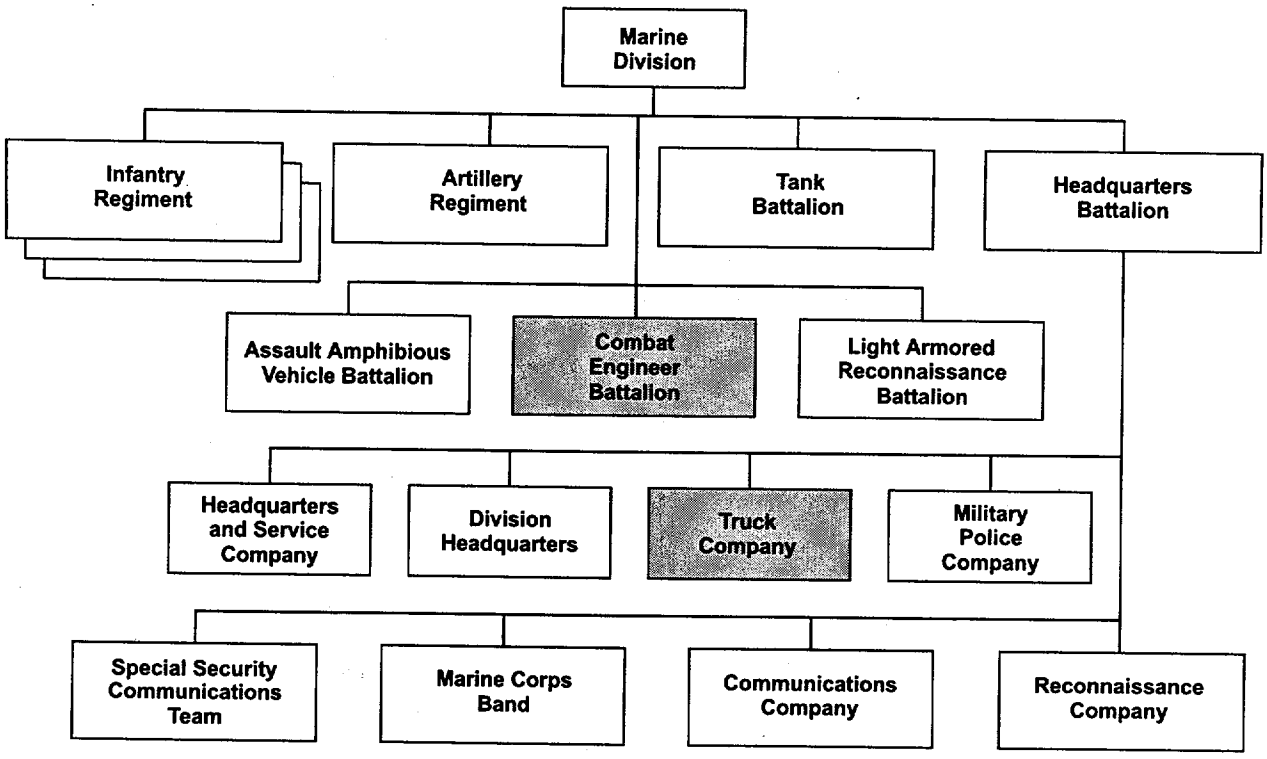


Figure 2-3. Force Service Support Group Organization.



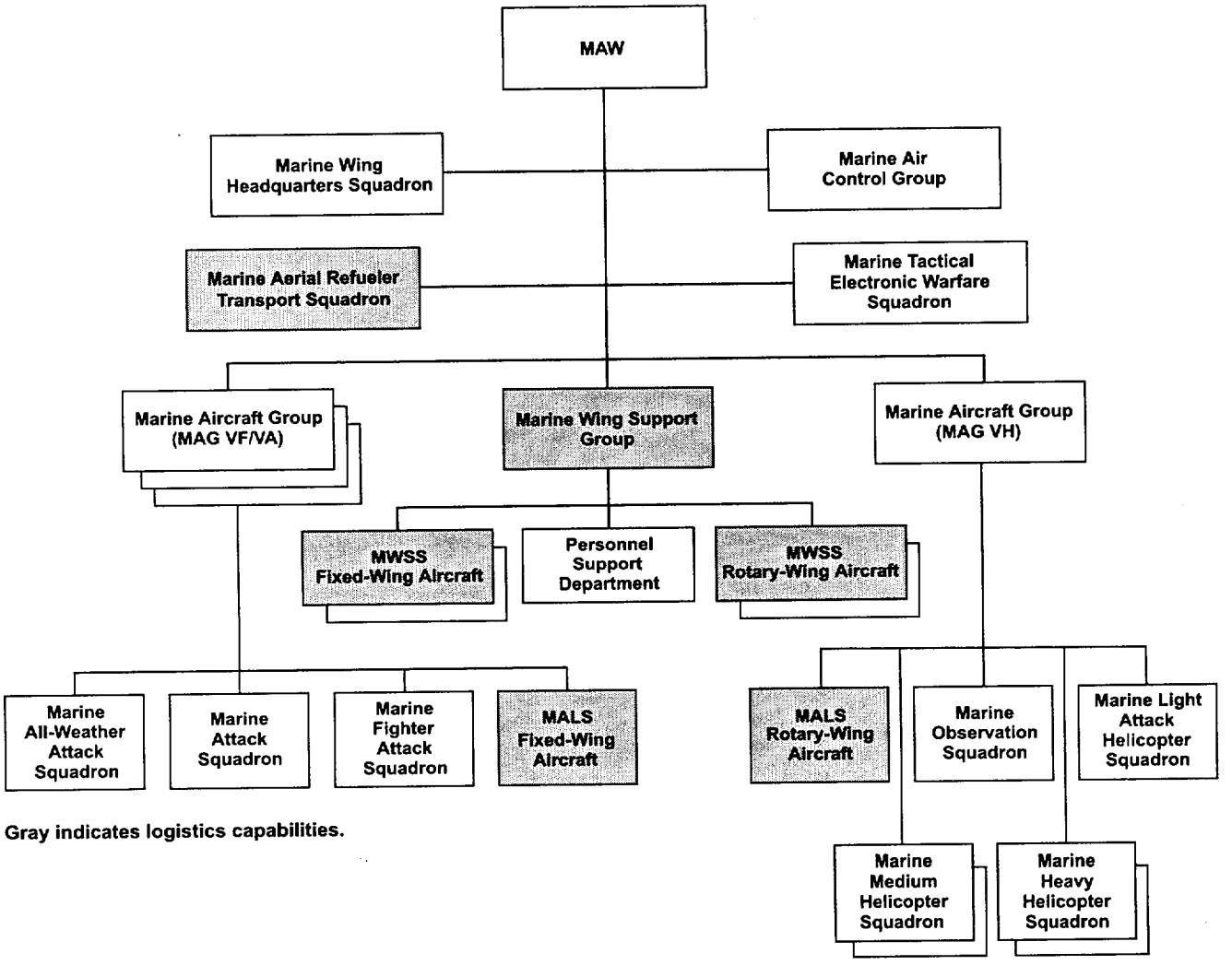
Gray indicates logistics capabilities.

Figure 2-4. Marine Division Organization.

The MEF GCE is task-organized to conduct ground operations in support of the MAGTF mission. The Marine division is the MEF GCE. It depends on the FSSG as its primary source of logistics support. However, the division has organic combat engineer capability that it can employ in general and direct support of division organizations before requesting additional support from the engineer assets of the FSSG. The division also possesses a limited general and direct support motor transport capability, which is normally employed in support of the division headquarters. See figure 2-4.

The ACE is task-organized to support the MAGTF mission by performing some or all of the six functions of Marine aviation: antiair warfare, assault support, offensive air support, air reconnaissance, electronic warfare, and control of aircraft and missiles. The Marine aircraft wing (MAW) is the MEF's ACE. The MAW possesses limited CSS capabilities in the MWSG that provides aviation-oriented ground logistics support. These capabilities include engineer, transportation, and services capabilities for general and direct support of wing organizations both in garrison and while deployed. The Marine Aviation Logistics Squadron provides intermediate-level, aircraft-specific aviation supply, maintenance, avionics, and ordnance capabilities in direct support of aircraft squadrons and groups. The MAW depends on the FSSG as its primary external source of ground logistics support and for delivery of aviation bulk commodities. See figure 2-5 (on page 14).

(2) Marine Expeditionary Unit (Special Operations Capable). The Marine expeditionary unit (special operations capable) (MEU [SOC]) is the standard forward-deployed Marine expeditionary organization. It continually forward deploys for quick response to potential or developing contingencies. It has a command element, a reinforced battalion, a composite squadron, and a MEU service support group. The standard accompanying sustainment for a MEU is 15 days of



Gray indicates logistics capabilities.

Figure 2-5. Task-Organized Marine Aircraft Wing Organization.

supplies, except for aviation. Aviation support aboard ships is designated for 90 days of combat flying hours, except for class V(A), which is constrained to 15 days of ammunition due to limits of amphibious explosive storage.

(3) Special Purpose MAGTF. A special purpose MAGTF is organized to accomplish a specific mission, operation, or exercise. As such it can be organized, trained, and equipped to conduct a wide variety of expeditionary operations. The size and capabilities of its elements will vary with the mission. Normally, a combat service support detachment (CSSD) is task-organized to be the CSSE. The assigned mission will reflect the logistics functional capabilities and the level of organic sustainment assigned.

(4) Air Contingency MAGTF. An air contingency MAGTF (ACM) consists of air-deployable forces that are maintained in both Marine Forces, Pacific, and Marine Forces, Atlantic. Lead elements are always ready to deploy on short notice. ACMs are task-organized based on mission, threat, and airlift availability.

The size of the force can range from a reinforced rifle company to a regimental-sized force with an appropriately sized CSSE. The CSSE is organized

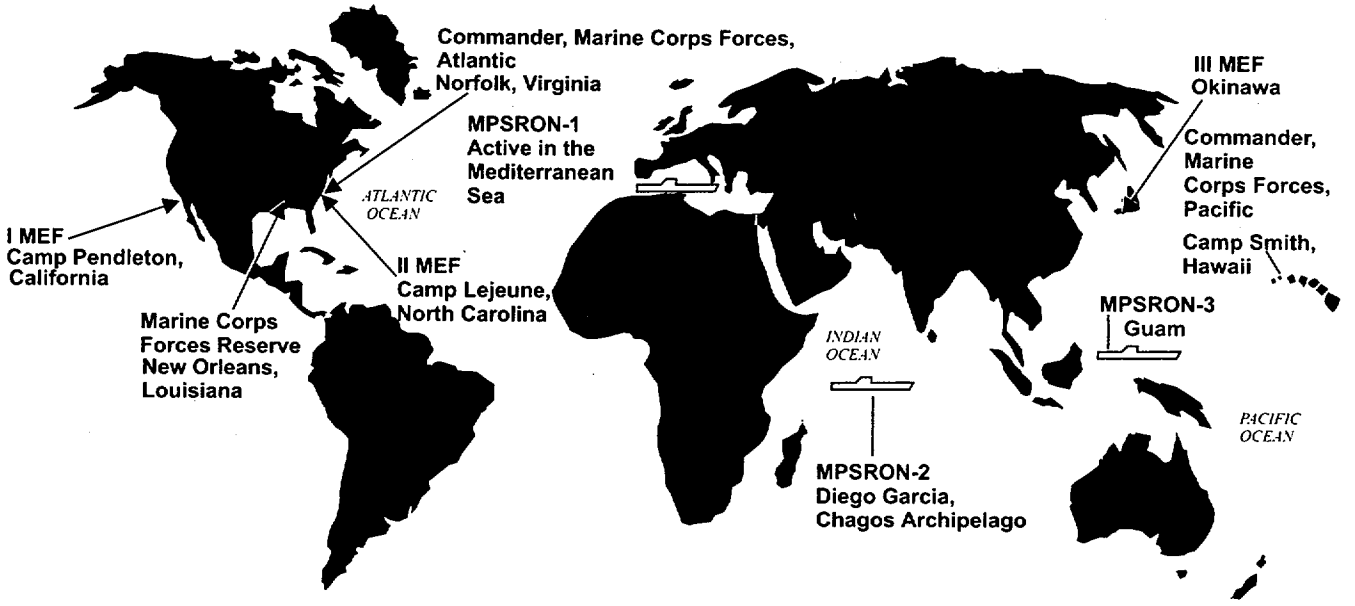


Figure 2-6. MPF Global Positioning.

to support the ACM in accomplishing the following missions:

- Stability operations (presence, humanitarian assistance, security, peacekeeping, and counterinsurgency operations).
- Limited-objective operations (noncombatant evacuation, amphibious raid, airfield seizure, and counterterrorism operations).
- Conventional combat operations (amphibious operations, operations ashore, and reinforcement).

e. Other Logistics Support Programs

(1) Maritime Prepositioning Forces. MPFs provide an added dimension to strategic mobility, readiness, and global responsiveness. The MPF program involves 13 ships (three new ships are planned by fiscal year 2000) and includes three maritime prepositioning ships squadrons (MPSRONs). These squadrons are strategically positioned around the world (see fig. 2-6). By prepositioning the bulk of equipment and 30 days of supplies for a notional 17,600-man force aboard specially designed ships, the MPF program reduces MAGTF response time from weeks to days. Included in each MPSRON is organizational-level, common aviation support equipment and limited, intermediate-level support equipment.

Personnel and selected equipment designated to marry up with MPF supplies and equipment make up what is termed the fly-in echelon. The fly-in echelon can be airlifted quickly to an objective area to join with required equipment at a secure site. As part of this fly-in echelon, the MAGTF ACE deploys with a fly-in support package that, when combined with prepositioned assets on the MPSRON, provides critical aviation support for 30 days of combat flying. Equipment and supplies, to a limited extent, can be offloaded selectively to support smaller MAGTFs.

(2) Aviation Logistics Support Ship. The aviation logistics support ship (TAVB) is a program developed to transport critical, tailored, intermediate-level maintenance and supply support to a forward operating area in support of deployed aircraft. There are two TAVBs (one located on the west coast and one on the east coast). They are under the administrative control of the Military Sealift Command in Ready Reserve Force-5. They provide a dedicated sealift for movement of the Marine aviation logistics squadron supplies and equipment and an afloat intermediate maintenance activity capability. This

immediate maintenance activity is task-organized to repair aircraft parts and equipment of the aircraft platforms within the MAGTF.

(3) Norway Geoprepositioning Program. The Norway Geoprepositioning Program is a capability similar in scope to that of an MPS squadron. The program, established with the Government of Norway, permits the prepositioning and maintenance of a brigade's worth of equipment in underground storage facilities in Norway.

2006. Marine Corps Reserve

The Marine Corps Reserve is organized under the Commander, Marine Corps Forces Reserve. The mission of the Marine Corps Reserve is to provide trained units and qualified individuals to be available for active duty in time of war or national emergency and at such other times as the national security may require. The structure of the Marine Corps Reserve predominantly reflects the active operating forces. The Marine Corps Reserve is organized into individual augmentation detachments that are assigned to an operating force's higher headquarters and throughout the supporting establishment when activated. Actual employment of the Marine Corps Reserve's assets is situation driven. The Marine Corps Reserve can—

- Reinforce active operating forces.
- Augment active operating forces and supporting establishment activities.
- Form MAGTFs for service with the fleets.
- Reinforce already committed MEFs.

Marine Corps Reserve logistics capabilities and responsibilities are comparable to the logistics capabilities and responsibilities of their active counterparts. The Marine Corps Reserve can augment and reinforce any major operation in which Marine forces operate. Combatant commanders exercise COCOM over assigned Marine Corps Reserve forces when mobilized or ordered to active duty (other than for training). The Selected Marine Corps Reserve is assigned to the Commander in Chief, U.S. Atlantic Command, who normally exercises COCOM and training and readiness oversight authority on a continuous basis through Commander, Marine Corps Forces, Atlantic.

2007. Supporting Establishment

The Marine Corps supporting establishment consists of 16 bases, training activities, formal schools, the Marine Corps Recruiting Command, the Marine Corps Combat Development Command (MCCDC), and the Marine Corps Material Command (MARCORMATCOM) and its subordinate commands [the Marine Corps Systems Command (MARCORSYSCOM) and Marine Corps logistics bases (MARCORLOGBASEs)]. The supporting establishment furnishes logistics support vital to the overall combat readiness of the Marine Corps. It is the source of Marine Corps strategic logistics in that it recruits, trains, equips, and provisions the force. It also exercises some operational-level support responsibilities. Although not part of the Marine Corps, the Navy supporting establishment also provides essential logistics support to the Marine Corps; in particular, naval aviation logistics support to Marine aviation organizations.

a. Marine Corps Combat Development Command

Logistics support is a significant focus of MCCDC. Each division within MCCDC establishes logistics branches and sections to ensure that logistics is properly integrated into the Concept Based Requirement Process, the Combat Development System, and the Marine Corps Master Plan. MCCDC develops or identifies the concepts, doctrine, organizations, equipment requirements, training programs, facilities, and support that generate Marine Corps' warfighting capabilities. It also describes how these capabilities are employed. MCCDC is also responsible for professional military education programs that teach Marines their warfighting profession and provide an intellectual environment for improving established methods and equipment for mission

accomplishment. MCCDC also collects, analyzes, and disseminates lessons learned during MAGTF employment to ensure that appropriate followup actions are taken.

b. Marine Corps Materiel Command

The Commander, MARCORMATCOM is the single process owner for the Marine Corps life cycle management process. The Commander, MARCORMATCOM executes this process through two subordinate commanders: Commander, MARCORSYSCOM and Commander, MARLOGBASES.

Note: As specific responsibilities are realigned between Deputy Chief of Staff, I&L Department, and the Commander, MARCORMATCOM (see par. 2003a), they will be incorporated as a change to this publication).

(1) Marine Corps Systems Command. MARCORSYSCOM is responsible to the Assistant Secretary of the Navy for research, development, acquisition, and life-cycle management of Marine Corps-funded materiel and information systems for the Marine Corps. MARCORSYSCOM directs Marine Corps-sponsored programs and represents the Marine Corps in the development of other-Service-sponsored programs in which the Marine Corps participates. MARCORSYSCOM coordinates program interface internally within the Marine Corps and externally with Department of the Navy, DOD, other Services, Congress, and industry. MARCORSYSCOM also manages Marine Corps ground ammunition acquisition programs and Marine Corps-owned and controlled ground ammunition stocks. The ground ammunition function is particularly significant in supporting MAGTF sustainability during operation and crisis action response planning and execution.

(2) Marine Corps Logistics Bases. The Marine Corps logistics bases at Albany, Georgia, and Barstow, California, and the Blount Island Command at Jacksonville, Florida, are under the command of the Commander, Marine Corps Logistics Bases, headquartered at Marine Corps Logistics Base, Albany. They provide general, Service-level supply and maintenance support to the Marine Corps and certain support services to DOD. Marine Corps Logistics Base, Albany, is the inventory control point for the Marine Corps supply system. The Marine Corps logistics bases at Albany and Barstow have materiel storage facilities that house consumable and repairable materiel, including some prepositioned war reserve materiel. Marine Corps logistics bases control the storage of principal end items. They also have repair centers that perform depot-level (5th echelon) maintenance and, when directed, overflow field/intermediate-level (3d and 4th echelon) maintenance on ground equipment. They can also serve as manufacturing centers when directed. Blount Island Command is responsible for inventory management and equipment maintenance, modification, and replacement in support of the MPF and the Norway Geoprepositioning Program. The Commander, Marine Corps Logistics Bases, is responsible for the initial procurement and release of the initial issue package of spares that support new acquisitions.

c. Marine Corps Bases, Stations, and Reserve Support Centers

Marine Corps bases, stations, and reserve support centers furnish the garrison administration, housing, storage, maintenance, training, and deployment support facilities. The operating forces and the Marine Corps Reserve use bases, stations, and centers to maintain their combat readiness and support their deployment on routine and contingency-response operations. Bases, stations, and centers provide critical logistics support to deploying forces during predeployment preparations. Some bases and stations are designated stations of initial assignment for Marine Corps Reserve mobilization and are responsible for assisting the operating forces with the throughput of Marine Corps Reserve personnel and materiel in support of MAGTF deployment. Detailed information is in the Marine Corps Mobilization Management Plan.

d. Department of the Navy Agencies

Certain Department of the Navy agencies support both the Navy and the Marine Corps. In the area of logistics, the most visible functions are naval

aviation materiel support and health service support. Materiel support is provided by Naval Systems Command. Naval Systems Command's support responsibilities include the development, logistics support planning, acquisition, testing and evaluation, contracting, construction, installation, conversion, alteration, configuration management, overhaul, and depot-level maintenance and repair of—

- Ships.
- Aircraft.
- Surface and undersea craft.
- Weapons and weapons systems.
- Missiles and other expendable ordnance.
- Command, control, and communications systems.
- Space and oceanographic systems and equipment.
- Targets.
- Training equipment and devices.
- Land vehicle systems and equipment.
- Fixed ocean systems and structures.
- Shore facilities, utilities, and related equipment.
- Land-based test sites, materials, supplies, and supporting services for both the Navy and the Marine Corps.

Health service support is provided by the Bureau of Medicine and Surgery. The Bureau—

- Directs shore-based medical and dental center laboratories and training activities.
- Provides all professional and technical assistance required to safeguard and promote the health of Navy and Marine Corps personnel.
- Provides professional and technical guidance in the care and treatment of sick and injured Navy and Marine Corps personnel and their dependents.

2008. War Materiel Support

The MEF can deploy with sufficient equipment and supplies to support up to 60 days of contingency operations. This 60-day level of support provides reasonable assurance that the employed force can be self-sustaining until resupply channels are established, regardless of the area of operations or its logistics infrastructure. The MAGTF ACE can deploy with sufficient equipment and supplies to support up to 90 days of contingency operations. The ACE maintains various supplies and equipment to support aviation units in contingency response. This inherent sustainability of Marine Corps forces is made necessary by, and is characteristic of, naval expeditionary operations. The manner in which materiel support is planned and positioned considers both the organizational structure and employment doctrine of the MAGTF and the availability and responsiveness of access to stocks of war reserve materiel (WRM), which is maintained in accordance with DOD policy.

WRM is defined as mission-essential principal end items, secondary items, and munitions required to attain operational objectives in the scenarios authorized for sustainability planning and other stockage objectives approved for programming in the Defense Planning Guidance. WRM inventories are acquired during peacetime. These inventories are flexible, and they provide an expansion capability that can respond to spectrum regional contingencies, while minimizing investment in resources.

a. Sources

The Marine Corps attempts to satisfy the WRM requirement by first using peacetime operating stocks possessed by the Marine Corps or the DOD. To satisfy remaining requirements, the Marine Corps relies on the U.S. industrial base and host nation support. Finally, the Marine Corps stocks assets to meet WRM requirements only when other, less resource-intensive alternatives prove infeasible.

b. Functions

WRM programs address two functions: requirements determination and sourcing.

For planning, programming, and budgeting purposes, requirements determination identifies the types and quantities of materiel required to support planned operational objectives for scenarios. It also identifies other stockage objectives approved for programming in the Defense Printing Guidance. Materiel requirements serve as goals for funding.

Sourcing is the process of identifying where the materiel needed to meet the requirement is held and who is responsible for providing that materiel. Actual stocks on hand or programming objectives (the amount of materiel to be procured based on approved funding) should not be confused with requirements. The actual attainment of materiel is affected by such competing goals as cost reduction, inventory reduction, and stock rotation.

c. Ground-Common Versus Aviation-Peculiar Materiel

The Marine Corps prepares and implements policy for ground-common war materiel within DOD guidelines and as coordinated by the Deputy Chief of Staff, I&L, Headquarters, Marine Corps. The Deputy Chief of Staff for Aviation, Headquarters, Marine Corps, coordinates Marine Corps participation in aviation-peculiar war materiel policy and management, as coordinated by the Chief of Naval Operations.

d. War Materiel Requirement

The war materiel requirement is the total Marine Corps requirement for materiel and equipment needed to train, equip, field, and sustain forces in combat. It is based on the requirements of committed MAGTFs, including assigned Marine Corps Reserve units, committed to distinct major regional contingencies for planning. The war materiel requirement has two components: peacetime force and war WRM requirements.

The peacetime force materiel requirement is the materiel required to support day-to-day operational and training requirements of both the active and Marine Corps Reserve forces as well as the supporting establishment. It includes peacetime operating stocks and table of equipment materiel.

The WRM requirement is that portion of the war materiel requirement required to be onhand on (D-day) or after the day an operation commences. This level consists of the war materiel requirement less the sum of the peacetime assets assumed available on D-day and the war materiel procurement capability. It includes the depth of support required (supplies and equipment needed to sustain MAGTFs) for a distinct period of time and is based on projected employment scenarios to support either operational requirements or budgetary planning.

e. Sourcing War Materiel

MAGTFs will deploy with sustainment drawn from WRM stocks, which are inventories that are accumulated based on the war materiel requirement. These inventories may not exactly equal the war materiel requirement because of funding constraints. Figure 2-7 (on page 2-20) depicts the sourcing of war materiel in support of a MAGTF.

(1) Peacetime Force Materiel Stocks. Peacetime force materiel stocks are on-hand inventories that support day-to-day operational and training requirements of the operating forces and the Marine Corps Reserve.

(2) War Materiel Procurement Capability. War materiel procurement capability is the quantity of an item that can be ordered on D-day or after the day an operation commences. Sources can include industry or other available sources; e.g., host nations.

(3) War Reserve Materiel Stocks. WRM stocks consist of two portions: field and inventory control. WRM stocks (field) is the portion of the war reserve material stocks held by the operating forces. WRM stocks (inventory control point) is the portion of the WRM stocks held at the wholesale level at Marine Corps logistics bases or in the

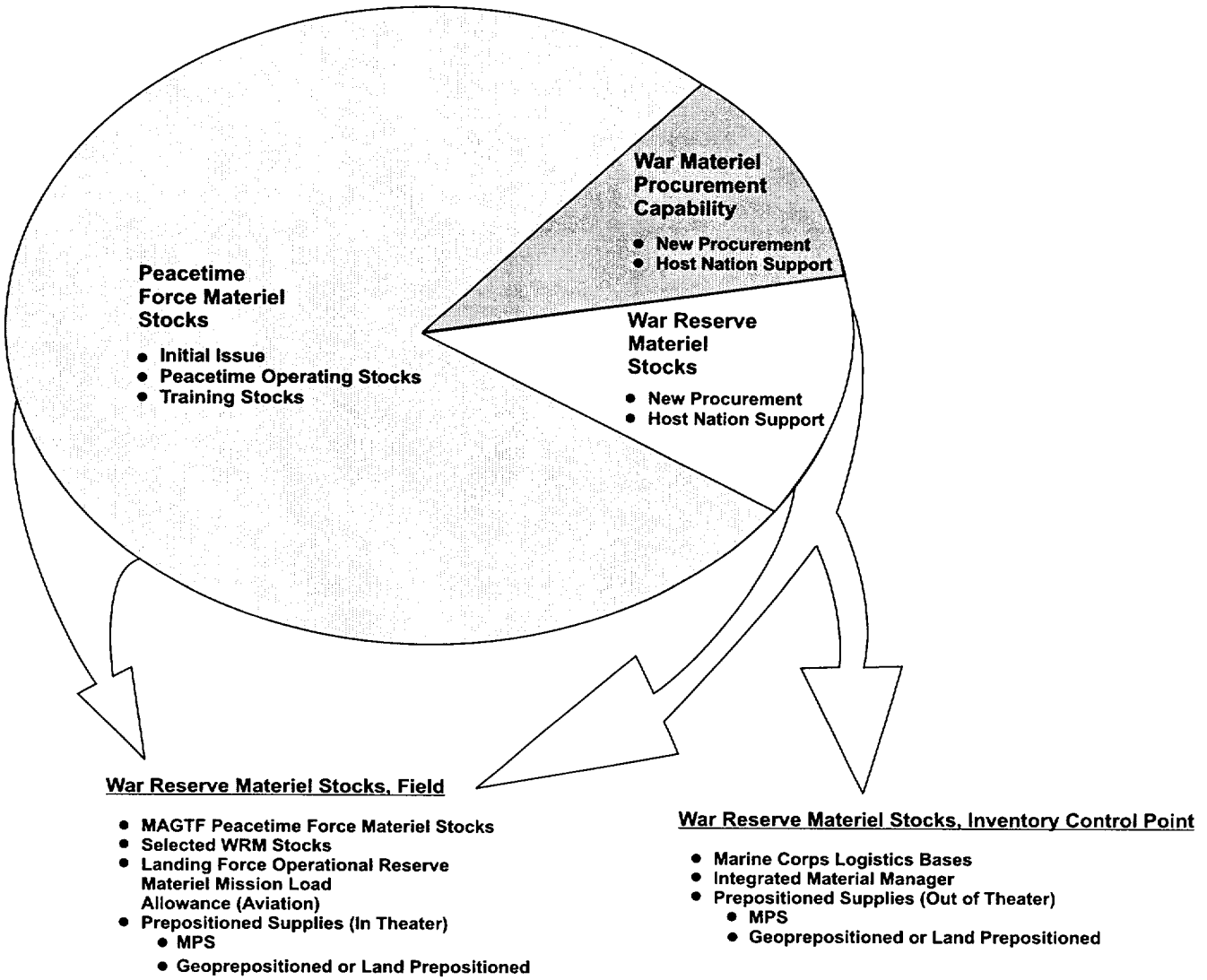


Figure 2-7. Sourcing War Materiel for Operations.

DOD supply system under the cognizance of an integrated materiel manager.

Starter stocks are WRM that are located in or sufficiently near a theater of operations to support the conduct of military operations until resupply at wartime consumption rates is established or the contingency ends, whichever comes first. MPF assets are starter stocks.

Swing stocks are centrally held WRM. They may be positioned ashore or afloat and are capable of supporting requirements of more than one contingency in more than one theater of operations. Swing stocks are used as a source of accompanying supplies. A portion of swing stocks will be used to complement starter stocks as a follow-on source of supply. All WRM stocks and inventory control points, whether held by Commander, Marine Corps Logistics Base, or an integrated materiel manager, are swing stocks.

f. Budgeting and Funding for War Reserve Materiel

Responsibility for programming, budgeting, and funding for WRM differs depending on whether the items are ground-common principal end items, ground-common secondary items, or aviation-peculiar materiel.

(1) Ground-Common Principal End Items. Ground-common principal end items are end items and replacement assemblies that, in the judgment of the Military Services, are important enough to need central inventory control. This includes centralized computation of requirements, central direction of distribution, and central knowledge and control of all assets owned by the Military Services. Ground-common principal end items are normally selected on the basis of their essentiality for combat, high monetary value, difficulty of procurement or production, or criticality of basic materials or components.

New ground-common principal end items for which a combat active replacement factor has been determined will be budgeted and funded during initial acquisition of WRM stocks. Commander, MARCORSYSCOM, and Commander, Marine Corps Logistics Bases, are responsible for programming, budgeting, and acquisition of ground-common principal end items for which they have procurement authority.

(2) Ground-Common Secondary Items. Ground-common secondary items are consumable and reparable items other than principal end items. New ground-common secondary items for which a table of authorized materiel (TAM) control number and a combat active replacement factor have been assigned will be budgeted and funded for WRM stocks, in addition to organizational allowances during initial acquisition.

Programming and budgeting to maintain levels of ground-common secondary items are generally the responsibility of the equipment owner. Programming and budgeting for WRM stocks (field) is the responsibility of the respective force commander or Marine Corps activity that maintains the assets on accountable records. Programming and budgeting for WRM stocks (inventory control point) are the responsibility of Commander, Marine Corps Logistics Bases. Commander, Marine Corps Logistics Bases, is responsible for the programming and budgeting of secondary items for the Commander, Marine Corps Forces Reserve.

(3) Aviation-Peculiar Materiel. The Deputy Chief of Staff for Aviation is responsible for coordinating all Marine Corps aviation logistics, including determining requirements and sponsoring development and acquisition of aviation-peculiar end items and secondary items. The Aviation Department reviews the Navy PPBS process to ensure that approved Marine aviation programs are correctly reflected in the future years' defense program and the annual DOD budget. Specific aviation WRM responsibilities include—

- Participating in the Chief of Naval Operations' Nonnuclear Ordnance Requirements Process for determination of class V(A) WRM requirement.
- Providing updated data elements for Marine Corps aircraft and aviation activities to use in Nonnuclear Ordnance Requirements Process model computations.
- Assisting the Navy program/acquisition sponsor for designated WRM stocks.
- Coordinating class V(A) requirements for MPF and landing force operational reserve material on amphibious shipping and the appropriate distribution of stocks held at Chief of Naval Operations distribution centers.

g. Withdrawal of War Reserve Materiel Stocks

Authority to approve the release of WRM stocks is limited to—

- Deputy Chief of Staff, I&L Department, for principal and secondary items (except class V(W) and aviation-peculiar materiel) for WRM (inventory control point) in support of scenarios approved in the Defense Planning Guidance.

- Commander, MARCORSYSCOM for class V(W) from swing stocks.
- Commander, Marine Corps Forces, Pacific, and Commander, Marine Corps Forces, Atlantic, for WRM (inventory control point) for all classes of supply except class V(W) and aviation-peculiar equipment.
- Commander of the Marine Corps forces of the Marine Corps activity holding WRM stocks assets on accountable records for issue/use in circumstances other than contingencies. Peacetime issue of WRM stocks is stringently controlled and occurs only when assets cannot be obtained in a timely manner from procurement or maintenance sources.
- Commander, Marine Corps Forces, Pacific, and Commander, Marine Corps Forces, Atlantic, for class V(W) starter stocks in support of contingencies. Starter stocks may also be released in support of peacetime operations if they will be replaced by Marine forces training allowances or through prior coordination with Commander, MARCORSYSCOM.
- Designated Navy agencies via Deputy Chief of Staff for Aviation for aviation-peculiar WRM stock.

Chapter 3

Command and Control of Logistics

Command and control of logistics involves the people, communications architecture, and processes needed to generate, collect, and transmit logistics information that enables the commander to plan, assess risk, and make decisions that influence the battle. Command and control supports the planning, decision, execution, and assessment cycles (PDE&A) of logistics support at all levels of war. It enables MAGTF elements to pass logistics information to higher, adjacent, supported, supporting, and subordinate elements and to integrate logistics operations with maneuver, fires, intelligence, and force protection operations. Command and control coordinates support across strategic, operational, and tactical levels, yet maintains a focus on the needs of the operating forces.

3001. Command and Control Organization and Architecture

Knowledge of capabilities, activities, location, and status of logistics functions at any point in the battle is essential to permit timely decisionmaking. Accordingly, command and control of logistics promotes situational awareness of all logistics functions at all levels and provides commanders with the information needed to make timely and relevant decisions. The backbone of command and control used for logistics is the C2 organization. It uses comprehensive data from a variety of sources, which are accessible by a communications and information systems architecture, to provide a common logistics picture. This architecture provides the channel to request or coordinate service support and to report or monitor materiel status. This architecture must also be fully interoperable with the joint force and other Services. The C2 organization and architecture are employed in an environment significantly influenced by the pressures of uncertainty, limited time, and the need to maintain operational tempo.

a. Uncertainty

MCDP 6, *Command and Control*, states that we are faced with conflicting demands—the desire for absolute certainty, limited time in which to respond, and the need to maintain operational tempo. The analytical nature of logistics drives the planner toward specific levels of detail; yet in order to maintain tempo, decisionmaking requires the planner to use a more intuitive approach. Logisticians resolve these conflicts by accepting and dealing with varying levels of uncertainty.

During planning, logisticians accept a very low level of uncertainty regarding logistics capabilities and a moderately higher level of uncertainty regarding logistics requirements. Therefore, at a minimum, Marine commanders should be able to determine logistics requirements based on the unit's designated manning, equipment, and table of organization mission statement. Commanders identify requirements through advanced planning, standing operating procedures, training, MOS competence, and experience.

At the higher end of the uncertainty spectrum is the unknown operational environment. Planners reduce the impact of uncertainty in the unknown operational environment by undertaking a thorough intelligence effort, employing a fully integrated planning process, synchronizing priorities, placing redundancy and flexibility in their plans, and maintaining situational awareness.

b. Time

The MAGTF must have the ability to plan, decide, execute, and assess operations in a rapid and flexible cycle. This ability allows the commanders to effectively use the available time and to adapt rapidly to changing situations. The Marine Corps refers to the planning, decision, execution, and assessment cycle as PDE&A. In today's warfighting environment, the time needed to complete the Marine Corps' PDE&A cycle is

inherently longer at higher echelons than at lower echelons. For example, the joint force commander may have days or weeks to plan the commencement of operations, whereas the commander of a MEU(SOC) may have just a few hours. Therefore, to coordinate interrelated PDE&A cycles, planners must be adaptable—form should not be enforced rigidly to the detriment of effectiveness. Subordinate commanders and individuals directing support functions must make every effort to adjust their PDE&A cycles to accommodate the senior/supported commander's cycle. A continuous flow of information among all command echelons and functional activities and the exchange of liaison officers facilitates communications and increases PDE&A cycles.

c. Tempo

In warfighting, it is essential to maintain a constant, uninterrupted operational rhythm that leaves the enemy no recovery time to reflect, reorganize, and react. To ensure and maintain this operational tempo, logisticians must anticipate where and when support must occur, and then they must balance this support with other battlefield activities. Command and control systems that support logistics operations provide logisticians with a means to effect these tasks. Logisticians also use the PDE&A cycle to plan support during anticipated pauses rather than to create pauses to provide support; this enables the supported commander to maximize tempo.

The replenishing of direct and general support logistics elements and the restocking of support areas are sequenced with the operational requirements of the supported elements. This avoids the unnecessary delay of operations and precludes conflicts at transportation nodes, lines of communications, and main supply routes. A C2 system that totally integrates with all activities within the battlespace is essential to replenish and restock effectively. Logisticians plan for and build redundancy and flexibility into their C2 systems in order to be responsive to emergency requirements; to be ready to consolidate, shift, or divert assets; and to fight their way to the supported unit to ensure timely delivery of supplies to prevent any interruption in tempo.

3002. Command and Control Organizations and the Levels of War

a. Strategic Level

At the strategic level of war, the Marine Corps must effectively and efficiently disseminate information and directives to and from Headquarters, Marine Corps. The principal agents for dissemination of logistics information are Deputy Chief of Staff, I&L (ground) and Deputy Chief of Staff, Aviation. An effective flow of information and directives enables the Marine Corps to manage materiel readiness, mobilization and deployment support, and materiel replenishment (see fig. 3-1). Headquarters, Marine Corps logisticians work closely with—

- Higher headquarters (joint chief of staff, DOD, federal logistics agencies, and our industrial base).
- Adjacent commands (other Services' logistics departments).
- Supported commands (operating forces, bases, and stations).

b. Operational Level

At the operational level of war, the logistics effort enables force closure; establishes and maintains arrival and assembly areas; and coordinates intratheater airlift, sustainment needs, and force redeployment requirements. Commander, Marine Corps Forces, Pacific, and Commander, Marine Corps Forces, Atlantic, direct logistics at the operational level. They must be able to expeditiously coordinate logistics needs with—

- Higher commands (unified command logistics coordination agencies, Defense Logistics Agency item managers, and Marine Corps logistics and naval aviation support agencies).
- Adjacent commands (advanced logistics support bases, intermediate staging bases, in-theater common-item/user support agencies, and/or host nation support agencies).
- Supported commands.

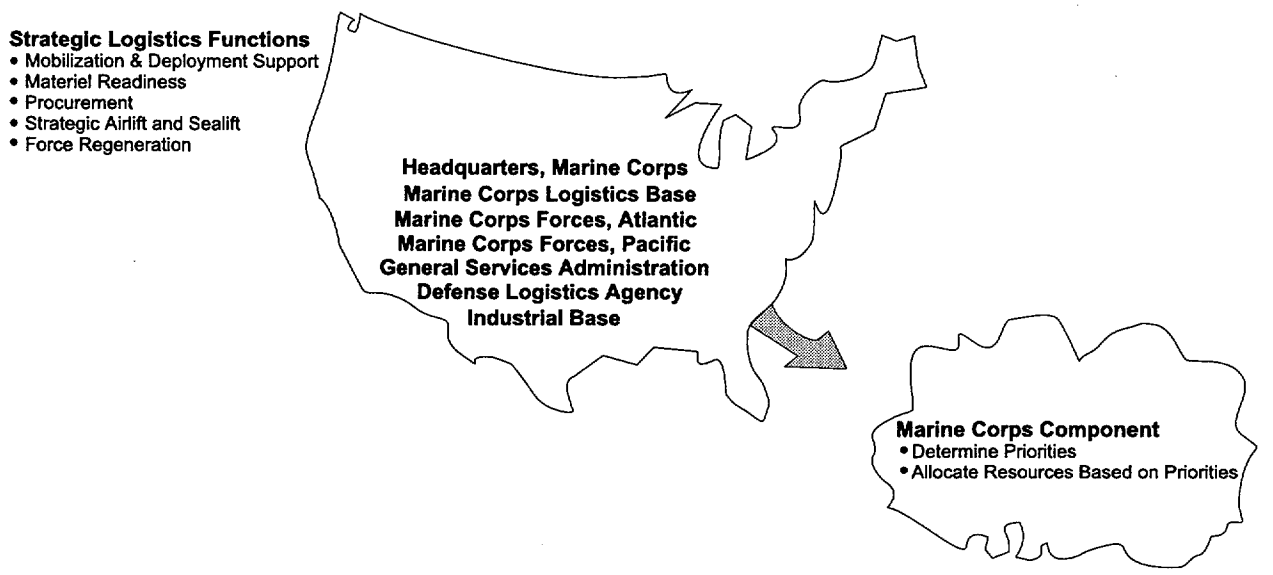


Figure 3-1. Command and Control of Strategic Logistics.

The G-4s for both the Commander, Marine Corps Forces, Pacific, and the Commander, Marine Corps Forces, Atlantic, coordinate ground logistics support issues with subordinate MAGTF G-4/S-4s. Commander, Naval Air Force, Pacific, and Commander, Naval Air Force, Atlantic, deal directly with the MAGTF ACE aviation logistics department to assist in resolving aviation logistics requirements. In joint operations the principal logistics agent is the J-4 at the unified/subunified and/or the JTF staff level. When the MAGTF commander is designated as the joint force commander, the MAGTF G-4/S-4 may assume J-4 responsibilities. When the JTF has a Marine Corps forces component, the MAGTF G-4/S-4 becomes the Marine forces G-4 for the JTF. See figure 3-2.

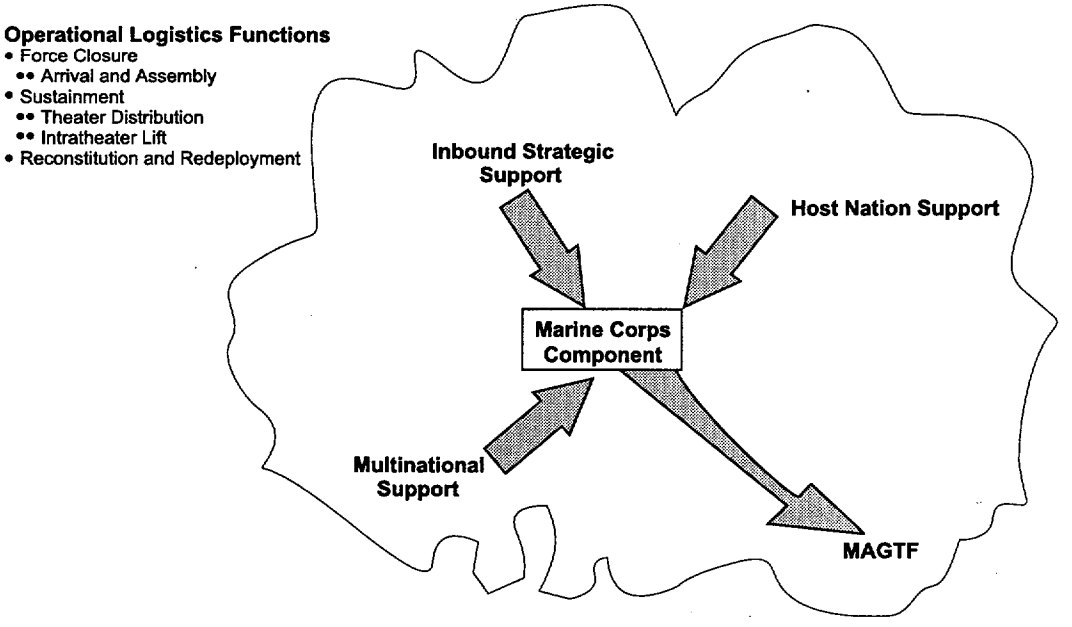


Figure 3-2. Command and Control of Operational Logistics.

c. Tactical Level

Command and control of logistics at the tactical level focuses on monitoring, directing, and executing logistics operations and maintaining communications with supporting operational-level forces. Tactical logisticians are linked to—

- Higher commands (Service component headquarters and MEF command element).
- Adjacent commands (theater logistics agencies, inter-Service support agencies, and host nation support agencies).
- Supported commands (MAGTF CE, GCE, ACE, and CSSE).

At the tactical level, MAGTF element G-4s/S-4s employ all of their organic logistics support capabilities as effectively as possible and coordinate with the CSSE. The CSSE's mission is to provide

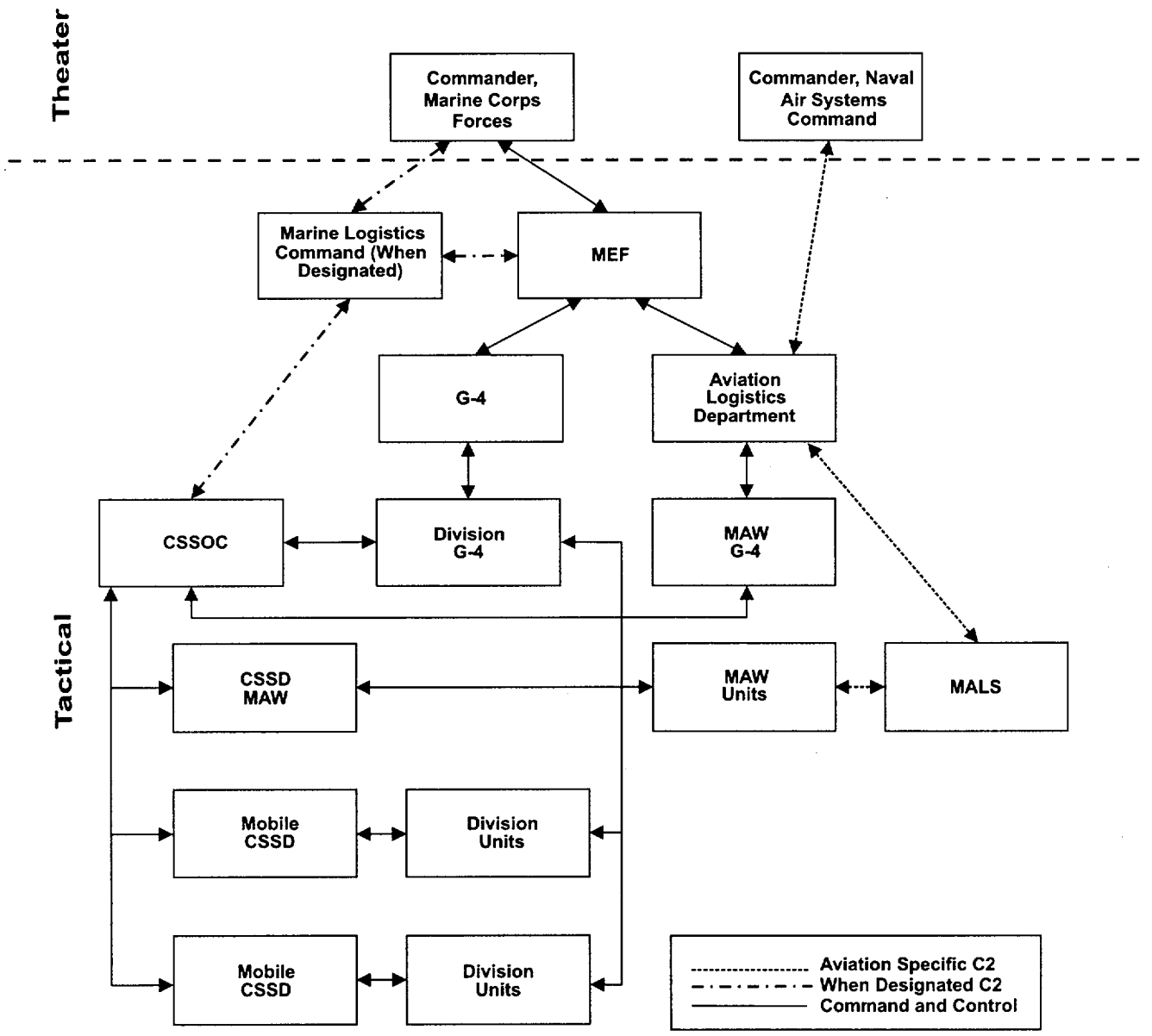


Figure 3-3. Command and Control of Tactical Logistics.

logistics support exceeding the organic capabilities of other MAGTF elements. The ACE aviation logistics department works with the MALS to resolve aviation logistics shortfalls. See figure 3-3.

3003. Command and Control Information Systems

There are two basic uses for information: to promote situational awareness as the basis for a decision and to direct and coordinate actions in the execution of that decision. There are currently over one hundred logistics information systems within the Marine Corps that support force deployment planning and execution, sustainment, and distribution. Biannually, the I&L Department, Headquarters, Marine Corps, publishes a comprehensive listing of these systems in a Logistics Information Resources Plan. The Logistics Information Resources Plan provides a roadmap for employing technologically advanced information systems to enhance logistics information systems. It also provides a migration strategy that identifies the number of systems (eliminating redundancies) and uses joint systems to their advantage. Table 3-1 (on pages 3-5 through 3-7) provides a partial listing of significant information systems currently in use to support force structure, movement, sustainment, materiel readiness, and fiscal management.

Table 3-1. Operational and Materiel Readiness Systems.

System Name	Functions
Operational System	
Planning, Programming, and Budgeting System (PPBS)	Produces a plan, a program, and a 2-year budget for the DOD. Provides combatant commanders with the best mix of forces, equipment, and support attainable within fiscal constraints.
Joint Operation Planning and Execution System (JOPES)	Executes joint planning (DOD-directed and JCS-specified system). Enables supported commanders, supporting commanders, and the United States Transportation Command (USTRANSCOM) to manage deployment of forces and follow-on sustainment for both training and contingencies.
Global Command and Control System (GCCS)	Provides flexible, evolutionary, interoperable joint command, control, communications, computers, and intelligence (C4I) system capabilities and will eventually connect joint and upper echelon Service systems down to the battalion level. Moves information both vertically and horizontally. Encompasses the policies, procedures, personnel, automated information systems, common communications paths, and common switches necessary to plan, deploy, sustain, and employ forces. Provides joint operation planning and execution capabilities and facilities with deployment and redeployment of Marine Corps forces. Ensures compatibility with MAGTF C4I. Incorporates JOPES as one of its first applications. The Marine Corps tactical combat operations (TCO) system facilitates MAGTF planning and employment under JOPES.

Table 3-1. Operational and Materiel Readiness Systems (Continued).

System Name	Functions
Operational System—Continued	
Marine Corps Training, Exercise, and Employment Program (MCTEEP)	Provides operational training exercise and employment scheduling for Marine Corps operating forces. This scheduling is then used to update and maintain other automated systems. Schedules all contingency operation plans. Schedules all normal routine exercises.
Standard Accounting, Budgeting, and Reporting System (SABRS)	Functions as a DOD automated accounting and reporting system. Accounts for and reports expenditures of appropriated funds. Provides submissions to the DOD budget cycle.
Marine Air-Ground Task Force System (MAGTF II)/Logistics Automated Information System (LOGAIS)	Supports Marine Corps ground logistics data requirements. Serves as a primary planning tool to select and tailor a MAGTF. Provides updates to JOPES. Supports force deployment, planning, and execution. Includes TC-AIMS and MDSS II. Provides an improved degree of integration between MDSS II and TC-AIMS. *Note: TC-AIMS II, a joint system, will eventually replace TC-AIMS and MDSS II. TC-AIMS and ATLASS will be the primary systems that provide functional logistics management for sustainment and distribution.*
Transportation Coordinator's Automated Information for Movement System (TC-AIMS)	Provides automated support for motor transport, control, planning of support, and coordination of overland movement and convoys. Manages use and movement of day-to-day motor transport and heavy equipment. Provides inventory, support requests, and task and dispatch management through its resource management tool. Supports convoy management with an embarkation and marshaling module. Tracks critical events, including user time statistics. Interfaces with the MDSS II.
MAGTF Deployment Support System II (MDSS II)	Assists in deployment planning and execution and unit movement at the MEF level and below. Functions in coordination with TC-AIMS.
Theater Medical Information Program (TMIP)	Provides a global capability that links medical information databases to integration centers. These integration centers are accessible by Navy medical personnel while engaged in support of Marine forces. Provides theater medical integrated automated information using GCCS and Global Combat Support System (GCSS), which links all echelons of medical care in support of Marine forces.

Table 3-1. Operational and Materiel Readiness Systems (Continued).

System Name	Functions
Materiel Readiness	
Global Status of Resources and Training System (GSORTS)	Provides information on the readiness status of units with respect to personnel, equipment, and training.
Asset Tracking Logistics and Supply System (ATLASS)	Provides automated support for supply and maintenance. *Note: ATLASS replaces two mainframe-based systems developed in the early 1970s (Marine Integrated Maintenance Management System [MIMMS] and Supported Activities Supply System [SASSY]) with a client-server system based on an open system architecture. ATLASS is being implemented through phased development, with the current phase focusing on integrating user-unit supply and shop-level maintenance functions.*
Naval Tactical Command Support System (NTCSS)	Provides status and ad hoc reports to the Battle Group Logistics Coordinated Support System (BGLCSS). Provides the ACE with a fleet tactical command support system. *Note: NTCSS is formulated around SNAP III, which began the process of integrating shipboard computers by adopting C2 systems architecture for command support applications. It replaces vintage 1970s fleet equipment with modern minicomputers, personal computers, and local area networks.*
Shipboard Nontactical Automated Data Processing Program III (SNAP III)	Provides automated information processing support for supply, finance, and organization maintenance management to the MWSG and MALS.
Naval Aviation Logistics Command Management Information System (NALCOMIS)	Provides automated information processing support for maintenance of all aviation equipment and spares to aviation units (MWSG and MALS) and selected base and garrison activities throughout the Marine Corps.
Shipboard Uniform Automated Data Processing System (SUADPS)	Provides financial, inventory, and logistics management of aviation supply support for Marine aircraft.
Conventional Ammunition Integrated Management System (CAIMS)	Provides on-line inventory management data; e.g., ammunition location, quantity, material condition, purpose code, requisition status.

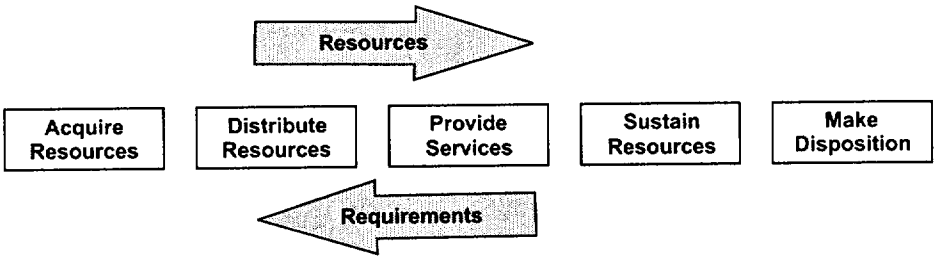


Figure 3-4. Current Marine Corps Logistics Activity Model.

3004. Information Management and Technology Improvements

Logistics provides resources that support the warfighter. Command and control of logistics manages the process of providing those resources. Information management is a principal tool used to accomplish this process. The Marine Corps' overall information management objective must be in consonance with doctrine presented in MCDP 5, *Planning*, and MCDP 6, which is to collect critical data from diverse organizations and cross-functional activities so it can be integrated to develop a common operational picture.

The rapid pace of information management technology requires planners to consider current and emerging capabilities that apply to the Marine Corps. The actual methodology pursued to manage logistics information can range from the most primitive, manual methods to sophisticated database management. The model and methodology used by the Marine Corps will shape how logistics information is managed in the future. The Marine Corps' information modernization efforts will incorporate emerging technologies and adapt successful business practices, while remaining consistent with its doctrine.

a. The Model

The current Marine Corps logistics activity model is a series of processes that identifies a requirement, matches it to a resource, and provides that resource to a customer (see fig. 3-4). Current business practices also use a similar activity model (see fig. 3-5). The analogy to command and control of logistics activity in the business model is supply chain management.

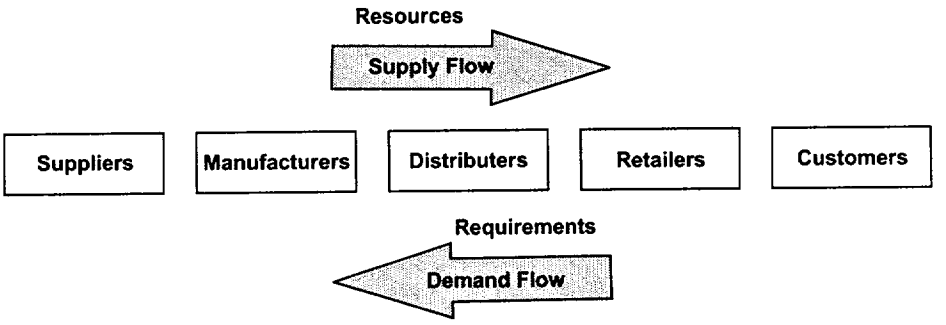


Figure 3-5. Business Model: Supply Chain Management.

If a business is to have effective supply chain management, it must have the following three capabilities:

- Provide visibility end to end within the model (command and control allows commanders to see the whole picture, not just selected parts).
- Manage the flow end to end (information ebbs and floods; the further out this fluctuation can be recognized the sooner adjustments can be made to sustain the flow).
- Coordinate interface of the functions within the model (problems typically occur at the interfaces of the functions, but coordination between the interfaces can maintain a steady and efficient flow in the logistics pipeline).

These three capabilities ensure speed, agility, and precision. Information management, using improved technology, helps achieve these capabilities, manage the activities that occur within the model, and support command and control of logistics. Information management requires the capabilities depicted in figure 3-6.

b. The Methods

The methods to implement a logistics model are a combination of existing systems and emerging approaches to future requirements. Some are functional and fielded and others still under development.

(1) Global Combat Support System. The GCSS is not a discrete system; it is an overarching capability. Its goal is to provide universal access to information and the interoperability of that information within logistics and other support functions. Ultimately, it will link information with other C2 systems in order to contribute to the commander in chief's common operational picture. GCSS encompasses six essential attributes: any box, any user, one net, one picture, common services, and robust communications architecture. GCSS consists of applications and shared data that ride on a common operating environment and are linked through a global network. It provides near-real-time command and control of the logistics pipeline from battlefield to sustaining base, one fused picture of combat support to the warfighter, and a closed link between operational C2 and logistics C2. Compliance with GCSS will ensure that information can be shared not only among multiple logistics functions but also with joint and coalition partners.

(2) Unified MAGTF C4I Requirements. Unified MAGTF C4I provides a common Marine Corps information infrastructure that integrates requirements, resources, and acquisition initiatives toward a layered, standardized architecture. Emerging C4I requirements are programmed across eight standing operational requirements documents. These documents track requirements that support the common Marine Corps information infrastructure and that support requirements specific to MAGTF information missions. Among

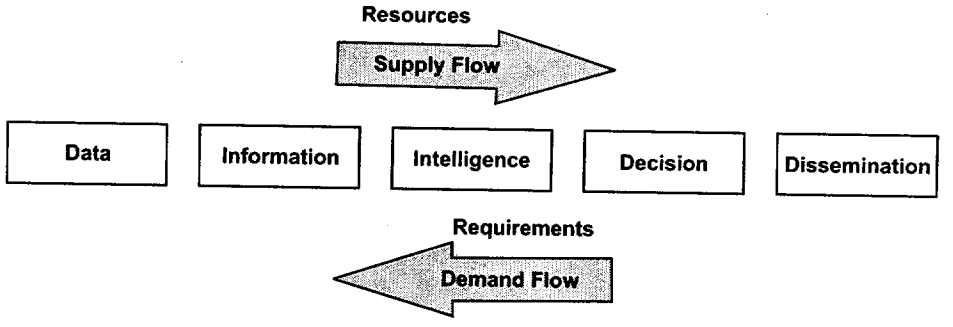


Figure 3-6. Logistics Information Management Model.

these requirements is an effort that targets the CSSE and supporting establishment. This effort includes annexes that identify CSS command and control, materiel readiness, mobility and transportation, facilities, budget and finance, manpower and personnel, health services, and combat development and acquisition information technology requirements.

(3) Shared Data. For information technology to support command and control of logistics, planners need a means by which information is accessible, shared, standardized, and timely to all users of the model. Historically, commanders culled through numerous reports from various commands and staff functional agencies; integrated the critical information; and posted the information on acetate-covered maps, display boards, or matrices. The sheer volume of material and the limits of time made this method ineffective. However, advancements in technology permit the development of a shared data environment that satisfies all three modeling capabilities: end-to-end visibility, end-to-end flow management, and coordination of function interface. Shared data capabilities promote functional integration of activities that focus on accomplishing a particular mission or enabling a specific process. The shared data environment has become a DOD initiative and the central focus for information technology that supports command and control of logistics. A shared data environment supports command and control of logistics through three principle means:

- Integrating all pertinent logistics information into one picture to reduce the PDE&A.
- Sharing the same information across the breadth of logistics functions to support decentralized decisionmaking, which is critical to logistics speed and agility.
- Providing a data environment based on visibility vice history.

This shared data environment is implemented via a shared "data warehouse." The data warehouse is an ethereal repository that is networked or web based. Data is separated from its mission application source and stored in the "warehouse," which allows access by multiple users, across multiple systems that interact and interface in real- or near-real-time.

c. Future Capabilities

Emerging information technology supports the management of logistics information based on three methods (see table 3-2). Information technology allows the commander to accomplish three essential tasks: anticipating requirements, allocating resources, and dealing with uncertainty.

Table 3-2. Future Logistics Information Management.

Methods	Capabilities
Common communication infrastructure.	Provides backbone to command and control.
Application, automated identification technology, and decision support tools.	Provides speed, agility, and precision to the information process.
Shared data.	Provides foundation for efficiency and effectiveness of information.

(1) Joint Total Asset Visibility. Joint total asset visibility (JTAV) is the desired capability to provide users with timely and accurate information on the location, movement, status and identity of units, personnel, equipment, and supplies. It will also include the ability to act upon information to improve overall performance of logistics practices. JTAV will provide in-process, in-storage, and in-transit business processes.

In-process assets are items that are being either repaired or procured. They include items that are in repair at depot-level repair organizations or on order from vendors and not yet shipped.

In-storage materiel assets encompass all classes of supply, whether categorized as wholesale or retail. For JTAV purposes, visibility of wholesale assets in storage means information on stock balances by condition code and purpose code, while visibility of materiel requirements means information on reorder points, requisitioning objectives, and retention limits. Visibility of retail assets consist of stock balances by condition code and assets on order.

In-transit visibility refers to the ability to track the identity, status, and location of unit and nonunit cargo, passengers, and patients from origin to destination. The Global Transportation Network is the automated information system that provides in-transit visibility. The Global Transportation Network provides an automated tool for command and control and business operations of the Defense Transportation System managed by the United States Transportation Command. It gathers data from a number of DOD, Service, agency, and commercial transportation systems to provide the visibility necessary to improve both movement efficiencies and command and control of the transportation pipeline.

JTAV will include full integration with joint personnel asset visibility (JPAV) and comprehensive medical asset visibility through the Theater Medical Information Program (TMIP). Ordnance asset visibility will be achieved through the Ammunition Management Standard System (AMSS). JTAV, JPAV, TMIP, and AMSS provide total asset visibility via GCSS.

(2) Decision Support Tools. Decision support tools support the ability to perform analysis of information aggregated from multiple sources and functions. This capability supports situational "what ifs" and comparisons of baseline planning factors against actual execution data using a data warehouse. Decision support tools allow planners to—

- Conduct "what-ifs" to determine the value of one alternative against another (highlighting strengths, redundancies, and vulnerabilities).
- Conduct baseline comparisons in order to identify specified plus or minus deviations from the planning baseline during execution.
- Support command and control by reducing the PDE&A cycle.
- Use visual displays, query capabilities, and collaborative workspaces.
- Provide qualitative and quantitative values to logistics activities, alternatives, and decisions.

(3) Automated Identification Technology. Automated identification technology supports command and control of logistics by providing speed and accuracy to the collection and input of data. Automated identification technology provides the means to capture source data on the status, location, and movement of assets. Automated identification technology devices include bar codes for individual items, optical memory cards for multipacks and containers, radio frequency tags for containers and pallets, and a movement tracking capability that uses satellite links for convoys, trains, and barges.

3005. Considerations for Joint or Multinational Command and Control of Logistics

Joint and multinational operations are complex and bring together diverse military organizations that must operate together and logistically support one force. Multinational forces may have differences in C2 systems, language, terminology, doctrine, and operating standards. The following considerations can minimize the impact of this diversity and promote efficiency.

a. Liaison

Liaison is the basis for effective command and control of logistics support in joint and multinational operations. Liaison representatives (e.g., liaison officers, liaison teams, couriers) should be chosen specifically for their knowledge and familiarity with the capabilities, limitations, and logistics concept of operations of their Service/national organization.

b. Equipment

The demand for information often exceeds the capabilities of C2 equipment within joint and multinational commands. It is crucial that the commander identify, as early as possible, the C2 requirements that are external to the command or that require the use of national and/or host nation equipment.

c. Standard Logistics Procedures

Standardization of logistics procedures by joint or multinational forces is essential.

d. Agreements

Agreements should be made with probable joint or multinational partners regarding command and control of logistics. These agreements should cover principles, procedures, and overall logistics report requirements (including standard text format, standard databases, and data formats). Agreements should be arrived at by mutual agreement in advance of the operation/war.

e. Policy in Absence of Agreements

Joint/multinational forces should adopt the procedures of one Service or ally on direction of the commander if C2 agreements have not been determined in advance.

f. Interpreters

The United States provides interpreters to ensure that U.S. interests are adequately protected.

g. Communications Security and Cryptographic Systems

The operational acceptability and disclosure or release of communications security to allied governments for multinational use will be determined and approved by national authorities before entering into discussions with allied nations.

Chapter 4

Logistics Planning

MCDP 4 defines logistics operating systems and command and control as core capabilities that are essential to our expeditionary nature. Integral to any logistics operating system are the sources of the logistics capability and the distribution procedures used to deliver the capability. MCDP 5 defines planning as the art and science of envisioning a desired future and creating effective ways to bring about that future. It is a preparation process that fully integrates all battlespace functions to achieve a desired result. Therefore, planning for logistics focuses on integrating logistics core capabilities with all battlespace functions at all levels in order to get to the fight, to sustain the fight, and to prepare for the next fight.

As a Service, the Marine Corps must fulfill its general Title 10 obligations to organize, train, and equip forces capable of performing a wide range of missions. As an operational force, MAGTFs must be prepared to execute missions and to respond to developing contingencies based on guidance from the supported combatant commander. Planning efforts at any level (strategic, operational, or tactical) must be fully integrated with planning at the other levels to ensure that all levels work together to achieve the common goal of mission success. Logistics planning results in—

- Building the MAGTF's ability to support national interests and mission accomplishment.
- Positioning a MAGTF globally, then within a theater, and, ultimately, within a battlespace.
- Sustaining a MAGTF throughout training, deployment, employment, and reconstitution.

4001. Planning at the Levels of War

Strategic plans cover the overall conduct of a war, whether the focus is on wartime execution or peacetime preparation. Campaign plans, normally prepared at the operational level of war, cover a series of related military operations aimed at accomplishing a strategic or operational objective within a given time and place. Tactical plans generally cover a single military evolution. Logistics planners also prepare logistics functional plans to support integrated plans.

Logistics planning is the combination of coordinated processes at the strategic, operational, and tactical levels used to calculate materiels and services requirements, identify sources of the required materiels and services, and determine the means to provide logistics support to the supported forces. It involves earmarking existing assets for specific potential uses and identifying deficiencies in current support capabilities for corrective action.

Planning techniques and procedures will vary with the time available. Force planning at the strategic level (i.e., organizing, training, and equipping the Armed Services) is based on 2- to 6-year cycles in the Joint Strategic Planning System (JSPS) and PPBS. Force planning at the operational level uses deliberate planning processes that span 2-year cycles if time is not a critical factor. When the time available for planning is short (sometimes as little as a few hours or days) because of a need to support the near-term deployment and/or employment of military forces, the

planner uses crisis action planning or time-sensitive operational planning procedures. JOPES prescribes joint operation planning techniques and procedures that supports the planning process. Marine organizations use the Marine Corps Planning Process (MCPP) to prepare their plans and orders, as well as Marine Corps input to JOPES.

4002. Administrative and Operational Planning

At all levels of war, Marine Corps logistics planning involves activities in both administrative and operational command channels. In the context of coordinated DOD planning systems, these systems assist in furnishing the best possible mix of missions, forces, equipment, and support to the combatant commanders. They support resolution of issues in the national interest at the strategic and operational levels that involve the Marine Corps supporting establishment (through Headquarters, Marine Corps) and operating forces or Reserves (through the Commander, Marine Corps Forces). While strategic and operational planning may seem transparent, perhaps even irrelevant, they provide the basis for the tactical employment of the MAGTF at the tactical level.

4003. Planning for Resources

Planning for a single mission or contingency is relatively straightforward but rarely the norm. Multiple, concurrent operations frequently occur whose requirements conflict and compete for the same resources and constrain preparations for response. Logistics planners accommodate potential or actual competing requirements for resources by apportioning or allocating available resources, establishing distribution priorities, and anticipating demands.

a. Apportion and Allocate Resources

Apportionment and allocation decisions establish how much of a particular resource is available to the supported commander. Apportionment is the *planned* distribution of limited resources among competing requirements; it is a fundamental feature of deliberate planning. In time-sensitive planning, apportionment blends into allocation, which is the *actual* distribution of limited resources among competing requirements. Apportionment and allocation are processes that divide limited resources, but they may not always satisfy projected consumption or provide desired sustainment levels. Resolution of shortfalls may require either a commander's intervention to obtain increased apportionments and allocations or modifications to the concept of operations to reduce consumption requirements. Identification of potential apportionment support shortfalls in both operation and support plans is critical to ensure the logistics feasibility of an operation plan.

b. Establish Distribution Priorities

The commander must establish distribution priorities for the apportioned or allocated logistics resources. These priorities determine *who* will receive *what* resources, *when*. Priorities are initially based on the concept of operations and modified as the situation develops.

c. Anticipate Demands

Analysis of assigned missions and tasks to determine resources, requirements, and shortfalls reduces uncertainty. It cannot entirely remove the impact of unanticipated support demands, but it can minimize their extent and potential effect on operations. Additionally, planning gives commanders and their staffs the opportunity to assess the area of operation's environment, the assigned forces' and the potential opposition's characteristics, and the nature of the mission. This assessment should enable commanders and their staffs to develop flexibility in planning that addresses most unanticipated demands.

4004. Principles and Considerations

The principles of logistics defined in chapter 1—responsiveness, simplicity, flexibility, economy, attainability, sustainability, and survivability—are universal constants that apply equally to all

aspects of logistics. In addition to these principles, other logistics considerations exist that commanders and logistics planners must judiciously apply to particular situations. These considerations will not dictate a specific course of action, but, if used wisely, they will help the planner maximize the effectiveness and efficiency of logistics operations. Logistics considerations are discussed in the following subparagraphs.

a. Integrated Planning

Operations cannot be conducted successfully without adequate logistics support. Logistics support cannot be effective if it is planned without detailed coordination with the functions it supports. Although the need for integration is obvious, staffs are typically organized on a functional basis that inhibits this coordination. Command oversight is necessary to ensure that essential functional integration occurs to produce one plan.

b. Forward Focus

The focus of logistics support is from the continental United States into the theater and forward, and from higher levels of support to lower levels. A system of continuous replenishment may take the form of either automatic (push) or requisitioning (pull) replenishment. Commanders and planners must devise a balance of push and pull replenishment that efficiently and effectively supports an operation and relieves the forward commanders of logistics support details without impairing their control of their organic logistics support capabilities. The replenishment system must effectively use the available transportation to maximize throughput, minimize expenditure of resources in the pipeline, and reduce command and control of logistics.

c. Logistics Constraints

Logistics resources are usually constrained. Therefore, their use must be disciplined to accommodate these constraints. At the strategic level, these limitations are either fiscal constraints or the unavailability of materials, industrial facilities, and skilled labor. Long lead times for mobilization and deployment can also affect the strategic concentration of forces and supplies within a theater.

At the operational and tactical levels, common limitations are attributed to—

- Inadequate transportation means and port capacities.
- Insufficient quantities of certain munitions, equipment, and critical spare parts.
- Lack of trained logistics personnel.
- Failure to plan for adequate or interoperable command, control, communications, and computer systems.

d. Standardization

Standardization is the commonality of equipment and uniformity of procedures. Standardized procedures make complex tasks easier to execute in a timely way. Commonality of equipment reduces the number of different maintenance procedures involved and reduces the amount and type of support equipment. Standardization promotes economy by reducing unnecessary redundancy. It also promotes productivity, flexibility, and system reliability.

e. Centralization Versus Decentralization

Centralized control and decentralized execution are ideals sought in logistics support operations. If achieved, support will be responsive, economical, and flexible. Often, however, a balance between centralization and decentralization is difficult to achieve. Control may suffer because it is fragmented, or support may fall short because services and materiel are too concentrated. Consequently, commanders and their staffs at all levels must use judgment and experience to achieve the optimal mix of centralized control and decentralized execution based on the circumstances. Centralized control is most effective at the strategic level. It draws on the existing infrastructure, established procedures, and a stable environment. The degree of centralization varies at the operational level as forces can be fragmented, sometimes over great distances, and operations take place under primitive, expeditionary conditions.

At the tactical level, the degree of centralization is determined by the mission and concept of operations—factors that may override considerations of a purely logistical nature.

f. Expenditure and Consumption

Commanders, operators, and logisticians must understand the difference between consumption and expenditure in order to enhance both responsiveness and economy in logistics support operations. Expenditure will always be greater than consumption because expenditure represents the sum of consumption, pipeline quantities, safety stocks, pilferage, waste, and loss. When determining requirements, planners must distinguish between consumption and expenditure. The supported commander submits requirements based on anticipated consumption. The supporting commander estimates requirements based on anticipated expenditures. While the supported commander must strive to identify consumption rates accurately, the supporting commander must constantly strive to refine expenditure rates. Usage factors require careful, constant reevaluation to ensure that they are based on current data.

g. Alternative Planning

Logistics alternative planning establishes more than one option to provide support using equivalent means. Alternative planning can involve substitute modes of transportation, sourcing supplies from different locations, or reassigning support tasks between different organizations. This requires a certain degree of planned redundancy but does not imply intentionally oversupplying or apportioning and allocating an excessive reserve. Alternative planning is essential to flexible support when fixed resources are apportioned or allocated for support of a particular operation.

h. Echelonment

Echelonment is the preplanned provision or positioning of resources to ensure uninterrupted logistics support. Echelonment can cause variation in the level of support capabilities available in a given location at a specified time. It must be considered when developing task-organized elements to accomplish specific functions. Echelonment planning considers the phasing of logistics support in both time and location to maximize the effectiveness of logistics operations. If properly used, echelonment contributes to the responsiveness, economy, and flexibility of logistics support operations and to the survivability and sustainability of Marine Corps forces.

i. Logistics Reserves

Logistics can be a pacing factor at the operational level of war. While the adequacy of logistics to sustain operations governs the rate at which the campaign can proceed, the presence of a reserve capability may determine whether opportunities are exploited or are missed. Just as strategic and operational reserves are necessary to exploit tactical or operational success or to respond to new contingencies, it is also necessary to coordinate and establish reserves of logistics resources that can be committed only by the Commander, Marine Corps Forces, at the strategic, operational, and tactical levels. Logistics reserves are established for possible consumption by the supported forces, but their intent is not to cover expenditures in the supporting force's pipeline. It is important to note that building a logistics reserve should not take priority over satisfying imminent or immediate support requirements.

j. Redundancy

Redundancy is the duplication of systems, units, or functions that provides alternate means of support if there is an interruption, failure, or loss of capability. Redundant capabilities help prevent disruption of support. This concept may be perceived as a contradiction of economy. However, properly planned redundancy can provide assurance of continued support. It can also contribute to enhanced responsiveness. Although redundancy improves flexibility and survivability, redundancy of systems, units, or functions should be limited to only what is essential to accomplish the mission.

k. Conservation

Conservation avoids waste and is one of the components of economy. Because limits always exist on available supplies and services, commanders

must continuously practice and enforce conservation. Commanders also enforce conservation to improve overall flexibility by making the conserved resources available elsewhere or at a later time. Means of conservation may include recycling of materiel, proper use of salvage, and local rebuilding of spares when authorized.

l. Austerity

Austerity avoids excess and is also a component of economy. Austerity entails providing just enough materiel or services to accomplish the mission. The objective of the logistics planner is to provide for the consumers' needs, rather than their wants. Austerity will not eliminate a commodity or service, but it will reduce it to absolute essentials. Commanders should encourage austerity even in times of plenty. Wide swings between wasteful overabundance and inadequate support jeopardize mission accomplishment.

m. Throughput

Throughput is a function of the distribution system. It is a measure of the amount of materiel passing through a processing point within a specified period of time. The distribution system is the pipeline through which supplies and services flow from the supporting command to the supported command. The flow cannot begin until requirements are identified and supplies and services procured. Until the flow of materiels begins, the MAGTF relies on its organic sustainment that deploys with it. As procurement actions are accomplished, goods and services begin to flow, and eventually the flow reaches a state that matches expenditures. Maintenance of throughput is affected by lead time and control.

From the perspective of the supported force, lead time is the period between requesting and receiving the supplies or services identified as support requirements. On occasion, the flow of the throughput system is interrupted and lead times must be gauged to anticipate such delays. Accompanying supplies and services must be adequately sized and timing of requisitions anticipated so that capabilities overlap or at least cover requirements throughout the lead time.

Control of the throughput process (flow) is the single most demanding task for supporting forces. Supporting forces must be able to adjust the flow of supplies and services to expedite critical supplies and services as necessary. Control measures must allow for the accumulation of lower priority supplies and services at holding points or their diversion to forces that have higher priorities. The supported commanders and their staffs integrate requirements and capabilities during planning and participate in controlling the flow of supplies and services support during execution.

4005. Mission and Task Analysis

Mission and task analysis is the foundation of all planning. It is the basis for preparing initial estimates of supportability and draft logistics annexes or for completing orders for logistics operations. Commands at all levels receive orders from higher commands that specify an operational mission and implementation tasks. Logisticians assigned to both supported and supporting commands must apply their own functional area expertise to the integrated staff effort to analyze these missions and tasks in the context of the higher headquarters commander's intent, the higher headquarters' mission, and the initial commander's orientation. Logisticians parallel efforts of the other functional area experts on the planning staff in identifying logistics-specific tasks. These tasks are either specified, implied, or mission-essential. Specified tasks are stated explicitly in a higher headquarters directive. Implied tasks are not stated, but they are obviously required for mission accomplishment. Mission-essential tasks must be completed for the command to be successful.

During planning, logisticians must identify the constraints or restraints that could limit a unit's freedom of action and identify, for the unit, certain criteria that must be met before taking a certain action (e.g., boundaries, timing, coordination requirements, preconditions, mandated stockage levels, resource apportionments, and allocations). Assumptions identify critical factors that affect the course of action, assigned mission, or task. Logisticians resolve resource shortfalls affecting

the assigned mission or task through redistribution, replenishment, modification to the course of action, or assignment of tasks.

4006. Factors Affecting Logistics Planning

A variety of factors influence logistics planning efforts to determine precise logistics support requirements (i.e., what, when, where). These factors affect logistics estimates, annexes, and plans for logistics support operations. At all levels and in all commands, staffs must take these factors into consideration while preparing logistics estimates and annexes. Commanders of supporting logistics organizations and their staffs also prepare complete plans for logistics support operations based on these factors.

Many logistics support requirements can be calculated mathematically based on the number of people and types or quantities of equipment to be supported for a specified period of time over known distances. The basis for estimating other support requirements is less precise, requiring judgment and experience to develop reasonable predictions. Information processing systems have greatly facilitated requirements estimation by allowing planners to merge, categorize, and summarize large quantities of data. However, in the end, all information systems reflect the inputs of their users, and logisticians must review input data and underlying assumptions carefully, examine planning output critically, and apply common sense to any plan before it is implemented.

a. Intelligence

Intelligence resources are a source of vital information for logistics planners. Characteristics of the area of operations and the area of interest can assist, as well as hinder, accomplishment of the logistics support mission. The potential effects of enemy force strengths, locations, and capabilities, in addition to the effects of weather and terrain on logistics operations, can be significant. Logistics planners must circumvent impediments and build survivability into their logistics organizations. Logisticians must also take into account the existing infrastructure (e.g., road, rail, and communications networks; ports and airfields; storage and maintenance facilities) that could be used to enhance the effectiveness of support operations.

b. Personnel

Personnel support planning begins with accurate identification of the number and location of personnel (by gender) to be supported. This drives numerous requirements, which include but are not limited to feeding, billeting, and transportation. In fluid, fast-moving situations, especially during deployment or redeployment, it can be very difficult to precisely establish the population density needing support at a particular place and time. Command attention may be necessary to ensure that support capabilities correspond to personnel requirements.

c. Equipment Density, Distribution, and Characteristics

The quantity and type of equipment, equipment location, equipment technical specifications, and information regarding how equipment is employed are critically important to planners. Requirements for fuel, batteries, spare parts, maintenance, salvage, and ammunition are all based on this information.

d. Historical Data

Historical data collected from past operations provides a foundation for calculating current support requirements. Much of this historical data is available in table and chart form in a digital data format. Although it is unlikely that a comprehensive template of previous operations is available or universally applicable to the current operation being planned, historical data can be very useful in establishing the extent of support that the operation may require.

e. Modeling and Simulation

Advances in computer technology and analytical and gaming software make it increasingly possible to run models and simulations of proposed operations to approximate how an operation may unfold. Although this technique is not completely

predictive, it is another way of establishing tentative support requirements and is more comprehensive and convenient than traditional calculation methods. Furthermore, models and simulations can be tremendously useful in effectively demonstrating the possible impact of proposed changes in force structure or concept of operation.

f. Experience and Intuitive Analysis

Commanders and logisticians must apply judgment based on experience and sound staff work to assess risk and ensure that a proposed solution to a support problem is both feasible and practical. While the planning factors discussed in this publication contribute to an increased level of certainty, the ability to analyze the incomplete picture and make a sound decision demands firm grounding in known capabilities and requirements.

4007. Coordination in Planning

There is extensive coordination and some overlap of functions between the strategic-operational and operational-tactical levels of logistics support planning.

a. Strategic-Operational Level

At the strategic-operational level, logistics planning focuses on JSPS, PPBS, and JOPES. JSPS and PPBS define national interests and the structure, equipment, and organization that U.S. military forces need to protect these interests. JOPES defines national actions; e.g., mobilization and deployment or employment of forces to protect those interests. They are cyclical, continuous, overlapping evolutions that regularly produce updated visions of general military requirements, the means for satisfying those requirements, and specific operation planning tasks or contingency response direction to the combatant commanders.

b. Operational-Tactical Level

Within the theater-strategic and operational-tactical levels, JSPS and PPBS guidance and resources are developed into specific joint operation plans that are prepared in accordance with JOPES. The Marine Corps forces component and its subordinate MAGTFs prepare their input to JOPES, as well as their own operation plans and operation orders, by using MCPP. Commanders and staff logisticians prepare taskings and supportability estimates from which subordinate commanders and their staffs develop their own estimates, plans, and orders. GCCS (with its tactical combat operations interface) is the host for this work in JOPES. When time is not a critical factor, the deliberate planning process is used. When time available for planning is short, planners use crisis action planning procedures.

4008. Planning Systems

The purpose of joint operation planning is to effectively use the military arm of national power to protect U.S. interests or implement national policy. Joint planning consists of a systematic series of actions or procedures to determine the best method of accomplishing assigned tasks. The following subparagraphs address key systems used by DOD for planning (JSPS, PPBS, and JOPES), command and control (GCCS), and the Marine Corps planning system (MAGTF II/LOGAIS).

a. Joint Strategic Planning System

In general, JSPS is a formal series of events, activities, and guidance conducted on a biennial cycle by which the Chairman, Joint Chiefs of Staff, discharges responsibility to accomplish the following tasks:

- Prepare strategic plans.
- Assist the President in giving strategic direction to the Armed Forces.
- Review Service programs and conduct risk assessments.
- Set guidance and apportion resources for contingency planning.
- Furnish planning continuity for the strategic planning process.
- Provide guidance to PPBS.

A specific product of the JSPS process is the Joint Strategic Capabilities Plan, which is the key document used by combatant commanders and the Service chiefs for accomplishing military tasks in a short-range period (2 years). The Joint Strategic Capabilities Plan provides guidance to the commanders in chief and Service chiefs based on current military capabilities. It apportions resources provided by the PPBS to develop operation plans.

b. Planning, Programming, and Budgeting System

PPBS is the system used by DOD and Service planners to allocate DOD funds to the requirements generated by JSPS. In its simplest form, the requirements are analyzed, a program (for the next 6 years) is implemented, and annual budgets are developed to allocate funds by the appropriation categories of military personnel, operations and maintenance, research and development, procurement, and military construction. PPBS encompasses planning input, guidance, and follow-up action coordinated between the operational and administrative command channels at the Service or combatant commander level.

c. Joint Operation Planning and Execution System

JOPES (see fig. 4-1) is a DOD-directed, Joint Chiefs of Staff-specified system for joint operation planning. JOPES brings both deliberate planning and crisis action planning into a single system architecture to reduce the time required to do either, to make the refined results of deliberate planning more readily accessible to planners in crisis action planning, and to more effectively manage any plan during its execution.

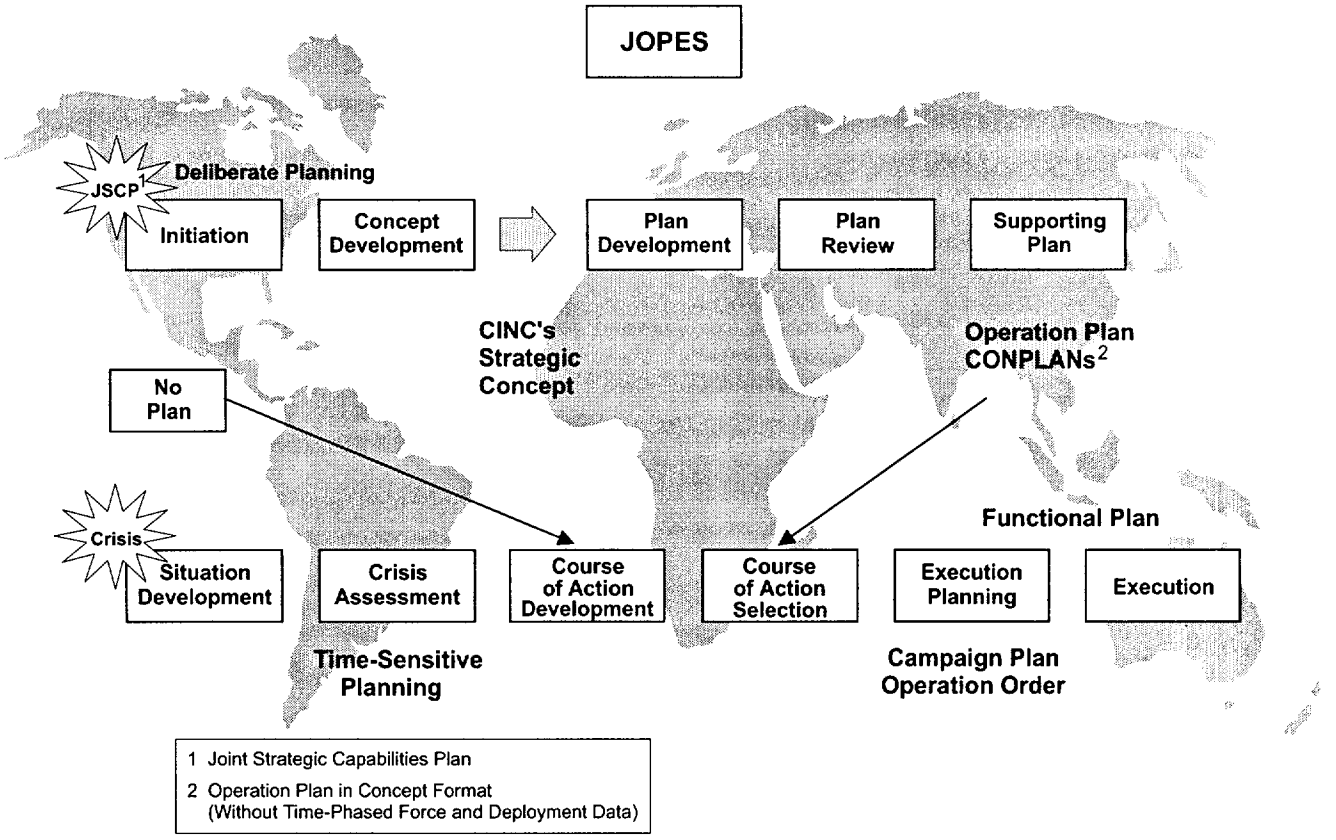


Figure 4-1. Joint Operation Planning and Execution System.

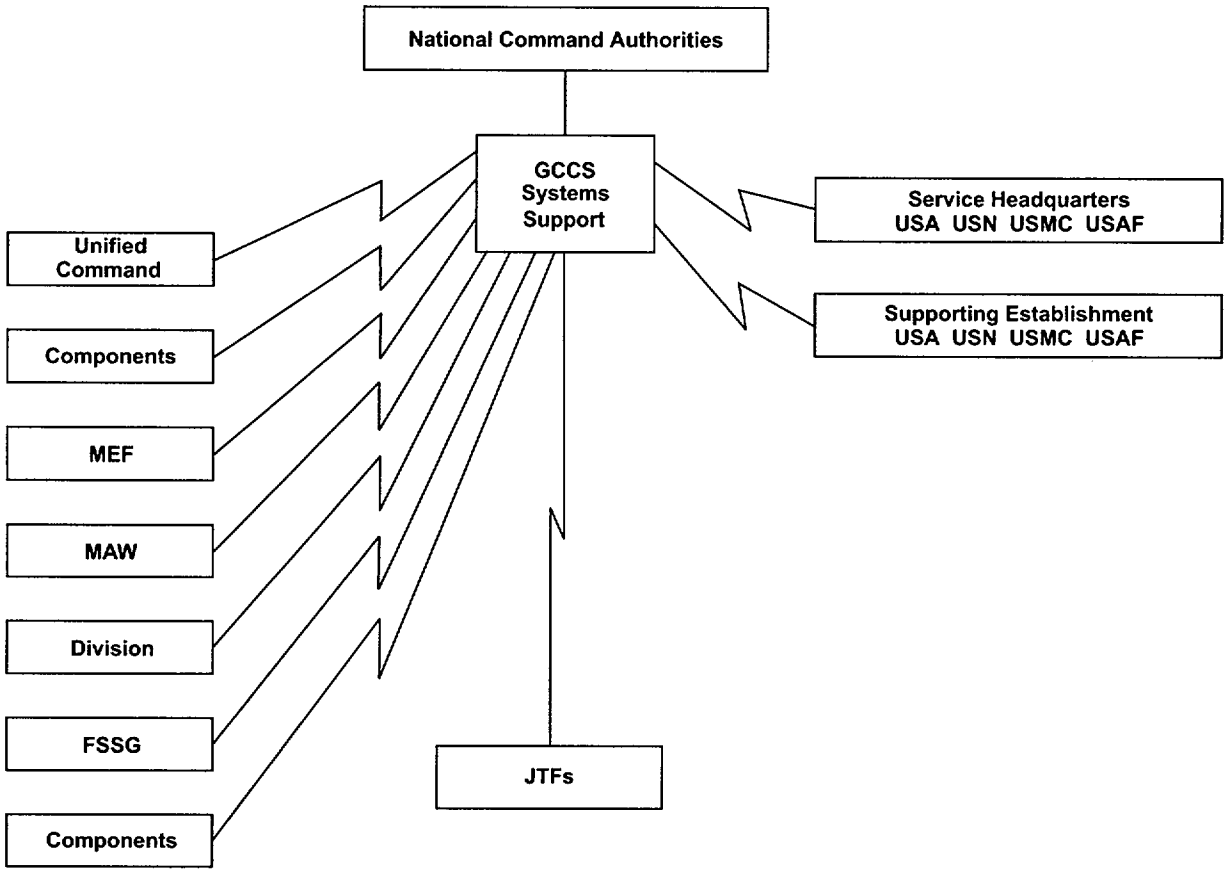


Figure 4-2. Global Command and Control System.

d. Global Command and Control System

GCCS (see fig. 4-2), discussed in greater detail in chapter 3, is a C2 system that provides JOPES capabilities and facilitates the deployment and redeployment of Marine Corps forces. JOPES is one of the first applications incorporated into GCCS. GCCS and MAGTF C4I must be compatible. In particular, the Marine Corps Tactical Combat Operations System facilitates MAGTF planning and employment under JOPES.

e. MAGTF/LOGAIS

The MAGTF II/LOGAIS family supports deliberate, crisis action, and time-sensitive planning for MAGTF deployment, employment, and redeployment. Table 4-1 (on page 4-10) identifies the MAGTF/LOGAIS family of subsystems. Table 4-2 (on page 4-11) depicts the relationship of Marine Corps planning systems with the other systems used in DOD.

4009. Planning Procedures

Specific procedures exist to organize and regulate planning actions; facilitate coordination between the supporting organization and the supported force at all levels; and ensure planning is thorough, relevant, and timely. These procedures must be followed carefully without losing sight of the planning purpose: to produce an effective plan within the time allowed that articulates how to accomplish the mission directed by higher command.

Table 4-1. MAGTF II/LOGAIS Family of Systems.

System	Functions
Marine Air-Ground Task Force System II (MAGTF II)	Estimates lift footprints. Compares alternative force structures. Forecasts lift and sustainability requirements. Generates and refines time-phased force and deployment data. Provides the Marine Corps data interface to JOPES.
MAGTF Deployment Support System II (MDSS II)	Enables the MAGTF and subordinate elements to develop and tailor force structures (personnel, supplies, and equipment). Monitors combat readiness (personnel and equipment attainment) status. Serves as the source of actual movement and embarkation data at level VI (national stock number, social security number, serial number, etc.).
Computer-Aided Embarkation Management System (CAEMS)	Produces amphibious, commercial shipping, and MPS load plans (template deck diagrams). Produces associated standard and embarkation reports (dangerous cargo manifest, trim stress and stability, etc.).
Transportation Coordinators' Automated Information for Movement System (TC-AIMS)	Supports planning and execution for movement of forces from points of origin to destination. Provides in-transit visibility to the U.S. Transportation Command's component commanders and the Defense Transportation System.
MAGTF Digital Library (MDL)	Facilitates the gathering of valid source data for use by the MAGTF II/LOGAIS family of systems.

Marines performing strategic-operational planning will follow the applicable DOD and joint planning procedures of the JOPES. Marines performing operational-tactical planning satisfy the applicable DOD and joint planning procedures, but they normally use MCPP to conduct operational-tactical planning.

a. Marine Corps Planning Process

The MCPP is a six-step model for integrated staff action that all Marine commanders and staffs at the operational and tactical levels use for MAGTF planning, orders development, and execution. It is compatible with joint planning systems, so it can also be used to prepare Marine Corps forces'

Table 4-2. Marine Corps Planning Systems Relationship.

Organizations	Levels	System
Headquarters, Marine Corps Supporting establishment MARCORMATCOM Bases and stations, etc	Strategic Logistics	JSPS/PPBS JOPES/GCCS
MARFOR	Operational Logistics	JOPES/GCCS MAGTF LOG-AIS
MEF: MLC; FSSG; Division; MAW	Tactical Logistics (CSS/Organic Logistics)	MAGTF II MDSS II TC-AIMS CAEMS MDL

planning inputs for joint operation plans and operation orders.

MCPP structures Marine planning into six steps that involve a continuous, iterative cycle from the beginning of planning to execution. These steps are a tool for both preparing an order for an anticipated mission or situation and adapting an order to a developing situation after execution commences. The six steps in that process are—

- Mission analysis.
- Course of action development.
- Course of action analysis.
- Course of action comparison/decision.
- Orders development.
- Transition.

MCPP embodies the following tenets in order to guide commanders and their staffs.

(1) Top Down Planning. Planning centers on the commander. The commander's intent and guidance are central to planning logistics support for any operation. The commander uses planning to gain knowledge and situational awareness. The plan is a translation of the commander's guidance into an understandable design for action by the staff and subordinate commanders who will accomplish the mission.

(2) Single Battle Concept. The single battle concept effectively focuses the efforts of all the elements of the force to accomplish the mission and maintain unity of effort. While battlespace may be conceptually divided into deep, close, and rear to facilitate planning and decentralized execution, activities conducted in each segment are viewed as an indivisible entity since operations in one area of the battle may have impact on others.

(3) Integrated Planning. Integrated planning provides a functional approach that is systematic, coordinated, and thorough. It is organized by the warfighting functions of intelligence, command and control, maneuver, fires, logistics, and force protection. The key to integrating these functions is a cross-functional representation within the staff and from subordinate and supporting commands via liaison officers.

b. Marine Corps Forces and MAGTF Planning Inputs

Marine Corps forces and MAGTFs prepare input to operation plans and supporting plans in deliberate and time-sensitive planning modes. During deliberate planning, the combatant commander requires three types of planning input from the Marine Corps forces component: concept development recommendations, plan development material, and supporting plans. During

time-sensitive planning (crisis action planning), the combatant commander or JTF commander requires two types of planning inputs from the Marine Corps forces component: concept development recommendations and execution planning material.

Planning input is prepared using MCPP with full participation from the logistician to ensure logistics feasibility. MCPP is of particular importance to Marine logisticians at the operational and tactical levels. MCPP is the standard Marine Corps forces or MAGTF planning process, adapted to the Marine Corps' warfighting philiosophy.

Chapter 5

Logistics Execution

The preceding chapters have described Marine Corps logistics concepts, force and materiel organization, command and control, and planning. This chapter discusses executing these elements into logistics operations in support of expeditionary MAGTF operations.

Note: MCWP 4-1 presents the conceptual framework for delineating tasks and responsibilities for an entire MEF to deploy on short notice. A smaller MAGTF's tasks and responsibilities will be the same as presented here, only smaller in scope. The information presented also applies to forward-deployed MAGTFs, with reduced time constraints associated with crisis response.

5001. Expeditionary Operations

Joint Pub 1-02 defines an expedition as "a military operation conducted by an armed force to accomplish a specific objective in a foreign country." The mission of a military expedition can vary widely and is limited only by the range of political objectives that may require the use of military force. Examples of military expeditions include providing humanitarian assistance in times of disaster or disruption, establishing and keeping peace, protecting U.S. citizens or commerce, punishing a foreign political group for an act of aggression, or defeating an enemy government by defeating its armed forces in combat.

MCDP 3, *Expeditionary Operations*, establishes doctrine for the conduct of expeditionary operations by the U.S. Marine Corps. It identifies the defining characteristics of expeditionary operations as the physical introduction of a military force onto foreign soil. The term expeditionary implies that an operation will be of a temporary duration and involves an intended withdrawal from foreign soil after the accomplishment of the specified mission. However, in practice, an expedition may not necessarily involve ground forces physically entering a foreign country. An expeditionary force may accomplish its mission by merely establishing a visible and credible presence nearby—direct application of coercive force may not be required. Regardless of the location of the expeditionary force, expeditionary operations involve the establishment of forward bases from which military power can be brought to bear on the situation as needed. Therefore, an expeditionary operation requires the temporary creation of a support apparatus that sustains the operation until its conclusion. Logistics—the movement and maintenance of forces . . . the "mounting" of the expedition—is a central consideration in the conduct of expeditionary operations.

The means for conducting expeditionary operations are created, in part, through the application of strategic and operational logistics capabilities in the administrative and operational chains of command by Headquarters, Marine Corps, the supporting establishment, and the senior participating commander of Marine Corps forces or MAGTF commander. The methods for executing expeditionary operations and the actual conduct of operations are supported with operational and tactical logistics functions exercised by participating MAGTF commanders and their subordinates in operational channels.

MCDP 3 states that expeditionary operations generally unfold in five broad phases of action (see fig. 5-1 on page 5-2):

- Predeployment.
- Deployment.
- Entry.
- Enabling and decisive actions.
- Redeployment.

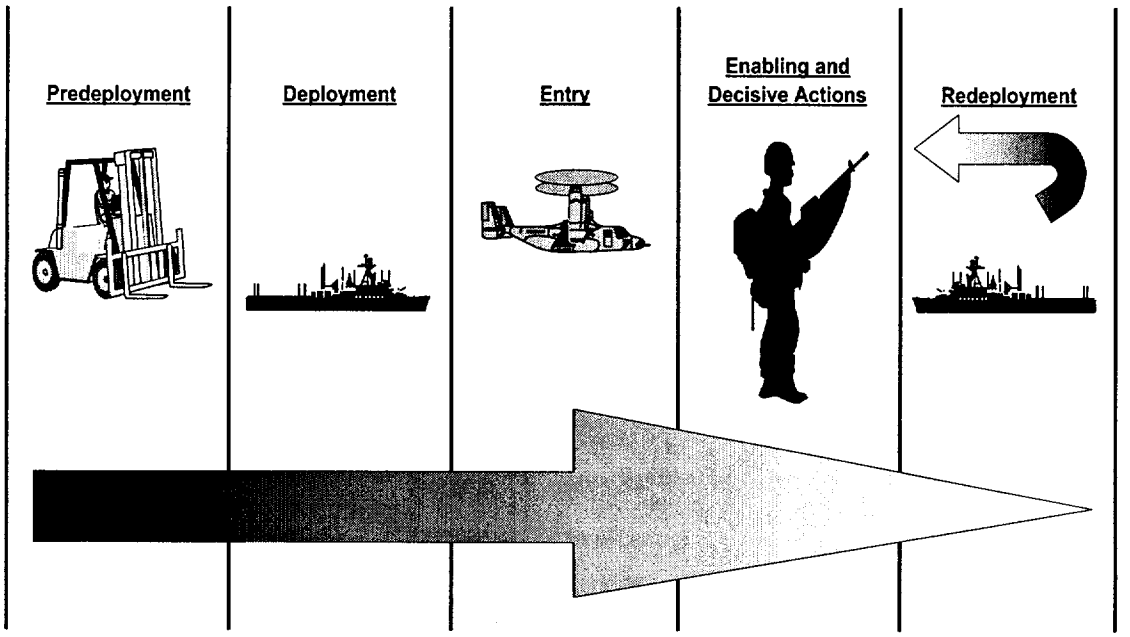


Figure 5-1. Logistics in Expeditionary Operations.

The sequence is meant merely to provide a conceptual framework for considering expeditionary power projection. The phases are not meant to determine the phases of an operation. Predeployment and deployment actions, for example, are closely related and overlap in some instances.

5002. Predeployment Actions

Predeployment actions include the commander's organization of the deployment to ensure that forces arrive in the objective area in a logical sequence, at the right time, and with the correct equipment and sustainment to support the concept of operation. Regardless of the deployment mode, predeployment preparation and deployment are complex undertakings that require the accomplishment of numerous tasks. In crisis response, the time available to accomplish these tasks is limited. Predeployment considerations are discussed in the following subparagraphs.

a. Supporting Establishment Interface

The supporting establishment assists Marine Corps forces in training, readiness, sustainment, and embarkation of deploying forces. In July 1998, Commanders of Marine Forces Pacific and Atlantic were also designated Commanders of Marine Corps Bases Pacific and Atlantic, respectively, to include all installations with operating forces with the exception of the Marine Air Ground Combat Center. This ensures effectiveness and efficiency of operations by the supporting establishment in support of deploying operating forces. Some bases and stations in the supporting establishment act as designated sites of initial assignment and also process the Marine Corps Reserve. Whether in support of general mobilization or small-unit deployments, command and staff coordination between the MAGTF and the supporting establishment counterpart is essential.

If deploying forces leave remain-behind equipment, the Commander, Marine Corps Forces, is initially responsible for that equipment. The home base or station will then act as caretaker of the equipment pending receipt of disposition instructions from the Commander, Marine Corps Logistics Base.

b. Force Service Support Group

The FSSG provides combat service support to the MEF in garrison and while deployed. If the FSSG

deploys with the MEF, its support capability of units in garrison diminishes as its support of deployed units increases. This necessitates the FSSG handoff of the CSS functions it usually conducted in garrison to the supporting establishment home base or station.

c. Civilian Support

To provide deployment support functions at the origin(s) and port(s) of embarkation, civilian personnel, transportation, and materials handling equipment can be contracted to supplement the capabilities of the force.

d. Mobilization Personnel Requirements

The currently programmed premobilization strength of the operating forces will constitute a valid point from which the Commander, Marine Corps Forces, can compute mobilization personnel requirements. Ability to fulfill these requirements will determine if activation of the Marine Corps Reserve is necessary.

e. Marine Corps Reserve Mobilization

The Deputy Chief of Staff, Plans, Policies, and Operations, exercises command and control of Marine Corps mobilization for the Commandant. Execution of any major operation plan requires augmentation and reinforcement by the Marine Corps Reserve. The Marine Corps Mobilization Management Plan provides direction and prescribes the concept, organization, responsibilities, and general procedures for mobilization of the Marine Corps Reserve. Augmenting and reinforcing Marine Corps Reserve units deploy with the MAGTF and integrate into the MAGTF to form a fully-manned and capable fighting force.

Reserve mobilization is a time-phased process directed by Headquarters, Marine Corps. The 4th Marine Division, 4th MAW, and 4th FSSG mobilize Selected Marine Corps Reserve (SMCR) units in accordance with designated operation plans, operation plans in concept format, or other directives. SMCR units move to the assigned site of initial assignment via prearranged transportation plans prepared by the Marine Corps Reserve component in accordance with the Marine Corps Mobilization Management Plan. Mobilization processing centers, established by the site of initial assignment, complete the processing of the activated SMCR units while they are en route to their assigned Fleet Marine Force commands. As directed by Commander, Marine Corps Forces, Pacific, and Commander, Marine Corps Forces, Atlantic, augmenting and reinforcing SMCR units, regardless of size, take their training allowance equipment to their site of initial assignment or port of embarkation. At the mobilization processing center, the site commander coordinates and effects liaison as necessary to support the—

- Arrival of SMCR unit personnel and equipment.
- Marriage of units with equipment arriving from the Commander, Marine Corps Logistics Base.
- Allocation of pretrained individual manpower with their gaining commands.
- Integration of active and Marine Corps Reserve units.

f. Fiscal Authority

Fiscal authority will be sufficient to implement the directed level of mobilization.

g. Support Facilities

Inactive or caretaker status support facilities are available for use, if needed.

h. Involuntary Extension

The decision to mobilize (other than selective mobilization) includes authority for involuntary extension of individuals beyond their expiration of current contract date.

i. Remain-Behind Equipment

Remain-behind equipment is equipment left at the home base or station by a deploying MAGTF. The following procedures apply to Marine Corps ground-common, remain-behind equipment:

- MAGTF deploying elements report equipment that will not deploy to their respective

major subordinate commands (division, MAW, or FSSG) for forwarding to the parent MEF command element. The MAGTF command element reports directly to the MEF command element.

- The MEF commander orders redistribution of equipment, based on reported equipment shortages and deadlines, to fill force deficiencies. This includes equipment deficiencies of deploying, augmenting, and reinforcing SMCR units and WRM stocks (field).
- The MEF command element forwards remain-behind equipment reports to the assistant chief of staff or G-4 at Marine Corps Forces, Atlantic, or Marine Corps Forces, Pacific.
- Commander, Marine Corps Forces, Atlantic, or Commander, Marine Corps Forces, Pacific, reports equipment that is not required to fill force deficiencies to Commander, Marine Corps Logistics Base. Information copies of the report are also sent to host bases and stations for the deploying MAGTF. The equipment reverts to control of the Commander, Marine Corps Logistics Base, inventory control point.
- Base and station commanders assume responsibility for receipt, storage, security, and inventory of remain-behind equipment that has reverted to control of the inventory control point until it is either recovered or reassigned by Commander, Marine Corps Logistics Base.
- Base and station commanders issue instructions regarding storage sites and schedules for turn-in of the remain-behind equipment. Information copies of the instructions are sent to Commander, Marine Corps Forces, Pacific; Commander, Marine Corps Forces, Atlantic; MEF command element; and division, MAW, and FSSG headquarters.
- MAGTF commanders and base and station commanders comply with applicable directives regarding joint limited technical inspections during changes in custody of equipment.

5003. Deployment

Deployment planning and execution are challenges for even the most experienced and skilled logisticians. Centralized control, coordination, and support of the deployment effort at the Marine Forces command level are necessary to effectively manage deployment; simplify coordination of logistics efforts; and interface with the deployment directorate supported commander, transportation component commands, the supporting establishment, and other commanders and commands.

a. Deployment Responsibility

The designated commander is directly responsible for carrying out deployment and/or deployment support missions.

b. Deployment Support

Deployment support is defined as the support provided to a MAGTF that allows the efficient and effective movement of forces from their origins to ports of embarkation and on to ports of debarkation and final destination. Deployment support assists the MAGTF commander in marshaling, staging, embarking, and deploying the command. The Commander, Marine Corps Forces, and subordinate commands provide support to MAGTFs during deployment and ensure that forces, sustainment, replacements, and supplies are obtained, prepared, and moved to ports of embarkation in the types and amounts required by the MAGTF. This is accomplished by activating control organizations, assuming operational control of the Marine Corps Reserve establishment and various base and station functions, and coordinating with the supporting establishment (especially Headquarters, Marine Corps) and transportation operating components. While retaining overall responsibility, the Commander, Marine Corps Forces, assigns responsibilities for specific functions to subordinate and supporting commands, monitors their actions, and provides guidance and assistance as required.

c. Deployment Support Organizations

MAGTFs deploy from permanent installations and forward deployment sites for exercises and combat operations. Certain organizations will control and coordinate the marshaling, embarkation, and movement of forces. External agencies that provide transportation or deployment support for MAGTF deployments may include the following:

- The supported commander in chief.
- The supporting commander in chief.
- The fleet commander.
- The U. S. Transportation Command and its transportation operating components (Military Sealift Command, Air Mobility Command, Military Traffic Management Command).
- The Defense Logistics Agency and its remote storage activities.

Marine Corps commands that are involved in MAGTF deployments may include the following:

- Headquarters, Marine Corps.
- Commander, Marine Corps Forces, Atlantic.
- Commander, Marine Corps Forces, Pacific.
- Commander, Marine Corps Forces, Europe.
- The deploying MEF.
- The deploying MAGTF (if other than a MEF deployment).
- The division, MAW, and FSSG that provide elements to the MAGTF and other commands that provide forces and sustainment.
- The bases and air stations from which the forces deploy.
- Commander, Marine Corps Logistics Base.

d. Joint Operation Planning and Execution System

JOPES is a joint deployment planning and execution management information system. The core product of the system is time-phased force and deployment data (TPFDD). TPFDD provides validated force movement requirements during planning and the status of each movement requirement during execution. The TPFDD shows, at a minimum, movement requirements by organization (personnel and equipment), origin, destination, ports of embarkation and debarkation, modes and sources of transportation, and movement scheduling. Information in the TPFDD is updated continuously by deploying commands and supporting commands during execution. It presents a comprehensive deployment picture that is accessible by the National Command Authorities, the joint staff, supported and supporting unified commands, Marine commands, and other interested parties.

e. Deployment Modes

Transportation modes vary depending on the size of the MAGTF, the purpose and duration of the deployment, and the anticipated employment. Deployment of a MEF requires the use of all modes of transportation. This includes—

- Military or commercial trucks, buses, and rail from ground points of origin to points of embarkation.
- Amphibious and commercial ships from seaports of embarkation to seaports of debarkation or destinations.
- Air Mobility Command or commercial charter airlift for personnel, supplies, and equipment from aerial ports of embarkation to aerial ports of debarkation.

During origin to port of embarkation movement, Marine Corps-owned assets are used to the maximum extent possible. Commercial transport is used only after all Marine Corps assets have been exhausted.

f. Movement Control

Movement control is defined as the planning, routing, scheduling, and control of personnel and freight movements over lines of communications. Movement control supports the deployment of forces. Under the supervision and direction of the commander, the deploying MAGTF must plan, organize, and direct its own deployment. The commander's agency for this function is the Force Movement Control Center, which will control and direct all deployment activities. During planning,

priorities and sequences for the deployment of MAGTF personnel, equipment, and supplies to meet operational objectives are established. MAGTF elements prepare specific aircraft and/or ship load plans (incorporating the priorities/sub-allocations of ships and aircraft). Ship and aircraft load priorities and configurations will be reviewed and revised as necessary throughout deployment. The Force Movement Control Center identifies locations and times that subordinate elements must be in place at ports of embarkation, ports of debarkation, and, finally, at destinations.

g. Movement Principles

Movement principles include centralized control, regulation, and flexibility. The Commander, Marine Corps Forces, centralizes control of movement at the appropriate levels. The MEF commander's force movement control organizations use multiple modes of transportation to regulate movement and prevent congestion and conflicting movements within lines of communications. The transportation system provides an uninterrupted flow of traffic that can adjust to changing situations. The MEF must effectively use limited transportation and deployment capabilities. Commanders must divert or reroute traffic to maintain continuous movement of personnel, supplies, and equipment.

h. Movement Control Organization

Transportation management and movement control organizations must exist and function in the same manner during both peacetime and periods of conflict. Personnel and equipment in established tables of organization and tables of equipment should provide MAGTF deployment or movement teams to operate movement control organizations. For smaller MAGTFs, this may be no more than one or two individuals in the S-4. In many cases, subordinate movement control organizations at the battalion, squadron, regiment, and air group levels may be temporary functions that are activated only when their organizations are moving.

i. Movement Control During Deployment

To provide complete and continued movement support to a MAGTF during predeployment and deployment phases of an operation, control, coordination, and support organizations are established within and between existing commands and agencies and are activated by the MEF at the direction of Commander, Marine Corps Forces. These organizations assist the deploying MAGTF commander in his efforts to prepare, pack, and move to geographically dispersed embarkation points, and then to deploy.

(1) Crisis Action Team. The crisis action team is primarily an information processing and advisory agency that keeps the Commander, Marine Corps Forces, abreast of the status of subordinate unit or MAGTF deployments. The crisis action team coordinates transportation requirements, priorities, and allocations as required with the following commanders in chief:

- United States Pacific Command.
- United States Atlantic Command.
- United States Central Command.
- U.S. Pacific Fleet.
- U.S. Atlantic Fleet.

(2) Force Movement Control Center. The Force Movement Control Center provides the Commander, Marine Corps Forces, and the MEF commander with the ability to control and coordinate all deployment activities. The Force Movement Control Center coordinates transportation requirements, priorities, and allocations with the United States Transportation Command and its transportation operating components (Military Sealift Command, Air Mobility Command, Military Traffic Management Command). The Force Movement Control Center directs all deployment support activities of the division; MAW; FSSG; and deploying MAGTFs, units, and detachments. It also coordinates with supporting organizations and commands to meet the deploying MAGTF commander's priorities. The Force Movement Control Center normally includes both operations and logistics representation (G-3, G-4). The actual

structure of the Force Movement Control Center is determined by the size and complexity of the MAGTF deployment.

(3) Logistics Movement Control Center. The Logistics Movement Control Center is the MEF commander's movement control agency. The Logistics Movement Control Center is activated on order by Commanding General, FSSG, and reports directly to the Force Movement Control Center. The Logistics Movement Control Center may be augmented by base, station, host nation, or other organizations. Separate Logistics Movement Control Centers may support units and elements moving from separate geographic areas. When activated, the Logistics Movement Control Center controls and coordinates all equipment augmentation, Marine Corps-owned and commercial transportation, movement scheduling, materiel handling equipment, and other support of movement from origin to port of embarkation in accordance with the MAGTF embarkation schedule.

(4) Unit Movement Control Center. On order, each deploying command activates a Unit Movement Control Center to support deployment. Every deploying unit down to the battalion, squadron, or separate company level activates a Unit Movement Control Center to control and manage its marshaling and movement. It can consist of a single individual who coordinates the movement of the unit/detachment. The Unit Movement Control Center ensures that units are prepared for embarkation, directs marshaling, coordinates organic assets, identifies additional support requirements, and, as directed by the Logistics Movement Control Center, coordinates the movement of forces to the aerial port of embarkation or seaport of embarkation.

(5) Base Operations Support Group. Bases establish base operations support groups to coordinate their efforts with those of deploying units. Bases have transportation, communications, and other assets that are useful to all commands during deployments. The base operations support group coordinates directly with the MEF Force Movement Control Center for deployment support and with the Logistics Movement Control Center for movement control and transportation support.

(6) Station Operations Support Group. Air stations establish station operations groups to coordinate efforts with those of the deploying units. Fleet Marine Force air stations have transportation, communications, and other assets that are useful to all commands during deployments. Commander, Marine Corps Air Bases Western Area, and Commander, Marine Corps Air Bases Eastern Area, coordinate the activities of their respective station operations support groups.

(7) Port Operations Group and Departure Airfield Control Group. The force service support group task-organizes, under the operational control of the Logistics Movement Control Center, a port operations group to support ship embarkation and a departure airfield control group to support airlift embarkation. Manning is normally sourced from the FSSG. Augmentation and liaison personnel are also assigned from the MEF as a whole and from bases and stations. Functions common to the port operations group and departure airfield control group include—

- Coordination with the Logistics Movement Control Center to verify the number of personnel, the type and quantity of cargo, and their schedule for arrival at the port of embarkation.
- Coordination with MAGTF representatives to ensure readiness for embarkation.
- Reception of troops and cargo at the embarkation point and organization of units and cargo in the staging area(s) at the seaport of embarkation or aerial port of embarkation.
- Provision of support at the seaport of embarkation or aerial port of embarkation beyond the deploying units' organic capabilities; e.g., vehicle washing, defueling, emergency maintenance, inspection, materiel handling equipment, lighting, food service, and first aid.
- Assistance in the inspection of loads to ensure that they are complete, are correctly

and safely prepared, and are making optimal use of their containers (box and/or vehicle cargo bed) within lift constraints.

5004. Entry

Entry refers to the initial introduction of forces onto foreign soil where no prior presence exists. During this phase, expeditionary forces are often at greatest risk, and for this reason, the introduction of forces is often a complicated military evolution. Entry is normally accomplished by sea or air. In some cases, forces may be introduced by ground movement from an expeditionary base in an adjacent country. Key to the entry phase is the presence or creation of some entry point—an available airfield or port, an assailable coastline, a suitable and supportable drop zone, or an accessible frontier. The most difficult type of entry is forcible entry, which refers to the initial introduction of forces into a hostile environment via combat in the face of active resistance. Not all expeditionary operations require forcible entry, although it is unavoidable in the absence of any secure point of entry. Many expeditionary operations involve the introduction of forces into a permissive environment or an environment that has not yet turned hostile. There are situations in which a regional presence, not actual entry, may accomplish the mission, although the perceived willingness and capability to introduce forces remains fundamental.

a. Amphibious Operations

An amphibious operation is an attack launched from the sea by naval and landing forces that are embarked in ships or craft and involves a landing on a hostile or potentially hostile shore. Execution of an amphibious operation is a complex undertaking. The assault is only the last phase of an amphibious operation; coordinated activities in phases of planning, embarkation, rehearsal, and movement precede it. Accordingly, sound planning provides a basis for successful execution.

An amphibious operation is characterized by a rapid buildup of combat power ashore. Associated with this projection of combat power may be the requirement to land CSS units to sustain the landing force. On the basis of establishing and maintaining an effective throughput system, combat service support for amphibious operations may remain sea-based or may be required to transition from sea-based to shore-based support. Consequently, the assault elements must be self-sufficient during the early stages of the operation. Tactical and logistical planners must consider the capabilities and limitations of the amphibious task force's CSS and naval logistics support capabilities.

(1) Planning. Logistics and CSS planning for amphibious operations concentrates on the broad area of supply and transportation to equip, move, and maintain the committed forces. The landing force and its subordinate elements focus their planning on the six functional areas of logistics. Logistics and CSS planning for amphibious operations include how the landing force and its subordinate elements—

- Marshal landing force personnel, supplies, and equipment in embarkation areas in an orderly fashion.
- Establish and maintain a responsive and adequate throughput system in the objective area to sustain the landing force.
- Initiate a logistics pipeline system to support subsequent operations and base development and garrison forces (if higher headquarters directs such development).

(2) Combat Service Support in the Assault Phase. To sustain the assault, CSS operations must support tactical operations. Therefore, the buildup of a CSS capability ashore must parallel the tactical buildup. Landing support operations begin with the landing of the advance elements of the landing force support element, and they continue until the operation ends. Combat service support early in the amphibious operation is limited to the provision of essential supplies and services (e.g., rations, water, ammunition, fuel, medical support). Until the CSSE is established ashore, nonaviation-peculiar CSS

operations focus on the landing force support element and its shore element and on helicopter-landed support from ships. Aviation logistics support generally remains aboard ship or out of the area at supporting airfields.

(3) Ship-to-Shore Movement. During the amphibious assault, the commander, amphibious task force is responsible for controlling the principle means of transport: landing craft, landing ships, amphibious vehicles, and helicopters. Navy control officers aboard control ships supervise waterborne elements. The Navy control officer in the helicopter direction center of the helicopter transport group supervises helicopter elements. Landing force control agencies assist and advise the Navy control organization.

(4) Navy Control Organization. The commander, amphibious task force, is responsible for control of the ship-to-shore movement of both waterborne and helicopterborne assault forces. The Navy control organization is the executive agency for the commander, amphibious task force, and has separate elements for surface movement and air movement. It directs landing craft, amphibious vehicles, landing ships, and helicopters during both waterborne and helicopterborne ship-to-shore movements. The structure of the Navy control organization may vary. The scope of the operation and number and type of beaches and helicopter landing zones dictate its structure. The tactical-logistical group is the agency used by the commander, landing force, to advise and assist the Navy control organization regarding landing force requirements during the ship-to-shore movement.

(5) Landing Force Control Organization. The landing force control organization interfaces with the Navy control organization for the purpose of keeping it apprised of landing force requirements and priorities as well as advising on transportation methods and phasing of serials. Although the exact structure of the landing force control organization may vary, the general composition remains the same. Combat operations centers of the various landing force elements afloat are the focal points for monitoring and directing operations ashore. The landing force support element, composed of Navy and landing force elements, establishes itself ashore as soon as possible to ensure an organized and uniform flow of personnel, equipment, and supplies over the beach in support of the landing force scheme of maneuver. The tactical-logistical group is a temporary task organization constituted from within the landing force to provide liaison between the landing force control organization and the Navy control organization.

(6) Ship-to-Shore-Movement Communications. The control of all landings is the responsibility of the Navy control organization. Tactical-logistical groups aboard various control ships provide assistance. Navy communications systems include radio, visual, sound, and messenger support. In some instances, underwater wire from the control ship to the beach may be used.

(7) Unloading Operations. Generally, ship-to-shore movement has two phases: the initial unloading period and the general unloading period. Selective unloading characterizes the first period and general unloading characterizes the second. Sea-basing, another option for supporting operations ashore, is a specialized form of logistics support that does not involve either unloading or a ship-to-shore movement in the traditional sense.

(8) Termination. Commander, amphibious task force, terminates the amphibious operation once the amphibious task force mission is completed and all other conditions in the initiating directive are satisfied. The following sequence of events occurs:

- Commander, landing force, determines that landing forces are firmly established ashore; the force beachhead is secured; sufficient combat, combat support, and CSS forces are ashore to sustain operations; command, communications, and supporting arms coordination facilities are ashore; and forces ashore are ready to assume full responsibility of the operations ashore.

- Commander, amphibious task force, advises the appropriate higher authority once he and the commander, landing force, agree to the above conditions.
- Higher authority terminates the amphibious operation, dissolves the amphibious task force, and provides instructions concerning subsequent external command relationships of the landing force and the MAGTF.

b. Maritime Prepositioning Force Operations

An MPF operation is the rapid deployment and assembly of a MAGTF in a secure area using a combination of strategic airlift, tactical self-deploying aircraft, and forward-deployed MPS. It begins with the decision to employ the MPF and the issuance of the necessary directives to the major participants (i.e., supported and supporting commanders in chief). The responsible commander in chief issues an initiating directive to the commanders responsible for the MPF operation. Planning for MPF operations is continuous; however, execution planning begins with the assignment of the MAGTF mission. Termination of the MPF operation occurs when all the prerequisites in the initiating directive are met, and the MAGTF is established ashore.

MPF operations are a strategic deployment option that is global in nature, naval in character, and suitable for employment in a variety of circumstances. MPF organization provides for multitheater operations or the concentration of MPFs within a given theater, and it provides the flexibility for simultaneous or sequential employment of MAGTFs worldwide. The essential strategic contribution of MPF operations is the mobility and flexibility that allows concentration of forces quickly in a designated area. MPF and amphibious operations are complementary capabilities; however, one is not an equivalent substitute for the other. Amphibious operations provide the means for forcible entry, while MPF operations permit rapid deployment into permissive areas where force introduction is essentially unopposed and is expected to remain so through the arrival and assembly phase. Amphibious operations can be used in the same environment as MPF operations, but the reverse is not true.

MPF operations involve airlifting MAGTF and Navy support element personnel into a host nation arrival and assembly area to join with equipment and supplies prepositioned aboard maritime prepositioning ships. MPF includes the combination of prepositioned and airlifted materiel of a MEF with 30 days sustainment. Smaller MAGTFs may be sustained for greater or lesser time depending on the size of the force, the number of MPS involved, and other variables such as the inclusion of an aviation logistics support ship (TAVB). Fixed-wing tactical aircraft associated with an MPF operation will self-deploy with assigned support personnel and equipment.

(1) Employment Considerations. The critical requirement for an MPF operation is a permissive area that allows for the arrival and off-loading of ships and aircraft and the assembly of personnel, equipment, and materiel. The following conditions are required to establish an MPF MAGTF ashore:

- A permissive area from the initiation of deployment through completion of arrival and assembly.
- Adequate strategic airlift and aerial tanker support.
- Adequate off-load forces (Navy support element) to support the operation.
- Sufficient airfield space for the Air Mobility Command and Civil Reserve Air Fleet operations and throughput capability to support the intended airflow.
- Ample port and/or beach area for timely off-loading and throughput. The port must have sufficient water depth, adequate overhead clearance, and maneuver room to admit MPS. Beaches and advances must be evaluated for hydrographic supportability and must be swept for mines and other hazards.
- A suitable road network between the port and/or beach and associated airfield to permit a timely arrival and joining of airlifted

units with their sea-lifted equipment and supplies.

(2) Phases of MPF Operations. Phases of an MPF operation include planning, marshaling, movement, arrival and assembly, and regeneration.

The planning phase begins on receipt of the warning order and is continuous through completion of the operation.

During the marshaling phase, units complete final preparations for deployment, move to aerial ports of embarkation, and load aboard aircraft. The marshaling phase begins on arrival of the first element at a designated marshaling point and ends on departure of the last element from a departure airfield.

The movement phase consists of the movement of forces by air and sea to the arrival and assembly area. The movement phase begins on lift off of the first aircraft from the departure airfield or when the MPSRON begins transit to the arrival and assembly area. It ends when the last fly-in echelon aircraft arrives in the arrival and assembly area, and the last MPS arrives at the off-load point.

The arrival and assembly phase begins on arrival of the first MPS or the first aircraft of the main body at the arrival and assembly area. This phase ends when adequate equipment and supplies are off-loaded, and the MAGTF commander reports that the MAGTF is prepared to conduct its assigned mission.

Regeneration is the process in which using units return MPS assets to as near condition code "A" as possible prior to backload. The regeneration process includes, but is not limited to, association of mobile loads and collateral equipment, cleaning off-loaded assets to meet U.S. agricultural standards, conducting required corrective maintenance, and servicing and reapplication of required preservatives and preservation materials.

(3) Logistics and MPF Operations. An MPF operation is a logistical operation because it involves deployment and preparation of the MAGTF for employment. The MAGTF mission is the focus of the MPF operation and logistics support.

Planning the logistics support of an MPF operation must be comprehensive, and it must thoroughly address the multifaceted character of the operation to include—

- Marshaling and moving to ports of embarkation (deployment support operations).
- Coordinating interrelated air and sea movements.
- Arriving and receiving in the arrival and assembly area.
- Preparing and distributing maritime prepositioned equipment and supplies.
- Supporting future tactical operations.

A critical goal in MPF logistics planning is to use existing logistics systems and infrastructure as much as possible. Use of existing host nation support and inter-Service support by all elements of the MPF is encouraged during the MPF operation. Planning must focus on providing continuous support for the duration of the MPF operation and subsequent MAGTF operations. Plans to support an MPF operation must be consistent with plans to support subsequent operations.

Facilities for off-loading include beaches, ports, arrival and tactical airfields, and assembly areas. These facilities must be in close proximity to each other, they must be able to accommodate MPS and strategic-lift aircraft, they must have sufficient capacity to handle the MPF off-load, and they must have all-weather capability.

The sequence and flow of airlifted and flight ferry elements are key variables. The fly-in echelon includes selected supplies and equipment not prepositioned but required during the first 30 days of operations. The sequencing of the fly-in echelon should provide the planner flexibility to deploy

critical supplies and equipment to the area of operation as needed.

A TAVB is an asset controlled by the commander in chief. It is used as an intermediate maintenance activity for Marine aviation, and it provides maintenance for fixed- and rotary-wing aircraft. TAVBs provide dedicated sealift for movement of the intermediate maintenance activity. Two TAVBs (one on each coast) are under administrative control of the Military Sealift Command in a ready reserve force-5 status. Ready reserve force-5 means that the ships will be ready for transport to the seaport of embarkation no later than 5 days after direction to activate. Extended MAGTF operational planning should include activation of a TAVB. The intermediate maintenance activity requires approximately 160 additional strategic sorties if the TAVB is not employed. Use of the TAVB requires the logistics planner to address—

- Timely TAVB activation to allow sea trials and transit to the desired seaport of embarkation.
- Provision for intermediate maintenance activity shutdown.
- Preparation for embarkation.
- Provision of interim support for aircraft at home base.
- Operating procedures for the intermediate maintenance activity en route to and within the objective area (this must include the method for transporting materiel to and from the TAVB).
- Capability to offload and establish the intermediate maintenance activity in theater.

Hospital ship (T-AH) is a floating surgical hospital with a mobile, flexible, and rapid response capability that provides acute medical care in support of military or humanitarian operations. T-AHs (one on each coast) are controlled by the commander in chief. A fleet commander in chief (Commander in Chief, Pacific Fleet, or Commander in Chief, Atlantic Fleet) has operational control and the Military Sealift Command has administrative control in a reduced operational status-5. Reduced operational status-5 means that within 5 days of the order to activate the T-AH, it is fully prepared to depart to its assigned area of operation. The Bureau of Medicine is responsible for staffing and equipping the medical contingents.

(4) Supporting Agencies. The execution of MPF operations requires the support of many diverse agencies. The following paragraphs discuss some agencies that provide support to MPF operations.

The U.S. Transportation Command is responsible for—

- Coordinating strategic deployment of forces assigned to, or in support of, the unified commander.
- Maintaining a deployment data base.
- Providing airlift support through the Air Mobility Command, including en route aerial refueling of the MAGTF's flight ferried aircraft and strategic airlift.
- Providing administrative direction and support of MPSRONs through the Military Sealift Command.
- Coordinating common-user surface transportation within the continental United States through the Military Traffic Management Command.

Marine Corps and Navy supporting and shore establishments provide support and assist deployment of forces as directed and/or coordinated by appropriate authority.

Marine Corps logistics bases have primary responsibility for the readiness of maritime prepositioned materiel prior to its commitment in an MPF operation. This includes contract maintenance and logistics support of maritime prepositioned equipment and supplies aboard the MPSRON.

c. Air Contingency MAGTF Operations

Air contingency MAGTF operations are task-organized, air-deployable forces that are maintained by Commander, Marine Corps Forces, Pacific, and Commander, Marine Corps Forces, Atlantic. An air contingency MAGTF consists of lead elements ready to deploy within hours of notification. These elements deploy to a secure area for subsequent employment. While the focus of air contingency MAGTF operations is on the deploying force, the significant role of logistics units in organizing and conducting the actual deployment cannot be overlooked.

(1) Employment Considerations. The air contingency MAGTF is task-organized to meet the mission, the threat, and the available airlift. The size of the force can range from a reinforced rifle company plus a battalion headquarters element to a regimental-sized force consisting of a regimental headquarters, two infantry battalions, a two-battery artillery battalion, a two-platoon reconnaissance company, a two-platoon engineer company, and an appropriate CSSE. Air contingency MAGTFs can be used as part of the fly-in echelon of an MPF, as reinforcement for an amphibious force, or as the lead element of a MEF. The air contingency MAGTF is prepared to perform the following missions:

- Stability operations (presence, humanitarian assistance, security, peacekeeping, and counterinsurgency operations).
- Limited objective operations (noncombatant evacuation, amphibious raid, airfield seizure, and counterterrorism operations).
- Conventional combat operations (amphibious operations, operations ashore, and reinforcement).

As an air movement operation, air contingency MAGTF operations require detailed planning and preparation by the deploying unit. An air movement operation consists of two phases: the planning and preparation phase and the execution phase. The MAGTF embarkation officer handles the planning and preparations required for the air movement. The MEF and the supporting base assist with coordinating and marshaling transported units into the staging area by loading supplies, equipment, and personnel at the departure airfield; and receiving and dispersing supplies, equipment, and personnel at the arrival airfield.

(2) Movement Control. The departure airfield control group (DACG) and the arrival airfield control group (AACG) are integral parts of airfield organization. The DACG's and the AACG's missions are to provide the personnel and equipment to coordinate, inspect, direct, and assist a deploying unit's move through aerial ports of embarkation or debarkation. The Air Force tanker airlift control element (TALCE) coordinates all aspects of the airlift mission, including aircraft movement control, communications, and technical supervision of loading and marshaling aircraft. Additional units, civilian agencies, or contracted support may fall under the cognizance of the DACG, the AACG, or the TALCE to assist with marshaling and movement. Close coordination among the DACG, the AACG, the TALCE, and deploying units is essential to ensure smooth execution of air movement.

(3) Zones of Responsibility. Airfield operations are normally subdivided into organizational zones of responsibility for departure airfield operations and arrival airfield operations. Departure airfield operations are subdivided into the marshaling area, alert holding area, call forward area, and loading ramp area. Arrival airfield operations are subdivided into the unloading ramp area, holding area, and unit area.

(4) Deploying Unit Tasks and Responsibilities. During departure airfield operations, the deploying unit has the marshaling area as its unit area of operation. The deploying unit prepares for air movement; assembles vehicles, equipment, supplies, and personnel into chalks (loads); delivers chalks to the alert holding area; and provides the required dunnage or shoring to accompany its loads. Its major functions include—

- Preparing personnel and cargo manifests.
- Preparing other documentation agreed on during the joint planning conference.

- Conducting initial inspection of each chalk.
- Releasing chalks to the DACG at the alert holding area.

During arrival airfield operations, the deploying unit has the unit area as its zone of responsibility. It receives chalks from the AACG and terminates the air movement.

(5) Departure Airfield Control Group Tasks and Responsibilities. The DACG has the alert holding area or call forward area as its zone of responsibility. The DACG ensures that chalks are moved forward to the ready line and released to the tanker airlift control element in accordance with the established movement plan. Its major functions include—

- Accepting chalks from the deploying unit.
- Conducting inspections.
- Establishing communications with the deploying unit.
- Establishing functional areas and backup communications with the tanker airlift control element.
- Assisting in joint inspections with the tanker airlift control element or ACE.
- Establishing a joint inspection area and a final briefing area or final manifest correction area.
- Establishing statistical data.

(6) Arrival Airfield Control Group Tasks and Responsibilities. The AACG has the holding area as its zone of responsibility during arrival airfield operations. It receives and processes chalks for release to the deploying MAGTF. Its major functions include—

- Assembling chalks.
- Inspecting for completeness.
- Providing minor services (e.g., gas, oil, minor maintenance).
- Developing statistical data.
- Establishing radio and/or landlines to the unit area and the functional area.
- Establishing backup communications in the unloading area with the tanker airlift control element.
- Establishing a temporary storage area.

(7) Coordination Requirements. Air movement operations require close coordination with all participating units. The DACG and AACG coordinate with the TALCE and/or the ACE as necessary to ensure smooth operations. It is essential that the movement officers of the embarking units contact the DACG as early as possible. This allows the DACG to coordinate the arrival of the unit, its gear, and its subsequent movement aboard an aircraft. Movement officers must coordinate receipt of gear and arrival of follow-on personnel and gear with the AACG.

5005. Enabling and Decisive Actions

Enabling actions refer to those preparatory actions taken by the expeditionary force after entry and establishment on foreign soil to facilitate the eventual accomplishment of the mission. Decisive actions are those actions intended to accomplish the primary mission. Both require logistics support operations.

a. Enabling Actions

Initial forces, which have undertaken enabling actions designed to set the stage for the eventual decisive actions, are typically followed by follow-on forces. Enabling actions may include seizing a port, airfield, or other lodgment to facilitate the secure introduction of follow-on forces. They may include the establishment of the necessary logistics and other support capabilities. In cases of disaster or disruption, enabling actions usually involve the initial restoration of order or stability. In the case of open warfare, enabling actions may involve operations to halt or delay an enemy advance, to attack certain enemy military capabilities, or to capture key terrain necessary for the conduct of decisive operations.

b. Decisive Actions

Decisive actions are those actions intended to create conditions that will accomplish the mission. In disasters, decisive actions include relief operations. In disruptions, they often include peacemaking and peacekeeping until local government control can be re-established. In conflict, they usually involve the military defeat of the enemy's fighting forces.

c. Logistics Support Operations

Logistics support operations that support enabling and decisive actions enhance the commander's ability to influence the battle and affect the MAGTF's combat power. They also facilitate the accomplishment of noncombat missions in accordance with the commander's concept of operations. Logistics operations are based on detailed planning, integration of logistics efforts and capabilities organic to both supported and supporting organizations, and continued supervision during planning and execution by both supported and supporting commanders.

Supporting commanders must task-organize their commands to maximize their support capabilities. They must also aggressively monitor the operational situation, constantly refine their preparations to provide preplanned support, and strive to anticipate and prepare for emerging support requirements. Supported commanders must ensure that their staff logisticians are intrinsically involved in operational planning, are making the best use of organic logistics capabilities, and are clearly articulating support requirements to the supporting commands. These guidelines apply at all levels of support and in all types of operations.

5006. Power Projection From the Sea and Amphibious Operations

There are three basic approaches to supporting power projection from the sea and amphibious operations: sea-basing, employing sea echelons, and building up logistics ashore through beach support and CSS areas. As the Marine Corps focuses its MAGTF warfighting capability on conducting maneuver warfare in the littoral regions of the world through the application of its operational concept for operational maneuver from the sea (OMFTS) and capitalizing on information and technology advances, sea-basing will become more commonplace. There should be decreasing occasions for employing sea echelons in OMFTS and for building up logistics ashore for sustained operations ashore. However, an understanding of all three approaches is necessary to ensure that MAGTFs retain maximum flexibility in logistics support of expeditionary operations. (See app. A.)

a. Operational Maneuver From the Sea

OMFTS is supported from the sea. Ideally, there will be no logistics buildup ashore, but this does not preclude putting essential logistics capabilities ashore, normally in the form of combat trains or contact teams.

(1) Sea-basing. Sea-basing retains the majority of logistics support resources afloat, as close to where needed as possible. Resources are sent ashore only if and when they are specifically needed. Sea-basing is possible when logistics support organizations have tactical mobility commensurate with the supported force's mobility, when communications is assured, and when stowage areas aboard ship permit easy access to both a comprehensive sample of the MAGTF's sustainment resources and transportation departure points such as well decks and flight decks. Sea-basing enhances flexibility and mobility in dispersing tactical forces in amphibious operations.

(2) Sea Echelon. The sea echelon concept places amphibious ships in relatively safe holding areas beyond the horizon. Amphibious ships are called forward as needed for offloading. This concept drastically reduces the concentration of amphibious ships in the immediate objective area. Employing the sea echelon concept requires detailed planning to ensure that troops, equipment, and supplies are embarked correctly so that they will be available for their preplanned, phased movement ashore.

b. Sustained Operations Ashore

Logistics-over-the-shore (LOTS) operations are used to sustain forces ashore after entry and involve the loading and unloading of ships. They are designed to be conducted without the benefit of fixed port facilities and can be adapted to use any available, suitable facility. This approach to supporting troops ashore is appropriate only under certain conditions, the key factor being that an operation must be of sufficient scope and duration to make the build up of logistics ashore worthwhile. Another important factor is the degree of enemy opposition; large concentrations of materiel and equipment ashore can be vulnerable targets whose destruction could severely impair the supported operation.

The buildup of logistics ashore requires a beach support area developed by the landing support element. The beach support area permits initial accumulation of sustainment ashore and subsequent establishment of a CSS area that provides sustained support to the landing force.

MAGTFs embarked on amphibious shipping are capable of conducting LOTS operations in support of the MAGTF. Doctrine for joint LOTS operations and some specialized equipment have been developed for LOTS operations involving Army units and equipment in addition to Marine Corps and Navy units and equipment.

c. Military Operations Other Than War

Military operations other than war (MOOTW) is a special category of operations. MOOTW operational characteristics can resemble either OMFTS, sustained operations ashore, or a combination of both. Often the focus will be on noncombat missions such as evacuation, disaster relief, humanitarian support, and similar activities that are logistics-intensive. If the MAGTF's mission is to provide medical, transportation, engineering, or services support, the logistics demand increases and tactical- and operational-level logisticians must plan accordingly.

5007. Redeployment

Because expeditions are by definition temporary, all expeditionary operations involve a departure of the expeditionary force or a transition to a permanent presence of some sort. Redeployment may be required by a change of mission, the assignment of additional missions within the theater or in another theater, or a return to the base of origin. The MAGTF's organic sustainment and ability to quickly reorganize and reconstitute without having to first return to its home base or await establishment of a theater logistics infrastructure prior to employment make it unique.

a. Sustainment

The MAGTF's versatility stems from its naval, expeditionary character, which enables it to not only respond quickly to contingencies, but also to shift rapidly between missions in littoral regions of the world. The MAGTF has this capability even in the absence of a logistics infrastructure ashore and before resupply channels from the continental United States have been established—an advantage in undeveloped regions. The MAGTF's organic sustainment capability (supplies and functional logistics services) makes it capable of independent operations for periods of up to 60 days without resupply. Since the MAGTF is a lighter force, capable of operating with a smaller footprint, within an austere environment, it is more easily sustained, places less demand on lift, and simplifies the problems associated with redeployment.

b. Reconstitution

A MAGTF's endurance, based on its accompanying sustainment, and its ability to maneuver at sea make it ideally suited for rapid reconstitution and redeployment in theater or out of theater within the limits of the accompanying supplies. MAGTF commanders and logisticians must ensure that requisitions for replenishment are submitted commensurate with anticipated lead times for delivery. It may be necessary to submit requisitions even before consumption begins. Reconstitution in theater requires resupply to rebuild baseline levels of accompanying sustainment. Resupply

may not be necessary before committing a reconstituted MAGTF to a new mission.

5008. Joint or Multinational Operations

Marine forces deploy for operations as part of a naval task force, joint task force, or multinational task force. In joint or multinational operations, the Commander, Marine Corps Forces or senior MAGTF commander maintains the tactical integrity of Marine forces. Logistics support of joint or multinational operations may call for compliance with specific operational and administrative requirements that are unique to those operations. Current joint doctrine provides a standard frame of reference for the planning, direction, and conduct of operations in a joint environment.

a. Joint Operations

In joint operations, the Services are normally responsible for providing their own logistics support. However, the unified commander—acting through the commanders of the component forces—is responsible for overall logistics coordination. The unified commander must oversee the logistics support of all parts of the unified force and may direct Marine Corps resources to support other Services. The unified commander is specifically responsible for developing and sustaining military effectiveness by establishing an effective logistics support structure/network. The unified commander makes recommendations for joint efforts to improve economy consistent with military efficiency, reviews requirements, and recommends priorities and programs. The unified commander has the authority to coordinate the logistics support of the Service components and to control distribution of that support when shortages occur. The most common type of support is single-Service logistics support. However, plans may require or direct the use of other types of support such as common servicing, cross-servicing, or joint servicing at the force, theater, department, or DOD level, including inter-Service support.

b. Multinational Operations

In multinational operations, logistics support is a national responsibility. Allied and coalition nations seek logistics systems that promote logistics self-sufficiency within their fiscal capabilities. However, agreements exist that establish the framework for one country to provide support to another country or its forces. The exchange of logistics support between alliance or coalition participants can create significant economies of effort and cost savings. This type of logistics support or cross-servicing may be in the form of supplies and/or services. Host nation support agreements normally establish or specify the type and amount of such support. If no appropriate international agreements exist, no authority exists whereby geographic combatant commanders can provide for or accept logistics support from allies or coalition forces, and combatant commanders are not authorized to enter into multinational relationships without direction from the National Command Authorities. Under these circumstances, and with National Command Authorities' approval, multinational commanders should acquire as much logistical support as possible through tact and diplomacy, their knowledge of allied forces' doctrine, and personal and professional relations with coalition and/or allied commanders and appropriate political leaders. In the absence of approved formal support agreements, authorization for Marine Corps forces to receive logistics support from allied or coalition forces or to provide support to allied or coalition forces must come from higher authority in the operational chain of command.

Appendix A

Emerging Concepts

The Marine Corps' support of emerging concepts demands a flexible approach to logistics that can support rapid decisionmaking and execution which creates and maintains a high tempo of operations. This approach must be as robust, flexible, and expeditionary as the MAGTF it supports. MAGTFs will continue to be employed across the full range of military operations, from humanitarian assistance operations to general war. Accordingly, MAGTF logistics must be equally capable of supporting each of the emerging operational concepts with special focus on operational maneuver from the sea (OMFTS), sustained operations ashore (SOA), and the supporting concepts of ship-to-objective maneuver (STOM), sea-based logistics, and MPF 2010 and Beyond. As these fundamental operational concepts and associated logistics doctrine and organizations evolve, MAGTF logistics systems and equipment must evolve as well. This appendix provides a framework for understanding the unique considerations in the employment of logistics to support each of the following operating concepts.

1. Operational Maneuver From the Sea

The underlying operational concept for all MAGTF operations is OMFTS. This concept applies the principles of maneuver warfare to naval forces at the operational level. In OMFTS, the MAGTF, as part of the naval expeditionary force in the conduct of a naval or joint campaign, takes advantage of the sea base as maneuver space. As in maneuver warfare, OMFTS orients on the enemy to shatter his cohesion through a variety of focused and rapid actions. Hence, OMFTS projects the landing force from over the horizon to locations selected for their impact on the enemy, as opposed to their ease in facilitating a logistics buildup. OMFTS requires no pause at the shoreline to establish a support base, thus preventing a reduction in tempo, maintaining surprise, and precluding dilution of combat power to provide security for a logistics base. OMFTS may also be the shaping operation in a larger campaign to enable introduction of a larger force, to conduct sustained operations ashore, or to support any variety of military operations other than war. OMFTS will be facilitated by the supporting concepts of ship-to-objective maneuver, sea-based logistics, and MPF 2010 and Beyond.

a. Ship-to-Objective Maneuver

The implementing concept of STOM combines ship-to-shore movement with subsequent operations ashore into a single, decisive maneuver that occurs directly from the ship to the objective. STOM generates operating tempo by avoiding the traditional pause required to seize a landing site based on its suitability as a future logistics site and to build up combat power ashore before pressing to the objective. This concept envisions the shoreline as if it were a phase line. Fully capable forces maneuver directly from the ship to the objective, and sustainment comes directly from the sea base to the force, without double handling on the beach. This concept maximizes capabilities of the advanced assault amphibious vehicle and the MV-22 (when fully fielded) to transport the surface assault and the vertical assault, respectively.

Note: Through skillful use of current capabilities, STOM is possible today, but on a limited scale. However, significant challenges remain in areas of adequacy of amphibious platforms, quantity and volume of surface transportation, and limitations imposed by current distribution means to extend the scope and duration of STOM.

b. Sea-Based Logistics

Sea-based logistics is another important implementing concept for executing OMFTS. Sea-based logistics envisions bringing ashore only

those elements of the MAGTF that are essential to mission accomplishment. Most fire support, aviation, aviation support, command and control, and logistics functions would remain sea-based throughout the operation. Sea-based logistics offers tremendous operational freedom of action to the MAGTF, precluding the need to establish and then to protect shore-based facilities. This translates into an increased operating tempo and reduced requirements for rear area security. The reduced infrastructure ashore also facilitates the rapid reembarkation and redeployment of the landing force. Enhancing this capability—its scope and duration—will significantly impact efforts that shape future transportation, communications, access, and materiel handling and distribution capabilities, and it also supports the concepts outlined within Joint Vision 2010.

Note: The Marine Corps can currently sea base on a limited scale for a finite duration.

(1) Logistics Principles. The logistics principles of OMFTS begin with the overarching precept of sea-based logistics. For maneuver forces to maximize the benefits of OMFTS, they must break with the past and accept that there will no longer be an "iron mountain" logistics footprint. The majority of the troops on the shore will be combat or combat support personnel whose focus will be on defeating the enemy, not on protecting CSS areas and lines of communication. The new logistics concept of precision logistics focuses on providing timely sustainment in sufficient quantity and on reducing inefficiency. Such efficient operation may delay or preclude the requirement to build up land-based materiel stocks, thereby permitting prolonged sea-based logistics and enhancing the flexibility of the commander.

(2) Supply. The commander would bring ashore only consumable supplies and ammunition essential for initial operations. Subsequent needs would be resupplied from the sea base on an as-needed basis. Supplies would be moved ashore via landing craft air cushion, advanced amphibious assault vehicle, MV-22, and other new delivery systems. Supplies would not be stockpiled ashore or force-fed to units. Requirements would be passed via digitized communications equipment from the requesting unit directly to the source of supply, whether that source is on board ship, at an intermediate staging base, or in the continental United States.

(3) Maintenance. The repair of major end items of equipment would be accomplished through contact teams wherever and whenever required with the necessary equipment and tools to effect the repair. However, equipment would be more reliable and less prone to breakdown, and future maintenance actions may be more modularized. Maintenance would be easier to accomplish on site at perhaps a lower echelon. Evacuation may focus on components vice end items. Evacuation of end items would be conducted only when it is beyond the capability of the team to effect repair and return the equipment to the user.

c. MPF 2010 and Beyond

Maritime prepositioning combines the advantages of sealift capacity and endurance with airlift speed to deploy a MAGTF with 30 days of supply to an objective area. Strategically, MPFs offer the theater commander a highly capable force, early arrival capabilities, and a minimum drain on scarce strategic lift resources. During Operation Desert Shield, the United States successfully deployed two MPF Marine expeditionary brigades (MEBs) to Saudi Arabia within a matter of days.

First-generation MPF ships required secure port and airfield facilities for offloading in the objective area. Subsequent improvements in the MPS and in organization of the MPF now afford an opportunity for in-stream offloading. These improvements enable reinforcement of the amphibious operation and provide more versatility and flexibility in MOOTW. However, limitations in the present system prevent force commanders from fully exploiting the potential of the MPF MAGTF. True integration with an ATF remains beyond the capabilities of the present MPS. The landing craft air cushion is incompatible with the MPS, and current MPS platforms have limited capabilities to support helicopter operations. Thus, the MPF must conduct offloading pierside or in-stream close to the shore with

no over-the-horizon capability. The use of MPF forces in the assault phase of the amphibious operation would entail a hazardous improvisation. Any offloading, however selective, in the face of even a minimal threat poses extremely high risk.

The previously discussed limitations, budget constraints, and past Navy shipbuilding priorities have combined to limit the size of the amphibious fleet to levels far below Marine Corps needs. Since the end of World War II, Marine Corps planners have faced shortfalls in amphibious lift platforms for both strategic deployment and operational employment. Currently, the Navy has embraced a "MEB plus lift" capability (although the Marine Corps employs as MEFs) as its program objective, which determines the size of amphibious fleets. This is a considerable reduction from the "MEF plus MEB" programs of the 1980s. The amphibious force of the future will be made up of some 36 ships, with a few hulls kept in preservation and reserve status, including—

- 12 general purpose amphibious assault ships (LHA) or general purpose amphibious assault ships (with internal dock) (LHD).
- 12 amphibious transport docks (LPD).
- 12 landing ships, dock (LSD).

This future amphibious force, organized into 12, 3-ship amphibious ready groups, would be unable to deploy a MEF without "swinging" amphibious forces between oceans. Such a swing would add 25 to 40 days to the time required to arrive in the amphibious objective area. Accordingly, MPF ships will continue to provide the needed strategic lift to compensate, if only in part, for the future shortfalls in amphibious shipping.

Improved capabilities and greater flexibility are required to respond to a broader range of operational requirements portrayed in MPF 2010 and Beyond. Future MPFs must be capable of task organization and arrival and assembly at sea to meet specific mission objectives, either through independent operations or through participation in naval, joint, or multinational operations. Although MPFs will have no forcible entry capability, they will be able to reinforce the ATF in the assault phase of an amphibious operation. This ability to integrate MPF capabilities and resources will greatly increase the combat power and sustainability of the landing force. The following subparagraphs address the MPF capability envisioned for 2010 and Beyond.

(1) Rapid Deployment Force. MPF 2010 and Beyond will adapt operating procedures to exploit the opportunities offered by improved technology. Combining the C-17 that opens more areas of the world to the fly-in echelon, the MV-22 that facilitates worldwide self-deployment, and the improved MPSs that facilitate the joining of operational units at sea allows rapid deployment of the MPF into areas where deployment is not now feasible. Improvements in offloading capabilities remove the dependence on port facilities and offer virtually worldwide deployment capability. Finally, the ability to employ MPF units to reinforce the ATF during any phase of the assault or assault follow-on echelon will significantly enhance the ability to project combat power ashore as well as to sustain forces from the sea.

(2) Rapid Assembly and Offloading of Combat-Ready Units. MPF MAGTFs must be able to reinforce units on the ground rapidly with or without the initial availability of ports and airfields. Furthermore, the MPF must be capable of integrating into an amphibious operation or sequencing ashore on the heels of the amphibious force.

(3) Sustained Operations. MPF 2010 and Beyond will provide long-term, in-theater logistics support to the MAGTF and other JTF forces from an offshore haven. This concept employs the full range of amphibious ships, landing craft, lighterage, and rotary- and fixed-wing transports to transfer units and all classes of supply ashore.

(4) Modular Suites. Existing MPF ships contain billeting, messing, and sanitation facilities for the ship's company, naval command team, and contractor maintenance force. The survey, liaison, and reconnaissance party and offload preparation party are accommodated on a surge basis. MPF 2010 and Beyond envisions an

additional capability to provide troops of the MPF MAGTF, primarily from the GCE, with austere living accommodations for limited periods on board MPF ships while in transit to the area of operations.

(5) Accessibility and Selective Offloading. The advanced maritime prepositioning component must provide the ability to selectively offload any on-board item in the quantity required. Design will accommodate shipboard vertical, longitudinal, and lateral transfer of containers and equipment as well as alongside transfer and offloading.

(6) Tailored Loads. Spreadloading of supplies and equipment reduces the risk of losing force capability in the event that a component is lost or disabled. However, there is much to be gained by tailoring ship loads to meet a variety of specific contingencies. An improved capability to rapidly distribute or redistribute prepositioned equipment and supplies enhances the MPF's flexibility and ability to adjust to changing circumstances.

(7) Command and Control of Logistics Operations. The tempo, diversity, and range of future logistics activities will require intensive oversight and timely action. An integrated logistics operations center must be a key component of MPF 2010 and Beyond. The logistics operations center would be activated while in transit to the area of operations. It orchestrates bringing equipment into combat-ready status and monitors debarkation, the provision of CSS, and the direction of reembarkation and reconstruction. The logistics operations center would integrate all commodity areas and CSS organizations. All logistics requirements, functions, and resources would be managed from this single operations center.

(8) Reconstitution. A reconstitution capability will allow the redeployment of the MPF MAGTF as a combat-ready force capable of sustained operations. The reconstitution of the MPF will be made possible by improvements in storage, handling, distribution, and maintenance capabilities. Improvements in information technology will ensure that the status and location of all supplies, materials, and equipment are known at all times by logistics managers.

(9) Fuel and Water Resupply. The transfer of liquids ashore will be even more difficult when operations are conducted from over the horizon, and physical linkage with the beach is not possible. Although fewer personnel and less equipment may be supported ashore, the pace and extent of maneuver ashore combined with the lack of facilities will pose problems. Improved fuel and water distribution capabilities are required to support MPF 2010 and Beyond in order to provide adequate resupply of these commodities to the MEF(Fwd) from a sea base.

(10) Summary. The MPF's unique combination of strategic deployability, versatility, and combat power ensures its relevance in future power projection operations. Improvements in ship design and exploitation of technological advances will greatly expand deployment and employment options, thereby providing a more robust capability to conduct rapid reinforcement and humanitarian operations of all types. Enhancements in materiel, organization, doctrine, and training will allow better integration of MPFs with other naval, joint, and multinational forces and, most significantly, will permit the MPF to reinforce the landing force in the amphibious assault. Parallel improvements in both structure and procedures for MPF support will enhance critical reconstitution and regeneration capabilities.

2. Sustained Operations Ashore

While organized and equipped to participate in naval campaigns and conduct OMFTS/STOM operations, the Marine Corps may be involved in sustained operations ashore in the event of a major conflict. Marine forces in sustained operations ashore may continue to sea base support to the extent necessary; however, order of magnitude, scope, and duration of the operation may require a more robust degree of logistics support based ashore with the support pipeline tying sea-based support to theater-level supporting agencies. If the sustained operation ashore requires the transition

of a larger degree of logistics from afloat to ashore, the transition must occur with due consideration to continuing support operations and without loss of capability.

a. Joint and Multinational Operations

When conducting sustained operations ashore, Marine forces are usually part of a larger joint or multinational force. The Commander, Marine Corps Forces, is directly subordinate to the joint force commander. Sustained operations ashore rarely, if ever, involve a MAGTF smaller than a MEF. The MEF commander, who may also be the Commander, Marine Corps Forces, must comply with operational direction from the joint force commander. The Commander, Marine Corps Forces, must be capable of coordinating combat, combat support, and CSS activity with adjacent units from other Services and allied nations as well as exercising operational control over attached U.S. and allied units. Of particular concern is the coordination of air operations by the ACE commander with the joint force air component commander and the linkage into the joint logistics system. The joint and multinational nature of most sustained operations ashore requires extensive use of liaison personnel until systems and equipment become more interoperable. Detailed planning for interfaces to joint and other Service communications networks is considered essential. (Refer to para. 3004.)

b. Future Command and Control for Logistics

Future command and control for logistics used in sustained operations ashore will integrate within a joint construct. It will depend on the communication of its requirements and sourcing and distribution of its capabilities through a Marine Service component agency at the theater level. To address this need, the Marine logistics command concept is being examined to support the functions of force closure, sustainment, and reconstitution and redeployment.

(1) Historical Background. The lessons of the Gulf War and current major theater war logistics requirements serve as a springboard for the development of a Marine logistics command concept. During Desert Shield, lst FSSG deployed and organized into two general support activities with multiple direct support detachments. This organization of logistics forces supported all Marine forces during Desert Shield. In preparation for Desert Storm, commanders identified a requirement for additional logistics personnel and resources. A second FSSG was required due to mission scope, and the need for a robust command and control structure was greater than one FSSG could address without augmentation. The 2d FSSG was deployed to reinforce and augment the theater logistics structure. Once both FSSGs were in theater, they were apportioned tasks: one managed the general support and operational logistics responsibilities, while the other handled the direct support tasks associated with tactical combat service support. This concept provided for robustness of CSS forces and maximum flexibility, while centralizing command and control of logistics and combat service support. This organization was successful in achieving efficient division of logistics tasks and was a significant contributor to success in the war.

Based on this actual example, commanders and planners became concerned that support of other major regional contingencies may be too much for a single FSSG to command and control. The multitude of operational and tactical tasks would divide the commander's attention between looking backward to ensure the arrival of sustainment, and simultaneously attempting to remain focused on present and future battles. The solution would require development of an organization that was operationally focused on pushing support to the tactical level, thus freeing the CSS commander to concentrate on supporting the current battle and preparing for the next one. The Marine logistics command concept is one alternative that could provide the operational and logistics focus on the intertheater pipeline, sustainment, and intratheater support concerns, while freeing the CSS commander to focus on supporting the warfighter.

(2) Potential Future Scenario. The following paragraphs depict a potential employment scenario for a notional Marine Logistics Command.

The role of the Marine Logistics Command during the deliberate planning phases of operational planning would be to support the identification, preparation, and submission of host nation and interservice support and intertheater and intratheater requirements for the Marine Service component. The FSSG, designated as the Marine Logistics Command, deploys early and provides support to arrival, assembly, and initial CSS missions to the MEF until its own CSSE can be established. This ensures maximum flexibility on the ground should the situation change drastically before all forces have flown into theater. As augmentation arrives and the force matures, the MEF's CSSE assumes the direct support CSS mission. The Marine Logistics Command then concentrates on general support missions and interaction with other theater logistics agencies, as they arrive.

The Marine Logistics Command, perhaps representing the initial, dominant logistics-capable force in an immature theater, would coordinate with joint and multinational forces as the Marine component logistics agency. While it might initially be tasked to provide some lesser degree of support to other Services, it is not envisioned (due to its limited capabilities) that the Marine Logistics Command would assume the role of the permanent theater support agency in a mature theater. It would however function as the Service component link to the theater distribution system, communicate Marine Corps sustainment requirements, and ensure that capabilities in response to those requirements were introduced into the theater and passed along to the warfighter.

3. Implications of Emerging Concepts

Technological developments that apply to Marine Corps equipment and systems will require 21st-century logisticians to be more innovative and forward-thinking than their predecessors. Emerging concepts for the 21st century could yield significant savings in manpower, supply inventories, and maintenance costs, while at the same time increasing responsiveness, efficiency, and effectiveness of support.

a. Advancing Technologies

To further develop the capabilities inherent in OMFTS, advancing technologies that are applicable to Marine Corps information and logistics systems and equipment are needed to reduce the logistics footprint and reliance on facilities ashore. Further, close liaison with civilian businesses will be essential to take advantage of technological breakthroughs.

b. Logistics Information Systems

The Marine Corps, in conjunction with the Navy, needs to develop and field logistics systems that will provide near real time, over-the-horizon logistics information. These systems also need to be able to determine future over-the-horizon, surface, and aviation assault support requirements. Finally, the development and fielding of aerial and surface refueling capabilities will need to be embodied in the over-the-horizon logistics information capability. An over-the-horizon capability is essential to the successful employment of OMFTS and will also aid immeasurably in reducing the logistics footprint ashore, especially when a sea-based logistics method is required.

c. Sea-basing

Sea-based logistics is yet another emerging support concept that requires technology, coupled with innovative thinking, to become a viable reality. When providing a sea-based logistics capability, the Marine Corps needs to ensure that this capability is fully integrated with amphibious ships, MPS, aviation logistics support ships, hospital ships, combat logistics force ships, offshore petroleum discharge systems, and logistics-over-the-shore systems.

d. Total Asset Visibility

Total asset visibility systems, combined with improved business practices, can enhance the operational tempo of 21st-century MAGTFs. Expeditionary logistics must be anticipatory and more responsive to support the increased number and frequency of requirements to units at greater distances dispersed over a larger battlefield. Effective and accurate total asset visibility systems will be essential for rapid identification of

requirements, location in storage, immediate access, and tracking transportation assets for delivery. Successful MAGTF logistics support will depend heavily on total asset visibility systems to maintain responsiveness—especially in the expeditionary operational environment of the 21st century.

e. Distribution Systems

Planners must develop future distribution systems that provide rapid and responsive means to receive, store, access, break down, repackage, transport inland, and distribute on demand smaller "more easily digestible" unit packages. Innovations will be necessary in the packaging of unit daily requirements that will facilitate direct delivery from the container to the user. Improvements in shipboard selective warehousing, access, and offload technologies need careful examination to address the increased demand (increased deliveries, increased frequency of smaller sustainment slices) on limited transportation assets. Sea-basing will demand that distribution systems provide the means to accomplish at sea, or preclude having to do at all, the functions that currently necessitate general offload and buildup ashore.

f. Supply

Expeditionary logistics capabilities could decrease the need to stockpile or warehouse supplies. Emerging technologies in commercial enterprise, military warehouse modernization, and potential extension to shipboard or even container designs may potentially improve receipt, storage, accountability, and issue operations to the point where one supply warehouse person could do the work of ten in one tenth the time. Sizable cost savings could also result from increased use of commercial sources for commonly used items, tools, services, and repair parts. This could eliminate the current methods used to procure, store, and maintain large inventories of repair parts or backup subassemblies.

g. Maintenance

In conjunction with MPS, as well as for conventional amphibious operations, shipboard maintenance requirements of on-board equipment need accurate identification as well as reduction, wherever possible. Technology can again yield significant benefits in this area. The advances here can be realized through incorporation of built-in maintainability and reliability features in equipment and supplies. Such things as improved lubricants and longer shelf lives for various supplies can substantially reduce on-board equipment maintenance and the rotation of needed supplies. Greatly improved equipment reliability and maintainability, realized through technology, could also reduce the number of maintenance actions required to ensure equipment readiness and simplify repair. Significant savings become feasible in facilities, inventories, manpower, and the money required to maintain them. Enhanced technological developments will also lead to growing procurements of commercial end items versus military-unique end items. Such efforts greatly reduce equipment cost, increase availability of and accessibility to commonly used parts, reduce mean time to repair, and increase overall equipment readiness.

h. Retention of Amphibious Capability

OMFTS and state-of-the-art technological logistics enhancements underscore the Corps' naval character and why it must continually strive to improve its capability to conduct amphibious operations. The skills and knowledge built on our amphibious capability are essential tools for influencing technological and tactical advances that produce time, manpower, cost, and other savings,

Appendix B

Acronyms

AACG ..... arrival airfield control group
ACE ..... aviation combat element
ACM ..... air contingency Marine air-ground task force
ADCON ..... administrative control
AMSS..... Ammunition Management Standard System
ATF ..... amphibious task force
ATLASS .....Asset Tracking Logistics and Supply System

BGLCSS ..... Battle Group Logistics Coordinated Support System

C2.....command and control
C4I ..... command, control, communications, computers, and intelligence
CAEMS..... computer-aided embarkation management system
CAIMS.....Conventional Ammunition Integrated Management System
CE ..... command element
CEBn..... combat engineer battalion
COCOM..... combatant command
CSS ..... combat service support
CSSD ..... combat service support detachment
CSSE.....combat service support element

DACG ..... departure airfield control group
DIRLAUTH ..... direct liaison authorized
DOD ..... Department of Defense

ESBn .....engineer support battalion

FSSG.....force service support group

GCCS ..... Global Command and Control System
GCE .....ground combat element
GCSS .....Global Combat Support System
GSORTS ..... Global Status of Resources and Training System

I&L..... installations and logistics

JOPES .....Joint Operation Planning and Execution System
JPAV.....joint personnel asset visibility
JSPS .....Joint Strategic Planning System
JTAV..... joint total asset visibility
JTF .....joint task force

LHA ..... general purpose amphibious assault ship
LHD ..... general purpose amphibious assault ship (with internal dock)
LOGAIS.....logistics automated information system
LOTS .....logistics over-the-shore
LPD.....amphibious transport dock
LSD..... landing ship, dock

MAGTF .....Marine air-ground task force
MAGTF II..... Marine air-ground task force system II
MALS ..... Marine aviation logistics squadron
MALSP .....Marine aviation logistics support program
MARCORLOGBASE..... Marine Corps logistics base
MARCORMATCOM ..... Marine Corps Materiel Command
MARCORSYSCOM..... Marine Corps Systems Command
MAW .....Marine aircraft wing
MCCDC.....Marine Corps Combat Development Command
MCDP ..... Marine Corps doctrinal publication
MCPP..... Marine Corps Planning Process
MCTEEP..... Marine Corps training, exercise, and employment Program
MCWP ..... Marine Corps warfighting publication
MDL..... MAGTF Digital Library
MDSSII..... MAGTF Deployment Support System II
MEB..... Marine expeditionary brigade
MEF .....Marine expeditionary force
MEF (Fwd) ..... Marine expeditionary force (Forward)

METT-T ..... mission, enemy, terrain and weather, troops and support available-time available
MEU ..... Marine expeditionary unit
MEU(SOC) ..... Marine expeditionary unit (special operations capable)
MIMMS ..... Marine Integrated Maintenance Management System
MLC ..... Marine Logistics Command
MOOTW ..... military operations other than war
MOS ..... military occupational specialty
MPF ..... maritime prepositioning force
MPS ..... maritime prepositioning ships
MPSRON ..... maritime prepositioning ships squadron
MWSG ..... Marine Wing Support Group
MWSS ..... Marine wing support squadron

NALCOMIS ..... Naval Aviation Logistics Command Management Information System
NDP ..... naval doctrine publication
NTCSS ..... Naval Tactical Command Support System

OMFTS ..... operational maneuver from the sea
OPCON ..... operational control

PDE&A ..... planning, decision, execution & assessment
POL ..... petroleum, oils, and lubricants
POM ..... Program Objective Memorandum
PPBS ..... Planning, Programming, and Budgeting System

SABRS ..... Standard Accounting, Budgeting, and Reporting System
SASSY ..... Supported Activities Supply Systems
SMCR ..... Selected Marine Corps Reserve
SNAP III ..... Shipboard Nontactical Automated Data Processing Program III
SOA ..... sustained operations ashore
SPMAGTF ..... special purpose Marine air-ground task force
STOM ..... ship-to-objective maneuver
SUADPS ..... Shipboard Uniform Automated Data Processing System

TACON ..... tactical control
T-AH ..... hospital ship
TALCE ..... tanker airlift control element
TAVB ..... aviation logistics support ship
TC-AIMS ..... Transportation Coordinator's Automated Information for Movement System
TCO ..... tactical combat operations
TMIP ..... Theater Medical Information Program
TPFDD ..... time-phased force and deployment data

U.S. ..... United States
USTRANSCOM ..... United States Transportation Command

VTOL ..... vertical takeoff and landing

WRM ..... war reserve materiel

Appendix C

References

Joint Publications (Joint Pubs)

0-2 Unified Action Armed Forces (UNAAF)
1-02 Department of Defense Dictionary of Military and Associated Terms
4-0 Doctrine for Logistic Support of Joint Operations

Naval Doctrinal Publication (NDP)

4 Naval Logistics

Marine Corps Doctrinal Publications (MCDPs)

3 Expeditionary Operations
4 Logistics
5 Planning
6 Command and Control

Miscellaneous

United States Code, Title 10