

Marine Air-Ground Task Force Command and Control



U.S. Marine Corps

DISTRIBUTION STATEMENT B: Distribution authorized to U.S. Government agencies for official use only. Other requests for this publication must be referred to the sponsor.

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 morgann@mccdc.usmc.mil. Recommendations should include the following information:

- 1 Location of change
 - Publication number and title
 - Current page number
 - Paragraph number (if applicable)
 - Line number
 - Figure or table number (if applicable)
- 1 Nature of change
 - Add, delete
 - Proposed new text, preferably double-spaced and typewritten
- 1 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.usmc.mil>.

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

DEPARTMENT OF THE NAVY
Headquarters United States Marine Corps
Washington, DC 20380-1775

17 March 2003

FOREWORD

Marine Corps Warfighting Publication (MCWP) 3-40.1, *Marine Air-Ground Task Force Command and Control*, presents doctrine, tactics, techniques, and procedures (TTP) for the command and control of the Marine air-ground task force (MAGTF). It builds on the philosophy in Marine Corps Doctrinal Publication (MCDP) 6, *Command and Control*, and links that philosophy to the detailed TTP in MCWP 3-40.2, *Information Management*, and MCWP 3-40.3, *Communications and Information Systems*.

MCWP 3-40.1 is written for all MAGTF commanders, staff officers, and Marines who support command and control.

Reviewed and approved this date.

BY DIRECTION OF THE COMMANDANT OF THE MARINE CORPS

EDWARD HANLON, JR.
Lieutenant General, U.S. Marine Corps
Commanding General
Marine Corps Combat Development Command

Publication Control Number: 143 000064 00

DISTRIBUTION STATEMENT B: Distribution authorized to US Government agencies for official use only. Other requests for this publication must be referred to the sponsor.

MARINE AIR-GROUND TASK FORCE COMMAND AND CONTROL

TABLE OF CONTENTS

CHAPTER 1. FUNDAMENTALS

Command and Control and the Commander	1-1
People, Information, and the Command and Control Support Structure. . .	1-1
Evolutionary Nature.	1-1
Conceptual Foundation	1-2
Warfighting Focus	1-2

CHAPTER 2. COMMAND AND SUPPORT RELATIONSHIPS

Section I. United States Command Relationships and Other Authorities

Administrative Control	2-1
Definition.	2-1
Marine Corps Applicability	2-2
Concept	2-2
Relationship.	2-2
Example	2-2
Direct Liaison Authorized	2-2
Definition.	2-2
Marine Corps Applicability	2-2
Concept	2-2
Relationship.	2-2
Example	2-2
Coordinating Authority	2-2
Definition.	2-2
Marine Corps Applicability	2-2
Concept	2-3
Relationship.	2-3
Example	2-3

Section II. Marine Air-Ground Task Force Command and Support Relationships

Command.	2-4
Concept	2-4
Relationship.	2-4
Example	2-4

Support	2-4
Command Element	2-5
Ground Combat Element	2-5
Aviation Combat Element	2-8
Combat Service Support Element	2-9

Section III. Navy and Marine Corps Command and Support Relationships

Expeditionary Operations	2-11
Maritime Prepositioning Forces Operations	2-11
Tactical Control Command Relationships	2-11
Support Command Relationships	2-11
Marine Expeditionary Unit	2-12

Section IV. Joint Command Relationships

Section V. Component Command Relationships

Joint Forces	2-13
Service Component Commands	2-14
Functional Component Commands	2-14
Combination of Service and Functional Components	2-16
Marine Air-Ground Task Force Component Command Relationships	2-17

Section VI. North Atlantic Treaty Organization Command Relationships

Military Command Structure	2-17
Strategic Commands	2-17
Regional Commands	2-17
Subregional Commands	2-17
Relationship Terminology	2-18
Full Command (NATO)	2-18
Operational Command (NATO OPCOM)	2-18
Operational Control (NATO OPCON)	2-18
Tactical Command (NATO TACOM)	2-18
Tactical Control (NATO TACON)	2-19

Section VII. Multinational Command Relationships

National Goals	2-20
Unity of Effort	2-20
Doctrine, Training, and Equipment	2-20
Cultural Differences	2-20
National Communications	2-20
Marine Air-Ground Task Force as Part of a Joint or Multinational Task Force	2-21
Marine Air-Ground Task Force Attaching Non-Marine Elements	2-21

CHAPTER 3. MARINE AIR-GROUND TASK FORCE STAFF ORGANIZATION

Chief of Staff	3-1
Principal Staff versus General/Executive	3-2
Staff Cognizance	3-2
Responsibilities	3-2
Special Staff	3-3
Personal Staff	3-3

CHAPTER 4. MARINE AIR-GROUND TASK FORCE STAFF RESPONSIBILITIES

Section I. Chief of Staff and Special Staff Officers

Staff Secretary	4-2
Special Staff Officers under Staff Cognizance of the Chief of Staff	4-2
Public Affairs Officer	4-2
Security Manager	4-3
Information Management Officer	4-4
Headquarters Commandant	4-4
Chaplain	4-4
Staff Judge Advocate or Legal Officer	4-5
Provost Marshal	4-6
Comptroller	4-6
Inspector	4-7
Unit Liaison Officers	4-7

Section II. General/Executive Staff Officers

Administration and Personnel	4-8
Specific Responsibilities of the G-1/S-1	4-8
Special Staff Officers under Staff Cognizance of G-1 Officer	4-9
Intelligence	4-11
Specific Responsibilities of the G-2/S-2	4-11
Special Staff Officers under Staff Cognizance of the G-2 Officer	4-11
Operations	4-15
Specific Responsibilities of the G-3	4-15
Special Staff Officers under Staff Cognizance of the G-3 Officer	4-16
Logistics	4-22
Specific Responsibilities of the G-4/S-4	4-22
Special Staff Officers under Staff Cognizance of the G-4 Officer	4-23
Special Staff Officers under Staff Cognizance of the Aviation Logistics Officer	4-27
Planning	4-28
Communications	4-29

Section III. Personal Staff

Sergeant Major	4-29
Aides	4-30

CHAPTER 5. MARINE AIR-GROUND TASK FORCE STAFF ACTION

Marine Corps Planning Process	5-1
Coordination	5-1
Staff Briefings	5-2
Staff Meetings and Conferences	5-2
Staff Visits	5-3
Staff Inspections	5-3
Liaison	5-3
Completed Staff Action	5-4

CHAPTER 6. ORGANIZATION FOR PLANNING

Planning Modes	6-1
Planning, Decision, Execution, and Assessment Cycle	6-1
Command Group	6-2
Battlestaff	6-3
Future Plans Section	6-4
Future Operations Section	6-4
Current Operations Section	6-4
Operational Planning Team	6-5
Crisis Action Team	6-5
As-Required Cells	6-5
Liaison to Support the Marine Corps Planning Process	6-5
Command Liaison	6-5
Staff Liaison	6-6
Marine Liaison Element	6-6
Liaison Officers	6-6
Operational Planning Team Liaison Officers	6-6
Liaison Team	6-6
Couriers	6-6

CHAPTER 7. CONCEPT OF EMPLOYMENT

Section I. Concepts

Seabased Command and Control	7-1
Collaborative Planning	7-2
Reachback	7-2

Section II. Command and Control Centers

Maneuver	7-3
Marine Expeditionary Force Combat Operations Center	7-3
Ground Combat Element Combat Operations Center	7-4
Rear Area Operations Center/Rear Area Command Post.	7-4
Intelligence	7-5
Marine Air-Ground Task Force All-Source Fusion Center	7-5
Surveillance and Reconnaissance Center	7-5
Reconnaissance Operations Center.	7-5
Operations Control and Analysis Center	7-6
Intelligence Center	7-6
Fires	7-6
Force Fires Coordination Center	7-6
Fire Support Coordination Center	7-6
Fire Direction Center	7-6
Electronic Warfare Coordination Center and Information Operations Cell.	7-6
Aviation	7-7
Tactical Air Command Center	7-7
Direct Air Support Center.	7-8
Tactical Air Operations Center.	7-9
Marine Air Traffic Control Detachments.	7-9
Low-Altitude Air Defense Battalion	7-10
Logistics	7-10
Combat Service Support Operations Center.	7-10
Combat Service Support Detachments.	7-10
Movement Control Centers	7-10
Logistics Cells	7-11
Communications and Information Systems	7-11
Marine Expeditionary Force Communications Control Center	7-12
Operational Systems Control Center	7-12
Technical Control Facility	7-12
Amphibious Command and Control Facilities	7-12
Landing Force Operations Center.	7-12
Supporting Arms Coordination Center.	7-13
Navy Tactical Air Control Center	7-13
Helicopter Direction Center	7-13
Tactical-Logistical Group.	7-14
ATF Intelligence Center	7-14

CHAPTER 8. COMMUNICATIONS AND INFORMATION SYSTEMS

Section I. Marine Air-Ground Task Force Communications Architecture

Single-Channel Radio	8-1
Switched Backbone	8-2
Switches	8-2
Internet Protocol Routers	8-3
Multichannel Radio	8-3
Local Area Networks	8-3
Special-Purpose Systems	8-4
AN/PSN-11 Precise Lightweight Global Positioning System	
Receiver	8-4
Enhanced Position Location Reporting System	8-4
Joint Tactical Information Distribution System	8-5
Integrated Broadcast Service	8-5
Commander's Tactical Terminal	8-5
Joint Tactical Terminal	8-5
TROJAN SPIRIT II	8-5
Tactical Data Network	8-6

Section II. Tactical Communications Information Systems

Global Command and Control System	8-7
Marine Air-Ground Task Force C4I	8-7
Key Marine Air-Ground Task Force Information Systems	8-8
Maneuver	8-8
Intelligence	8-8
Aviation Operations	8-9
Fires	8-10
Logistics	8-10
Communications and Information Systems	8-11

Section III. Defense Communications Architecture

Defense Information Systems Network	8-12
Defense Switched Network	8-12
Defense Red Switch Network	8-12
Nonsecure Internet Protocol Router Network	8-12
Secure Internet Protocol Router Network	8-13
Joint Worldwide Intelligence Communications System	8-13
Video Teleconferencing	8-13
Defense Message System	8-13
Marine Corps Enterprise Network	8-13
First Echelon	8-14
Second Echelon	8-14
Third Echelon	8-14
Fourth Echelon	8-14
Deployed Units	8-15

Section IV. Roles and Responsibilities

Commander	8-15
Communications Officer/G-6/S-6	8-15
Supported Unit/Agency	8-16

CHAPTER 9. INFORMATION MANAGEMENT

Information and Command and Control	9-1
Information Theory	9-1
Step 1, Collect Raw Data	9-1
Step 2, Process Data	9-2
Step 3, Analyze and Evaluate	9-2
Step 4, Situational Awareness	9-2
Characteristics of Quality Information	9-2
Relevance	9-2
Timeliness	9-3
Accuracy	9-3
Completeness	9-3
Objectivity	9-3
Usability	9-3
Commander's Critical Information Requirements	9-3
Shared Situational Awareness	9-4
Common Operational Picture/Common Tactical Picture	9-4
Track Database Management	9-4
Information Dissemination	9-5
E-mail	9-5
Information-Pull Techniques	9-5
Broadcasting	9-6
Video Teleconferencing	9-6
Information Display	9-7
Briefings	9-7
Information Protection	9-7
Information Management Plan	9-7
Information Management Officer	9-8

APPENDICES

A Staff Actions	A-1
B Glossary	B-1
C References and Related Publications	C-1

FIGURES

2-1. Joint Force with Service Components	2-14
2-2. Joint Force with Functional Components	2-15
2-3. Joint Force with Service and Functional Components	2-16
3-1. Staff Structure	3-1
6-1. Lower Level Organizations and Planning Relationships	6-2
6-2. Component and MEF Organizations and Planning Relationships	6-3
6-3. Command Element Organization	6-3
8-1. MAGTF Communications Architecture	8-1
9-1. Information Hierarchy	9-2

TABLES

8-1. Data Network Terms	8-4
-----------------------------------	-----

CHAPTER 1

FUNDAMENTALS

Command and control is the exercise of authority and direction by a properly designated commander over assigned and attached forces in the accomplishment of the mission. (Joint Publication [JP] 1-02, *DOD Dictionary of Military and Associated Terms*)

Command and Control and the Commander

The command and control process enables the commander to exercise command across the breadth of his forces. It provides the means for the commander to form an understanding of the situation, decide what action is required, transmit instructions to subordinate commanders, monitor execution of instructions, and assess the results of the action.

Command and control is the key to achieving unity of effort and realizing the full combat potential of the unit. Supporting the commander is a carefully designed command and control infrastructure that obtains, analyzes, and submits information to the commander to assist in decisionmaking; and oversees the execution of the commander's decisions. Subordinate commanders and their staffs are central to obtaining, analyzing, and submitting command and control information. However, the proper exercise of command and control remains the sole responsibility of the commander.

People, Information, and the Command and Control Support Structure

People drive the command and control system. People gather information, make decisions, take

action, communicate, and cooperate with one another to accomplish a common goal. Effective command and control starts with qualified people and a common philosophy.

Information refers to representations of reality used to inform—to give form and character to—decisions and actions. Information is the words, letters, numbers, images, and symbols that represent things, events, ideas, and values. In one way or another, command and control is about information: getting it, judging its value, processing it into useful form, acting on it, and sharing it with others. There are two basic uses for information:

- To help create situational awareness as the basis for a decision.
- To direct and coordinate actions in the execution of the decision.

The command and control support structure aids the people who create, disseminate, and use information. It includes the organizations, procedures, equipment, facilities, training, education, and doctrine that support command and control.

Evolutionary Nature

The next century will see a dynamic, volatile world characterized by inherent complexity and unprecedented levels of global interaction and connectivity. In response, the Marine Corps seeks a transformational departure from traditional notions of command and control. We envision new capabilities whereby control is imbedded within the Marine Corps philosophy of command, and forward deployed commanders exploit the entire

spectrum of our military power to conduct expeditionary operations in support of national interests.

Our existing means of command and control will evolve as we increasingly achieve control through command; i.e., through increased mutual understanding of the situation and of the commander's intent rather than *through* technologies that many have come to view as synonymous with control. The day is envisioned when mechanistic control no longer exists, but has been replaced by broad coordination.

Conceptual Foundation

The Expeditionary Force Development System is the process used to analyze the anticipated future environment, identify potential challenges, and then determine the warfighting capabilities needed to effectively address those challenges.

Our operational concepts stand at the core of the process. These formal documents articulate our vision for future warfighting. They look forward in time—beyond the concerns of today's programming and budgeting—and provide the spark that initiates a focused process of proposal, debate, and experimentation. This participatory dialogue shapes the initial concepts, ultimately molding them into requirements that provide warfighting solutions.

Expeditionary maneuver warfare (EMW), as the Marine Corps' current capstone concept, forms the basis for developing a MAGTF command and control process. EMW encompasses the concepts of operational maneuver from the sea (OMFMS) and ship-to-objective maneuver (STOM). EMW calls for a command and control process that provides the utmost flexibility in the execution of the mission in accordance with the commander's intent.

To enable this kind of focused flexibility, we require a robust information infrastructure, coupled with comprehensive training for our personnel. Any future global information grid (GIG) must be designed to allow members of the commander's staff to locate and "pull down" information to form decisions in their area of expertise. Training is critical to ensure this process is effective. The risk of information inundation or faulty retrieval or analysis methods is significant and must be minimized. Similarly, we must continue to train our leaders to recognize situations based on information provided, and to act with confidence when that information is inconsistent or incomplete.

Trained and equipped to quickly gain situational awareness, commanders will rely less on the command hierarchy for information. They will be enabled to act swiftly and decisively and rapidly assess the results of their actions to overwhelm the enemy's decision cycle.

Warfighting Focus

MAGTF command and control must be optimized for maneuver warfare. It must incorporate the best features of flexible and decentralized mission-type command and control, providing for harmony of effort while eschewing unnecessary control measures that limit the initiative of leaders. It must address the full range of capabilities that might be wielded by a commander. The result sought is an integrated organic whole capable of crisis deterrence and response that provides a broad range of military capabilities while preserving freedom of action at every level.

Command and control systems and procedures must be flexible enough to provide support to the MAGTF while afloat, while ashore in an austere expeditionary environment, and during transition

from ship to shore. Continuous communications connectivity and complete interoperability within the amphibious force (AF) are required. In joint operations, communications connectivity and command and control interoperability are required within and between the joint task force (JTF) headquarters, the Marine Corps component commander, and any designated functional component commanders. In multinational operations, connectivity and interoperability are also required with allied and coalition forces. Finally, during military operations other

than war (MOOTW), connectivity and interoperability are required between military forces, other government agencies, host nation governments, and nongovernmental organizations (NGOs).

Effective command and control support of expeditionary operations demands extraordinary efforts, careful planning and coordination, ingenuity, adaptability, and improvisation. The ability to exercise effective command and control is critical to the success of the MAGTF.

CHAPTER 2

COMMAND AND SUPPORT RELATIONSHIPS

Command is central to all military action, and unity of command is central to unity of effort. Inherent in command is the authority that a military commander exercises over subordinates. Command confers authority to assign missions and demands accountability for their attainment. The authority vested in a commander must be commensurate with the responsibility assigned.

Command relationships and levels of authority, although authoritative, must be tailored to meet the requirements of the mission. Establishment of command relationships is at the heart of MAGTF command and control. Command relationships

establish the basis for interaction of unit commanders and foster freedom of action. Effective employment and support of the forces depends on the command and control command relationships established, from the highest to the lowest levels of authority.

Command relationships are the interrelated responsibilities between commanders, as well as the authority of commanders in the chain of command. They are established between units to foster mutual understanding. Forces, not command relationships, are transferred between commands.

SECTION I. UNITED STATES COMMAND RELATIONSHIPS AND OTHER AUTHORITIES

When forces are transferred, the command relationship the gaining commander will exercise (and the losing commander will relinquish) over those forces must be specified. A common understanding of each authority is necessary for effective command and control. JP 0-2, *Unified Action Armed Forces (UNAAF)* identifies four command relationships commanders should be familiar with: combatant command (command authority) [COCOM]; operational control (OPCON); tactical control (TACON), and support. Generally, command relationships are developed by the G-3 and approved by the commander. They are determined in concert with the development of task organization during the Marine Corps Planning Process (MCPPE).

Administrative Control

Definition

Administrative control (ADCON) is defined as the direction or exercise of authority over subordinate or other organizations in respect to administration and support, including 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 the subordinate or other organizations. (JP 1-02)

Marine Corps Applicability

The definition for ADCON used in the Marine Corps and the joint community is the same. ADCON is used internally and externally to the MAGTF.

Concept

ADCON is the authority over subordinate or other organizations in respect to administration and support. MAGTF commanders will normally have ADCON over all organic, assigned, and attached Marine Corps Forces (MARFOR) but not over assigned or attached forces from the other Services. ADCON is subject to the command authority of combatant commanders. ADCON is the authority necessary to fulfill Military Department statutory responsibilities for administration and support.

Relationship

ADCON indicates that a unit is under conditional control of another commander with respect to administrative matters. The specific degree of ADCON is frequently specified in the order directing assignment to such status.

Example

A tank company is attached to an infantry battalion less ADCON (personnel and logistics responsibilities are retained by the tank battalion).

Direct Liaison Authorized

Definition

DIRLAUTH is that authority granted by a commander (any level) to a subordinate to directly consult, or coordinate an action with, a command or agency within or outside of the granting command. (JP 1-02)

Marine Corps Applicability

The definition for direct liaison authorized (DIRLAUTH) used in the Marine Corps and the joint community is the same. DIRLAUTH is used internally and externally to the MAGTF.

Concept

DIRLAUTH is the authority to directly consult or coordinate an action.

Relationship

DIRLAUTH is more applicable to planning than operations and always carries with it the requirement of keeping the commander granting DIRLAUTH informed. It is a coordination relationship, not an authority through which command may be exercised.

Example

A Marine Expeditionary Force (MEF) commander gives DIRLAUTH to a division commander to consult with a United Nations relief agency for a humanitarian relief planning.

Coordinating Authority

Definition

A commander or individual assigned responsibility for coordinating specific functions or activities involving forces of two or more military departments or two or more forces of the same Service (JP 0-2).

Marine Corps Applicability

The definition for coordinating authority used in the Marine Corps and the joint community is the same. Coordinating authority is used internally and externally to the MAGTF.

Concept

Coordinating authority is a consultation relationship, not an authority through which command may be exercised. Coordinating authority is more applicable to planning and similar activities than to operations (JP 0-2).

Relationship

The commander or individual has the authority to require consultation between the agencies involved, but does not have the authority to compel agreement. In the event that essential

agreement cannot be obtained, the matter shall be referred to the appointing authority. Coordinating authority is a consultation relationship, not an authority through which command may be exercised.

Example

A Marine aviation group commander would be granted coordinating authority to work with the Army and Air Force aviation units at a forward deployed location to establish a forward operating base (FOB).

SECTION II. MARINE AIR-GROUND TASK FORCE COMMAND AND SUPPORT RELATIONSHIPS

Command relationships are not necessarily identical for all MAGTF elements. Although the terms OPCON and TACON are often used in joint and multinational operations, they are not used to establish command relationships between Marine units within the MAGTF. Relationships established within the MAGTF are framed in terms of command or support.

MAGTF elements may be organic to the MAGTF, attached or tasked to provide support. When a Marine unit is under the command of a senior Marine unit, the subordinate Marine unit is either organic or attached. Support relationships are established when one element or unit of the MAGTF provides a required capability to another element. These relationships do not imply tactical missions or techniques of employment. Although the terms organic and attach apply consistently throughout the MAGTF, support relationships can differ in meaning.

A support relationship is normally identified by the MAGTF commander when planning missions for MAGTF subordinate elements. The element making the main effort is designated as the

supported element; other elements are designated as supporting. Each support relationship is designed by the MAGTF commander to fit the situation at hand. A supporting-supported relationship allows required support to be provided by one MAGTF element to another without the need to change existing command relationships. Supported commanders do not exercise command over supporting units. Unity of effort is achieved through mutual coordination.

Designation of supported-supporting elements may change over the course of an operation. For example, when the MAGTF is conducting long-range battlespace shaping operations, the aviation combat element (ACE) may be the main effort of the MAGTF, and thus the supported element. However, as the MAGTF closes with the enemy, the ground combat element (GCE) may be designated the main effort, with the ACE shifting from a supported to a supporting role.

Command relationships among the command element (CE), GCE, ACE, and combat service support element (CSSE) are discussed in the rest of this section.

Command

The concept of command applies to all MAGTF elements.

Concept

Command is the authority that a commander in the Armed Forces lawfully exercises over subordinates by virtue of rank or assignment. Command includes the authority and responsibility for effectively using available resources and for planning the employment of, organizing, directing, coordinating, and controlling military forces for the accomplishment of assigned missions. It also includes responsibility for health, welfare, morale, and discipline of assigned personnel (JP 1-02).

Relationship

Marine Corps units are organic or attached. Organic is defined as assigned to and forming an essential part of a military organization. (JP 1-02) Attached is the placement of units or personnel in an organization where such placement is relatively temporary. (JP 1-02) When a unit is attached, it is under the command of the unit to which it is attached. Unless otherwise stated, this encompasses all command responsibilities.

Example

Organic parts of a unit are those listed in its table of organization (T/O). When used in the joint arena, organic units are listed on the T/Os for the Army and Air Force or assigned to the administrative organizations of the operating forces for the Navy.

An attached unit is bound temporarily to a command other than its organic command. For example, a tank company is attached to an infantry battalion for an operation or a tank battalion is attached to an infantry regiment. An

attached unit is under the command of the unit to which it is attached.

Attached units may be further attached to subordinate units. For example, an infantry regimental commander could further attach elements of the tank battalion to his subordinate battalions. Unless the attachment orders qualify the degree of control involved, attachment implies full responsibility for logistics, administration, training, and operations. However, the responsibility for matters relating to the transfer and promotion of personnel will normally be retained by the command to which the unit is organic. Units of like size are generally not attached to each other, with the exception of artillery units organized into groupments.

Support

The establishing authority should issue a directive that includes the purpose of the support relationship, the effect desired, and the scope of action to be taken. At a minimum, the time, place, level, and duration of the supporting effort should be specified. Each support relationship is tailored by the senior commander to fit the situation at hand.

Support relationships within the Marine Corps may differ from those used within the joint force. Joint doctrine defines four categories of support: DS, GS, mutual, and close (JP 0-2). MARFOR employ two categories of support: direct support (DS) and general support (GS). DS is a mission requiring a force to support another specific force and authorizing it to answer directly to the supported force's requests. GS is a mission given to the supporting force as a whole and not to any particular subdivision thereof. Support relationships may vary within the MAGTF.

The following paragraphs provide additional detail and examples of support relationships as they are used in each MAGTF element.

Command Element

The mission of the CE is to command and control, direct, plan and coordinate the air, ground, logistics, intelligence, and communications and information systems (CIS) operations of assigned forces. The MAGTF commander is responsible for everything that his unit does or fails to do and is given commensurate authority. He cannot delegate his responsibility or any part of it although he may delegate portions of his *authority*. The MAGTF commander has the authority to perform those functions of command over assigned forces involving organizing and employing commands and forces, assigning tasks, designating objectives, and giving authoritative direction over all aspects of military operations, training and logistics necessary to accomplish the mission.

The CE has command and attached relationships, but does not normally have support relationships. When other Services or combined units are attached, the commander can exercise OPCON and or TACON according to the command relationships defined in the operation plan (OPLAN). Subordinate MARFOR are organic or detached to the CE. External forces may be OPCON, TACON or in support of the CE.

Ground Combat Element

Identification of the enemy's centers of gravity and critical vulnerabilities helps the GCE to concentrate its combat power on objectives most likely to achieve success. During the planning process, tasks and purposes are determined as the two parts of the mission statement. The mission statement focuses the employment of forces by providing subordinates with a clear understanding of the tasks to be accomplished and the reason or intent behind the actions to be taken. Since resources are often limited, commanders must distribute and organize those available forces to provide unity of effort and economy of force for efficient employment.

The unit assigned the responsibility for accomplishing the key mission is designated as the main effort. The main effort receives priority for support since the main effort represents the commander's primary bid to achieve decisive results. Units assigned the responsibility of the supporting effort furnish support so that the main effort can accomplish its mission. Since GCE units usually tailor the combat power of forces by task-organizing, it is necessary to consider the support relationships that exist among various units taking part in the operation.

Subordinate elements of a task-organized GCE may be organic to the unit, attached to the unit or tasked to provide support. These command relationships do not imply tactical missions or techniques of employment. There are two basic types of support relationships in the GCE: direct and general. Although artillery units are part of the GCE, the nature of their employment defines two additional support relationships in those units. Therefore, their command relationships are DS, GS, reinforcing (R), and general support-reinforcing (GS-R).

Direct Support

The DS mission requires a supporting unit to furnish close and continuous support to a single supported unit. Units given a tactical mission of DS are not attached or under the command of the supported unit. The DS relationship is not established between combat and combat support units employed as separate maneuver elements because the parent commander of the supporting unit still retains command of the supporting unit.

The DS mission is the most decentralized of the support missions. DS creates a responsive, one-to-one relationship between supporting and supported units. The supported unit sends requests directly to the supporting unit. Generally, units in DS collocate although this is situation-dependent. The DS mission is usually assigned to provide the supported unit with

dedicated support to accomplish urgent, unanticipated tasks.

Assigning a supporting unit a DS mission is a common means of increasing the supported unit's combat power. Supported and supporting units must keep their respective higher headquarters informed of their operations and plans. However, the parent commander retains command of the supporting unit. The supported unit is relieved of the administrative and logistic burden imposed by the establishment of a command relationship, but receives the benefit of close, prompt support. An example of a DS mission follows.

An engineer company (supporting unit) assigned a DS mission to an infantry regiment (supported unit) would be required to do the following:

- Report directly to the commander of the supported unit and provide liaison personnel if required.
- Respond to the supported unit's priority of work and priority of effort tasks within the supported unit's zone of action or sector of defense.
- Establish direct communications between the supporting and supported unit.
- Answer requests for engineering support in priority from the supported unit, own engineer platoons or higher engineer headquarters.

General Support

A GCE unit assigned a mission of GS supports the supported force as a whole. The GS mission is the most centralized support relationship. The supporting unit commander retains full control over his organic assets and attached forces. Therefore, the parent commander retains complete authority over, and responsibility for, the operation of the supporting unit. He employs them in the most beneficial manner for the supported command as a whole.

A supporting unit given a GS mission is not required to establish separate communications or liaison from standard operations. However, the supporting unit must conduct coordination with higher, adjacent, and supporting units to ensure proper integration within the force as a whole. An example of a GS mission follows.

Combat support assets such as the division's reconnaissance battalion are assigned a GS mission in support of the Marine division. A GS relationship is usually assigned when centralized control of that force enables flexible employment of that force's assets and when the enemy disposition is relatively uncertain. GS units provide the GCE with immediately available support to influence the battle or to allocate to subordinate commands to influence widely separated actions. An example would be the Marine division employing the teams of the reconnaissance battalion in the division's security area. The supporting unit given a GS mission is required to plan assignments based on missions and priorities established by the parent higher headquarters.

Marine artillery units use the four categories of support. Although DS and GS are similar to the traditional MAGTF definitions, there are some differences.

The DS mission requires a unit to furnish close and continuous fires to a single supported unit, normally a regiment or separate maneuver battalion. The commander of an artillery unit with a DS mission ensures that his firing units are positioned to deliver fires in the zone of action/sector of the supported unit, that the fires have been planned effectively, and that he has continuous communications with the liaison team and forward observer teams located with the supported team.

The GS mission requires a unit to support the force as a whole and be prepared to support any subordinate element. The fires of a unit in GS are controlled by higher artillery headquarters. See also MCWP 3-16.1, *Artillery Operations*.

Reinforcing

An R mission requires one unit to augment the capabilities of another unit. Typically, a unit given an R mission will augment the capabilities of a similar unit. The R unit will receive tasks from the reinforced unit and higher headquarters. Priority of support goes to the reinforced unit, but other tasks may be undertaken if they do not interfere with support of the reinforced unit. Responsibility for administration and logistical support of the R unit remains with its parent command. As in the DS mission, the relationship is one-to-one between the R and reinforced units.

If a supporting unit requires augmentation to meet supported unit requirements, the common commander can furnish additional capability by establishing R support with another supporting unit for a specific task, operation or period of time. Since augmentation of ground units is most easily accomplished by attachment, reinforcement is normally used only with indirect fire support agencies, principally artillery units.

The R support relationship places no additional administrative burden associated with reassignment of personnel and equipment on either the unit being reinforced or the unit it is supporting. The unit assigned the R mission can reinforce only one unit at a time. The reinforced unit, however, may be reinforced by several other units. A unit may only reinforce a similar MAGTF unit. For example, an artillery unit can only reinforce another artillery unit since no other unit in the MAGTF can provide the same fire support capabilities. The relationship between R and reinforced units is the same as that for supporting and supported units. The higher headquarters of the R or reinforced unit does not perform detailed planning or routine coordination between the two units. However, both units must keep their

respective higher headquarters informed of operations and plans. An R unit's area of operations (AO) includes that of the reinforced unit to the extent required for the support being required. (See MCWP 3-16, *Fire Support Coordination in the Ground Combat Element*.) An example of an R mission follows.

An artillery battalion R the fires of another artillery battalion would be required to do the following:

- Establish a zone of fire that corresponds to the zone of fire of the reinforced unit.
- Establish communications and liaison with the reinforced unit.
- Furnish forward observers upon request of the reinforced unit.
- Position firing batteries per direction of the reinforced unit or as ordered by the higher artillery headquarters.
- Provide fires planned by the reinforced unit.
- Answer calls for fire in priority from a reinforced unit, own field observers, and higher artillery headquarters.

General Support-Reinforcing

The GS-R mission requires the supporting unit to furnish support for the force as a whole while simultaneously augmenting the capabilities of another similar unit as a second priority. GS-R is assigned only to indirect fire support agencies, principally artillery units. This type of assignment permits dedicated support to specific units; it does not deprive the entire force of its required support. See also MCWP 3-16.

GS-R is the most flexible standard artillery tactical mission. An artillery unit with this mission will support the force as a whole and answer calls for R fires from a designated artillery unit in DS. Priority of fires of GS-R units is to the higher artillery commander unless otherwise specified. To increase responsiveness, a designated net (quick-fire channel) may be established between the GS-R unit and the reinforced DS unit. An example of a GS-R mission follows.

An artillery battalion providing GS-R to an artillery regiment. The unit given a GS-R mission is required to do the following:

- Provide a zone of fire that covers the zone of action of the supported unit to include the zone of fire of the reinforced unit.
- Furnish forward observers upon request of the reinforced unit subject to prior approval of higher artillery headquarters.
- Position firing batteries as directed by the higher artillery headquarters or reinforced unit subject to prior approval by higher artillery headquarters.
- Respond to fires planned by the higher artillery headquarters.
- Establish communications and liaison with the reinforced unit.
- Answer calls for fire in priority from a higher artillery headquarters, a reinforced unit, and own observers.

Aviation Combat Element

Central to the concept of employment for the Marine ACE is the philosophy of centralized command and decentralized control. This philosophy is based on two fundamental requirements of the ACE commander. First, the commander plans, directs, and coordinates all aspects of aviation employment for the MAGTF. Second, the commander optimizes the flexibility, versatility, and responsiveness of aviation by allowing control of assets to be conducted by subordinate agencies. These agencies are responsive to the commander and in touch with the changing dynamics of the situation. Plans and orders are brief. Execution depends on the sound judgment of well-trained subordinates, their initiative, and their understanding of the commander's intent. This style of command and control supports rapid decisionmaking and allows the ACE to maintain a high operational tempo.

The command support relationship established for the ACE by the MAGTF commander is almost always GS of the MAGTF. Because the

ACE is organic to the MAGTF, the mission is inherent in the mission of the ACE in any MAGTF. This command relationship is established for several important reasons. The ACE inherently has limited resources to meet a high operational demand. Since availability of aviation assets for mission tasking rarely meets the demand, the MAGTF commander will keep the ACE in GS of the MAGTF. Marine aviation is inherently able to fight or provide support throughout the MAGTF AO. The GS role ensures a synergistic effect to the overall force and the most efficient and effective allocation of aircraft to the MAGTF. This process is orchestrated through the air tasking order (ATO) cycle, allowing flexible and prioritized tasking. By using and completing the ATO cycle, planners can ensure that finite aviation assets are allocated to achieve maximum effect with correct prioritization based on the commander's intent. See also MCWP 3-2, *Aviation Operations*.

Relative to the ACE, the terms GS and DS are most often used conceptually. The ACE is in GS of the MAGTF, and some sorties or missions may be flown to support a particular MAGTF unit. Formal command relationship terms (such as would be assigned an artillery battalion or combat service support detachment [CSSD]) are not used regarding the ACE.

Direct Support

A formal DS command relationship rarely exists between ACE subordinate units and other MAGTF units. While an individual sortie or mission may be executed to support a designated MAGTF unit, typically there is not a formal command relationship of DS established. This support relationship usually exists only within the context of mission tasking, where individual sorties are allocated for a specific MAGTF unit conducting a particular mission (usually of short duration). Since these sorties do not represent subordinate units of the ACE, the ACE GS command relationship inherent in the task organization of the MAGTF does not change. However,

low altitude air defense (LAAD) units may be assigned such relationships during joint, combined or multinational operations.

If aviation support is required for a long or complex mission such that detailed coordination and prior planning must be conducted before execution, the aviation mission commander may be assigned a DS mission. With the designation of an aviation unit to the DS role comes the requirement to establish direct liaison, direct communications to receive critical information, coordination of local security, and logistic support from the support unit. LAAD units that must be dispersed are often assigned a DS mission to provide a defense within the supported commander's zone or AO.

An ACE unit assigned a DS role is immediately responsive to the needs of the supported unit. It furnishes continuous support to that unit and coordinates its operations to complement the concept of operations of the supported unit. The DS role creates a one-to-one relationship between supporting and supported units. The higher headquarters of the supporting and supported units become involved only on a by-exception basis. However, each unit must keep its higher headquarters informed of its operations and plans. The supported unit makes requests directly to the supporting unit. An example of a DS mission follows.

An attack squadron is in DS of one subordinate unit of the GCE, a helicopter lift is provided in direct support of a maneuver battalion or a LAAD section in DS of an infantry battalion.

General Support

The ACE will be assigned the role of GS and supports the MAGTF commander's main effort. The GS command relationship is a formal relationship established between the MAGTF and ACE commanders. It provides the ACE commander the most flexible, efficient, and effective means of apportionment, allocation, and prioritization of all aviation assets in support of the MAGTF.

The ACE commander retains full control over his subordinate units, including establishing the priority of their efforts. This prevents supporting aviation units from dealing directly with various GCE or combat service support (CSS) agencies. Sorties allocation will be apportioned indirectly through the ATO cycle process to requesting units; e.g., a GCE/CSSE agency will submit air support requests through the direct air support center (DASC) or tactical air command center (USMC) (TACC). The ACE commander may control how and when he fills those requests as long as he meets the MAGTF commander's apportionment and prioritization guidance.

Combat Service Support Element

CSS is the activity that actually provides services and supplies to the combat forces. Central to the concept of employment for the CSSE is centralized control and decentralized execution. The CSSE manages and provides the required support through task organization of the CSSD. The CSSD is tailored to the requirements of supported units. The CSSE is always in GS of the MAGTF and executes its mission through task organization and command relationship assignment.

Direct Support

DS is a mission requiring a force to support another specific force and authorizing it to answer directly to the supported force's request for assistance. (JP 0-2)

A CSS unit that is in DS of another unit is immediately responsive to the needs of the supported unit. It furnishes continuous support to that unit and coordinates its operations to complement the concept of operations of the supported unit. A one-to-one support relationship is created between supporting and supported units. The DS mission is the most decentralized of the four standard missions. The higher headquarters of the supporting and supported units become involved only on an exception basis. The supported unit sends requests directly to the supporting unit.

The following subparagraphs analyze considerations for assigning the DS mission either to permanently organized or task-organized CSS units. The unit the DS mission is assigned may be a single-function unit or a multifunction unit:

- **Permanently Organized Units.** The CSSE commander may assign the DS mission to any of his permanent subordinate organizations; e.g., he may give this mission to his engineer or motor transport. Permanent CSS organizations may provide DS to any other MAGTF element, although certain CSS organizations, such as the supply and maintenance battalions, are not likely to have a DS mission.
- **Task-Organized Units.** The CSSE commander may assign the DS mission to a CSSD. CSSDs are most often in DS. The commander must ensure that the task-organized unit has enough assets to accomplish the DS mission. Of particular concern is the ability to establish and maintain communications with the supported unit.

General Support

A CSS unit that is in GS supports the MAGTF under the direction of the CSSE commander.

The GS mission is the most centralized mission. The CSSE commander retains full control over his subordinate units, including establishing the priority of their efforts. This does not prevent supported units from dealing directly with various CSS agencies; e.g., they submit requisitions directly to the supply source. However, the CSSE commander may control how and when he fills those requisitions. He follows the priorities and allocations of the MAGTF commander. In cer-

tain cases, the MAGTF commander may stop the issue of supplies or items of equipment without prior approval of the CSSE commander. In other cases, he might specify a priority of issue for certain items or may assign a specific quantity to each unit. An example of a GS mission follows.

The MAGTF CSSE always has a GS mission. The CSSE commander, however, may assign different missions to his subordinate units consistent with the requirements of the tactical situation. The concept of logistics and CSS, found in Annex D of the MAGTF operation order (OPORD), specifically addresses this topic. It tells precisely how to satisfy the requirements of a particular tactical situation. The following paragraphs are examples of GS missions:

- **Permanently Organized Units.** The CSSE commander may assign the GS mission to any of his permanent subordinate organizations; e.g., the force service support group (FSSG) commander may give the engineer support battalion the mission of GS of the MAGTF. The battalion would provide support based on the MAGTF commander's priorities. The CSSE commander would not assign this mission without prior coordination with and approval from the MAGTF commander.
- **Task-Organized Units.** The CSSE commander may assign the GS mission to a CSSD or landing force support party (LFSP). Task-organized CSS units must have sufficient assets to perform the functions associated with this mission. Of particular concern is the ability to establish and maintain communications and liaison with the supported unit and parent organization.

SECTION III. NAVY AND MARINE CORPS COMMAND AND SUPPORT RELATIONSHIPS

The Navy and Marine Corps are inextricably joined together as the Nation's naval forces. The relationship is strong, but not without differences in perspectives. Since command relation-

ships for expeditionary operations were doctrinally established just prior to World War II, they have been the subject of continual discussion and evolution.

Expeditionary Operations

JP 3-02, *Joint Doctrine for Amphibious Operations*, is the overarching doctrine on the conduct of expeditionary operations and defines command relationships within AFs. An AF is an amphibious task force (ATF) and a landing force (LF) together with other forces that are trained, organized, and equipped for expeditionary operations.

Maritime Prepositioning Forces Operations

The establishing authority may delegate an OPCON or TACON relationship between the MAGTF commander and the commander, maritime prepositioning force (CMPF). The establishing authority is responsible for establishing command relationships and the command and control structure. The command relationship established between the MAGTF commander and CMPF is a key decision, and should provide for unity of effort, simplicity, and flexibility. Ultimately, the command relationship between the MAGTF commander and CMPF should be predicated upon the establishing authority's assessment of mission requirements. It should provide a clear, well defined, and easily understood command channel with the requisite authority to prosecute the maritime prepositioning forces (MPF) operation in a timely, efficient, and effective manner.

While the establishing authority normally has OPCON or TACON of subordinate forces, the relationship between the CMPF and MAGTF commander is normally TACON or support.

Tactical Control Command Relationships

TACON may be delegated to and exercised at any level at or below the level of combatant

command. TACON is typically limited to the detailed and usually local direction and control of forces necessary to accomplish assigned tasks. TACON provides sufficient authority for controlling and directing the application of force or tactical use of combat support assets. TACON can be delegated by the establishing authority to subordinate commanders within the MPF.

Support Command Relationships

Each joint force subordinate element can support or be supported by other elements. A supporting relationship is established by a superior commander between subordinate commanders when one organization should aid, protect, complement or sustain another force. A support command relationship between the MAGTF commander and the CMPF may be appropriate when the establishing authority decides that the mission and associated taskings do not require one force to have TACON of the other. The establishing authority is responsible for ensuring that the supported and supporting commander understand the degree of authority the supported commander is granted. The following are examples:

- **Tactical Control Command Relationships.** A TACON command relationship between the MAGTF commander and CMPF may be appropriate when the establishing authority decides that, because of the threat, timing or the nature of the mission, it is necessary for at least part of the operation for one element to have a significant degree of control over the other.
- **Support Command Relationships.** Since the essential purpose and primary focus of an MPF operation is establishing a MAGTF fully prepared to execute an employment mission, then in a broad sense CMPF supports the MAGTF. The establishing authority may decide that a specified support relationship between the MAGTF commander (supported) and the CMPF (supporting) should be established for the duration of an MPF operation. However, there

may be certain requirements in a phase of an MPF operation that may mitigate against such a generality, and may require the support relationship to change from phase to phase. For example, during the movement phase CMPF relies on the MAGTF commander to coordinate the air transportation of the Navy support element (NSE). In another, the CMPF's critical responsibility during the arrival and assembly phase is the off-load of the maritime prepositioning ships squadron (MPSRON), a tasking that cannot be accomplished without assistance from the MAGTF; e.g., the LFSP. In these two instances the MAGTF is providing support to the CMPF.

While a support relationship is a viable command authority, it is incumbent upon the establishing authority to make clear in the initiating directive the requirements for support, who is supporting whom, and the parameters for transitioning this command relationship. It should also include the following:

- Forces and other resources allocated to the supporting effort.
- Time, place, level, and duration of the supporting effort.
- Relative priority of the supporting effort.
- The authority, if any, of the supporting commander to modify the supporting effort in the event of exceptional opportunity or an emergency.
- Degree of authority granted to the supported commander over the supporting effort.

SECTION IV. JOINT COMMAND RELATIONSHIPS

All Service forces (except as noted in Title 10, *United States Code*, section 162) are assigned to combatant commands by the Secretary of Defense *Forces for Unified Commands* memorandum (JP 0-2). As establishing authorities for

Marine Expeditionary Unit

Marine Corps Order (MCO) 3120.9B, *Policy for Marine Expeditionary Unit (Special Operations Capable)* prescribes the following command relationships:

- When the Marine Expeditionary Unit (MEU) is in the continental United States (CONUS) and not embarked aboard ship, the MEF commander exercises OPCON of the MEU. When embarked aboard amphibious ready group (ARG) ships, the fleet commander in whose AO the ARG is operating normally will exercise OPCON of the MEU during routine activities. During contingencies, command relationships will be prescribed in the alert, warning, and/or execute order. The MEU may be designated a separate component within a joint force or designated as the LF of an AF. It is unacceptable for the MEU commander to be designated as a functional warfare commander within the Navy composite warfare commander construct; nor is it acceptable for the MEU to be embedded in a command relationship that fails to provide the commander, landing force (CLF) the decisionmaking authority and span of control prescribed in joint doctrine for LF operations.
- Typically, when units within the naval services are transferred, the term change of operational control (CHOP) is used. CHOP is defined as the date and time (coordinated universal time) when a force or unit is reassigned or attached from one commander to another where the gaining commander will exercise OPCON over that force or unit.

subordinate unified commands and JTFs, combatant commanders may direct the assignment or attachment of their forces to those subordinate commands as appropriate. When forces are transferred, the command relationship the gaining

commander will exercise over those forces must be specified.

The combatant commander's OPLANs and concept plans (CONPLANs) will often provide a concept for command relationships in that theater, including units assigned. Units are assigned when placement is relatively permanent or where such organization controls and administers the units or personnel for the primary function or greater portion of the functions of the unit or personnel. When transfer of forces to a joint force will be temporary, forces will attach to the gaining command. Joint force commanders (JFCs) will exercise OPCON or TACON over attached forces.

Command includes the authority and responsibility for effectively using available resources and for planning, organizing, directing, coordinating, and controlling military forces for the accomplishment of assigned missions. A command relationship defines the interrelated responsibilities between commanders as well as the authority of those commanders. JP 0-2 prescribes four command relationships to be used by United States (US) military forces—COCOM, OPCON, TACON, and support. These command relationships and levels of authority, although authoritative, must be adapted to meet mission requirements. Collectively, they provide the flexibility to organize forces to respond to all situations.

SECTION V. COMPONENT COMMAND RELATIONSHIPS

Establishing component commands within a joint force and the relationships between the component commands and the forces assigned to the component commands is a complex topic. JP 0-2, MCDP 1-0, *Marine Corps Operations*, and MCDP 1-0.1, *Componency*, contain an in-depth treatment of componency issues. It is important that Marines at all levels of the MAGTF understand the basics of Marine componency and the effect it has on the relationships among the units of a joint force. Proper establishment of command relationships within the joint force can foster effectiveness.

Joint Forces

To address the command relationships between the MAGTF and the component commanders of a joint force, the basic characteristics and structure of a joint force must be understood. The three levels of joint forces are unified commands, subordinate unified commands, and JTFs.

Unified commands are combatant commands and are established in accordance with the Unified Command Plan by the President through the Sec-

retary of Defense with the advice and assistance of the Chairman of the Joint Chiefs of Staff (CJCS). A unified command has a broad and continuing mission and is composed of significant components of two or more Military Departments. The unified commander exercises COCOM over all assigned forces and, normally, OPCON over attached forces.

When authorized through the CJCS, commanders of unified commands may establish subordinate unified commands; e.g., United States Forces, Korea, is a subordinate unified command established by the Commander, United States Pacific Command. Subordinate unified commanders exercise OPCON over all assigned forces and, normally, over all attached forces.

A JTF may be established by the Secretary of Defense, a combatant commander, a subordinate unified commander or an existing JTF commander. A JTF is normally established to accomplish a mission with a specific limited objective and is dissolved when that mission is accomplished. The commander of a JTF exercises OPCON over all assigned forces and, normally, over all attached forces.

The JFC organizes his forces in the most effective manner to accomplish the mission. The JFC may conduct operations through Service components, functional components or some combination of the two based on mission, enemy, terrain and weather, troops and support available-time available (METT-T). Usually, the JFC organizes the force in a combination of Service and functional component. This combination takes advantage of the benefits of Service component while allowing the combatant commander to centralize resources. Regardless of how the JFC organizes the assigned forces, if MARFOR are included, there will be a Marine Corps Service component with responsibility for administrative and logistic support of MARFOR.

Service Component Commands

The Service component command will consist of the component commander and all of the Service forces that have been assigned to the joint force. Because administration and logistics are Service responsibilities, joint forces always include Service component commands that exercise ADCON over the forces of that Service that have been assigned to the joint force.

Operations will normally be conducted through the Service component when the situation requires organizational integrity of Service forces. Conducting operations through Service components fully exploits the capabilities and experience that the individual Service can bring to a joint command by allowing Service organi-

zations to function as they were designed and trained. Figure 2-1 depicts a joint force organized to conduct operations through Service component commands.

Functional Component Commands

The JFC may establish functional component commands, which are employed when forces from two or more Military Departments must operate in the same dimension (or medium) or there is a need to accomplish a distinct aspect of the assigned mission. Joint force land, air, maritime, and special operations component commands are functional component commands.

Normally, the Service component commander with the preponderance of forces to be tasked to accomplish a particular function will be designated as the functional component commander. However, in selecting a functional component commander, the JFC must also consider the command and control capabilities of the Service components. A Service component commander designated as the functional component commander retains Service component responsibilities. Figure 2-2 is an example of a joint force organized to conduct operations through functional components.

The responsibilities and authority of a functional component command must be assigned by the JFC. Establishing a functional component commander will not affect the command relationships between Service component commanders and the JFC. The

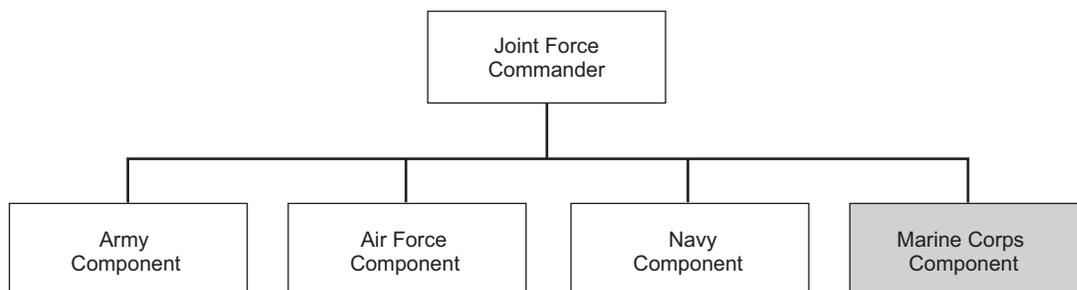


Figure 2-1. Joint Force with Service Components.

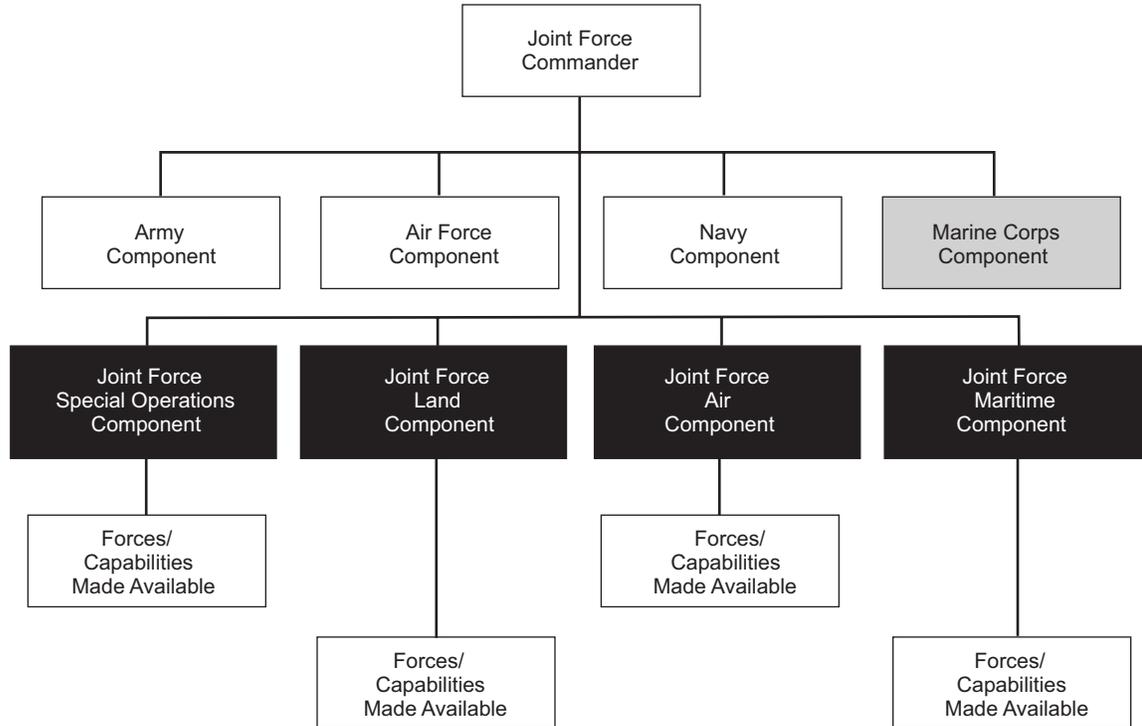


Figure 2-2. Joint Force with Functional Components.

JFC must designate the military capability that will be made available by Service component commanders for tasking by the functional component commander and the command relationship that the functional component commander will exercise. The appropriate command relationship will depend on the overall situation and the nature of the forces or capability involved.

Joint force special operations component commanders, land component commanders, and maritime component commanders normally have OPCON or TACON of forces made available to them for employment, while discussed previously, a joint force air component commander (JFACC) is normally delegated TACON of aircraft sorties or other capabilities made available. All Marines should be aware of the following policy for command and control of Marine Corps aviation promulgated in JP 0-2, chapter V:

The MAGTF commander will retain OPCON of organic air assets. The primary mission of the

MAGTF aviation combat element is the support of the MAGTF ground combat element. During joint operations, the MAGTF air assets normally will be in support of the MAGTF mission. The MAGTF commander will make sorties available to the JFC, for tasking through the JFACC, for air defense, long-range interdiction, and long-range reconnaissance. Sorties in excess of MAGTF direct support requirements will be provided to the JFC for tasking through the JFACC for the support of other components of the joint force or the joint force as a whole. Nothing herein shall infringe on the authority of the geographic combatant or subordinate joint force commander in the exercise of operational control, to assign missions, redirect efforts (e.g., the reappportionment and/or reallocation of any Marine air-ground task force (MAGTF) TACAIR [tactical air] sorties when it has been determined by the joint force commander that they are required for higher priority missions), and direct coordination among the subordinate commanders to ensure unity of effort in

accomplishment of the overall mission, or to maintain integrity of the force.

NOTE: Sorties provided for air defense, long-range interdiction, and long-range reconnaissance are not "excess" sorties and will be covered in the air tasking order. These sorties provide a distinct contribution to the overall joint force effort. The JFC must exercise integrated control of air defense, long-range reconnaissance, and interdiction aspects of the joint operation or theater campaign. Excess sorties are in addition to these sorties.

The JFC may reapportion or reallocate MAGTF TACAIR sorties when they are required for higher priority missions in support of the JFC's campaign. Although the JFC may assign the reapportioned or reallocated air to the JFACC for use, the JFACC does not have the authority to reapportion or reallocate MAGTF TACAIR sorties.

Combination of Service and Functional Components

The most common method the combatant commander uses to organize his available forces is

a combination of Service and functional competency. If operations are being conducted through functional component commanders, the MAGTF commander could be either OPCON or TACON to the joint force maritime component commander (JFMCC) or the joint force land component commander (JFLCC), depending on the nature and phase of the operation.

The combination of Service and functional components takes advantage of the benefits of Service competency while allowing the combatant commander to centralize certain functions to achieve his strategic or operational objective. Service components retain command of their forces, while providing forces and capabilities through the combatant commander to the functional component commander. Regardless of how the combatant commander organizes his assigned or attached forces, if MARFOR are included, there will be a Marine Corps component. See figure 2-3 for an example of a joint force designed to conduct operations through four Service components and a special operations component.

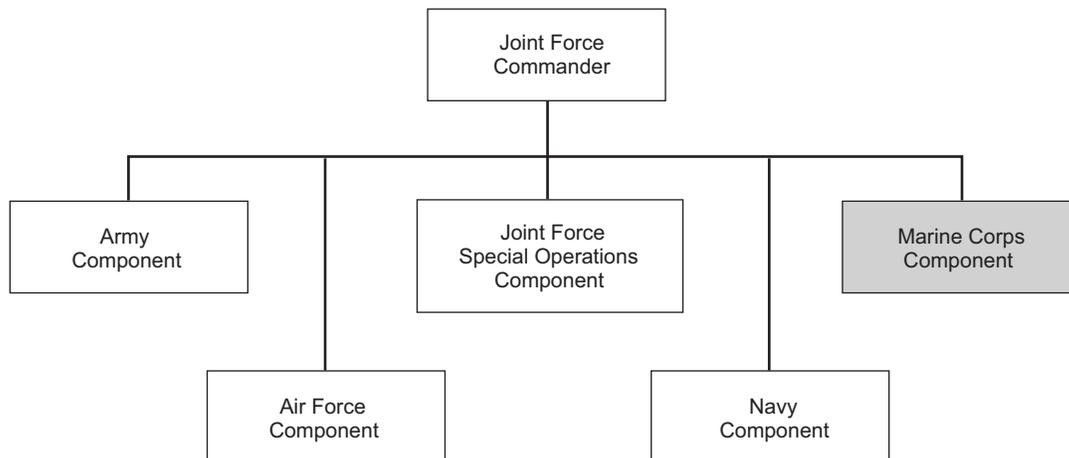


Figure 2-3. Joint Force with Service and Functional Components.

Marine Air-Ground Task Force Component Command Relationships

A Marine Corps component commander's assigned MARFOR will normally include one MAGTF and, depending on the scope of the assigned mission, include a Marine Corps Logistic Command (MLC) and a rear area coordinator. Normally, an MLC and rear area coordinator would be established only to support MARFOR conducting sustained operations ashore in a major theater war.

The Marine Corps component can also include forces from other Services and nations. The Marine Corps component commander will

always exercise ADCON over the assigned MAGTF and, if operations are being conducted through Service components, will exercise OPCON. If operations are being conducted through functional component commanders, the MAGTF commander could be OPCON to the JFMCC, JFACC or the JFLCC, depending on the nature and phase of the operation. The MAGTF commander could also be the JFLCC, JFACC or JFMCC; e.g., a MAGTF might conduct an expeditionary operation under OPCON of the maritime forces component commander and then CHOP OPCON to the land forces component commander or MARFOR.

SECTION VI. NORTH ATLANTIC TREATY ORGANIZATION COMMAND RELATIONSHIPS

NATO was founded in 1949 as a defense alliance to protect member nations against aggressions. Marines should be aware that North Atlantic Treaty Organization (NATO) doctrinal measures sometimes differ from US joint doctrine. It is important that common authorities be clearly spelled out and mutually understood by all nations involved.

Military Command Structure

In September 1999, NATO adopted a three-level command structure—strategic, regional, and sub-regional. Subregional exists only in Allied Command Europe.

Strategic Commands

Allied Command Atlantic is commanded by the Supreme Allied Commander, Atlantic (SACLANT) and is headquartered in Norfolk, VA. Allied Command Europe is commanded by the Supreme Allied Commander, Europe (SACEUR) and is headquartered in Brussels, Belgium.

Regional Commands

There are three regional commands in the larger Allied Command Atlantic area for the maintenance of regional identities and geographic expertise: West, East, and South Atlantic Areas (WESTLANT, EASTLANT, and SOUTHLANT). There are also two combatant commands directly subordinate to SACLANT: Striking Fleet Atlantic (STRIKFLTANT) and Submarine Allied Command Atlantic (SUBACLANT). These commands provide coordination/command and control functions in relevant operational warfare areas.

Within Allied Command Europe, the operational focus is provided by two regional commands based on the natural division of Europe north and south of the Alps: Allied Forces North Europe (AFNORTH) and Allied Forces South Europe (AFSOUTH).

Subregional Commands

Within Allied Command Europe is a mix of geographically dispersed joint subregional commands (NORTH, NORTHEAST, CENTRE,

SOUTH, SOUTHCENTRE, SOUTHEAST, and SOUTHWEST) and functionally organized air and maritime component commands (AIRNORTH, NAVNORTH, AIRSOUTH, and NAVSOUTH). The latter has region-wide responsibilities. The joint subregional commands provide a dispersed joint planning and capability to undertake or contribute to all Alliance missions as directed by the regional commands.

Relationship Terminology

The following terms describe NATO command relationships. Some terms are the same as US joint terminology; some only exist in NATO. *Note: commanders must exercise caution not to interchange terms.*

These NATO definitions do not differ greatly from established US definitions of OPCON measures. NATO, using the standardization agreement (STANAG) process, has developed, staffed, and gained NATO approval of these definitions, which ensures unambiguous use of these measures, ensuring operational interoperability.

Full Command (NATO)

The NATO equivalent of US COCOM is full command. It is the military authority and responsibility of a commander to issue orders to subordinates. It covers every aspect of military operations and administration and exists only within national services. It follows that no NATO or other multinational force commander will have full command over other national forces.

Operational Command (NATO OPCOM)

In NATO, operational command (OPCOM) is the authority granted to a commander to do the following:

- Assign missions or tasks to subordinate commanders.
- Deploy units.

- Reassign forces.
- Retain or delegate OPCON and/or TACON as the commander deems necessary.

OPCOM does not include responsibility for administration.

OPCOM allows a commander to specify missions and tasks, assign separate employment to components of assigned units, and reassign forces away from his own force. OPCOM does not carry the authority to disrupt the basic organization of a unit to the extent that it cannot readily be given a new task or be redeployed elsewhere. In this area, NATO OPCOM coincides with US OPCON and its authority to *organize and employ commands and forces*. OPCOM allows changing overall organizations and command relationships, but the basic building blocks remain intact. Short of full combat operations, to meet an attack upon NATO territory, US forces will not normally fall under OPCOM of foreign commanders.

Operational Control (NATO OPCON)

OPCON is a defined NATO term. In NATO, OPCON is the authority delegated to a commander to direct forces assigned and accomplish specific missions or tasks usually limited by function, time or location. It further includes the deployment of units concerned and the retention or delegation of TACON to those units. OPCON does not include administrative or logistic control. OPCON is more limited than OPCOM. OPCON does not include the authority to reassign forces or employ a formation or any part of it, other than on the assigned task or to disrupt its basic organization so that it cannot readily be given a new task or redeployed elsewhere.

Tactical Command (NATO TACOM)

TACOM is the authority delegated to a commander to assign tasks to forces under his command for the accomplishment of the mission assigned by higher authority. TACOM is narrower in application than

OPCOM but includes the authority to delegate or retain TACON.

Tactical Control (NATO TACON)

NATO and US joint doctrine have similar definitions for TACON. TACON is the authority normally limited to the detailed and specified local direction of movement and maneuver of the tactical force to accomplish an assigned task. TACON does not provide organizational authority or administrative and support responsibilities. The US Service component continues to exercise these authorities. TACON differs from TACOM in that TACON involves only the necessary control of movements and maneuvers to accomplish a previously assigned mission. An example of TACON follows.

MARFOR may have the opportunity to serve with NATO forces in allied joint operations.

These may involve air, space, maritime, amphibious, land or special forces dimensions and government or civil agencies. These forces may be organized into combined JTFs under the command of a combined JFC or alternatively may be organized into a multinational force under a multinational force commander. Regardless of the naming convention used, command relationships must be clear and specific, especially with regards to logistics, fire support, force protection, and CIS.

The MAGTF could also retain OPCON/TACON and employ the allied or multinational forces as a separate element. The MAGTF may also pass OPCON/TACON of the allied or multinational force to one or more elements of the MAGTF. For example, a coalition infantry brigade CHOP OPCON to the MEF, which then passes OPCON to a Marine division.

SECTION VII. MULTINATIONAL COMMAND RELATIONSHIPS

MAGTFs must be prepared for multinational operations. Multinational operations consist of several nations employing their forces together to successfully accomplish a mission. The success of the multinational operation depends largely on the commander achieving unity of effort within the structure of an alliance or a coalition.

Unity of effort can be extremely difficult to accomplish because individual protocols and contingency plans are developed within each alliance. Coalition operations are even less structured, based on temporary agreements or arrangements. Accordingly, each multinational operation is unique. Key considerations involved in planning and conducting such operations vary with the international situation and perspectives, motives, and values of the organization's members.

Alliance and multinational operations are normally determined by the objective and if the

objective or relationship is to be long-term or short-term. Multinational describes military actions conducted by forces of two or more nations, typically organized within the structure of a coalition or alliance. An alliance is the result of formal agreements between two or more nations for broad, long-term objectives. Alliance members typically have similar national political and economic systems. NATO is one example.

A coalition is an ad hoc arrangement between two or more nations for common action. Coalitions often bring together nations of diverse cultures for a limited period of time. The coalition that defeated Iraq in the 1991 Gulf War is an example. As long as the coalition members perceive their membership and participation as advancing their individual national interests, the coalition can remain intact.

For coalition forces where no common body of doctrine exists, it is vital that modifications and restrictions to extent of authority must be clearly spelled out and mutually agreed to by all nations involved. MAGTF commanders should exert variations and modifications to joint doctrine for multinational command relationships. It is important that command relationships be planned and made clear to all involved. OPLANs and CONPLANs will often provide a concept for a coalition's command relationship in that theater. Bilateral and multinational exercises and training may also provide a foundation for OPCOM relationships.

US forces may be the predominant and most capable forces within an alliance or coalition. The MAGTF commander may often be expected to play a central leadership role. Regardless of command relationships, several considerations are germane during the planning and conduct of multinational operations.

National Goals

No two nations share exactly the same reasons for entering an alliance or a coalition. To some degree, participation within an alliance or a coalition requires the subordination of national autonomy by member nations. The glue that binds the multinational force is agreement, however tenuous, on common goals and objectives. The MAGTF commander must strive to understand the different national goals and how these goals can affect conflict termination and the desired end state. Maintaining cohesion and unity of effort requires understanding and adjusting to the perceptions and needs of member nations.

Unity of Effort

Motivations of member nations may differ, but multinational objectives should be attainable, clearly defined by the commander or leadership structure of the multinational force, and supported by each member nation. Capabilities of each mem-

ber nation's forces will often differ significantly and must be considered by the JFC when determining the types of missions to be assigned. When multinational forces are under the direction of the MAGTF, the commander should strive to involve all national forces commensurate with their capabilities and to balance this with considerations for national pride, honor, and prestige. The commander should establish a personal, direct relationship with the leaders of other national forces as respect and trust are essential to building and maintaining a strong team.

The commander should include staff members from subordinate multinational forces in the decisionmaking process, consistent with the terms established at the founding of the alliance or coalition. Member recommendations should be sought continuously by the commander, but especially during the development of courses of action (COAs) and rules of engagement (ROE), assignment of missions to national forces, and establishment of priorities of effort.

Doctrine, Training, and Equipment

Doctrine, operational competence as a result of training and experience, and types and quality of equipment can vary substantially among the military forces of member nations. The commander should seek to optimize the contribution of member forces through training assistance, joint exercises, and sharing resources.

Cultural Differences

Each member has a unique cultural identity. Even minor differences can have a significant impact on cohesion of the force. The commander should attempt to accommodate the following:

- Religious holidays and other unique cultural traditions.
- Language differences.
- Dietary restrictions.

National Communications

Some member forces will have direct and near immediate communications capability from the operational area to their respective political leadership. This can facilitate coordination but can also be a hindrance as leadership external to the operational area may issue guidance directly to its deployed forces.

MARFOR will function in a multinational operation in two basic relationships: as a MAGTF as part of a joint or multinational task force, and a MAGTF attaching non-Marine elements.

Marine Air-Ground Task Force as Part of a Joint or Multinational Task Force

The MAGTF, maintaining its organizational integrity, may form part of a larger joint or multi-

national task force. In this case, the MAGTF headquarters will effect most of the coordination and liaison with the non-MARFOR. Again, coordination with non-MARFOR units will be dictated primarily by the presence of those units adjacent to Marine units.

Marine Air-Ground Task Force Attaching Non-Marine Elements

The MAGTF may be assigned combat units from a foreign military and should, in turn, logically assign those units to the appropriate element when the elements can absorb them. This relationship most directly involves ground commanders coordinating with non-MARFOR. The commander must consider the requirements and interoperability of communications, fire support, and logistics.

CHAPTER 3

MARINE AIR-GROUND TASK FORCE

STAFF ORGANIZATION

Size and composition of a MAGTF unit staff depends on the size and type of the unit. However, each unit's staff has the same basic structure: a chief of staff (C/S) or executive officer and three components (a general/executive staff, a special staff, and a personal staff). The number of personnel within each component varies at different command echelons.

Staffs are not normally formed in units smaller than a battalion or squadron. Figure 3-1 depicts the basic structure of a Marine Corps staff. It is the commander's prerogative to modify his staff structure to accomplish the mission. The mission determines what activities or tasks the unit is to accomplish. These tasks determine how the commander organizes or adapts his staff to support him in accomplishing the mission. The

basic staff structure provides the flexibility to make such modifications.

Chief of Staff

The C/S is the commander's principal staff officer. The commander normally delegates authority to the C/S for the executive management of general/executive and special staffs. The C/S directs staff tasks, conducts staff coordination, and ensures efficient and prompt staff response. Although the C/S oversees general/executive and special staff officers, he does not normally oversee the commander's personal staff. In units commanded by colonels and below, the personal staff is omitted, with the exception of

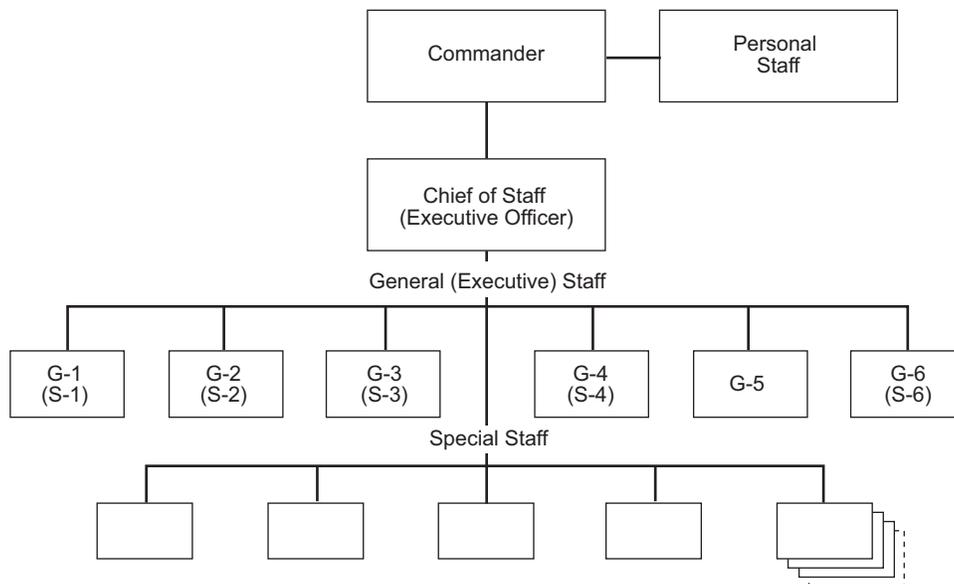


Figure 3-1. Staff Structure.

the sergeant major. The commander normally delegates authority to the executive officer to direct, coordinate, and supervise the staff.

Principal Staff versus General/Executive

The commander's principal staff officers comprise the general staff in units commanded by a general officer and the executive staff for all other units. Principal staff assistants are responsible to the commanding general/commanding officer and are coordinated and directed by the C/S and/or executive officer. General/executive staff officers are responsible for a broad functional area and help the commander coordinate and supervise the execution of plans, operations, and activities in that area.

Staff Cognizance

Staff cognizance is the term used to describe the broad coordinating responsibilities over special staff sections assigned to a general/executive staff officer in his area of primary interest. These responsibilities are intended to facilitate coordination within related areas of staff functioning and to ensure the systematic channeling of information and documents.

To facilitate coordination, staff officers are assigned staff cognizance over special staff sections whose activities fall within their areas of primary interest. This should not preclude direct access of special staff officers to the C/S or the executive officer or direct liaison with other staff sections.

At the major command level, general staff officers are designated as the assistant chief of staff (AC/S) for their respective functional areas: AC/S, G-1, personnel; AC/S, G-2, intelligence; AC/S, G-3, operations and training; AC/S, G-4, logistics; AC/S, G-5, plans; and AC/S, G-6, CIS. The commander, assisted by the C/S, determines the number, type, and function of general staff sections. If desired, they may organize additional general staffs into

sections on the basis of staff requirements. Specifics on the organization, functions, and responsibilities of a particular command's general staff are normally delineated in that command's published orders, directives, and standing operating procedures (SOPs).

At lower echelons, the executive staff is similarly organized. Executive staff officers are designated S-1, personnel officer; S-2, intelligence officer; S-3, operations officer; S-4, logistics officer; and S-6, CIS officer.

Responsibilities

Collectively, through the C/S or executive officer, staff officers are accountable for the commander's entire field of responsibilities (except for any areas that the commander may elect to control personally). A commander may elect to modify staff organization based on the situation, perhaps by creating additional staff sections and designating a special staff officer as a member of the staff. The most common additional MEF-level staff section is the G-7 that may encompass such areas as exercises, training, safety, inspections or readiness. However, any such modification must be clearly defined and be accomplished with available resources (personnel and equipment).

A staff officer's authority is limited to advising, planning, and coordinating actions within his field of interest. He also coordinates and integrates appropriate special staff officer activities. The commander might also give a staff officer added authority to act on specific matters related to his field of interest. In such cases, staff officers have staff authority in their own right and additional authority as delegated by the commanders.

Staff officers are responsible for acquiring information and analyzing its implications to provide timely and accurate recommendations to the commander. Staff officers must often request and receive information and recommendations from staff sections that are not under their cognizance.

A clear definition of staff responsibilities is necessary to ensure coordination and to eliminate conflict. Unit directives and SOPs should clearly delineate primary responsibilities and requirements for coordination.

Special Staff

Special staff officers advise and assist the commander and other staff members in a particular military specialty such as supply or legal matters. In some cases a unit commander is dual-hatted as a special staff officer; e.g., the artillery regimental commander may also be the division fire support coordinator (FSC).

The number of special staff officers and their duties vary at each level of command and by type of unit. The commander may make adjustments by omitting sections not required, combining or adjusting responsibilities, and creating additional special staff sections. Normally, the commander assigns responsibilities to specific general/executive staff officers for each special staff function. Although the activities of a particular special staff section may not be integral to those of any particular general/executive staff section, there are usually areas of common interest and continuing relationships. This then forms the basis for assigning staff cognizance to a

general/executive staff officer. For example, at division level the G-3 is normally responsible for and coordinates the activities of the FSC; the air officer; the information operations (IO) officer (if assigned); the engineer officer; the naval gunfire officer; and the nuclear, biological, and chemical (NBC) defense officer.

Some special staff officers routinely coordinate with more than one general/executive staff officer. For example, although provost marshal (PM) functions are operationally aligned under the C/S, the provost marshal office (PMO) must also coordinate with the G-1, G-3, and G-4 for certain functions falling in their respective areas of interest.

Personal Staff

Personal staff members work directly for the commander. The personal staff is normally composed of aides, a sergeant major, and personal secretaries. Below the major command level, the sergeant major is the only member of the personal staff. The sergeant major's duties are those specifically assigned by the commander and generally concern the discipline, welfare, conduct, morale, and leadership of the command's enlisted personnel.

CHAPTER 4

MARINE AIR-GROUND TASK FORCE

STAFF RESPONSIBILITIES

The role of the staff is to assist the commander in accomplishing the mission in accordance with his intent. The staff accomplishes this through gathering and presenting information to the commander to make decisions, and providing oversight of their respective functions to ensure execution of those decisions. Collectively, in coordination with the C/S, the staff must rapidly and effectively execute the MCPP and the operation.

All staff officers perform the following duties:

- Advise the commander with respect to their functional areas of interest.
- Prepare, update, and maintain staff estimates.
- Prepare plans and orders and monitor execution of decisions.
- Process, analyze, and disseminate information.
- Identify and analyze problems.
- Conduct internal, vertical, and horizontal staff coordination.
- Train and supervise staff sections.
- Exercise staff cognizance over assigned areas.

SECTION I. CHIEF OF STAFF AND SPECIAL STAFF OFFICERS

The C/S (or executive officer to the extent authorized by the commanding officer) is responsible for directing, coordinating, supervising, and training the staff. The C/S frees the commander from routine managerial duties. The C/S is the primary conduit for the exchange of critical information and insight between the staff and the commander.

It is critical that the C/S shares a common vision of the goals of the organization with the commander. The C/S must fully understand the commander's intent in all situations and must help focus the staff. The C/S must understand the commander's personality and style as they influence planning and execution.

No staff member or subordinate unit commander should be denied full access to the commander. However, the C/S is responsible for monitoring the commander's schedule to avoid inefficient use of the commander's time. The C/S will establish the operational cycle of the organization and orchestrate briefings and meetings for

the commander. Staff members should inform the C/S of any recommendations they pass directly to the commander or of instructions they receive directly from the commander. In units not authorized a C/S, the executive officer will provide staff supervision. The C/S performs the following functions:

- Keeps the commander informed of current and developing situations.
- Receives the commander's decisions and ensures staff takes appropriate actions to implement those decisions.
- Supervises the activities of the headquarters commandant (HQCOMDT) and the staff.
- Serves as chief information officer.
- Monitors the currency, accuracy, and status of commander's critical information requirements (CCIRs).
- Directs and supervises the planning and execution process.

- Monitors the development of plans, orders, and instructions.
- Obtains the commander's approval of and then promulgates plans, orders, and instructions.
- Monitors, with the assistance of the staff, the execution of plans, orders, and instructions.
- Determines liaison exchange requirements and receives liaison teams.
- Monitors staff discipline, morale, and combat readiness.
- Organizes, plans, and supervises staff training.
- Ensures proper coordination of staff activities internally, vertically (with higher headquarters and subordinate units), and horizontally (with adjacent units).
- Ensures proper staff support to subordinate commanders and staffs.
- Exercises staff cognizance over the following:
 - Staff secretary.
 - Public affairs officer (PAO).
 - Security manager.
 - Information management officer (IMO).
 - HQCOMDT.
 - Chaplain.
 - Staff Judge Advocate (SJA).
 - PM.
 - Comptroller.
 - Inspector.
 - Unit liaison officers.

Staff Secretary

The staff secretary is an administrative assistant to the C/S. The staff secretary is not a member of the general or special staff. The nature of his duties requires a close relationship with the officers of the general and special staffs. The following functions are performed:

- Maintains the temporary office of record for the commander, deputy or assistant commanders, and C/S. The permanent office of record for the unit is maintained by the adjutant.

- Ensures that information, including organizational e-mail, routed to the C/S has been seen and acted on, if necessary, by all interested staff sections.
- Directs and supervises the administrative functioning of the offices of the commander, deputy or assistant commanders, and C/S.
- Receives personnel visiting the headquarters to confer with the commander, deputy or assistant commanders, and C/S.
- Plans and supervises conferences chaired by the commander, deputy or assistant commanders or C/S.
- Monitors planning and execution of all official events and ceremonies involving the commander, deputy or assistant commanders, and C/S.
- Acts as the informal point of contact for liaison officers.

Special Staff Officers under Staff Cognizance of the Chief of Staff

Within their respective fields, special staff officers act as advisors, planners, supervisors, and coordinators. They are authorized direct access to the C/S or the executive officer and direct liaison with other staff sections in matters of interest to those sections. However, special staff officers normally will operate under the staff cognizance of either the C/S/executive officer or a member of the general/executive staff.

Public Affairs Officer

The PAO is responsible for providing information about the Marine Corps to the public, the media, and the internal Marine Corps audience and for establishing positive relations with local communities and the general public. The PAO operates under the staff cognizance of the C/S. The following functions are performed:

- Advises the commander and staff on the probable public impact of command decisions/policy and, as the command spokesperson, recommends policies and procedures with respect to the release of information to the public and the media.

- Works closely with the civil affairs officer to integrate strategy and unify efforts to communicate the command perspective to the local population.
- Prepares and disseminates accurate and timely information about the Marine Corps and the command to the media and the general public in the spirit of the Freedom of Information Act (FOIA).
- Advises the commander and staff on Privacy Act and FOIA matters.
- Serves as the command's contact with the media and, in this capacity, answers media queries, coordinates all media visits/interviews, and escorts media representatives
- Supports the internal information program to inform Marines and the Marine family of Marine Corps and command matters through supervision of such internal news outlets as command newspapers, radio/television facilities, etc.
- Develops and coordinates a community relations program, including both on- and off-base activities, to foster mutual understanding and acceptance with the general public and the communities directly affected by the command.
- Coordinates and advises in the planning and conduct of IO.
- Develops written command information and personnel security procedures, including an emergency plan that integrates emergency destruction bills when required.
- Formulates and coordinates the command's security education program.
- Ensures that threats to security, compromises, and other security violations are reported, recorded, and, when necessary, investigated vigorously.
- Ensures that incidents falling under the investigative jurisdiction of the Naval Criminal Investigative Service (NCIS) are immediately referred to the nearest NCIS office.
- Administers the command's program for classification, declassification, and downgrading of classified information.
- Coordinates preparing and maintaining classification guides in the command.
- Maintains liaison with the command's PAO to ensure that proposed press releases that could contain classified information are referred for security review.
- Ensures compliance with accounting and control requirements for classified material, including receipt, distribution, inventory, reproduction, and disposition.
- Coordinates with the security officer on physical security measures to protect classified material.
- Ensures that any electrical or electronic processing equipment meets control of compromising emanations; i.e., tempest requirements.
- Ensures security control of visits to and from the command when the visitor requires (and is authorized) access to classified information.
- Ensures protection of classified information during visits to the command when the visitor is not authorized access to classified information.
- Prepares recommendations for release of classified information to foreign governments.
- Ensures that all personnel who handle classified information or who are to be assigned to sensitive duties are appropriately cleared and that requests for personnel security investigations are properly prepared, submitted, and monitored.

Security Manager

The security manager is responsible for managing the command information and personnel security program, and operates under the staff cognizance of the C/S. Although the security manager is responsible for the coordination of the overall program, he may delegate individual duties; e.g., the adjutant may handle classified material control. Every staff will include a security manager, although the billet will often be an additional duty. The following functions are performed:

- Serves as the commanding officer's advisor and direct representative on classified information security and personnel security.

- Ensures that access to classified information is limited to those with the need to know.
- Ensures that personnel security investigations, clearances, and accesses are recorded.
- Coordinates the command program for continual evaluation of eligibility for access to classified information or assignment to sensitive duties.
- Maintains liaison with the command's special security officer on investigations, access to sensitive compartmented information (SCI), continuous evaluation of eligibility, and changes to information and personnel security policies and procedures.
- Maintains records of personal foreign travel reported by assigned personnel.
- Coordinates with the command CIS and physical security officers on matters of common concern.

Information Management Officer

The unit IMO is responsible for establishing the policy and procedures for information management within the command. The IMO operates under the staff cognizance of the C/S or executive officer. If an IMO is not designated, then this duty is the responsibility of the C/S or executive officer. In some cases, an IMO may be designated for each staff section when the volume of information is significant, in an exercise or operation. The following functions are performed:

- Advises the commander and staff on information management matters.
- Coordinates information management efforts throughout the organization.
- Coordinates the CCIR process.
- Develops and implements, in close coordination with the CIS officer and other staff principals and subordinate units' IMO, effective information dissemination techniques.
- Develops training programs on information management procedures.
- Coordinates with the unit security manager and the G-6/S-6 the development and implementation of information security (INFOSEC) procedures.

- Coordinates with the G-6/S-6 on local area network/wide area network (LAN/WAN) management and networking issues.
- Develops and publishes the information management plan.

Headquarters Commandant

The HQCOMDT has responsibility for local operational, administrative, and logistic support of the headquarters. The HQCOMDT operates under the staff cognizance of the C/S. The following functions are performed:

- Exercises command over Marines assigned to the headquarters who are not assigned or attached to subordinate commands.
- Provides local headquarters security, including construction of defensive positions.
- Supervises the operation of supply, maintenance, motor transport, health services, and food service activities serving the headquarters.
- Maintains facilities for the reception and accommodation of visitors and aughtees.
- Supervises police and maintenance of headquarters facilities.
- Supervises the billeting of headquarters personnel.
- Assists in selecting specific command echelon sites with the G-1, G-3, and G-6.
- Conducts training and morale activities for headquarters personnel.

Chaplain

The staff chaplain has responsibility for matters pertaining to the moral, spiritual, and religious well-being of the command. The chaplain operates under the cognizance of the C/S. The following functions are performed:

- Assists the G-1 in determining and improving the state of morale.
- Advises the commanding officer or commander on all matters related to religious ministries.
- Prepares Appendix 6 (Chaplain Activities) to Annex E to the OPLAN, OPORD or campaign plan.

- Administers the Command Religious Program (CRP).
- Conducts divine services; administers sacraments and ordinances; performs rites and ceremonies in accordance with the manner and forms of the chaplain's faith group; provides outreach programs, spiritual growth retreats and religious education; and facilitates religious ministries for personnel of other faith groups.
- Provides pastoral care and pastoral counseling, including visiting the sick and confinees. (Privileged communication of Servicemembers, eligible family members, and other authorized personnel throughout the Department of the Navy will be safeguarded. A communication is presumed confidential if it is a formal act of religion or a matter of conscience that is privately conveyed to a chaplain or chaplain's assistant in his or her official capacity. If a chaplain or chaplain's assistant must impose any condition upon confidential communication, those conditions or reservations must be explicitly stated before proceeding with the communication.)
- Advises the commanding officer or commander on moral issues and provides input to programs that emphasize Marine Corps core values.
- Reports to an assigned position or battle station in combat, at general quarters or similar situations to provide ministry.
- Assists in the casualty assistance calls program by providing ministry to the next of kin of deceased and seriously ill personnel. Chaplains shall not be designated as casualty assistance calls officers.
- Develops plans, programs, and budgets to execute religious ministries within the command.
- Advises the command chaplain of the unit or command to which the unit is attached of necessary actions on programming of chaplain and Religious Program Specialist (RP) billets and other support requirements.
- Provides liaison with local religious groups and NGOs in the US or foreign countries.
- Fulfills faith group requirements for maintaining ecclesiastical endorsement.
- Provides supervision and training for assigned junior officers, enlisted members, and civilian personnel.
- Prepares and maintains directives and procedures pertinent to the CRP, including chapel usage instructions, turnover files, etc.
- Reports a summary of activities semi-annually to the major claimant staff chaplain on a report form to be determined by the same.

Staff Judge Advocate or Legal Officer

The SJA (senior judge advocate in commands not having general court-martial authority) is responsible for assisting the commander in the administration of military justice and the processing of legal matters. In units not authorized an SJA, these duties are performed by the legal officer. The SJA operates under staff cognizance of the C/S. The legal officer will normally operate under the staff cognizance of the G-1/S-1. The following functions are performed:

- Assists the commander in the administration of military justice.
- Prepares all court-martial orders issued by the headquarters.
- Reviews and recommends action on investigations and claims.
- Advises and provides legal assistance to military personnel.
- Advises and provides legal assistance to the commander and staff on other legal matters, including the following:
 - Law of war and ROE.
 - Civil-military relations and jurisdiction.
 - Civil affairs and civic action.
 - Civil and administrative law.
 - International law and relations.
 - Claims, litigation, investigations, and reports.
 - Local law in the AO.
 - Negotiation of contracts with indigenous organizations.
 - Contract law.
 - Labor law.
 - Environmental law.

- Conducts training for members of the command on legal matters, including training on the law of war and standing ROE, the administration of military justice, and the conduct of investigations.

Provost Marshal

The PM is responsible for all military police (MP) matters. The following functions are performed:

- Coordinates with the G-3 in—
 - Conducting battlespace circulation control, including motor patrols, movement control procedures, roadblocks, checkpoints, and refugee control.
 - Providing area security, including motor and foot patrols, airbase ground defense, and rear area security.
- Coordinates with the civil affairs officer in controlling the civil population. The PM cooperates with civil authorities when implementing antisabotage measures, and supports civil authorities during domestic disturbances and disasters.
- Coordinates with the G-2 in—
 - Providing information from MP activities to appropriate collection agencies.
 - Receiving intelligence information to support MP activities.
- Coordinates with the G-4 in—
 - Enforcing traffic regulations and installing route markers and traffic control signs.
 - Controlling mass movement of refugees.
- Coordinates with the G-1 in—
 - Enforcing police regulations among members of the armed forces and in areas occupied by troops.
 - Apprehending and maintaining custody of offenders.
 - Conducting criminal investigations.
 - Cooperating with civil authorities with respect to police protection, blackouts, criminal investigations, and black market suppression.
 - Apprehending stragglers.

- Collecting, guarding, and evacuating enemy prisoners of war (EPW), including recommending the location of collection points and enclosures.
- Performing law-and-order functions in occupied areas.
- Conducting customs and counterdrug activities.

Comptroller

The comptroller has responsibility for financial management. Operating under the staff cognizance of the C/S, a comptroller will be assigned only to major commands. At commands not authorized a comptroller, staff duties pertaining to fiscal matters may be assigned to one or more staff sections. (All comptroller responsibilities would normally be assigned to the AC/S G-4 except for disbursing matters, which would be assigned to the G-1.) In commands without a comptroller the disbursing officer or fiscal officer assumes the comptroller's duties. See also MCWP 4-1, *Logistics Operations*. Responsibilities follow.

Budgeting

- Prepares guidance, instructions, and directives to develop and execute the command's budget.
- Reviews the resource requirements and justifications for various command financial programs.
- Compiles the annual budget.
- Recommends allocation of funds and provides funding ceilings to subordinate units.
- Initiates action for financial adjustments, when required, in the amount of funds made available.
- Improves financial management efficiency.

Accounting

- Maintains required records, including records of obligations and expenditures against allotments and project orders.
- Maintains records for the plant property account and financial transactions of all classes of property.
- Executes tasks involved in civilian pay, leave, and retirement.

- Prepares financial accounting reports.
- Supervises cost accounting operations.
- Submits property returns.
- Supervises timekeeping operations.
- Prepares civilian payrolls.

Disbursing

- Accomplishes payment of military and civilian payrolls, travel and per diem allowances, and public vouchers.
- Collects proceeds of sales and other funds for credit to the US.
- Registers allotments and savings bonds.
- Prepares disbursing reports and returns.

Auditing and Reviewing

- Designs new and improves existing audit policies, programs, methods, and procedures to monitor execution of funded programs.
- Tests the reliability and usefulness of accounting and financial data.
- Examines the effectiveness of control provided over command assets and makes appropriate recommendations for any required action.
- Coordinates all matters pertaining to external audits, including monitoring the implementation of recommendations and initiating follow-up action.
- Participates in financial management inspections of subordinate commands.

- Analyzes the requirements of all financial management directives promulgated by higher authority and prepares amplifying directives for dissemination within the command.
- Conducts routine analysis of all financial management reports submitted by subordinate units for accuracy, correctness of format, and compliance with directives, and to ascertain the financial condition of the reporting unit.
- Conducts financial management training programs for the staff and subordinate units.

Inspector

The inspector performs the general duties of a special staff officer with respect to the inspections of activities and units to ensure compliance with regulations, directives, and orders. The following functions are performed:

- Conducts inspections and investigations as directed by the commander.
- Recommends measures and actions to correct deficiencies.
- Processes request mast petitions to the commanding general and acts as his agent by hearing request mast cases during the commanding general's command inspection program.

Unit Liaison Officers

Liaison officers (LNOs) represent the commander at the headquarters of another unit to coordinate and promote cooperation between the two units.

SECTION II. GENERAL/EXECUTIVE STAFF OFFICERS

This section describes specific responsibilities of each principal staff officer with respect to the following functions:

- Administration and personnel.
- Intelligence.
- Operations.

- Logistics.
- Planning.
- Communications.

It also identifies those special staff officers for whom the principal staff officers commonly have primary staff responsibility. Except where noted,

duties of the general/executive staff officers for each function are similar. Specific duties listed for each staff officer are notional and may be modified by the commander. The list of special staff officers is not all-inclusive. Not every staff has all of the special staff officers listed. Commanders may assign additional special staff officers not discussed here. Billets and staff cognizance are subject to the commander's requirements and desires.

Administration and Personnel

The G-1/S-1 is the principal staff officer for all matters on personnel management, personnel administration, and headquarters management. Every unit staff has a personnel officer.

Specific Responsibilities of the G-1/S-1

Personnel Strength Management

- Maintains personnel strength status.
- Monitors and analyzes personnel strength data to estimate combat readiness.
- Coordinates with the G-3 to estimate casualties.
- Projects future manpower requirements.
- Develops plans to maintain organizational strength.

Personnel Replacement Management

- Determines present and estimates future replacement requirements.
- Plans and coordinates the procurement and assignment of replacements.
- Allocates replacements in accordance with priorities established by the G-3.
- Supervises the receiving, processing, and delivery of replacements.
- Advises the commander and staff on individual replacements and the replacement system.

Discipline, Law, and Order

- Promulgates orders for the enforcement of laws and regulations and the maintenance of good order and discipline.
- Promulgates regulations for troop conduct and appearance.
- Plans for the control and disposition of stragglers.
- Prepares plans and orders pertaining to the administration of military justice, except court-martial orders.
- Plans the location and supervises the operation of confinement facilities.
- Supervises and coordinates relations with civilians with respect to law enforcement.

Prisoners of War

- Plans and coordinates the collection, safeguarding, administration, and evacuation of prisoners of war (PWs).
- Plans, coordinates, and supervises PW employment.
- Prepares plans, orders, and instructions relating to the treatment of PWs.
- Plans and supervises measures to ensure the discipline, indoctrination, and repatriation of PWs.

Headquarters Management

- Organizes and supervises administrative support activities relating to the operation of the headquarters.
- Determines the internal arrangement of the headquarters with the HQCOMDT and the CIS officer.
- Allocates space within the headquarters.
- Assigns billeting areas.

Casualty Management

- Conducts casualty reporting and casualty mail coordination.

- Conducts next-of-kin notification and assistance.
- Plans, coordinates, and supervises the conduct of ceremonies and funerals.
- Plans and coordinates policies for personnel determined unfit for combat duty for medical reasons.

Personnel Management

- Plans and coordinates personnel procurement, retention and reenlistment, classification, reclassification, assignment, promotion, and reduction.
- Supervises personnel management procedures relating to transfer, retirement, separation, and rotation.
- Conducts staff inspections to ascertain the effectiveness of personnel administration.
- Monitors the deployability of all personnel.
- Maintains personnel records.

Morale and Personnel Services

- Maintains a current appraisal of morale and influencing factors.
- Determines requirements for leave and liberty and for rest and recreation facilities.
- Plans, coordinates, and supervises the unit award program.
- Plans, coordinates, and supervises religious activities, command information, morale, welfare, and recreation (MWR) services, exchange facilities, postal services, legal assistance, family support services, and other quality-of-life programs.

Operation Plan and Operation Order

- Prepares Annex E (Personnel) to the OPLAN/OPORD.
- Provides input to the logistic estimate and to the logistic annex of the OPLAN/OPORD.

Special Staff Officers under Staff Cognizance of the G-1 Officer

Adjutant

On general staffs, the adjutant is responsible for office management. On executive staffs, the S-1

will be dual-hatted as the adjutant, and in the S-1 role, will have staff cognizance over personnel administration and office management. The following functions are performed:

- Supervises the flow of paperwork to ensure the correct staffing of all documents.
- Routes messages and monitors those requiring action.
- Establishes and maintains a report control system.
- Manages line-of-duty investigations, congressional inquiries, and special correspondence.
- Coordinates and arranges nontactical boards, meetings, and conferences.
- Prepares duty rosters, read boards, and welcome aboard information.
- Plans, coordinates, and supervises the conduct of ceremonies and funerals.
- Promulgates SOPs and directives for general administration within the command and supervises the command award program.
- Maintains the office of record for the headquarters.
- Plans and coordinates the movement of documents and reports via mail, messenger, electronic means, and external guard mail.
- Performs other administrative services as assigned to relieve other staff sections of routine administrative responsibilities.

Career Planning Officer

The career planning officer performs the general duties of a special staff officer with respect to career planning matters. The following functions are performed:

- Develops and coordinates an officer retention program.
- Monitors the reenlistment program of staff noncommissioned officers (SNCOs).
- Develops and coordinates a first-term reenlistment program.
- Monitors promotion and retirement policies, assignments, active duty/dependent entitlements, academic/professional education programs, and resignation/retirement requests.

- Interviews, trains, and recommends assignments for Marines with a secondary and tertiary military occupational specialty (MOS) in career planning.
- Provides informal assistance and services to all Marines on career matters to include a direct communication link to Headquarters Marine Corps.
- Conducts formal and informal inspections in the area of career planning.
- Advises the commander on career planning issues.

Disbursing Officer

The disbursing officer performs the general duties of a special staff officer with respect to the safekeeping of all public money collected or otherwise placed in his custody. The disbursing officer falls under the staff cognizance of the comptroller or, if a comptroller is not authorized, the G-1. The following functions are performed:

- Disburses or transfers funds as directed.
- Performs duties as fiscal agent of the Marine Corps in accordance with applicable law or regulation.
- Deposits public funds not required for current expenditures.
- Maintains detailed records of all transactions and submits periodic financial reports.

Postal Officer

The postal officer performs the general duties of a special staff officer, with respect to postal matters. Staff responsibilities include the following:

- Directs, supervises, and coordinates postal operations and services.
- Supervises the operation of post offices, postal directories, and organizational mailrooms.
- Conducts inspections and audits required by regulations.
- Assumes custody of and accounts for postal funds and equipment assigned to the command.
- Prepares postal reports as required.

Morale, Welfare, and Recreation Officer

The MWR officer performs the general duties of a special staff officer, with respect to special services matters. The following functions are performed:

- Supervises the command's recreation and athletic programs.
- Advises the commander on the technical and logistic support of recreational and athletic programs.
- Coordinates special services matters with MWR agencies of other Services.
- Researches, prepares, and administers the budget for MWR matters for appropriated and nonappropriated funds.
- Plans, coordinates, and supervises the acquisition, storage, security, issue, recovery, and redistribution of all special services supplies and equipment.
- Supervises administrative matters pertaining to acquisition, maintenance, and operation of MWR facilities including libraries and amateur radio stations.
- Furnishes advice and information relative to MWR procedures including property accounting, property control, and property responsibility.
- Conducts internal audits of required accounting procedures and inspections of MWR facilities and equipments.
- Plans, coordinates, and supervises education and troop information programs.

Personnel Officer

The personnel officer performs the general duties of a special staff officer with respect to personnel administration. The following functions are performed:

- Plans and supervises the procurement, classification, assignment, transfer, and replacement of the unit's personnel.
- Develops SOPs and directives for personnel policy within the command.

- Analyzes current and projected strength data to determine personnel requirements.
- Assists the G-1/S-1 in preparing and maintaining the personnel estimate.
- Maintains visibility of personnel status.
- Supervises casualty reporting and next-of-kin notification and assistance.
- Coordinates personnel matters with other commands.
- Submits correct and timely input into the Joint Uniform Military Pay System/Manpower Management System (JUMPS/MMS) and takes corrective actions required by reports generated by JUMPS/MMS.

Intelligence

The AC/S G-2 (S-2) has staff responsibility for intelligence and intelligence operations. The commander relies on the intelligence officer to provide information on weather, terrain, and enemy capabilities, status, and intentions. Through the intelligence annex and supporting appendices, the G-2 does the following:

- Validates and plans information requirements.
- Coordinates intelligence priorities.
- Integrates collection, production and dissemination activities.
- Allocates resources.
- Assigns specific intelligence and reconnaissance missions to subordinate elements.
- Supervises the overall intelligence, counterintelligence (CI), and reconnaissance efforts. See also MCWP 2-1, *Intelligence Operations*.

Specific Responsibilities of the G-2/S-2

- Develops and answers outstanding intelligence-related priority intelligence requirements (PIRs) and intelligence requirements (IRs) by planning, directing, integrating, and supervising organic multidiscipline MAGTF and supporting intelligence operations.

- Prepares appropriate intelligence, CI, and reconnaissance plans and orders, and reviews and coordinates the all-source intelligence, CI, and reconnaissance plans of JTFs, theaters, and other organizations.
- Submits and coordinates all-source collection, production, and dissemination requirements beyond the capability of the MAGTF through higher headquarters for JTF, theater or national intelligence support.
- Ensures intelligence information is rapidly processed, analyzed, and incorporated where appropriate in all-source intelligence products, and rapidly disseminates to all MAGTF and external units requiring these.
- Evaluates JTF, theater, and national all-source intelligence support and adjusts stated IRs.
- Identifies deficiencies in intelligence, CI, and reconnaissance personnel and equipment resources.
- Incorporates exercise intelligence in training exercises to improve individual, collective, and unit readiness.
- Facilitates understanding and use of intelligence in support of the planning and execution of operations.

Special Staff Officers under Staff Cognizance of the G-2 Officer

G-2 Operations Officer

The G-2 operations officer has primary responsibility for intelligence support to current and future operations. Specific responsibilities include the following:

- Coordinates and provides intelligence support to the commander, the G-3 operations section, and the rest of the commander's battle staff.
- Serves as the G-2 representative to the MAGTF CE crisis action team (CAT).
- Coordinates, provides, and supervises intelligence support to the MAGTF CE combat operations center (COC), future operations center, and force fires.

- Plans, directs, and supervises the Red Cell.
- Provides recommendations on PIR and IR validation, prioritization, and taskings to the AC/S G-2 and the information systems coordinator (ISC).
- Coordinates and supervises the transition of intelligence planning and operations from G-2 plans to G-2 future operations, and from G-2 future operations to G-2 current operations to effectively support the MAGTF's single battle transition process.
- Plans, directs, and supervises MAGTF liaison teams to external commands; e.g., the JTF and joint functional components headquarters and intelligence organizations.
- Coordinates with the ISC and MAGTF major subordinate commands' (MSCs') G-2 operations officers for unity of effort of MAGTF intelligence operations.
- Provides intelligence input and other support to MAGTF warning and fragmentary orders and to operations related reporting; e.g., periodic situation reports.
- Coordinates intelligence training for the MAGTF G-2 section and provides G-2 oversight for and integration of the entire MAGTF intelligence training program.
- Performs other intelligence support and tasks as directed by the AC/S G-2.

G-2 Plans Officer

The G-2 plans officer has primary responsibility for intelligence support to the future plans cell. Specific responsibilities include the following:

- Plans the MAGTF concept of intelligence operations for approval by the AC/S G-2 and subsequent implementation by the integrated staff cell based on the mission, threat, commander's intent, guidance, and concept of operations.
- Leads, coordinates, and provides intelligence support to G-5 future plans section.
- Plans and coordinates intelligence support requirements for and the deployment of intelligence elements and resources into the AO.

- Provides recommendations on PIR and IR validation, prioritization, and taskings to the AC/S G-2 and the ISC.
- Coordinates, with the ISC, G-2 development of Annex B (Intelligence) and Annex M (Geospatial Information and Services) to the OPLAN.
- Keeps the G-2 section, other CE staff sections, intelligence liaison personnel, augmentees, and others apprised of MAGTF intelligence planning actions and requirements.
- Identifies requirements and provides recommendations to the G-2 operations officer for MAGTF intelligence liaison teams to external commands; e.g., the JTF or other components' headquarters and intelligence agencies.
- Coordinates and develops policies for intelligence, CI, and reconnaissance operations.
- Plans, directs, and supervises the G-2's imagery and mapping, CI/human intelligence (HUMINT), signals intelligence (SIGINT), and weather sections.
- Performs other intelligence support and tasks as directed by the AC/S G-2.

Intelligence Battalion Commander/Intelligence Support Coordinator

The intelligence battalion commander is responsible for planning, directing, collecting, processing, producing, and disseminating intelligence, and providing CI support to the MEF, MEF MSCs, subordinate MAGTFs, and other commands as directed.

Garrison

In garrison the principal task of the intelligence battalion commander is to organize, train, and equip detachments that support MAGTFs or other designated commands to execute integrated collection, intelligence analysis, production, and dissemination of intelligence products.

Actual Operations

During operations the intelligence battalion commander is dual-hatted as the ISC, serving under the direct staff cognizance of the AC/S G-2. The S-3 section, along with the operations center element of the G-2, form the core of the ISC support effort, with planning, direction, and command and control conducted within the intelligence operation center's (IOC's) support cell. As the ISC, the commander is responsible to the AC/S G-2 for the overall planning and execution of all-source intelligence operations. Specific responsibilities of the ISC during actual operations include the following:

- Implements the concept of intelligence operations developed by the G-2 plans officer and approved by the AC/S G-2.
- Establishes and supervises operation of the MAGTF IOC, which includes the support cell, the surveillance and reconnaissance cell (SARC), and the production and analysis (P&A) cell. Generally, the IOC will be collocated with the MAGTF CE's main command post.
- Develops, consolidates, validates, and prioritizes recommended PIR and IRs to support MAGTF planning and operations. The ISC is tasked to perform PIR and IR validation and prioritization only during actual operations when the IOC is activated. During routine peacetime operations the PIR/IR validation and prioritization tasks are the responsibility of the G-2 operations officer.
- Plans, develops, integrates, and coordinates intelligence collection, production, and dissemination plans. This includes the effective organic and external integration and employment and staff cognizance of SIGINT, CI, HUMINT, geographic intelligence (GEOINT), imagery intelligence (IMINT), ground remote sensors, ground reconnaissance, and tactical air reconnaissance intelligence collections, production, and dissemination operations.
- Develops, with the G-2 plans officer and G-2 operations officer, and completes Annex B (Intelligence) and Annex M (Geospatial Information and Services) to the OPORD.
- Plans, develops, integrates, and coordinates intelligence and CI support to the commander's estimate, situation development, indications and warning, force protection, targeting, and combat assessment.
- Manages and fuses the threat (or red) common operational picture/common tactical picture (COP/CTP) inputs from subordinate units and external commands and intelligence agencies into the COP/CTP.
- Provides intelligence support to the MAGTF G-2 section and the MSCs.
- Prepares the intelligence and CI estimates to support G-2 plans.
- Plans, develops, and coordinates intelligence CIS architecture, including its integration with and support of IMINT and other intelligence and reconnaissance requirements.
- Coordinates and integrates all-source intelligence operations with other Service components; the JTF joint intelligence support element (JISE); the theater joint intelligence center (JIC) or joint analysis center (JAC); and national intelligence agencies and operations to include all aspects of intelligence reachback support.
- Assists with the evaluation and improvement of all-source intelligence, CI, and reconnaissance operations.
- Provides other intelligence support and tasks as directed by the AC/S G-2.

Collection Management/Dissemination Officer

The collection management/dissemination officer (CM/DO) is sourced from the intelligence battalion's S-3 section and is a key subordinate to the intelligence battalion commander/ISC during operations. The CM/DO is responsible for formulating detailed intelligence collection requirements (ICRs) and intelligence dissemination requirements (IDRs) and tasking and coordinating internal and external operations to satisfy

these. The CM/DO receives validated PIR and IRs and direction from the ISC, and then plans and manages the best methods to employ organic and supporting collection and dissemination resources through the intelligence collection and dissemination plans.

The CM/DO is also responsible for validating and forwarding national and theater intelligence collection requests from the MAGTF and MSCs typically using appropriate intelligence tools and TTP. He also is responsible for coordinating intelligence CIS requirements and maintaining awareness of available CIS connectivity throughout the MAGTF and with key external organizations. During operations the CM/DO works within the support cell. In coordination with the P&A cell officer in charge (OIC), the SARC OIC, G-2 operations officer, intelligence/reconnaissance commanders, and the G-6, the CM/DO is responsible to the ISC for the following tasks:

- Determining and coordinating the collection effort of PIR/IRs that may be collected via intelligence, CI, and reconnaissance resources.
- Determining PIR/IRs and preparing requests for intelligence (RFI) that are beyond organic capabilities and preparing submissions to higher headquarters and external agencies for support.
- Recommending dissemination priorities, development of intelligence reporting criteria, and advising on and selecting dissemination means.
- Using the Collection Management Board to develop and coordinate all-source intelligence collection plans, coordinating and integrating these with MAGTF, other components, JTF, theater, and national intelligence production operations.
- Developing and coordinating all-source intelligence dissemination plans and supporting architectures for voice and data networked communications, and coordinating and integrating these with MAGTF, other components, JTF, theater, and national intelligence CIS and dissemination operations.
- Monitoring the flow of intelligence throughout the MAGTF and ensuring that it is delivered to intended recipients in a timely fashion and satisfactorily meets their needs.
- Evaluating the effectiveness of MAGTF and supporting intelligence collection and dissemination operations.

Surveillance and Reconnaissance Center Officer in Charge

The SARC OIC is also an immediate subordinate of the ISC and is responsible for supervising the execution of the integrated organic, attached, and DS intelligence collection and reconnaissance operations. The SARC OIC is responsible to the ISC for the following:

- Coordinates, monitors, and maintains the status of all ongoing intelligence, CI, and reconnaissance collection operations. This includes the following:
 - Missions, tasked ICRs, and reporting criteria for all collection missions.
 - Locations and times for all pertinent fire support control measures.
 - Primary and alternate CIS plans for routine and time-sensitive requirements (for collectors and between the collectors or the SARC and key MAGTF CE and MSC command and control nodes) to support ongoing command and control of collection operations and dissemination of acquired data and intelligence to those needing it via the most expeditious means.
- Conducts detailed intelligence collection planning and coordination with the MSCs and intelligence, CI, and reconnaissance organizations' planners, with emphasis on ensuring understanding of the collection plan and specified intelligence reporting criteria.
- Ensures other MAGTF command and control nodes; e.g., the current operations center or force fires, are apprised of ongoing intelligence, CI, and reconnaissance operations.

- Receives routine and time-sensitive intelligence reports from deployed collection elements; cross-cueing among intelligence collectors, as appropriate; and the rapid dissemination of intelligence reports to MAGTF command and control nodes and others in accordance with IRs, intelligence reporting criteria and dissemination plan, and the current tactical situation.

Production and Analysis Cell Officer in Charge

The P&A cell OIC is the third principal subordinate to the integrated staff cell. Primary responsibility is to manage and supervise the MAGTF's all-source intelligence processing and production efforts. Key responsibilities include the following:

- Plans, directs, and manages operations of the all-source fusion platoon (to include the fusion, order of battle, intelligence preparation of the battlespace [IPB], and target intelligence/battle damage assessment teams), the topographic platoon, the imagery intelligence platoon (IIP), the DS teams, and other P&A elements as directed.
- Coordinates and integrates P&A cell operations, estimates, and products with the G-2 section's G-2 operations branch and its Red Cell operations and estimates.
- Maintains all-source automated intelligence databases, files, workbooks, country studies, and other intelligence studies.
- Plans and maintains imagery, mapping, and topographic resources and other intelligence references.
- Administers, integrates, operates, and maintains intelligence processing and production systems and unclassified general service (message) (GENSER) and SCI information systems; e.g., the intelligence analysis system (IAS) or the image product library.
- Analyzes and fuses intelligence and other information into tailored all-source intelligence

products to satisfy all supported commanders' stated or anticipated PIR and IRs.

- Develops and maintains current and future intelligence situational, threat, and environmental assessments and target intelligence based on all-source analysis, interpretation, and integration.
- Manages and fuses the threat (or red) COP/CTP inputs from subordinate units and external commands and intelligence agencies into the COP/CTP.

Operations

The G-3 is the principal staff officer for all matters on training, plans, operations, and organization. At the MEF/MARFOR levels, the G-3 shares responsibility for planning with the AC/S G-5, plans officer. Every unit staff has an operations officer.

Specific Responsibilities of the G-3

Training

- Assists the commander in developing the unit's mission-essential task list (METL).
- Identifies training requirements based on the unit's METL and training status.
- Determines requirements for and allocates training aids, publications, facilities, and ammunition.
- Organizes and conducts internal schools and obtains and allocates quotas for external schools.
- Plans and supervises the execution of training.
- Maintains training records and prepares training reports.
- Plans and conducts training inspections, tests, and evaluations in accordance with established standards.

Operations

- Supervises the activities of the current operations, future operations, and future plans sections.
- Plans, coordinates, and supervises the tactical movement and employment of units.
- Plans, coordinates, directs, and monitors fires.
- Integrates fire and maneuver with other warfighting functions.
- Monitors the battle.
- Operates the COC and determines the general location of the command post.
- Designates the general location for bivouacking, quartering, and staging units involved in tactical operations (recommends intelligence requirements to the G-2).
- Recommends missions for reconnaissance units in coordination with the G-2.
- Integrates and displays the COP.
- Determines priorities for allocation of personnel, weapons, equipment, and ammunition.
- Estimates personnel and CSS requirements in coordination with the G-1 and G-4.

Planning and Operation Orders

- Exercises overall staff responsibility for the preparation of OPLANs and OPORDs.
- Exercises staff cognizance for Annexes A (Task Organization), C (Operations), J (Command Relationships), and W (Aviation Operations).
- Develops, authenticates, publishes, and distributes OPLANs, OPORDs, fragmentary orders, and warning orders (assists the C/S in directing the planning process).
- Prepares or reviews supporting plans such as fire support, tactical deception, combat engineer operations, MP operations, and psychological operations (PSYOP).
- Reviews subordinate units' OPLANs and OPORDs.
- Plans, coordinates, and supervises exercises.
- Plans fire support.
- Ensures that combat support requirements are identified and satisfied.

- Plans, coordinates, and supervises tactical deception activities, civil affairs activities, and rear area security.
- Plans for operational security and force protection.
- Plans and coordinates electronic warfare operations and activities in coordination with the G-2 and G-6.
- Conducts crisis action planning.
- Conducts long-range contingency planning.
Note: At the MEF/MARFOR levels, the G-5 has primary responsibility for long-range contingency planning.
- Prepares operational and historical reports.

Organization

- Develops task organization (assigns missions to subordinate elements).
- Develops and maintains the troop list.
- Assigns, attaches, and detaches units.
- Determines priorities for replacements, including unit replacements, in coordination with the G-1.
- Receives, orients, trains, and reorganizes units.
- Fields new weapons and equipment.
- Analyzes the need for and documents any recommended changes to tables of organization and equipment (TO&Es) (oversees unit activation and deactivation).
- Organizes and equips units.

Special Staff Officers under Staff Cognizance of the G-3 Officer

Air Officer

The air officer has staff responsibility for the coordination of air support. The following functions are performed:

- Serves as a member of the force fires coordination center (FFCC) or force support coordination center (FSCC).
- Determines air support requirements.
- Prepares, consolidates, coordinates, and prioritizes air support requests.

- Assists in the integration and coordination of offensive air support with other supporting fires.
- Coordinates with higher headquarters on air-space coordination measures to protect supporting aircraft.

Target Intelligence Officer

The target intelligence officer (TIO) is the head of the target information section in the division FSCC, and is responsible for targeting. His duties require him to work closely with the G-2 section TIO. There are no TIOs at regiment and battalion FSCCs. The FSC at these echelons may have to perform some TIO duties or delegate some to the supporting arms representatives. Duties include the following:

- Receives reports on potential targets from the G-2/S-2, subordinate elements, artillery units, and other FSCCs.
- Keeps the FSC and other supporting arms representatives informed of the status of targets.
- Keeps appropriate target files.
- Performs preliminary weaponeering. (A preliminary analysis of the target to determine what, if any, weapons will be effective against the target and the degree of damage it is possible to achieve with various types and quantities of ammunition.)

Civil Affairs Officer

The civil affairs officer has the responsibility to enhance the relationship between military forces and the civilian population in the AO to ensure the success of the military operation. The civil affairs officer is normally the commanding officer of the civil affairs group (CAG), the detachment commander of the civil affairs detachment or the team leader of a civil affairs team. Currently, all Marine Corps civil affairs units reside in the Reserve establishment. School-trained personnel in the active force may provide a limited civil affairs capability when Reserve

civil affairs assets are not available. In joint operations, other-Service augmentation of the Marine Corps civil affairs capability may be an option. In some situations; e.g., humanitarian operations, it may be more effective to authorize the civil affairs officer to act as a member of the general/executive staff rather than under the cognizance of the G-3. The following functions are performed:

- Advises the commander of the potential civilian impact on military operations.
- Advises the commander on the potential impact of military operations on the civilian population.
- Identifies civil affairs goals to support the mission.
- Develops concepts and plans to accomplish civil affairs goals.
- Prepares Annex G (Civil Affairs) to the OPLAN/OPORD.
- Coordinates with the SJA on the ROE as applied to civilians in the AO; recommends changes to the commander to ensure that, to the extent that the tactical situation permits, civilian personal, cultural, and property rights are safeguarded.
- Coordinates with the comptroller and the SJA to facilitate the identification, recording, and payment of claims for compensation for death, personal injury or property damage.
- Plans and implements, in coordination with the PM and SJA, necessary emergency population control measures to support rear area security, maintain law and order, and minimize civilian interference with combat operations. Such measures may include relocations, curfews, and movement restrictions.
- Provides the G-2 with information gained from civilians in the AO.
- Establishes and operates a civil-military operations center (CMOC) to maintain liaison with and coordinate the operations of other United States Government (USG) agencies, host nation civil and military authorities, and NGOs in the AO.

- Plans, in coordination with the PAO, public affairs and community relations programs supporting civil affairs goals and objectives; focused on gaining and maintaining public understanding, goodwill, and support.
- Assists the G-4 and the medical officer in identifying the basic needs of the civilian population in terms of emergency food, shelter, and health care and developing programs to satisfy those needs.
- Assists the G-4 in identifying local goods, services, and facilities available to support military operations.
- Coordinates the planning and execution of IO.
- Advises the commander on the employment of military units in support of civil affairs programs.

Future Operations Officer

The future operations officer conducts detailed planning for the command's next mission. The future operations officer focuses on new fragmentary orders and/or changes to the mission for subordinate elements, and forms and leads the integrated planning effort. The following functions are performed:

- Develops branch plans and refines sequels.
- Coordinates with G-5 for USG, combatant commander, and Service support.
- Develops potential CCIR and PIR.
- Plans to maintain the initiative and avoid unnecessary operational pauses.
- Interacts with force fires coordinator and the MAGTF target board to shape the battlespace for the next MSC mission change.
- Drafts initial OPORD or fragmentary order.
- Transitions the plan to current operations for execution. Key is to maximize time for MSCs to react to the fragmentary order.
- Develops briefing slides and decision aids as required.
- Provides direction and oversight to operational planning teams.

Current Operations Officer

The current operations officer coordinates the current battle and ensures adherence to the commander's intent. The following functions are performed:

- Operates the COC.
- Provides the nucleus of the "remain behind" element during force deployment.
- Confirms the plan to the commander.
- Executes plan.
- Monitors close battle.
- Analyzes battlespace events and information.
- Interprets and assesses battlespace events.
- Assesses CCIR collection.
- Coordinates with FFCC and future operations to adjust the current plan.
- Establishes and operates the Operations Synchronization Center.
- Coordinates and monitors execution of force deployments.
- Transmits orders and tactical decisions.
- Executes the OPORD.
- Develops fragmentary orders from future operations input for the current OPORD to execute the current battle.
- Establishes information requirements/criteria for rapid decisionmaking.

Information Operations Officer

The IO officer is responsible for coordinating IO. An IO officer may be found on MEF, division, and wing staffs, and performs the following functions:

- Advises the commander on the employment of IO assets to support the commander's concept of operations.
- Integrates the IO plan into OPLANs and OPORDs and prepares IO appendices to those plans and orders.
- Coordinates and supervises the IO activities of the command, with particular emphasis on

coordination of IO with other fires, and prevention of interference to friendly CIS through coordination with the G-6 to deconflict frequency usage.

- Establishes the electronic warfare coordination center (EWCC) and/or an IO cell as required and maintains liaison with electronic warfare and IO agencies of other commands.
- Participates in targeting meetings, and other staff meetings as required.

Marine Expeditionary Force Force Fires Officer/Fire Support Coordinator

The MEF force fires officer/FSC is responsible for the planning, coordination, integration, direction, and monitoring of organic and supporting lethal and nonlethal fires. All ground combat maneuver units, division through battalion, include an FSC. An FSC will be assigned to the rear area operations center (RAOC). The following functions are performed:

- Supervises the operation of the FSCC, including organizing and training personnel.
- Develops, in coordination with the G-3/S-3, a concept of fires and targeting objectives to support the operation.
- Conducts targeting boards.
- Determines fire support requirements and prepares fire support plans.
- Coordinates and directs the targeting process and supervises the collection and dissemination of target data.
- Plans, coordinates, integrates, directs, and monitors organic and supporting fires.
- Coordinates the activities of the air officer, naval gunfire officer, IO officer, and the TIO.
- Plans, in coordination with the IO officer, the use of electronic warfare assets in support of the overall fire support effort.
- Institutes and coordinates the use of fire support coordinating measures as required.
- Maintains information on the status of fire support systems, including ammunition on hand, and target acquisition assets.

Naval Gunfire Officer

The naval gunfire officer is responsible for coordinating, planning, integrating, and monitoring naval gunfire support. The following functions are performed:

- Serves as a member of the FSCC/FFCC.
- Determines requirements for naval gunfire support in support of the concept of fires and consolidates and reviews requirements of subordinate units.
- Prepares requests for naval gunfire support.
- Assists in the coordination and integration of naval gunfire with other supporting fires.
- Ensures that timely information is furnished to naval commanders regarding supported units.
- Maintains information on the status of the naval gunfire assets and ammunition supply as they affect supported units.
- Plans and supervises the training of naval gunfire personnel.

Nuclear, Biological, and Chemical Defense Officer

The NBC defense officer is responsible for planning and coordinating all activities relating to NBC defense. The following functions are performed:

- Supervises the detection, identification, evaluation, and monitoring of NBC agents and the employment of NBC reconnaissance, surveillance, and detection systems.
- Supervises the decontamination of personnel, equipment, supplies, facilities, and areas.
- Determines, in coordination with the G-2, the enemy's capability to employ weapons of mass destruction.
- Assesses weather and terrain data to determine whether environmental factors are favorable to enemy employment of weapons of mass destruction.
- Provides technical advice and recommendations on adopting mission-oriented protective posture (MOPP).

- Assesses the impact of potential or actual enemy use of weapons of mass destruction on the ability of the unit to accomplish the mission.
- Assists the surgeon or medical officer in establishing systems for determining personnel exposure to NBC agents.
- Prepares NBC messages and situation reports.

Psychological Operations Officer

When one is assigned, the PSYOPs officer performs the general duties of a special staff officer with respect to PSYOP. Staff responsibilities include the following:

- Advises the commander on matters pertaining to PSYOP.
- Prepares PSYOP plans and estimates.
- Coordinates PSYOP activities with other military and civilian agencies.
- Analyzes target audiences and evaluates the effects of PSYOP.
- Supervises the conduct of psychological campaigns including preparing, producing, and disseminating PSYOP materials and messages.

Visual Information Officer

The visual information officer performs the general duties of a special staff officer with respect to the use of photography to record operations, training, and other activities for use in future operations, training, study, planning, historical documentation, and public information. The following functions are performed:

- Advises the commander on capabilities and value of photography, the capabilities of photographic personnel assigned, and the material readiness of the equipment.
- Prepares appropriate instructions and notices to ensure operational readiness of the photographic unit.
- Prepares the photographic annex to OPORDs.
- Recommend changes to photographic personnel and equipment allowances to enhance operational readiness.

- Recommends changes on procurement and personnel training.
- Maintains close liaison with intelligence, historical, and public relations officers.
- Forwards photography in accordance with current directives.
- Plans, coordinates, and supervises the operation of the command photographic facility.
- Plans, administers, and directs the use of all instructional television equipment assigned to his photographic facility.
- Prepares and forwards, via the commander, the annual photographic report.

Air Control/Anti-air Warfare Officer

The air control/anti-air warfare officer performs the general duties of a special staff officer with respect to tactical air control and anti-air warfare. The following functions are performed:

- Advises on matters pertaining to coordination and integration of electronics countermeasures and communications-electronics deception in coordination with the wing electronics warfare officer and the wing communications-electronics officer.
- Coordinates all means of air defense with naval commands concerned with air defense control agencies.
- Recommends the tactical employment of air and surface anti-air warfare assets.
- Assists in technical inspections of air defense systems.
- Plans and coordinates with naval commands and air defense control agencies concerned with surface-to-air missile matters.

Assault Amphibian Officer

The assault amphibian officer performs the general duties of a special staff officer with respect to assault amphibian matters. Staff responsibilities include the following:

- Advises on assignment of assault amphibian vehicles (AAVs) to various classes of shipping based on the ship's carrying capacity; location

of personnel, equipment, and supplies to be lifted; and employment ashore.

- Advises on optimum distances (from an AAV standpoint) from line of departure; amphibious vehicle launching circle to the line of departure; and line of departure to the beach.
- Advises on techniques for discharging assault troops on the beach, to include using AAVs in projected mechanized operations ashore.
- Advises on employment of AAVs in transfer operations and the overall conduct of such operations.
- Advises on optimum AAV formations and timing of AAV waves.
- Assists in planning for employment of AAVs as mobile or floating dumps.
- Advises on cargo carrying capacity of AAVs, economy of such operations, and employment of a transfer line.
- Assists the landing support officer in planning for CSS employment of assault amphibian units.
- Coordinates all aspects of AAV employment with naval control groups and ships involved with AAV operations.
- Advises on maintenance requirements for assault amphibian units, to include location of maintenance areas ashore, assignment of maintenance personnel to higher echelon maintenance units, phasing ashore spare parts, and probable breakdown rates.
- Advises on requirement of assault amphibian units for fuel, oil, and other lubricants during operations ashore.
- Coordinates with G-4 on planning for assault amphibian unit assistance in fuel resupply by use of tanker trucks organic to the unit and fuel-ferrying assemblies transported in AAVs.
- Assists in planning for employment of landing vehicle, tracked, command-mark 7 (LVTC-7) vehicles as command posts or observation posts.

- Assists in planning for employment of AAVs in special operations such as river crossings, jungle operations, and mountain operations.
- Advises on employment of signals, marker devices, etc., for AAV control during night landings and operations conducted under cover of darkness.
- Advises on safety requirements when personnel are to be embarked in AAVs, and recommends training programs for units to be embarked.

Artillery Officer

The artillery officer performs the general duties of a special staff officer with respect to artillery. Staff responsibilities include the following:

- Coordinates and supervises field artillery observation, survey, communications, liaisons, and supply of meteorological data.
- Coordinates the fires and movement of artillery units.
- Assists in the collection and dissemination of enemy information by means of artillery intelligence agencies.
- Serves as unit FSC when directed by the commander.

Aviation Safety Officer

The aviation safety officer performs the general duties of a special staff officer with respect to aviation safety. Staff responsibilities include the following:

- Promotes the early discovery of unsafe trends or practices in flight operations.
- Coordinates training programs designed to further interests and education in aviation safety.
- Assisting in aircraft accident investigations to determine causes and to make recommendations.

Nuclear and Chemical Weapons Employment Officer

The nuclear and chemical weapons employment officer performs the general duties of a special staff officer with respect to nuclear and chemical weapons employment. Staff responsibilities include the following:

- Supervises the determination of requirements for nuclear and chemical munitions.
- Evaluates enemy vulnerability to nuclear and chemical weapons.
- Supervises the establishment and functioning of the offensive nuclear and chemical capability.
- Assists in the preparation of fire support plans when the employment of nuclear and chemical weapons is contemplated.

Logistics

The AC/S G-4 (S-4) is the principal staff assistant for all logistic matters. The G-4 plans, coordinates, and supervises the provision of CSS in the areas of supply, maintenance, transportation, health services, engineer support, landing support, materials handling, food services, mortuary affairs, and host-nation support. Every unit staff has a logistics officer. Aviation logistics, supply, maintenance, ordnance, and avionics functions are unique to the ACE and fall under the staff cognizance of the aviation logistics officer. At regiments and battalions, the S-4 also has staff responsibility for financial management.

Specific Responsibilities of the G-4/S-4

- Analyzes COAs and estimates supportability from a logistic/CSS perspective.
- Maintains visibility of logistic/CSS status.
- Identifies CSS requirements and prioritizes CSS through close and continuous coordination with the G-3.
- Develops logistic and CSS plans based on the concept of operations and in close coordination with the G-3 and supporting CSS units. The logistic plan will normally be prepared only at the MAGTF level. It deals primarily with external, deployment-oriented, and theater-level support, while the CSS plan is oriented to internal, combat-oriented support.
- Recommends the employment of organic and assigned/attached CSSEs.
- Recommends intelligence requirements to the G-2.
- Plans, coordinates, and supervises the collection, identification, and evacuation of the deceased and the disposition of personal effects.
- Coordinates with the G-3 for CSS of tactical troop movements.
- Plans, coordinates, and supervises nontactical troop movements.
- Coordinates with the G-1 and the G-3 on transporting replacement personnel and PWs.
- With the support of the comptroller and the SJA or legal officer, conducts procurement and contracting.
- In coordination with the civil affairs officer, plans and supervises the use of local services, supplies, and facilities.
- Manages real property and facilities, except field fortifications and command and control facilities.
- In coordination with the G-3 and supporting CSS units, plans the location of logistic support areas and the security of rear area facilities and lines of communications.
- Supports the G-3 and the G-5 in conducting force deployment and employment planning, including preparing time-phased force and deployment data (TPFDD) and coordinating strategic transportation.
- Exercises staff cognizance for embarkation planning.
- Exercises staff cognizance for preparing Annex D (Logistics) to the OPLAN/OPORD.

Special Staff Officers under Staff Cognizance of the G-4 Officer

Supply Officer

The supply officer is responsible for all general supply activities within the command. The following functions are performed:

- Plans, coordinates, and supervises the acquisition, storage, control, security, issue, recovery, and redistribution of all supplies and equipment.
- Furnishes advice and information relative to supply procedures, including property accounting, property responsibility, and standardization of material.
- Maintains technical publications for the command, including procurement, allowances, and distribution, as provided for in the Marine Corps technical publications system.

Dental Officer

The dental officer is responsible for dental matters and coordinating dental activities within the command. The following functions are performed:

- Exercises staff supervision and provides professional and technical assistance with respect to all dental matters affecting the command.
- Coordinates with the medical officer in the development and implementation of plans to ensure the command's oral health and readiness.
- Develops and implements the command's preventive dentistry program.
- Ensures the maintenance of professional standards and adequate levels of dental care and treatment.
- Recommends employment of dental personnel and equipment for effective and efficient use of dental services.
- Establishes priorities for dental care and treatment.
- Plans and supervises the professional training of dental personnel.
- Coordinates with the medical officer and the civil affairs officer in developing dental support programs for humanitarian and civic action operations.

- Coordinates with the medical officer for the temporary use of dental personnel to assist in the care, treatment, and evacuation of mass casualties.

Medical Officer

The medical officer has responsibility for medical matters and coordinating medical service support for the command. Most unit staffs include a medical officer. The following functions are performed:

- Advises on the health services requirements of the command and, when relevant, the indigenous population within the commander's area of responsibility.
- Advises on the medical threat in the AO, considering the following:
 - Environmental factors.
 - Endemic and epidemic diseases.
 - Weapons of mass destruction.
 - Directed-energy devices.
- Plans for treatment of casualties resulting from enemy employment of weapons of mass destruction; identifies biological agents used against friendly troops; advises on preventive medicine measures to protect friendly troops from the effects of potential enemy biological and chemical agents; and furnishes assessments of the impact of potential and actual use of weapons of mass destruction on friendly troops.
- Determines requirements for and supervises the requisitioning, procurement, storage, maintenance, distribution, and documentation of medical equipment and supplies.
- Determines requirements for medical personnel to support operations and requests augmentation when necessary.
- Exercises staff supervision over medical training in the command.
- Exercises staff supervision and technical direction over medical activities throughout the command, including personal hygiene, environmental sanitation, first aid, sanitary aspects of food service and food procurement, and other preventive medicine activities affecting the health of the command.

- Plans and supervises health service operations, including the following:
 - Treatment and evacuation.
 - Preventive medicine in the command and, as required, for indigenous populations.
 - Professional health service in subordinate units.
 - Preparation of reports.
 - Medical supply and maintenance.
 - Medical laboratory service.
 - Whole blood control, including planning, acquisition, storage, and distribution.
 - Professional health services for EPWs and civilian internees/detainees.
- Coordination of medical requirements for facilities and transportation.
- Coordination with the civil affairs officer of the development of programs for medical support of humanitarian and civic action operations.

Ordnance Officer

The ordnance officer is responsible for all ordnance matters. The following functions are performed:

- Advises the commander and his staff on ordnance matters and exercises technical direction over ordnance activities throughout the command.
- Determines requirements for and requisitioning, procurement, storage, and distribution of ordnance materiel.
- Estimates operational ammunition requirements, establishes priorities, and monitors mount-out code plan ammunition allowances and the issuing of ammunition for training and combat within established priorities and allowances.
- Plans and supervises the recovery, evacuation, and maintenance of ordnance materiel beyond the capability of using units.
- Coordinates the establishment and operation of ordnance maintenance and supply activities.
- Provides for technical inspection of ordnance materiel, including organizational maintenance of such materiel.

- Plans and supervises the collection and reclamation of captured or abandoned ordnance materiel.
- Plans and supervises explosive ordnance and nuclear weapons disposal.

Embarkation Officer

The embarkation officer performs the general duties of a special staff officer with respect to loading and unloading of personnel, equipment, and supplies in movement by ship, aircraft, and railroad. The following functions are performed:

- Formulates loading plans for land, sea, and air movement in accordance with administrative and tactical requirements.
- Maintains liaison with appropriate ground, sea, and air transportation commands.
- Supervises activities relating to loading and unloading to ensure adherence with established priorities.
- Determines requirements for and recommends allocation of transportation means.
- Compiles and maintains lift requirement data for the command.
- Maintains characteristics data for land, sea, and air carriers.
- Plans, conducts, and supervises embarkation training.

Engineer

The engineer performs the general duties of a special staff officer with respect to engineering. The force/division engineer is normally the senior engineer. He advises the commander on the employment of engineer forces. The following functions are performed:

- Plans technical training of engineer and non-engineer personnel in engineer duties.
- Plans engineer reconnaissance, field surveys, terrain studies, and mapping operations, including technical assistance, in coordination with the G-2, in collecting and processing information to prepare and revise maps.

- Plans for engineer intelligence and dissemination.
- Analyzes engineer tasks required to implement the force/division commander's plan.
- Maintains liaison and coordination with higher and adjacent commands on engineer matters.
- Determines engineer units that can best accomplish required tasks, and evaluates, plans for, and coordinates engineer support/unit requirements not organic to the command.
- In coordination with the G-3, plans and provides technical supervision of construction of defensive works, including field fortifications, demolitions, obstacles, and minefields.
- Maintains detailed minefield, barrier, and obstacle records.
- Recommends traffic regulations dictated by physical conditions of routes of communications.
- Provides advice and technical supervision on camouflage matters.
- Plans construction, repair, and maintenance of essential utilities.
- Plans construction, repair, and maintenance of camps, advanced landing fields, warehouses, hospitals, roads, bridges, piers, pipelines, and river-crossing sites.
- Exercises staff supervision and makes recommendations concerning procurement, storage, and distribution of engineer equipment and supplies.
- Exercises appropriate technical staff supervision and inspection of corresponding staff sections and activities of subordinate and attached units.

Fiscal Officer

The fiscal officer performs the general duties of a special staff officer under the staff cognizance of the accounting officer, comptroller or the G-4 as directed with respect to allotments of appropriated funds. If the command does not have a comptroller, the disbursing officer or fiscal officer assumes the comptroller's duties. The supply officer, under the staff cognizance of the

G-4/S-4, may also be designated as the fiscal officer. See also MCWP 4-11, *Tactical-Level Logistics*. The following functions are performed:

- Maintains records reflecting the use and status of appropriated funds made available to the commander by allotment, suballotment or other means.
- Prepares reports pertaining to the status of allotments and other fiscal matters.

Food Service Officer

The food service officer performs the general duties of a special staff officer, with respect to food service. The following functions are performed:

- Conducts surveys on food equipment and dining facility personnel.
- Supervises the training of dining facility personnel.
- Coordinates with the G-1 on the assignment of food service personnel.
- Coordinates the activities of food management teams when aboard the command.
- Conducts inspections of dining facilities to ensure proper food preparation and correct use of dining facilities and food service equipment.
- Advises the commander on the adequacy of the subsistence issue and the development of food service facilities under field or combat conditions.
- Coordinates feeding tactical organizations.
- Provides advice regarding the functional layout of food service equipment on all construction projects and rehabilitation and major equipment programs for food service facilities.

Ground Safety Officer

The ground safety officer performs the general duties of a special staff officer, with respect to ground safety. The following functions are performed:

- Coordinates and supervises all aspects of the ground safety program.

- Conducts inspections and maintains records of ground accidents to keep the commander informed of problems and progress of the ground safety program.
- Coordinates ground safety training programs designed to further awareness and education.

Landing Support Officer

The landing support officer performs the general duties of a special staff officer. The following functions are performed:

- Analyzes tactical plans and their attendant landing support requirements.
- Plans for tactical employment of landing support units to support the surface assault (shore party) and the helicopterborne assault (helicopter support team/group).
- Conducts detailed planning for organization of beach support areas and landing zone support areas.
- Plans and supervises training of landing support units.

Maintenance Management Officer

The maintenance management officer performs the general duties of a special staff officer and is the primary point of contact in maintenance management. Responsibilities encompass all commodities of Marine Corps ground equipment. The following functions are performed:

- Develops and manages the command's maintenance management program.
- Advises the commander on all matters related to equipment maintenance and the impact of the command's maintenance effort on equipment readiness.
- Exercises staff supervision over the maintenance management programs of subordinate units and provides technical assistance and instruction.
- Exercises staff and technical supervision over field maintenance and salvage of engineer material.

- Coordinates the command's equipment inspection program in support of the maintenance management effort.
- Manages the information systems associated with the Marine Corps Integrated Maintenance Management System.
- Coordinates the command's maintenance management related programs, such as Operational Readiness Float, Quality Deficiency Reporting, Modification Control, Calibration Control, Technical Publications Control, Corrosion and Wear Control Program, and other maintenance-related areas.
- Ensures close coordination with supply operations and management to provide timely support of maintenance requirements.
- Exercises staff technical supervision over field maintenance matters and salvage of material and equipment.

Motor Transport Officer

The motor transport officer performs the general duties of a special staff officer with respect to motor transport and advises the commander on the employment of motor transport assets. The following functions are performed:

- Supervises the planning of technical training for motor transport related duties and programs.
- Coordinates planning for motor transport intelligence and dissemination.
- Analyzes all motor transport tasks required to implement the commander's plans.
- Maintains liaison with higher and adjacent commands pertaining to motor transport.
- Analyzes and evaluates motor transport capabilities throughout the command.
- Coordinates all motor transport support requirements and directs commitments, as appropriate, to organizations best capable of providing support.
- Monitors and provides technical supervision to all motor transport requirements, commitments, and movements.
- Supervises and coordinates the maintenance of required motor transport records and reports.

- Develops, coordinates, implements, and monitors command technical inspections for motor transport.
- Monitors motor transport combat readiness in all subordinate organizations.
- Recommends and supervises procurement, distribution, and storage of motor transport assets.
- Advises the commander on all technical motor transport matters.

Transportation Officer

The transportation officer performs the general duties of a special staff officer with respect to transportation. The following functions are performed:

- Serves as technical advisor to the commander and the staff on commercial transportation matters other than motor transport.
- Assists the commander and the staff in planning and coordinating the strategic movement of the command and its resupply by common-user transportation assets.
- Maintains close liaison with other staff officers and the common-user transportation operating agencies.

Special Staff Officers under Staff Cognizance of the Aviation Logistics Officer

Aviation maintenance, ordnance, supply, and avionics officers are unique to ACE and Marine aircraft wing (MAW) headquarters. In ACEs based on a single aircraft group or composite squadron, these posts are normally assumed as additional duties by the commanding officer of the assigned host Marine aviation logistics squadron (MALS) and the squadron or detachment staff. See also MCWP 4-11.

Aircraft Maintenance Officer

The aircraft maintenance officer is the senior maintenance manager of the command and performs the general duties of a special staff officer with respect to the support and maintenance

of aircraft and associated ground support equipment. Staff responsibilities include the following:

- Serves as a technical advisor to the commander and staff on aircraft and ground support equipment.
- Supervises and coordinates aviation maintenance functions within the command to comply with technical directives and plans and policies of the commander.
- Analyzes data provided through the data collection system to determine support and maintenance problems; recommends corrective action.
- Reviews all accident and damage materiel reports to promote the early discovery of unsafe trends and practices in aviation maintenance.
- Furnishes technical assistance to subordinate units in matters relating to aviation maintenance.
- Ensures that maintenance management of all aircraft components and ground support equipment is exercised to the fullest extent at all levels within the command.

Aviation Ordnance Officer

The aviation ordnance officer performs the general duties of a special staff officer with respect to aviation munitions and ordnance. Staff responsibilities include the following:

- Serves as technical advisor to the commander and his staff on aviation ordnance equipment and class V(A) ammunition, including training and operational munitions.
- Exercises technical and logistical cognizance over nonnuclear and nuclear munitions.
- Exercises technical and logistical cognizance over offensive chemical weapons and associated handling and delivery equipment.
- Implements a conventional weapons safety program within the command consisting of inspections of munitions handling procedures and loading techniques.
- Ensures that all ordnance safety regulations are strictly adhered to.

- Recommends and supervises the procurement, allocation, use, and storage of aviation ordnance equipment, including targets and associated hardware and class V(W) and V(A) ammunition.
- Monitors distribution of aviation conventional ordnance.
- Assesses availability of required munitions in accordance with current contingency and general war plans; initiates corrective action as required.
- Ensures compliance with the commander's plans and policies pertaining to aviation ordnance.
- Furnishes technical assistance to subordinate units in matters related to aviation ordnance and related equipment.

Aviation Supply Officer

The aviation supply officer performs the general duties of a special staff officer with respect to aviation supply. The following functions are performed:

- Plans, coordinates, and supervises the acquisition, storage, control, security, issue, recovery, and redistribution of all aviation supplies and equipment including, as appropriate, Marine Corps supplies and equipment.
- Supervises and furnishes advice and information relative to the managerial and technical aspects of the aviation supply system internal and external to the command to include its interface with other echelons of supply and the Naval Aviation Supply System.
- Coordinates the development and implementation of plans, policies, and programs for the proper use of aviation funds.
- Reviews, analyzes, and evaluates managerial and performance data in relation to the aviation supply effectiveness and readiness posture of the command to accomplish its mission and commitments.
- Coordinates the requirements, utilization, employment, technical education, and proper management of supply personnel resources.

Avionics Officer

The avionics officer performs the general duties of a special staff officer with respect to the

maintenance of aircraft electrical and electronic systems and the associated special support equipment. The following functions are performed:

- Serves as technical adviser to the commander and his staff on avionics systems and their associated special support equipment.
- Supervises and coordinates avionics maintenance functions within the command to comply with technical directives and plans and policies of the commander.
- Analyzes data provided through the data collection system to determine avionics maintenance trends that will have an impact on weapons systems availability.
- Manages the operation for the calibration/qualification of test equipments applicable to the aviation maintenance programs.
- Furnishes technical assistance to subordinate units in matters relating to avionics maintenance.
- Conducts administrative and materiel inspections of subordinate units.
- Provides guidance and supervision for an efficient and current technical training program.

Planning

The AC/S G-5 is the principal staff assistant for all long-range (future) planning and joint planning. Normally, a G-5 is found only at the MEF and MARFOR levels. At lower echelons of the MAGTF, future planning is the responsibility of the G-3/S-3. The following functions are performed:

- Conducts future planning and supervises the future plans section by performing the following:
 - Provides a liaison element to participate in the higher headquarters planning process.
 - Receives the MAGTF mission from higher headquarters and initiates the MAGTF planning process.
 - Analyzes the mission assigned and develops an outline plan.
 - Exercises responsibility for OPLAN development with the G-3.
 - Transitions the outline plan to the G-3 to initiate detailed planning.

- Supports planning for current operations.
- Ensures general staff participation in the joint planning process.
- Conducts contingency planning for joint operations by performing the following:
 - Determines forces required and available.
 - Coordinates force deployment and employment planning.
 - Provides planning recommendations for host-nation support.
 - Coordinates and reviews the TPFDD input through the Joint Operation Planning and Execution System (JOPES).
- Trains the staff on JOPES procedures.

Communications

The AC/S G-6 (S-6) is the principal staff assistant for all CIS matters. Every unit staff has a CIS officer. The following functions are performed:

- Analyzes COAs and estimates supportability from a CIS perspective.
- Maintains visibility of CIS status.
- Identifies CIS requirements—personnel, equipment, supplies, and facilities—and prioritizes CIS support through close and continual coordination with the G-3.
- Develops CIS plans, orders, and SOPs based on the concept of operations and in close coordination with the G-3 and supporting CIS units.
- Recommends and supervises the employment of organic and assigned/attached CIS elements.
- Recommends intelligence requirements to the G-2.
- Advises the staff on the technical and operational aspects of CIS employment.
- In coordination with functional area users, plans and supervises CIS training.
- Coordinates with the G-3 on the location, echelonment, and displacement of the headquarters and command and control facilities for adequate and continuous CIS support.
- Plans and supervises the installation, operation, and maintenance of communications networks.
- Manages radio frequency assignments.
- Provides LAN/WAN management, including internet protocol (IP) address and routing management.
- Complies with interoperability standards and communications protocols.
- Coordinates with the G-4 for the supply and maintenance of CIS.
- Implements CIS security procedures in coordination with the other staff sections.
- Establishes CIS liaison with senior, subordinate, adjacent, supported, and supporting units.
- Prepares OPLANs/OPORDs (has staff cognizance for preparing Annex K [Communications and Information Systems] to the OPLAN/OPORD).

SECTION III. PERSONAL STAFF

The commander's personal staff consists of the sergeant major and, in some commands, aides and personal secretaries. The staff is directly responsible to the commander.

Sergeant Major

Duties are those specifically assigned by the commander on the discipline, welfare, conduct,

morale, and leadership of enlisted personnel. Functions usually are the following:

- Advises the commander and staff about enlisted personnel, including appraisals of the morale and discipline of the unit.
- Implements policies and standards on enlisted personnel performance, training, personal appearance, and conduct.
- Maintains communications with unit SNCOs and other enlisted personnel through SNCO channels.

- Provides guidance and counsel to SNCOs and other enlisted personnel.
- Participates in the reception and orientation of newly assigned enlisted personnel.

Aides

Aides serve as personal assistants to a general officer. An aide typically does the following:

- Provides for the general officer's personal well-being and security.
- Helps prepare and organize schedules and activities.
- Meets and hosts visitors.
- Acts as an executive assistant.
- Supervises other personal staff members (secretaries, assistant aides, and drivers).

CHAPTER 5

MARINE AIR-GROUND TASK FORCE

STAFF ACTION

Staff actions are designed with one aim: to assist the commander. This assistance contributes to timely and effective decisionmaking. The commander and staff should be continually alert to opportunities to streamline bureaucratic, cumbersome or time-consuming practices. Staff procedures must contribute directly to mission accomplishment. See appendix A for required staff action procedures and formats.

Marine Corps Planning Process

The most important planning activity conducted by MAGTF staff officers is participation in the MCPP. Staff officers make continuing estimates and analyses as a basis for developing and analyzing COAs. Once the commander has announced his decision and presented his concept of operation, each staff section prepares its appropriate portion of the plan and/or order implementing the commander's decision. See also MCWP 5-1, *Marine Corps Planning Process*.

Coordination

All staff actions are focused on coordination. Coordination must extend beyond the unit headquarters to higher, adjacent, supporting, supported, and subordinate units. The C/S and/or executive officer has overall responsibility for staff coordination. Under this direction, general/executive staff sections have primary responsibility for coordinating those activities that fall within their staff cognizance. When overlap exists between staff interests, the C/S and/or executive officer assigns

primary coordinating responsibility to one staff section and collateral responsibilities to other staff sections. Although one staff section may have primary responsibilities for coordination, every staff section coordinates its activities with those of other concerned staff sections.

Success is achieved when all staff officers understand the meaning and purpose of coordination and habitually practice it. The desire and will to cooperate are important. The staff officer must subordinate his own interests and those of his staff section to contribute to the effectiveness of the staff and the command as a whole. Coordination is developed through understanding, training, and practice. A staff officer should possess a basic knowledge of the organization, operations, administration, capabilities, and limitations of all elements of the command. He must also know the responsibilities of all staff sections in the command, as well as what kinds of information they need and can provide.

Coordination is effected by the following methods. (Time available; deployment status of the unit [garrison or deployed]; and the commander's preferences are normally the most important factors in determining the methods to be used.)

- Close and continual contact and exchange of information among staff sections, staff officers, and corresponding staff sections of other units by visits, telephone calls, and e-mail.
- Prompt dissemination of information, decisions, plans, orders, and instructions to all staff sections and units concerned.
- Effective message control to route messages and correspondence to all interested sections and units.

- Formal routing of staff papers to all interested sections and units for information and comment.
- Staff briefings.
- Conferences and meetings.
- Staff visits.
- Staff inspections.
- Liaison.

Staff Briefings

Staff briefings are the primary technique for keeping the commander and staff informed of the current situation and major problems facing the command. The C/S is responsible for scheduling and orchestrating briefings and meetings for the commander. Briefings are designed for the rapid oral dissemination of information to a group of people; they are not to settle issues, planning or solve problems. However, command decisions may occasionally be made at staff briefings.

Attendance varies with the subject, headquarters size, and type of operations. The C/S and/or executive officer guides the briefing to bring the commander and the staff up to date on the situation and actions since the last briefing. In expeditionary operations, briefings are held as frequently as necessary. Each person is made aware of what is going on throughout the command. Such general comprehension is difficult to achieve by other means. Staff officers take notes on the portions of the briefing pertinent to their section for subsequent action. Each staff officer should be prepared at any time to present a briefing on the activities of his section.

The focus of briefings must be to provide the commander with assessments, not information. The C/S must guard the commander's time and energy to ensure that briefings focus the commander on the big issues, provide assessments, and ask for guidance and decisions.

Staff Meetings and Conferences

Conferences and meetings are a particularly effective means of coordination. They provide an opportunity for the face-to-face exchange of information and views among all parties interested in a problem. With the fielding of video teleconferencing (VTC) technology, meetings and conferences can take place between geographically dispersed participants. Meetings are more informal than conferences. Meetings may be strictly to exchange information and may or may not include an agenda and a report of discussions. Conferences may be formal or informal, but will normally include an agenda and a report. Staff meetings must have a purpose, be focused, and used only when needed.

The conference agenda, prepared and circulated in advance of the conference, is the principal means to organize the efforts of the conference toward a common objective. The simplest form of an agenda is a memorandum to the prospective participants indicating the date, time, and place of meeting and a list of the items to be discussed. A complete formal agenda provides a statement of each item to be discussed and their sequence; a list of available reference material that may assist conferees prepare for the conference; a list of individuals who will be requested to provide special information at the conference; and the name of the individual who will preside.

Before the conference, all personnel will familiarize themselves with the agenda, ascertain the policies or desires of their commanders, and determine the extent of their authority to commit their commanders. After the conference ends, the results of the conference are summarized and circulated to the staff. The commander may desire that important conference reports be discussed with all or part of the staff.

Staff Visits

To obtain information on the status of subordinate units and to render staff assistance, staff officers frequently visit subordinate units. In garrison at MSC level and higher, a program of visits is planned by the C/S or by the heads of general staff sections. These visits are made in the name of the commander.

The staff officer conducts himself so as to promote cordial relations and cooperation between the staff and the unit visited. He calls on the unit commander, informs him of the purpose of the visit, requests assistance if needed, and before leaving, informs the commander of facts he has noted. He avoids criticism or interference with the responsibilities of the subordinate commander. If it appears that the intent of the higher commander has been misunderstood, he furnishes the subordinate commander or his staff with additional information to assist the subordinate commander in comprehending the exact desires of his superior.

The staff officer makes a brief oral or written report to his commander on his observations. This report is referred to all staff sections concerned. It serves as a means of conveying information on the appropriate staff officer to take action.

Staff Inspections

Staff officers inspections are made as directed by the commander and may be made by individual officers or teams. The latter method is frequently used for technical inspections. Before the inspection, the commander of the unit to be inspected should be informed of the nature of the inspection and its purpose. Inspection reports are prepared and submitted upon completion of the inspection, and the commander of the inspected unit is furnished a copy. Inspection reports should be factual, clear, and concise.

Liaison

A commander establishes liaison with another unit by sending a representative to the headquarters of the other unit, thus providing a personal contact between the two headquarters. The commander's representative is specifically appointed as an LNO if his stay at the other headquarters is to cover an extended period of time or if liaison duties are to constitute his principal responsibility. However, liaison is not limited to specifically appointed LNOs. Every staff officer who makes a staff visit to another headquarters performs liaison.

The C/S is responsible for establishing liaison as part of his general responsibility for coordination. LNOs function under his direction and supervision. Supporting units normally establish liaison with supported units. Liaison between adjacent units is established on the initiative of the units concerned or as directed by higher authority. Liaison between higher and lower units is established by the higher unit and may be covered in SOPs.

Before departure from his parent headquarters, the LNO ascertains his exact mission and familiarizes himself with the situation of his parent unit and that of the host unit to be visited. He secures written credentials, if required, and ensures that arrangements for communications and transportation between the two units will be adequate. On arrival at the host unit, the LNO reports to the commander or appropriate staff officer, states his mission, presents his credentials, and offers his assistance, if appropriate. He then familiarizes himself with the situation of the host and makes arrangements for securing information required by his mission and for communicating such information to his parent unit.

During his liaison tour, the LNO frequently returns temporarily to his parent unit to keep informed of its situation and makes such information available to the commander and staff of the host unit. He makes continuing reports to his parent unit on matters within the scope of his mission and

maintains a record of the contents of such reports. On completion of the liaison tour, he returns to his parent unit, reports on his mission, and transmits any messages or requests from the commander or staff on the host visit.

See MCRP 5-1B, *MTTP for Joint Task Force Liaison Officer Integration (JTF-LNO)*, for more information.

Completed Staff Action

Completed staff action on a problem results in the presentation of the problem, together with conclusions and any recommended COAs, in

such form that all that the commander need do is indicate approval or disapproval. It includes the coordination of the action with all affected staff sections before the commander's decision and the necessary actions and supervision to ensure issuance, receipt, and understanding of orders and instructions, and compliance therewith. All matters brought to the commander for decision should be presented as completed staff action. If possible, the entire problem under consideration should be presented as a single item of completed staff action. If the problem is very extensive or complex and is susceptible to more effective treatment in parts, each part may be presented separately in the form of completed staff action.

CHAPTER 6

ORGANIZATION FOR PLANNING

Planning is an essential and significant part of the broader field of command and control. The commander organizes his staff to gather, manage, and process information essential to decision-making and execution. Planning supports decisionmaking by helping to develop and evaluate potential COAs. It supports execution by identifying and detailing measures needed to implement the chosen COA.

The commander also disciplines the planning process so that it is sensitive to time, planning horizons, simplicity, and level of detail. Organization for planning involves personnel and structure and is affected by planning modes and the planning, decision, execution, and assessment (PDE&A) cycle. Ideally, the staff functions in garrison as it does when deployed. In reality, garrison operations and field operations differ significantly. When units deploy they establish headquarters consisting of command and control centers to plan, monitor, coordinate, control, and support operations around the clock.

Planning Modes

The MCPP is designed to facilitate planning at all levels. MCDP 5, *Planning*, discusses three modes of planning: orientation, contingency, and commitment. Orientation planning is used when the degree of uncertainty is so high that it is not practical to commit to a specific plan. Planners focus on assessing the situation and designing flexible preliminary plans that can be adapted to a broad variety of situations. Contingency planning

is used when there is less uncertainty but enough is not known about the situation to allow for the adoption of a specific plan. Normally, planners prepare several COAs for each contingency, allowing the commander to respond quickly when the situation requires action. Commitment planning is used when there is a reasonable level of certainty or acceptable level of uncertainty about the situation that allows the commander to select a plan and commit resources to executing the plan. Commanders and planners consider these modes when organizing their planning efforts to ensure they use a mode and planning sequence appropriate to the situation.

Planning, Decision, Execution, and Assessment Cycle

The PDE&A cycle is the process the commander and his staff use to plan operations, make accurate and timely decisions, direct the effective execution of operations, and assess the results of those operations.

The PDE&A is a complete cycle that starts with the initial receipt of a higher headquarters OPORD or warning order and continues through mission accomplishment. It is time-and-event driven. It provides a framework that supports the commander's efforts to assimilate information in the chaotic environment of war to increase tempo through timely and decisive actions. See also MCWP 5-1.

The MCPP is scalable from the component level down to the battalion and squadron level. Typically, resources, information, and time available for planning are limited at the lower command levels. Therefore, planning organizations must form or adapt to meet these limitations. Command and staff relationships are established and function within a defined organizational structure. These relationships are key to providing the command and control to effect operational success.

Lower command levels, like regiments and air groups, adapt and consolidate certain MCPP planning responsibilities and functions within their limited structures. Normally, most MCPP procedures are performed by the commander and his primary staff officers and selected special staff officers. Figure 6-1 shows the planning organization and relationships found at lower levels of command.

Only at the higher levels of command (MEF, division, wing or FSSG) are specialized planning staff elements and organizations formed. Figure 6-2 illustrates planning organizations at the Marine Corps component, the MEF, and their link to higher headquarters when the JFC chooses to conduct operations through the Service component commanders. In this case, the MCPP at the component and MEF levels is primarily conducted by three planning organizations: future plans, future

operations, and current operations. Their efforts must be coordinated for the smooth transition from long-term planning to execution. To ensure integrated planning, these organizations must have warfighting function representation from within the command, as well as subordinate and adjacent commands. Manning limitations may require placing some of this expertise in GS of the planning effort as a whole. See also MCDP 1-0 and MCDP 1-0.1.

When the MAGTF deploys, it may adopt a nonlinear manning structure. In such a system, the CE should be thought of as the central hub connecting a number of circles. See figure 6-3. At the center of this hub is the command group. Working outward from this hub is the battlestaff and integrated staff cells. These cells represent the major staff sections and MSCs. Therefore, information is shared and disseminated faster, and the entire staff participates throughout all stages of the PDE&A cycle.

Command Group

The command group consists of the MEF commander, deputy commander, and the C/S. The command group is the primary decision-making body. The MEF commander will issue specific guidance on decisions that will remain his prerogative and the ones that may be delegated.

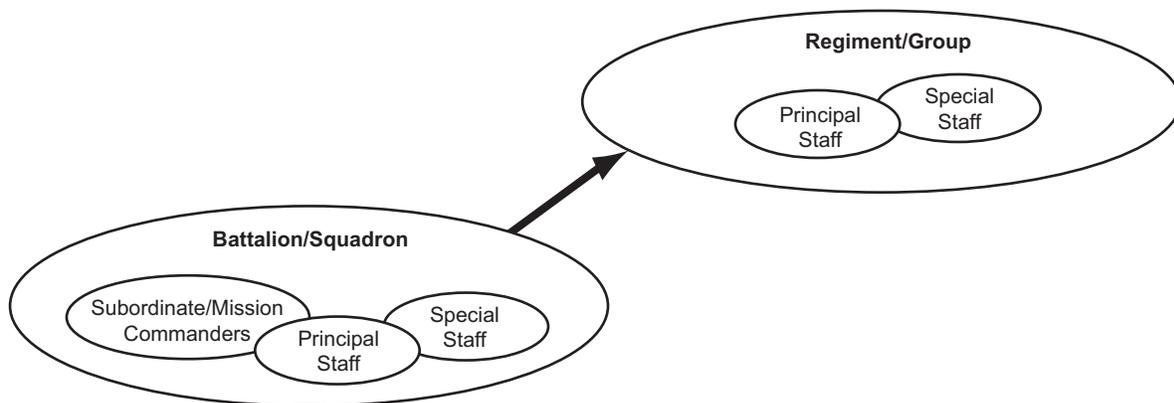


Figure 6-1. Lower Level Organizations and Planning Relationships.

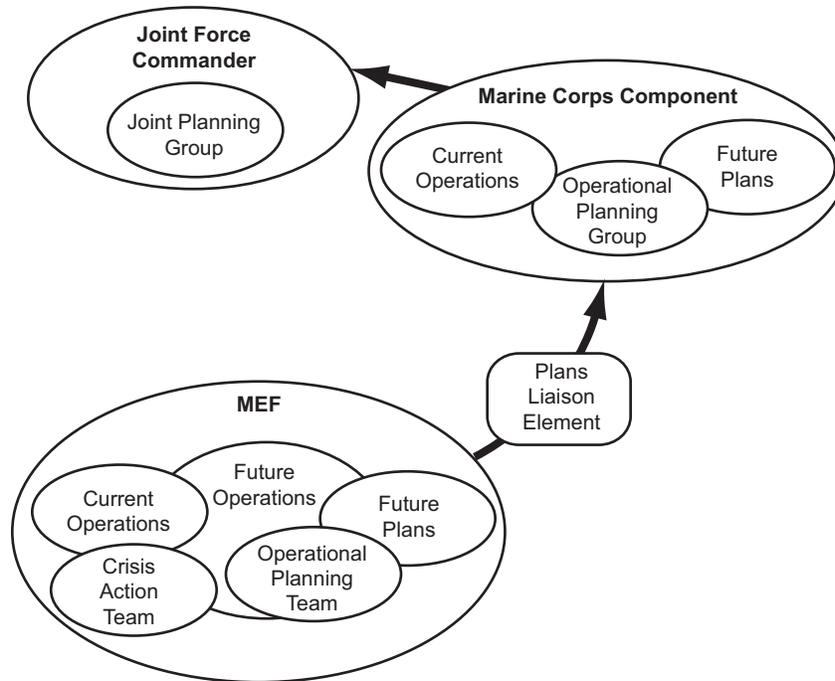


Figure 6-2. Component and MEF Organizations and Planning Relationships.

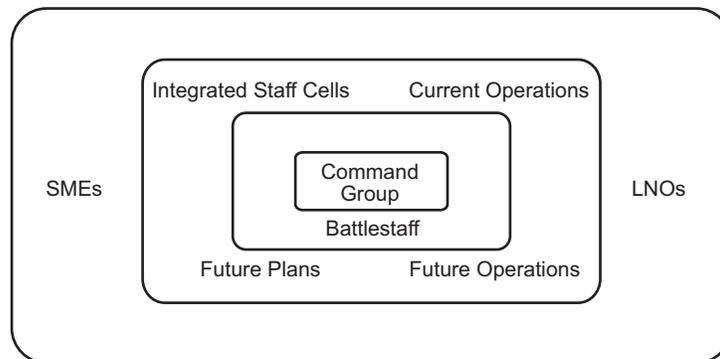


Figure 6-3. Command Element Organization.

Battlestaff

The battlestaff consists of the principal staff officers (AC/S G-1 through G-6) and designated special staff. Battlestaff members are the MEF commander’s primary advisors. They will closely monitor the areas under their staff cognizance and provide detailed recommendations, information, and analysis to the future plans and

future operations cells. The battlestaff has six main functions as follows:

- Receives information.
- Analyzes information.
- Distributes information.
- Makes recommendations to the command group.
- Integrates resources.
- Synchronizes resources.

Future Plans Section

The future plans section is normally under the staff cognizance of the G-5. The G-5 forms a liaison element to the higher headquarters' staff and integrates the higher headquarters plan into the MEF's planning process, ensuring that it meets the intent of the higher commander.

The future plans section focuses beyond the immediate next battle or next phase that is being planned to provide a link between higher headquarters and the future operations section. The future plans section addresses the command's next mission. Upon receipt of a mission from higher headquarters, this section initiates the MEF's planning process and develops an outline plan. Depending on the situation, it may focus on a phase of a campaign, develop reconstitution requirements or plan deployment. An operational planning team (OPT) may be formed to focus the planning effort and gather relevant planning expertise. This section's responsibility is to get the mission correct with regard to MEF capabilities, command relationship requirements, and the battlespace. This is the effort that generates tempo external to the force.

The future plans section may also develop sequels, support relationships for the next phase, and develop plans to ensure that the force does not reach a culminating point. It transitions to the future operations section the outline plan that provides the salient features of a mission that precedes detailed planning.

Future Operations Section

The future operations section is under the staff cognizance of the G-3 and is the focal point of the planning process. It usually forms the nucleus of the OPT and coordinates with the future plans and current operations sections to integrate planning of the next battle. The OPT fully integrates the other staff sections' plans officers, warfighting function representatives, and subordinate unit LNOs into the planning process. The

future operations section takes the outline plan from the future plans section and uses it as the basis for further planning. The future operations section focuses on changes to MEF or MSC missions; develops branch plans and sequels; and recommends potential CCIRs. This section interacts with intelligence collection and the targeting process to shape the next battle. The current operations section may provide a representative to the future operations section to guarantee that the transition process is continuous. The future operations section's efforts generate tempo internal to the force.

Current Operations Section

The current operations section is under the staff cognizance of the G-3. During operations, it receives the OPORD from the OPT and staff at the transition brief. The following functions are performed:

- Coordinates and executes the OPORD.
- Prepares and transmits OPORDs.
- Monitors operations of the force.
- Tracks CCIRs and immediately reports relevant information to the commander.
- Analyzes battlespace information.

Branch plans are normally passed to the current operations section during the transition brief. When an unforeseen enemy action begins to develop, the current operations section will refine already existing branch plans or develop a branch plan. To support the commander, the current operations section may develop new COAs, allocate resources, and prepare fragmentary orders to modify the current OPORD. This section assesses shaping actions and the progress toward the commander's decisive actions, monitors the status of forces and materiel, monitors rear area operations, coordinates terrain management, maintains essential maps and information, and provides the future operations section with situational awareness.

Operational Planning Team

The OPT is a dynamic, ad hoc organization that may be formed by the future plans section or future operations section to conduct integrated planning. It helps conduct mission analysis, develops war game COAs, and assists the commander in selecting a COA and the staff in the preparation and transition of the order. Normally, the OPT is built around a core of planners from the future plans section or the future operations section. The OPT may include the future plans or future operations officer, assistant plans or assistant future operations officer, future plans or future operations chief, and a clerk/plotter. It integrates additional staff representatives; e.g., G-1 through G-6, SJA, PM, health services, and public affairs, as appropriate to the mission. The OPT may also be augmented by warfighting function representatives, LNOs, and subject matter experts (SMEs) needed to support planning. The OPT serves as the linchpin between the future plans, future operations, and current operations sections.

Crisis Action Team

Falling under the staff cognizance of the G-3, the CAT is usually formed in the initial stages of a crisis. It has the requirement to rapidly collect and manage information, and can be task-organized to reflect the unique nature of each crisis. Often, at the initial stage of a crisis, the commander's primary concern is force readiness status and deployment planning.

The CAT may initiate the planning process, develop situational awareness, and access previously prepared and emerging planning products from the JOPES. For common situational awareness, potential members of the CAT are identified in advance and are recalled for initial crisis action planning. For extended operations, the CAT's planning and execution functions transition to the

normal planning sections (current operations, future operations, and future plans); manning and functions are redefined. The CAT may also maintain situational awareness for follow-on and supporting units.

As-Required Cells

The MAGTF maintains the flexibility to form a variety of integrated staff cells that may be required. Membership of these as-required cells will be directed by the C/S, but they will normally be comprised of representatives of the battlestaff and appropriate SMEs. Examples include the MEF Targeting Board (convened daily during operations) or the MEF Real Estate Board (convened as required for terrain management).

Liaison to Support the Marine Corps Planning Process

Liaison is the contact or intercommunication maintained between elements of military forces to ensure mutual understanding and unity of purpose and action. Liaison helps reduce the fog of war through direct communications. It ensures that senior commanders remain aware of the tactical situation by providing them with exceptional, critical or routine information; verifying information; and clarifying operational questions. Overall, liaison is another tool to help commanders overcome friction and accomplish their mission.

Command Liaison

Commanders of all organizations routinely initiate contact with commanders of other units in their locale even though there may be no official command or support relationship between them. This contact opens the channels of communications to facilitate mutual security and support.

This is dictated by METT-T, command relationships or direction from a common superior.

Staff Liaison

Staff officers of all organizations routinely initiate contact with their counterparts at higher, lower, adjacent, supporting, and supported commands. This contact opens channels of communication that are essential for the proper planning and execution of military operations. Staff liaison may also include temporary assignment of liaison elements to other commands.

Marine Liaison Element

The Marine liaison element at the MEF headquarters provides task-organized, trained, and equipped teams to facilitate command, control, communication, and coordination, fire support, and terminal control with allied and/or coalition forces.

Liaison Officers

The LNO is the most commonly used means of maintaining close, continuous contact with another command. As the commander's personal representative, the LNO has the special trust and confidence of the commander to make appropriate recommendations and estimates in the absence of communications. The commander uses an LNO to transmit or receive critical information directly with key persons in the receiving headquarters. The LNO must have the requisite rank and experience to properly represent the command. The ability to communicate effectively is essential, as is sound judgment. Equally, he must have immediate access to his commander.

Operational Planning Team Liaison Officers

Subordinate, adjacent, and supporting command's OPT LNOs are key contributors to the MCPP and the future operations plan. They provide timely and accurate movement of information between the OPT and their commands and facilitate integrated planning. Normally, this LNO's primary responsibility is to the planning effort. He may only be able to provide part-time support to other activities such as logistic coordination or targeting.

Liaison Team

A liaison team, usually headed by an officer, is assigned when the workload or need for better communications is greater than the capabilities of a single LNO. The team will normally consist of an officer, a liaison chief, clerical personnel, drivers, and communications personnel with equipment. Team members may function as couriers. The grade of the senior team member depends on unit size and personnel available. Liaison teams are generally required for continuous operations.

Couriers

Although infrequently used because of the capabilities of electronic communications, the courier remains a valuable liaison tool. The courier is more than a messenger. He is expected to provide more information than is contained in the message he is delivering. This is why the courier should have sufficient experience and maturity to answer questions and provide more than superficial insight. Couriers are often junior officers or SNCOs. If such personnel are available, dedicated couriers may be used to augment the LNO or liaison team.

CHAPTER 7

CONCEPT OF EMPLOYMENT

SECTION I. CONCEPTS

Seabased Command and Control

EMW and the supporting STOM concept implement maneuver warfare principles and exploit planned improvements in weapons systems and command and control capabilities to enhance the ability of naval forces to conduct expeditionary operations in the littorals. The primary focus is the projection of combat power ashore through amphibious assault, including the supporting operations necessary to shape the littoral battlespace for that assault. However, the rapid maneuver and wide dispersion of forces involved in the execution of these concepts stretch the limits of current CIS and make it difficult to maintain shared situational awareness and to disseminate decisions.

To conduct STOM, the MAGTF commander and the commanders of the GCE, ACE, and CSSE must have the ability to exercise command and control from aboard ship. The CE may remain embarked throughout STOM, normally moving ashore only if the MAGTF mission changes from naval power projection to sustained operations ashore. Likewise, the command and control structure of both the ACE and the CSSE will usually remain offshore. Although the GCE commander will likely establish a tactical command post either airborne or ashore, the GCE main command post may remain afloat, at least initially. By retaining command and control afloat, the MAGTF will take advantage of the command and control support capabilities of Navy platforms while greatly reducing the requirement for command and control nodes ashore. Elimination of these vulnerable and

relatively immobile facilities translates into greatly improved freedom of maneuver and improves the overall survivability of the command and control system. Seabasing of command and control also frees valuable lift space in ship to shore movement assets.

To exercise command and control afloat, MAGTF command and control must operate as an integral part of an overall naval command and control architecture. In many areas—including fire support coordination, air command and control, communications, and intelligence—LF and ATF staffs may be integrated. Command and control nodes of all elements of the MAGTF must function effectively throughout the operation, and shipboard spaces and facilities should be dedicated accordingly. MAGTF tactical information systems must be fully operational aboard ship with both LAN connectivity and broadband multichannel ship-to-ship and ship-to-shore communications connectivity.

The Marine Expeditionary Unit (Special Operations Capable) (MEU(SOC)) normally exercises command and control from a seabase. Ongoing shipboard CIS upgrades are improving the capability to support MEU(SOC) operations. The focus is on providing the MEU(SOC) CE and subordinate elements with command and control capabilities—systems, spaces, and communications connectivity—aboard amphibious ships. Amphibious ships receive CIS upgrades just before MEU(SOC) embarkation to provide data communications networking capabilities for the deploying ARG. These upgrades are meant to provide the required communications connectivity and command and control capability needed for the MEU(SOC) to conduct both ARG and split-ARG operations. A similar but far more

extensive and complex capability is required for a larger MAGTF to conduct expeditionary operations from a seabase. Such operations require shipboard facilities/spaces, information systems support, and communications connectivity for all of the MAGTF's major command and control nodes.

The Navy, in coordination with the Marine Corps, is upgrading shipboard CIS capabilities. Implementation of planned improvements will enhance the MAGTF's ability to exercise command and control from aboard ship. A MEF or MEB exercising seabased command and control of an expeditionary operation would, at least in the near- and midterm, have to cope with widely varying levels of command and control support and communications connectivity.

Collaborative Planning

The need to generate and maintain operational tempo drives the MAGTF to use parallel planning rather than sequential planning when conducting operations. The old rule of thumb allocating one third of the planning time to the senior unit and two thirds of the time available for planning to be reserved for subordinate unit planning has been largely abandoned. This sequential approach is too slow for the modern battlefield. Units at various levels of the MAGTF plan concurrently based on the mission and the next higher commander's intent. However, parallel planning has its drawbacks. Chief among these is the opportunity for a subordinate unit's plan to become out of synchronization with the plan of the senior unit as well as with the plans of adjacent units. Through collaborative planning this danger is greatly reduced. Planners at all levels of the MAGTF not only plan concurrently, they also plan in concert with one another.

The improvements in information management and dissemination (these techniques are discussed in detail in chapter 9) provide the opportunity for

the MAGTF to achieve more effective collaboration in the planning and execution cycle. Multiple users participating in the process can access information via the MAGTF intranet and enter, update, and delete their own records remotely. Staff sections and subordinate units can manage the information under their cognizance through secure, on-line facilities. On-line networking techniques allow planners to pull tailored information generated from current data. Updated information is available continuously throughout the planning and execution cycle. Everyone involved in the planning process can keep abreast of and respond to an ever-changing operational situation. These capabilities support greater communication, broader and more meaningful information sharing and situational awareness, and increased collaboration among commanders, staff sections, and subordinate units.

Reachback

Closely related to collaborative planning is the use of communications networking techniques for electronic reachback and virtual staffs. Electronic capabilities can be used to reduce the size of deployed staffs. Electronic capabilities can also provide the MAGTF access to virtual staffs through the use of specialists-military, government civilian, or consultant-who never deploy. The Marine Corps Chemical/Biological Incident Response Force (CBIRF) provides an excellent example of this virtual approach. The Marines in the CBIRF are linked electronically to civilian experts in government, academia, and the medical profession. This linkage allows instantaneous consultation between deployed CBIRF members and knowledgeable specialists located in universities, hospitals, and government organizations around the United States. A similar reachback capability in other areas holds tremendous potential for deployed MARFOR. In many cases, it is not possible to deploy personnel with the complete range of expertise needed

to address all of the problems that will be encountered in the AO. Electronic connectivity can provide commanders with immediate access

to foreign area experts and medical, legal, and other specialists with the necessary knowledge, information, and skills.

SECTION II. COMMAND AND CONTROL CENTERS

Command and control centers are established to support the headquarters of all units of battalion size or larger. These centers, especially when dealing with air command and control, are referred to as command and control agencies. They are also known as command and control facilities. From these centers, watch officers and cells from the various staff sections plan, monitor, coordinate, control, and support the day-to-day activities of the unit. These centers include the personnel, software, hardware, shelters, and ancillary equipment needed to support command and control.

Each principal staff function is supported by one or more command and control centers. The ACE employs specialized command and control centers comprising the Marine air command and control system (MACCS) to provide the ACE commander with the ability to exercise command and control. Marine air control group (MACG) units are responsible for installing, operating, and maintaining these centers.

The key command and control centers supporting the functional areas of maneuver, intelligence, fires, aviation, logistics, and CIS are discussed below, as are the shipboard command and control facilities that support the MAGTF. Adequate information systems support and data communications connectivity are essential for efficient operation of these centers.

Maneuver

The key command and control center in the MEF main is the COC. The COC supports the

maneuver function and integrates information from all other command and control centers and functional areas. In most cases, the COC is collocated with the FFCC, which supports the fires function, and the MAGTF all-source fusion center (MAFC), which supports the intelligence function. These three command and control facilities work together closely, focusing on current operations and responding to the immediate needs of the MEF commander. Similarly, in the main echelon of GCE units, the COC is usually collocated or integrated with the FSCC and the combat intelligence center (CIC); these centers support maneuver, fires, and intelligence, respectively.

Marine Expeditionary Force Combat Operations Center

The MEF COC consists of G-3 and G-2 watch officers and noncommissioned officers (NCOs), a senior watch officer, and a situation report watch officer. Many enlisted Marines assist in operating tactical information systems, managing information, and maintaining situation displays and the CTP. The G-2 and G-3 watch officers receive information from collocated MAFC personnel (intelligence) and FFCC representatives (fires and air), the SARC, and subordinate and adjacent units. G-2 and G-3 watch officers filter this information, update the CTP as necessary, and forward critical items to the senior watch officer. The senior watch officer also receives information that affects current operations from other principal staff sections (G-1, G-4, and G-6). The senior watch officer evaluates information in the context of current operations and determines whether action is required and whether the COP requires

updating. Depending on the situation, the senior watch officer may be assisted in this process by other officers from current operations. On the basis of authority delegated by the MEF commander, the senior watch officer acts by issuing orders or briefing the MEF commander and recommending action.

Ground Combat Element Combat Operations Center

The COC is the command's "nerve center" where information is fused to provide situational awareness for the commander and his staff. The division COC, as well as regimental and battalion COCs in the GCE, functions in much the same fashion as the MEF COC. Current operations are directed from the division COC, which is typically manned with G-3 personnel, G-2 personnel, the division engineer, the division air officer, and NBC personnel. As at the MEF, the COC is the location for the G-2 and G-3 watch officers and NCOs. These watch officers monitor current operations by using the CTP and coordinate activities for the commander. Their activities are based on situational awareness gained from the CTP and on input, focusing on the CCIRs, from staff sections and other information sources. At the regimental and battalion levels, the senior watch officer and the operations watch officer may be the same individual, and other watch officers may be senior NCOs. It is important that these lower level COCs remain compact and lightweight for ease of displacement and to facilitate maneuver. At the battalion level and occasionally at the regimental level, the COC must be tailored as necessary to support foot mobile operations.

At regiment and battalion levels, the COC is increasingly supported by automated tactical information systems and data communications. These systems support the information processing and exchange requirements of the COC and enable it to monitor and direct current operations.

Voice radio nets are used extensively in regimental and battalion COCs. However, the fielding of

additional information systems will require greater access to and use of data communications. Strict procedures will be required to manage information flow to preclude overloading an extremely limited data communications capability. These procedures must focus on timely satisfaction of the CCIRs and maintaining the CTP.

Rear Area Operations Center/Rear Area Command Post

Successful rear area operations require an effective command and control organization and reliable command and control systems, including communications, intelligence, and planning. Three options for command and control of rear area operations are for the Marine commander (Marine Corps component or MAGTF) to retain command and control, designate a rear area coordinator, and/or designate a rear area commander.

The rear area coordinator or rear area commander normally establishes a facility from which to command, control, coordinate, and execute rear area operations. The facility established by the rear area coordinator is referred to as the RAOC. The facility established by the rear area commander is called the rear area command post (RACP). In both cases, this facility normally contains an operations cell and a logistic cell to coordinate the following:

- Security forces; e.g., MP and tactical combat force.
- Fire support agencies.
- Support units; e.g., supply, engineer, and medical.
- Movement control agencies.
- Other command and control facilities.
- Bases and base clusters.
- Other organizations as necessary; e.g., CI team and CAG.

A rear area command and control facility may be located within or adjacent to an existing facility

or it may be a single-purpose facility established specifically for rear area operations. An existing facility may include an existing organization, a cell within an existing organization, or a separate organization collocated with a host organization. Based on the scope of rear area operations within a major theater of war, it may be necessary to establish a separate rear area command and control facility.

The rear area command and control facility integrates and coordinates its activities with the main and forward command posts to ensure that the Marine Corps component or MAGTF commander has a better understanding of the battlespace and can influence and orchestrate the single battle. The rear area command and control facility must have reliable communications and connectivity with the higher, adjacent, and subordinate headquarters involved in rear area operations. Connectivity to the joint rear area intelligence network, movement control infrastructure, and other support structures is also vital to the successful conduct of rear area operations. (MCWP 3-41.1, *Rear Area Operations*)

Intelligence

The CIC is established under the G-2/S-2 within the MAGTF headquarters to provide centralized direction for the overall intelligence effort. This organization serves the entire force by consolidating, validating, and prioritizing intelligence requirements from all MAGTF elements. The CIC links the MAGTF to theater, national, and allied intelligence assets. The CIC includes as key internal nodes the MAFC and the SARC. The CIC also provides small G-2/S-2 elements to support both the current and future operations cells. The CIC is supported by the reconnaissance operations center and the operations control and analysis center (OCAC).

Marine Air-Ground Task Force All-Source Fusion Center

The MAFC provides intelligence analysis, production, and targeting information. An integral part of the current operations effort, the MAFC is collocated with the MAGTF COC. The results of all surveillance, reconnaissance, and intelligence gathering flow into the MAFC, where these results are fused with previous collections and intelligence products are updated and disseminated.

Surveillance and Reconnaissance Center

The SARC is the primary intelligence command and control node used to direct, coordinate, monitor, and supervise MAGTF intelligence collection conducted by organic, attached, and direct support assets. The SARC is located in proximity to the MAGTF COC. The SARC assigns collection tasks to various MAGTF assets: the force reconnaissance company, the sensor control and management platoon (SCAMP), the unmanned aerial vehicle (UAV) squadron, the radio battalion, CI detachments, HUMINT exploitation teams, as well as the imagery interpretation platoon and the topographic platoon of the intelligence battalion production and analysis company. Collection results are forwarded to the MAFC for incorporation into current intelligence products.

Reconnaissance Operations Center

The reconnaissance operations center serves as a focal point for monitoring and supervising the employment of force reconnaissance. Located near the MAFC, this facility gathers information from dispersed teams, decrypts reports, and forwards information for fusion into the overall intelligence situation display. Personnel manning the reconnaissance operations center assist reconnaissance teams with movement and other activities as needed.

Operations Control and Analysis Center

The OCAC provides centralized direction, management, and control of SIGINT and electronic warfare activities within the MAGTF and coordinates with external theater and national assets. Assigned personnel process, analyze, and disseminate collected information. The OCAC is located within the MAGTF headquarters compound near other intelligence agencies. The OCAC provides an interface between the radio battalion and the MAGTF G-2.

Intelligence Center

The G-2/S-2 will establish intelligence centers at all echelons of the MAGTF down to the battalion level. Personnel assigned to the intelligence center will collect, process, integrate, analyze, evaluate, and interpret intelligence and continually update the enemy situation. This information will be rapidly provided to current and future operations. These centers will be collocated with the COC whenever possible.

Fires

Command and control centers are established in all maneuver units to coordinate fire support and in artillery units to exercise tactical and technical fire support direction.

Force Fires Coordination Center

The FFCC is established at the MEF level to assist the MEF commander in planning and coordinating deep fires. The FFCC performs three primary functions for the MEF: planning, acquiring, and maintaining target information; coordinating and integrating MAGTF-level fires with future operations; and coordinating and integrating MAGTF-level fires with current operations. Located within the MEF main, this facility assists both future operations and current operations in their targeting functions. Additionally, the FFCC provides coordination between the MEF and JTF targeting

boards and centers. FFCC watch officers may be integrated with the COC to facilitate coordination of deep fires.

Fire Support Coordination Center

Each Marine ground combat organization from division to battalion level employs an FSCC as an advisory and coordination agency. The FSCC is collocated with the COC. The senior FSCC coordinates and deconflicts fire support efforts among subordinate units and centers. The FSCC includes the FSC, artillery liaison, tactical air control party (TACP) personnel, and a naval surface fires liaison. At division level the artillery regiment commanding officer serves as the FSC. At regiment level the FSC is typically provided by the supporting artillery battalion. At battalion level the FSC is normally the weapons company commander.

Fire Direction Center

Fire direction centers (FDCs) exist at artillery regiments, battalions, and batteries. These organizations permit respective commanders to plan and control fires. Fire direction activities may be centralized or decentralized. At regiment and battalion levels, the FDC exercises tactical fire direction. The battery FDC provides technical fire direction by determining firing data. This firing data is issued to artillery sections through fire commands. Battery FDCs are also capable of tactical fire direction and would perform this function in cases, such as MEU(SOC) deployments, when the battery operates independently.

Electronic Warfare Coordination Center and Information Operations Cell

The EWCC facilitates coordination of electronic warfare operations with other fires and CIS. In many cases an IO cell is established that is responsible for the broad coordination of all IO activities, including electronic warfare. Each center/cell coordinates efforts by the G-2, G-3, and G-6 to eliminate conflicts between these

overlapping battlespace functions. The EWCC, and/or IO cell if established, is under staff cognizance of the G-3. Assigned personnel identify potential conflicts in planned operations and work to resolve these issues. The EWCC (or IO cell) includes an electronic warfare officer, a CIS representative, and other LNOs; e.g., PSYOP, civil-military operations or public affairs as needed. Liaison could include radio battalion representation, airborne electronic countermeasures officers, a MACG radar officer, and other-Service representatives.

Aviation

The MACCS provides command and control support for the ACE in the form of several unique command and control centers. The responsibility for installing, operating, and maintaining these centers, usually referred to as agencies, is the primary mission of specialized units comprising the MACG. This approach is in contrast to the way in which COCs are installed, maintained, and operated in support of the other MAGTF elements. Only the ACE has personnel trained and assigned to units whose primary mission is command and control support. MCWP 3-2; MCWP 3-25, *Control of Aircraft and Missiles*; and publications in the MCWP 3-25.1 through 3-25.12 series provide detailed TTP for aviation command and control and employment of MACCS agencies.

Tactical Air Command Center

The TACC is operated by personnel from the ACE staff, the Marine tactical air command squadron (MTACS), and the MACG staff. The TACC is the senior MAGTF air command and control agency. The TACC provides the operational command post from which the ACE commander and his staff plan, supervise, coordinate, and execute all current and future MAGTF air operations. The TACC provides the capabilities necessary to integrate, coordinate, and direct air operations in support of the MAGTF.

The TACC interfaces with the other ACE command and control agencies, other MAGTF elements, and external civil and military air control organizations. Its primary CE interface is with the FFCC/COC. The TACC's primary external interfaces are with the joint air operations center (JAOC) and the Navy tactical air control center (TACC). In addition to serving as the ACE command post, the TACC, with augmentation, provides many of the capabilities necessary for the MAGTF commander to serve as the JFACC.

The TACC consists of three mutually supporting, cross-functional operational organizations supported by a centralized intelligence organization. The TACC does not provide facilities for all ACE staff functions. It provides a facility from which the ACE commander and staff plan and execute aviation and aviation support operations. TACC organizations are—

- Future plans.
- Future operations (future ops).
- Current operations (current ops).
- Air combat intelligence (ACI).

Future plans conducts aviation and aviation support planning for the next mission change. Future ops develops future ATO(s) and prepares operation orders or fragmentary orders for the next ACE mission change. Current ops executes the daily ATO and assesses its effectiveness. ACI is embedded within the TACC. Timely, tailored and fused intelligence is integral to the functioning of future plans, future ops, and current ops. ACI is the focus of all aviation intelligence activities supporting the ACE. It produces and disseminates aviation-specific, all-source intelligence, to include assessments of adversary capabilities and vulnerabilities, target analysis, battle damage assessment (BDA), and the current status and priority of assigned targets to assist in execution day changes. Principal staff sections; e.g., personnel, intelligence, logistics or communications provide tailored staff support to the TACC, including appropriate full-time representation as required.

This cross-functional representation within future plans, future ops, and current ops facilitates a fully integrated plan from conception to execution.

The TACC uses specialized information systems and equipment to display a common picture of the aviation situation received from tactical digital information links. Each Marine aviation function (antiair warfare, assault support, electronic warfare, air reconnaissance, offensive air support, and control of aircraft and missiles) has representatives in the TACC.

Direct Air Support Center

The DASC is established by the Marine air support squadron (MASS) and processes immediate requests for air support, coordinates aircraft employment with other supporting arms, manages terminal control assets such as forward air controller (airborne) (FAC[A]) and assault support coordinator (airborne) (ASC[A]) supporting ground forces, and will provide procedural control of assigned aircraft, unmanned aerial vehicles, and itinerant aircraft transiting through its assigned area. The DASC can employ a direct air support center (airborne) (DASC[A]) aboard a KC-130 that will provide extended line of sight communications with low flying aircraft.

The DASC will normally be collocated or electronically linked with the senior fire support coordination agency ashore. In a MEF operation where there are multiple maneuver elements (divisions) within the GCE, the DASC may be collocated with the MAGTF FFCC to centralize close air support and assault support management between the GCE maneuver elements in accordance with the MAGTF commander's intent. The DASC will usually deploy air support elements (ASE) to each major maneuver element FSCC to provide them the necessary links to the MACCS, enabling them to request and coordinate direct air support. Size and composition of the ASE will vary. It can be expanded or reduced as the situation requires (limited by the assets

available). The DASC only has the capability to provide procedural control for aircraft operating in the MAGTF AO. In expeditionary operations, the DASC will normally land in the same scheduled or on-call wave as the senior FSCC phased ashore.

The DASC is normally the first major air control agency ashore in expeditionary operations. Air support personnel control aircraft en route to the forward air controllers serving with infantry units. DASC controllers also monitor and provide safety of flight information to assault support aircraft operating in its area. The DASC assists GCE units obtain additional air support—fixed-wing aircraft or helicopters—by processing immediate air support requests. Because of their proximity to the senior FSCC, DASC personnel help the wing commander maintain awareness of the ground combat situation.

TACPs provide coordination between GCE units and supporting aviation assets. TACPs exist at the infantry division, regiment, and battalion levels. Depending on the command level, a TACP contains a combination of air officers, forward air controllers, and enlisted radio operators. Air officers serve at the division, regiment, and battalion levels. These officers serve as special staff officers to their respective commanders. Additionally, they may serve within the FSCC to assist with planning and deconfliction functions related to air support for the assigned unit. Forward air controllers provide terminal control of close air support aircraft that are passed to them by the DASC. These officers also advise GCE commanders on aviation capabilities and limitations and prepare requests for air support.

Marine aviators and flight officers often serve as airborne extensions of the MACCS. The tactical air coordinator (airborne) (TAC[A]) serves as an extension of the DASC and coordinates aircraft en route to offensive air support missions. The TAC(A) receives aircraft handoffs from the DASC, briefs those aircrews, and then turns those missions over to ground or airborne forward air

controllers for terminal control. The ASC(A) also serves as an extension of the DASC and coordinates complex helicopter missions. The ASC(A) deconflicts transport packages, escort packages, and fire support efforts throughout the mission. Airborne strike coordination and reconnaissance is a means to efficiently focus aviation fires in the deep battlespace. This function is usually performed by multiseat F/A-18 aircrews. It allows real-time reconnaissance to locate the MAGTF commander's high-priority targets. Once located, the strike coordination and reconnaissance aircrews control attack aircraft in much the same manner as a TAC, cycling and deconflicting multiple strike packages as they ingress to the target area.

Several employment options are available for the DASC, including an airborne configuration in a C-130. MASS assets are tailored to provide support based on the mission. A MEF could require the task organization of the assets of more than one MASS. At the MEU(SOC) level, a MASS detachment may be task-organized as an ASE. The size and capability of the DASC depend on the number of TACPs that will be requesting air support and the number of aircraft executing air support missions. The DASC maintains communications connectivity with the other MACCS agencies, the FSCC, aircraft under its control, UAV squadron(s), and joint and other-Service air support organizations. The DASC also requires connectivity with forward-based air assets to request launches in support of ground forces.

Tactical Air Operations Center

The Marine air control squadron (MACS) provides equipment and personnel for tactical air operations center (TAOC) operation. The TAOC provides the ACE with the capability to detect and identify hostile aircraft and missiles; control the interception of hostile aircraft and missiles; and provide tactical routing to friendly aircraft. MACS personnel assigned to the TAOC use specialized information systems, sensors, and dedicated

communications links to search the MAGTF airspace and coordinate air defense for vital areas. The TAOC controls friendly aircraft in the interception of hostile aircraft and assists missile units in locating and destroying hostile aircraft. Information gained through radar and tactical digital information links is transmitted to the TACC and updates the air picture for the wing commander. The TAOC also interfaces with the Air Force air operations center and control and reporting center to coordinate joint air defense efforts. The TAOC is movable but not mobile and is located in the rear of the AO. The TAOC is often located at a fixed-wing airfield. A MEF will normally deploy with one or two MACSs (task-organized) to operate and maintain the TAOC. Normally, a MEU(SOC) has no requirement for a TAOC, but an early warning/control capability may be task-organized as part of a special purpose MAGTF (SPMAGTF) if required.

Marine Air Traffic Control Detachments

Air traffic control detachments are components of the MACS. They are task-organized to provide terminal air traffic control for expeditionary airfields and other FOBs. The Marine air traffic control detachment provides airspace control, management, and surveillance for its designated sector or area. Services include radar approach/departure control, precision and instrument approaches, control tower, and tactical air navigation (TACAN). Detachment radar contributes to the overall air surveillance effort. The detachment can coordinate with Stinger teams that are defending airfields to help them detect hostile aircraft. The detachment serves as the MAGTF's liaison with national and international air traffic control agencies.

The MACS has four air traffic control detachments. All four would be required to support a MEF operation (four expeditionary airfields and up to four other facilities or sites could be established). Large radar systems, support equipment, and shelters are used to provide this MEF-level support. Deployment options include a mobile

team capability. The mobile team is task-organized to provide an initial, rapid-response capability for the establishment and control of tactical landing zones. A MEU(SOC) would normally deploy with a mobile team.

Low-Altitude Air Defense Battalion

The LAAD battalion establishes a COC from which the LAAD battalion commander exercises overall command and control of LAAD battalion operations. The battalion is comprised of two batteries with three platoons per battery and three sections per platoon. A section, the smallest employable LAAD element, has five Stinger teams that may be any combination of man-portable and high-mobility, multipurpose wheeled vehicle (HMMWV)-mounted Avenger teams. A MEF is normally supported by the entire battalion, while MEU(SOC) support is provided by a single section. LAAD units are routinely task-organized to support various contingencies. LAAD section leaders/platoon commanders/battery commanders position themselves where they can best provide command and control of their units and maintain connectivity with the MACCS and/or supported units. When operating in GS of the MAGTF, collocation with the TAOC is desirable to optimize integration of their teams into the overall MAGTF air defense effort and to gain access to the air defense picture. When operating in DS of the GCE, collocation with the DASC provides a means for LAAD commanders to receive current information and status from the GCE while also providing an alternate means to communicate with the MACCS. When information from other MACCS sensors is not available, each section can employ a lightweight, short-range organic radar to detect aircraft and cue Stinger teams.

Logistics

Combat Service Support Operations Center

The combat service support operations center (CSSOC) serves as the hub for future and current

operations planning within the FSSG main. Each CSS functional area (supply, maintenance, transportation, engineering, health services, and services) provides representation to the CSSOC. Under the supervision of a G-3 watch officer, these personnel monitor current operations and maintain status displays of friendly and enemy situations. Additionally, CSSOC personnel handle requests from subordinate units and keep the MAGTF informed of the CSS situation. FSSG commanders may choose either a centralized or decentralized configuration for their CSSOCs. See MCWP 4-1 for more information.

Combat Service Support Detachments

Depending on the situation, the FSSG commander may establish detachments to provide DS or GS to the other MAGTF elements. Detachment commanders may establish small CSSOCs to coordinate support and monitor logistic communications nets. In this instance, the CSSOC would resemble a tactical echelon of the FSSG. Communications connectivity would be predominantly through single channel radio (SCR).

Movement Control Centers

Movement control centers support the deployment of the MEF from the home station, through intermediate bases, to the destination. The MARFOR commander establishes a headquarters movement control center, which provides connectivity to the US Transportation Command (USTRANSCOM) and keeps the MEF force movement control center apprised of strategic movement issues. The force movement control center controls and coordinates all movement support and conducts liaison with the Air Mobility Command, Military Sealift Command, and Military Traffic Management Command. The force movement control center supervises efforts of unit movement control centers of the division, wing, and FSSG. These latter units provide transportation and communications assets in support of deployment activities. Bases and air stations from which Marine units deploy establish base or station operations support

groups to coordinate their efforts with those of deploying units. These bases also provide their transportation and communications assets in support of deploying units. These units augment unit movement control centers to ensure that all personnel and materiel arrive at sea and aerial ports of embarkation. During employment, the function of movement control centers transitions to battlefield circulation and tactical movement control. The MAGTF G-3/S-3 establishes priorities for these functions.

Logistics Cells

The G-4/S-4 may establish logistics cells in both the main and rear echelons. In the main echelon, the CSS cell will monitor the logistics situation and keep the common operational picture current with respect to the logistic status of the unit. The CSS cell will interact with the current operations cell to ensure adequate CSS for the current operation and coordinate with the future operations cell to ensure the logistics supportability of future operations. The focus of the CSS cell in the rear echelon will be on coordinating logistics support for the unit from supporting CSS units. The rear cell will collect and analyze logistic data, provide projected CSS status information, and plan and control administrative movements.

Communications and Information Systems

The CIS officer (the G-6) exercises technical direction and overall control over the MAGTF communications networks and information systems from the MEF communications control center (MCCC). The G-6 also coordinates with the controlling authorities of external communications networks. The G-6 is assisted in these responsibilities by the communications battalion. Communications control is performed at all echelons of the MAGTF down to battalion level by the G-6 or the S-6 with the assistance of organic and supporting communications units or detachments.

Communications control consists of three primary functions: systems planning and engineering, systems control (SYSCON), and technical control (TECHCON). Systems planning and engineering tasks include determining the CIS requirements of the organization; designing the communications networks to support those requirements; and promulgating CIS plans, orders, and directives. SYSCON involves supervising, coordinating, and controlling the overall day-to-day operation of MAGTF communications networks, and TECHCON is the centralized technical supervision of the installation, operation, and maintenance of MAGTF communications networks.

Systems planning and engineering at any echelon involves the design of communications networks. These networks are designed and subsequently engineered to meet the operational requirements as determined by the CIS officer. Circuits are determined by G-6/S-6 systems planning and engineering personnel by type and number to meet the internal and external communications requirements of the command. The systems planning and engineering personnel normally perform their duties in a suitable facility as part of the G-6/S-6 staff in the main command post. The MAGTF G-6 as the senior CIS officer directs the overall systems planning and engineering effort. The communications battalion provides personnel to support systems planning and engineering. The G-6/S-6 at lower echelons, with assistance from the supporting communications unit/detachment, plans communications support in accordance with the overall MEF communications plan.

SYSCON consists of all activities needed to monitor CIS operations and resolve conflicts. Headed by the operations officer of the supporting communications unit, the SYSCON staff establishes the operational systems control center (OSCC) to maintain current information on the availability and operational readiness of CIS.

TECHCON is the centralized technical supervision of the installation, operation, and maintenance of the CIS of the MAGTF. The TECHCON operations staff supervises the installation, operation, and maintenance activities of the communications battalion companies and/or their detachments. The TECHCON operations staff is supported by and directs the activities of the TECHCON facility.

Marine Expeditionary Force Communications Control Center

To coordinate and direct communications control efforts, the G-6, with staff augmentation from the communications battalion, establishes the MCCC. The MCCC coordinates external communications control with the JTF or combatant commander J-6 through the joint communications control center as described in CJCS Manual 6231.07, *Joint Network Management and Control*. An MCCC may also be required to provide communications control support to the Marine component headquarters. Augmentation from other communications battalions would be required to support separate MEF and Marine component communications control centers. The MCCC is required because of the complexity of communications control responsibilities and functions.

Operational Systems Control Center

The systems control staff supervises the OSCC activities. The OSCC directs the day-to-day operation of the communications networks, compiles statistics and reports for use in long-range planning, and serves as the focal point for coordination of user requirements and allocation of CIS resources. The communications battalion provides the operational systems control staff and mans the OSCC. In a similar fashion, the supporting communications unit at each MSC provides the operational systems control support for its command. At lower echelons, operational systems control functions are generally performed by organic communications unit personnel without establishing an OSCC.

Technical Control Facility

The TECHCON facility provides centralized technical supervision of the installation, operation, and maintenance of selected circuits, terminal equipment, and dedicated services. The TECHCON facility provides the means to conduct technical supervision of circuits and coordinate with other facilities for circuit troubleshooting and restoration. The size and scope of this facility are driven by the number of units being supported and types of services provided. Personnel assigned to the TECHCON facility must have the technical expertise and experience to resolve complex communications problems.

Amphibious Command and Control Facilities

When the MAGTF is embarked aboard amphibious shipping, the MAGTF commander serves concurrently as the CLF. While embarked, the MAGTF commander and his staff direct the actions of the MAGTF from command and control facilities aboard the amphibious ships. MAGTF command and control may remain afloat throughout the expeditionary operation. Shipboard command and control facilities also support the commander, amphibious task force (CATF), who normally is located with his staff aboard the flagship.

Landing Force Operations Center

The LFOC is the shipboard space allocated to CLF and the LF staff to plan and execute LF operations. The LFOC is normally located on the ATF flagship. The LFOC staff are the same personnel who man the MAGTF COC when, and if, it is phased ashore. The functions of the LFOC mirror those of the COC. This center controls and monitors LF activities until CLF establishes command ashore.

Supporting Arms Coordination Center

The supporting arms coordination center (SACC) exercises overall coordination of supporting fires within the amphibious operating area. This center, located aboard the amphibious flagship, consists of a supporting arms coordinator and naval gunfire, air support, and target information sections. ATF operations, intelligence and communications, and LF fire support personnel perform the functions of the SACC. These functions are similar to those performed by the FFCC and FSCC that may be subsequently established ashore. A LF liaison is established in the SACC if the responsibility for coordination of supporting arms is passed ashore.

This center provides the commanders of the ATF and the LF with information concerning the requirements and developments that affect coordination of fire delivery by naval gunfire units, support aircraft, and artillery units. Fire support requests received from the ATF or LF are coordinated from this center to ensure that all fires are integrated to achieve the maximum effect against targets. Current fire support information is continually updated and displayed while direction for the execution of restrictive fire plans and instructions concerning troop safety are promulgated. Surface fire support plans are prepared and their execution is supervised by the SACC staff. This center also coordinates air support operations with appropriate ATF and LF air control agencies. Records of targets in the objective area are maintained and appropriate fire support activities are monitored when responsibility for the coordination of fires is passed ashore to CLF.

Navy Tactical Air Control Center

The Navy TACC is organized and located in the ATF flagship. It provides the means to direct and coordinate all tactical air operations in an objective area, including antiair warfare, until this responsibility is transferred to Marine air control agencies ashore. The Navy TACC consists of a tactical air

controller; an air support controller; an antiair warfare coordinator; and appropriate operations, intelligence, and communications personnel and equipment. These personnel and their equipment are provided by the flagship, ATF staff, and a designated tactical air control squadron.

Helicopter Direction Center

The helicopter direction center (HDC) is organized aboard the flagship of the helicopter transport group to provide the means to direct and control helicopters during the ship-to-shore movement. It consists of a helicopter director, who is responsible to the tactical air commander for direction of all helicopters and supporting aircraft; a helicopter direction net officer; a helicopter air controller; and other appropriate air operations and communications personnel and equipment. These personnel and their equipment are normally provided by the flagship on which the HDC is established.

To effect the direction and control of helicopter movement in an objective area, the HDC must operate under the overall direction of the Navy TACC for coordination of air operations with other agencies and under the OPCON of the helicopter transport group commander. This center advises the Navy TACC on all matters pertaining to the movement of helicopters that require coordination with supporting arms. It provides information as directed by the Navy TACC and the helicopter transport group commander and maintains status of availability and location of assigned helicopters. The HDC also receives requests for helicopter support, designates units to provide the helicopters for specific missions, and directs their employment. This center further controls the movement of helicopters, both transport and escort, from wave rendezvous to the initial point and from takeoff at the landing zone to the breakup point. The HDC also controls movement of helicopters between platforms and assists the DASC in controlling helicopters between ship and shore after the control of helicopters has been passed ashore.

Tactical-Logistical Group

Tactical-logistical groups (TACLOGs) are temporary agencies that are organized as required by the LF to assist the naval control organization in the ship-to-shore movement of troops, equipment, and supplies. They are normally established aboard control ships at each echelon of the MAGTF, along with the naval control agency that is exercising control over the ship-to-shore movement of that echelon during a surface landing. They are also established aboard each helicopter transport carrier during vertical assaults. A TACLOG consists of operations, CSS, embarkation, and communications personnel provided by the parent ground combat organization.

The TACLOG assists the corresponding naval control agency in handling LF requirements during the ship-to-shore movement. It is task-organized to advise the naval control agency as to the location of units, equipment, and supplies and to monitor their regulated movement ashore. The TACLOG maintains a detailed

record of the status of unloading and landing, provides information to appropriate commanders concerning the progress of the ship-to-shore movement, and responds to routine requests received from units by coordinating with the naval control agency. It further advises the naval control agency when the tactical situation ashore dictates an adjustment to the prescribed landing sequence.

ATF Intelligence Center

The ATF intelligence center (ATFIC) is the principal intelligence command and control and operational node for both the ATF and the LF. The ATFIC is normally located on the AF flagship. It enables the integration of naval, and possibly other component, intelligence-related command and control and operations resources and capabilities in a mutually supporting manner. In this way, available intelligence resources are used most effectively in support of ATF, LF, higher and other force's intelligence requirements.

CHAPTER 8

COMMUNICATIONS AND INFORMATION SYSTEMS

The MAGTF employs CIS to support the collection, processing, and exchange of information. CIS can accelerate and automate routine functions, freeing commanders and staffs to focus on those aspects of command and control that require experience, judgment, and intuition. In every phase of operations planning and execu-

tion, these systems assist the commander and his staff by enabling rapid, secure information flow, shared situational awareness, informed decision-making, and swift dissemination of decisions. The success of the MAGTF in the modern battlespace depends heavily on the effective employment of CIS.

SECTION I. MARINE AIR-GROUND TASK FORCE COMMUNICATIONS ARCHITECTURE

The design of the communications architecture to support a MAGTF is based on the nature of the operation, the physical environment, the commander's intent, the concept of operations, and the composition and task organization of the MAGTF and attached and supporting forces.

In the early stages of an operation, SCR normally provides the principal means of communications. As the operation evolves, LANs and a switched backbone are established to meet the information transfer requirements of command and control at higher echelons, and to connect to the Defense Information Systems Network (DISN). Maneuver battalions continue to depend on SCR throughout the operation with limited interfaces to the switched backbone. Special-purpose systems provide dedicated communications support for certain functions, such as position location, navigation, and intelligence.

The MAGTF communications architecture may be viewed as four subnetworks that interface with one another through the architecture provided by the tactical data network (TDN). Figure 8-1 depicts these four networks, which are described

in the following paragraphs. For a more detailed discussion of the MAGTF communications architecture, see MCWP 3-40.3.

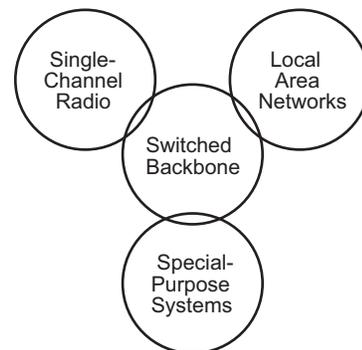


Figure 8-1. MAGTF Communications Architecture.

Single-Channel Radio

SCR equipment includes hand-held, manpack, vehicle-mounted, ground-mounted, and shelterized radios operating in the high frequency (HF), very high frequency (VHF), and ultrahigh

frequency (UHF) bands. It also includes TACSAT radios in the UHF band. The most widely employed tactical radios—the single-channel ground and airborne radio system (SINCGARS) family—provide built-in communications security (COMSEC) and electronic counter-countermeasures capabilities.

SCR equipment is easy to operate. SCR networks are easily established, rapidly reconfigured, and, most importantly, easily maintained on the move. They provide the principal means of communications support for maneuver units. SCR provides secure voice and data communications capability. However, data transfer rates (bandwidth) are limited. SCRs in the VHF and UHF bands are normally limited to line-of-sight ranges. In HF, SCR supports long-range communications, but not while on the move. SCR TACSAT communications combine mobility, flexibility, and ease of operation with unlimited range. However, TACSAT communications are restricted by the limited availability of satellite frequencies and channels.

In addition to a limited capability to support data transfer, other limitations are vulnerability to enemy electronic warfare, susceptibility to interference, and limited spectrum availability. The MAGTF employs TACSAT primarily in support of critical, long-range communications requirements; e.g., communications support for deep reconnaissance operations or ship-to-shore connectivity to the tactical echelon of a MEU(SOC) when deployed ashore.

Switched Backbone

The switched backbone consists of switching, routing, and wideband transmission systems that provide a high-capacity communications backbone for the MAGTF, and connectivity with the DISN. (See also section III.) The switched backbone is the tactical equivalent of commercial local and long-distance telephone networks. In some situations, it interfaces with and uses those

commercial networks. The switched backbone employs a mix of older equipment developed under the Tri-Service Tactical Communications System (TRI-TAC) program and newer equipment and technology. The TRI-TAC family of equipment was developed in the 1970s under a joint program by the Marine Corps, Air Force, and Army. TRI-TAC equipment, fielded beginning in the mid-1980s, provides the major components of the MAGTF switched backbone. This equipment was developed to provide interoperable, secure, and deployable voice and data digital switching and transmission systems for tactical forces operating in a joint environment.

The switched backbone is tailored to meet the requirements of a particular operation and has the flexibility to support the unfolding tactical situation and overall concept of operations. Planning, redesign, and adaptation are continuous as switched backbone equipment and personnel arrive in theater and the MAGTF transitions to operations ashore. Larger headquarters, rear areas, expeditionary airfields, and command and control centers at higher echelons are the principal subscribers to the switched backbone. Maneuver battalions cannot be constrained by the inherent lack of mobility of the switched backbone and normally link their voice and data systems through an SCR interface. The MAGTF switched backbone includes switches, IP routers, and wideband multichannel radio transmission systems.

Switches

Switches route traffic through a communications network. The three basic categories of switches are circuit, message, and packet. Circuit switches generally support telephone traffic. They range in size and capacity from man-portable switches that can support a few dozen subscribers to shelter-mounted switches that can handle traffic for over 100 users. They have an extensive built-in COMSEC capability. Message switches process formatted messages for storage and delivery. Packet switches process data into

standard packets for transmission and then reassemble the packets at the other end. The Marine Corps achieves a packet switching capability through the use of IP routers.

Internet Protocol Routers

The proliferation of information systems in the modern battlespace is driving an increased demand for data communications. Although circuit switches and message switches can support data communications, packet switching is far more efficient. The Marine Corps has developed a packet switching capability through the use of commercial IP routers. Routing protocol used with these routers provides for transmitting blocks of data called datagrams from sources to destinations, where the source and destination are identified within each packet by sets of 32 bits known as IP addresses. The router reads the network address of all data packets and forwards them to the addressee via the best available communications path. These IP routers form a data communications overlay on the switched backbone and serve as gateways to the IP router networks of the following:

- Other Services.
- JTF.
- DISN IP router networks: Joint Worldwide Intelligence Communications System (JWICS); Secret Internet Protocol Router Network (SIPRNET); and Nonsecure Internet Protocol Router Network (NIPRNET).

IP routers are an integral part of the TDN gateways and servers described in the following paragraphs.

Multichannel Radio

Multichannel radio provides the communications links for the switched backbone. It permits multiple users to access a single communications path and includes terrestrial and satellite radio

systems. Multichannel radio provides worldwide connectivity through links to the DISN and the links for long-distance communications within the theater and the MAGTF. Multichannel radio provides reliable, flexible, and high-capacity transmission paths for voice and data communications. Primary disadvantages are complexity and a lack of mobility. A multichannel radio network requires more time to set up and more expertise to operate and maintain than an SCR network. It cannot operate on the move due to the requirement for accuracy to transmit and receive a tightly-focused beam of radio energy. Consequently, maneuvering elements will rely primarily on SCR. Multichannel radio will be employed only down to the infantry regiment and artillery battalion levels in the GCE.

Local Area Networks

LANs are designed to support information exchange, collaboration, and resource sharing in a particular unit, agency, facility, center or cell in a confined geographic area. LANs can support high data throughput up to 1000 megabytes per second (Mbps), although 10 or 100 Mbps is more common. LANs include terminal equipment—usually computers—connected to a transmission medium such as wire or fiber optic cable. LAN media used in the MAGTF include copper-based coaxial and twisted-pair cable, and fiber optic cable used as a higher speed backbone that connects multiple facilities in a large headquarters complex. Optical networks are being employed at successively lower echelons. Initiatives such as the unit operations center (UOC)—described below—will continue that effort at regiment and lower headquarters. Fiber optic backbone LANs are also used aboard Navy ships with copper-based coaxial and twisted-pair LANs within an operational workspace such as the LFOC. MCWP 3-40.3 discusses how specific LAN media, access methods, technologies, proto-

cols, and equipment are employed to meet specific unit requirements.

Frequently, Marine Corps data networks are discussed using other terms, such as WAN or intranet. Table 8-1 provides a brief definition of these terms for clarification. Although all refer to an IP-based network, the differences are mainly issues of scale.

Table 8-1. Data Network Terms.

Term	Description
Local Area Network (LAN)	A LAN is a network confined to a relatively small area. It is generally limited to a single building or a small cluster of buildings. Rarely are LAN computers more than a mile apart.
Metropolitan Area Network (MAN)	A MAN covers more dispersed geographic areas, such as bases or larger deployed headquarters. By interconnecting LANs within a larger geographic area, information is easily disseminated throughout the network.
Wide Area Network (WAN)	A WAN connects larger geographic areas, such as states or countries. Dedicated trans-oceanic cabling or satellite uplinks may be used to connect this type of network.
Intranet	An intranet is a network based on transmission control protocol (TCP) and/or IP (just like the internet), belonging to an organization, which is accessible only by the organization's members or others with authorization. An intranet's web sites look and act just like any other web sites, but the security device (firewall) protecting an intranet prevents unauthorized access.

The UOC is a modular reconfigurable command and control system. It receives and transmits data and voice communications and provides the commander with a CTP to support staff planning and decisionmaking. Direction and control of unit operations can be accomplished through this center. It provides a centralized facility to host command and control functionality for CE, GCE, ACE, and CSSE. The UOC provides shelter/tent, power, cabling, LAN and processing systems to host mission application software. The UOC is scalable to support command echelons at the battalion level and above.

Special-Purpose Systems

Special-purpose communications systems support specific functions such as position location, navigation, and intelligence dissemination.

AN/PSN-11 Precise Lightweight Global Positioning System Receiver

The AN/PSN-11 precise lightweight global positioning system (GPS) receiver (PLGR) is small, hand-held, and weighs approximately 3 pounds. It provides precise positioning and timing solutions based on signals received from the GPS satellite constellation. It is important to understand the difference in capabilities between the PLGR and enhanced position location reporting system (EPLRS). The PLGR provides land navigation capability, but cannot provide the location of another unit. It does not have a communications capability beyond the passive receipt of location and time. Given the vulnerability of the GPS to interference and jamming, GPS should be viewed as a complement to, not a replacement for, EPLRS.

Enhanced Position Location Reporting System

EPLRS provides a dedicated data communications network and geodetic position location information to units below the regiment level. Its primary purpose is to provide data connectivity between the regiment and battalion. It provides the communication path to transfer data for Intelligence Operations Server version 1 (IOSv1), the data automated communications terminal (DACT), and the Advanced Field Artillery Tactical Data System (AFATDS).

The EPLRS radio set is normally vehicle-mounted, but may be removed and used in a man-pack configuration. EPLRS operates in the UHF spectrum, and provides a secure, robust communications architecture. This architecture supports the automated data distribution to

adjacent, senior, and subordinate commands and simultaneously provides unit position reports to automated command and control centers to update near-real-time tactical displays.

The network control station (NCS) provides the EPLRS control network, routes control net messages and queries, performs all calculations, and graphically displays the positions of all active EPLRS radio sets. The NCS provides over-the-air rekeying (OTAR) to radio sets that require keys for command, traffic, rekey or community of interest. Current plans call for fielding the EPLRS network manager (ENM) with EPLRS version 10. The ENM is a laptop-based system that will perform NCS functions and other planned network management functions. When fully fielded, the ENMs will allow network management functions to be performed at the battalion level.

Joint Tactical Information Distribution System

The Joint Tactical Information Distribution System (JTIDS) is an advanced radio system that provides information distribution, position location, and cooperative identification capabilities in an integrated form. The primary JTIDS role is in air defense coordination.

An initial JTIDS capability has been fielded. The AN/TYQ-JTIDS (modified AN/TSC-131 JM) does not currently have a JTIDS voice capability. It is normally fielded with a JTIDS tactical air operations module to provide an initial tactical digital information link-joint capability to the Fleet Marine Force. The Marine Corps implements the JTIDS terminal in the TAOC.

Integrated Broadcast Service

The integrated broadcast service (IBS) is the worldwide, Department of Defense (DOD) standard network for transmitting tactical and strategic intelligence and targeting data within a common format, which will migrate to a single family of joint tactical terminals (JTTs) for

improved operational jointness. The common IBS module is a totally integrated joint program (all Services and Special Operations Command) that was created to consolidate and replace existing IBS receiver functionality inherent with the duplicative existing systems with a common family of IBS modules (hardware and software).

Commander's Tactical Terminal

The commander's tactical terminals (CTTs) provide the warfighter with seamless, near-real-time intelligence and targeting information. They supply the critical data link to battle managers, intelligence centers, air defense, fire support, and aviation nodes across all Services. The CTT allows all Service users to exploit multiple intelligence broadcast networks.

Joint Tactical Terminal

The JTT, with its common IBS modules, can receive diverse broadcasts into terminals with common capabilities. These terminals use multiple transmission paths and sound information management to provide the ability for each user in the battlespace to view a COP/CTP. The modular feature of these terminals allows producers and users in the MAGTF to incorporate IBS into their existing information systems. Alternatively, users may also obtain completely configured tactical terminals. Employment of JTT/common IBS modules facilitates a seamless transition from current dissemination systems to the IBS without degrading the capabilities provided by current systems.

TROJAN SPIRIT II

TROJAN SPIRIT II is a mobile super high frequency (SHF) satellite communications system that receives, transmits, and processes multimedia products, including imagery and secure dial-up voice, data, facsimile, and video. It will be

deployed to provide GENSER and SCI communications for intelligence operations. TROJAN SPIRIT II supports two separate LANs (SCI and collateral secret) and provides entry to the SIPRNET and the JWICS.

Tactical Data Network

The Marine Corps is replacing interim, locally configured IP router-based data communications packages with the TDN. The TDN will augment the existing MAGTF communications infrastructure to provide an integrated data network—the MAGTF intranet. The TDN will connect the subnetworks of the MAGTF communications architecture and extend the MAGTF intranet down to battalion level. The data network established through the TDN will form the communications backbone for MAGTF information systems.

The TDN will consist of a network of gateways and servers interconnected with one another and their subscribers via a combination of common-

user long-haul transmission systems, LANs, SCRs, and the switched telephone system. It will provide subscribers with basic data transfer and switching services; access to strategic, supporting establishment, joint, and other Service component data networks; network management capabilities; and value-added services such as message handling, directory services, file sharing, and terminal emulation support.

The TDN gateway is mounted on a heavy-variant HMMWV. It will normally be employed with the digital technical control center and SHF- or extremely high frequency (EHF)-TACSAT to provide high bandwidth access to the DISN and/or the Marine Corps Enterprise Network (MCEN). TDN servers are being employed in several variants. The earliest of these are mounted in three man-portable transit cases. Newer variants are based on a laptop computer and are man-portable. TDN gateways will be employed at the MEF and MSCs. Servers will be fielded down to battalion/squadron level.

SECTION II. TACTICAL COMMUNICATIONS INFORMATION SYSTEMS

The Expeditionary Force Development System is being employed to develop new information systems-oriented warfighting capabilities. Experience gained by the operating forces is driving system modifications and changes in force structure. All staff sections require an organic capability to employ the information systems supporting their respective functional areas. Supported by CIS personnel under the cognizance and technical direction of the G-6/S-6, individual Marines, staff sections, and other activities now have an enhanced ability to support the commander's decisionmaking process.

To improve interoperability, increase efficiency, and reduce costs, the DOD has mandated that the

Services move to a common set of information systems and services. The Defense Information Systems Agency (DISA) is accomplishing this through the establishment of the common operating environment (COE), which includes the DISN, the Global Command and Control System (GCCS), and the Global Combat Support System (GCSS). These developments are having a profound effect on MAGTF CIS, doctrine, organization, training, and equipment.

The DISN provides the long-haul communications backbone for the MAGTF, both in garrison and deployed. The Marine Corps has implemented GCCS and is migrating its tactical information systems to comply with the COE. This migration began with the tactical

combat operations (TCO) and IAS command and control systems, now known as IOSv1 and IOSv2. COE compliance facilitates interoperability with the GCCS and other COE-compliant systems. MAGTF CIS must be viewed within the context of the COE.

Global Command and Control System

The GCCS implements the joint command, control, communications, computers, and intelligence (C4I) for the warrior concept. This concept calls for the capability to move a joint force anywhere on the globe at any time and to provide that force with the information necessary to accomplish its mission. The GCCS provides a fused and shared picture of the battlespace through its COP/CTP function. The GCCS also supports readiness assessment and reporting by the Services. The GCCS replaced the Worldwide Military Command and Control System, and is designed to resolve joint command and control interoperability issues by evolving incompatible, Service-specific command and control programs into a single integrated command and control system.

The GCCS employs a client-server architecture that uses both commercial and government-developed software. Through a DOD-mandated migration strategy, the GCCS will reduce the large number of information systems in use today. The GCCS is evolving from a baseline of existing or "legacy" command and control systems; as new GCCS versions are subsequently fielded, existing legacy systems will be replaced. The common functional, physical, and operational characteristics of the GCCS are based on a single COE. All future joint and Service/combatant commander-specific command and control systems must be compatible with this COE. The goal is to achieve a fully integrated, single GCCS in which all command and control functions are provided through GCCS application programs that have a common look and feel. The COE provides a standard environment, off-the-shelf software, and a set of programming standards

that describe in detail how mission applications will operate in the standard environment. Each mission application that is migrated to the common environment must comply with COE standards.

The first applications to be incorporated into the GCCS were mission-essential functions including the JOPES and the Status of Resources and Training System (SORTS). The GCCS also includes the infrastructure that supports sharing, displaying, and exchanging information and a COP/CTP. The GCCS infrastructure consists of UNIX-based servers and client terminals as well as personal computer (PC) workstations operating on a standardized LAN. The GCCS infrastructure supports data transfer among workstations and servers. Connectivity between GCCS nodes is achieved via SIPRNET.

Marine Air-Ground Task Force C4I

MAGTF C4I is the concept for the integration of Marine Corps tactical information systems and the migration of selected legacy systems to the COE. The MAGTF C4I concept is consistent with DOD mandates for COE compliance and designation of standard migration systems. MAGTF C4I is designed to support commanders and their staffs at all levels of the MAGTF. The MAGTF C4I migration strategy focuses on incorporating the software functionality of MAGTF tactical information systems into a MAGTF software baseline (MSBL). Standard software applications and the capability to support MAGTF command and control functions will be managed under the MSBL. The MSBL relies on the COE for its common software environment. This software environment, in addition to providing operating systems and application interfaces, provides users with common commercial-off-the-shelf (COTS) applications.

Command and control personal computer (C2PC) is a COTS-based software application designed to facilitate military command and control functions. C2PC applications are hosted on the

TCO and IAS. Laptops may be configured as IOSv1 workstations (maneuver client) and IOSv2 workstations (intelligence client).

IOSv1 and IOSv2 have already transitioned to support COTS. IOS servers and workstations have been fielded; in some instances, down to the regiment level.

Key Marine Air-Ground Task Force Information Systems

Key MAGTF information systems that support command and control are described below. The system descriptions focus on operational employment by functional area.

Maneuver

Information systems support maneuver by assisting commanders and staffs with shared situational awareness based on an integrated picture of the battlespace. This common picture is developed through the collection, processing, integration, and analysis of data from all functional areas. Through the COP/CTP, the commander and his staff gain an understanding of the situation and act on that understanding. Information systems support the planning process by facilitating the sharing of the commander's intent, the analysis of COAs, and the development and dissemination of OPLANs and OPORDs. Information systems then enable the commander and his staff to monitor execution, assess results, and act based on the changed situation.

IOSv1 is the primary information system supporting maneuver. As discussed above, IOSv1 has been incorporated into the MSBL and operates under the COE and in a PC client environment. IOSv1 processes tactical information from the GCCS track database manager (a UNIX server) to form a COP/CTP. Future enhancements to IOSv1 will provide automated support for the development of COAs and the preparation and

dissemination of OPLANs and OPORDs, including overlays that are geographically referenced to an electronic map.

IOSv1 supports the operations sections of all MAGTF units of battalion/squadron size and larger as well as planning sections at the MEF level. IOSv1 consists of computer workstations operating at the secret level on multiple LANs interconnected on the SIPRNET through MAGTF communications networks. The functional manager for IOSv1 is the G-3/S-3, and operations section personnel are responsible for setting up the IOSv1 equipment in the COC. CIS personnel are responsible for connecting IOSv1 terminals to the SIPRNET, providing them with IP network host addresses, and assisting the operations section in installing and maintaining the IOSv1.

Navy shipboard mission applications have been developed for operation in the same UNIX client-server COE as have the Marine Corps' IOSv1 and IOSv2. This permits embarked MAGTFs to "plug in" IOSv1 and IOSv2 to the shipboard client-server environment. Furthermore, like the Marine Corps, the Navy is currently rehosting some of these mission applications to a PC client environment. The Navy goal is the same as the Marine Corps: to transition away from UNIX to an all windows-based PC client-server environment.

Intelligence

Intelligence systems support the timely planning and direction, collection, processing and exploitation, production, dissemination, and use of all-source intelligence. IOSv2 is the principal Marine Corps intelligence information system. IOSv2 provides intelligence personnel with intelligence operations planning and direction, all-source processing and fusion, and dissemination capabilities. The G-2/S-2 is the functional manager for IOSv2. Intelligence personnel are responsible for setting up and employing IOSv2 equipment in their intelligence centers. MEF IOSv2 is a

sheltered, mobile system with multiple (scalable) analyst workstations in a UNIX-based client-server LAN configuration. IOSv2 suites for intermediate commands are configured in a four-workstation LAN. At the battalion/squadron level, a single intelligence/operations workstation with software developed as part of C2PC will provide IOSv2 capability. IOSv2 will host or integrate with a variety of MAGTF intelligence systems, to include:

- SIGINT—technical control and analysis center (TCAC).
- IMINT—tactical exploitation group, secondary imagery dissemination system.
- CI/HUMINT Automated Tool Set.
- Measurement and signature intelligence tactical remote sensor systems.
- GEOINT—topographic set, topographic production capability.

Additionally, it will be interoperable with other intelligence systems at the national, theater, joint, and other Services levels.

Aviation Operations

The MACCS provides the tactical air commander with the automated support required to exercise control over MAGTF air operations. The MACCS supports both tactical air command and the control of aircraft and missiles. The control of aircraft and missiles is a highly specialized function addressed in MCWP 3-25. MACG personnel support the installation, operation, and maintenance of the MACCS. The Marine wing communications squadron (MWCS) provides CIS connectivity.

Theater battle management core systems (TBMCS) is a battle management system used for planning and executing air operations. TBMCS provides a complete tool kit to manage, plan, and execute the ATO. TBMCS is an Air Force-developed program formed by the consoli-

ation of several existing segments: Contingency theater automated planning system (CTAPS), combat intelligence system, and the wing command and control system. Some of the functions provided by TBMCS are the following:

- Build the target nomination list, the air battle plan, and the ATO.
- Monitor the execution of the air battle and re-plans, as required.
- Plan routes, ensure airspace deconfliction.
- Build the airspace control order.
- Provide weather support.
- Manage resources; e.g., aircraft, weapons, fuel, logistics.
- Display information on the enemy, battle results, and friendly forces.
- Analyze information to determine strategies and constraints.
- Identify potential targets and propose an optimal weapons mix.
- Provide for support and protection of ground forces.
- Plan countermeasures and frequency assignments.

Tactical air command systems provide the tactical air commander with support for planning, controlling, and coordinating overall MAGTF air operations through the execution of the air tasking cycle. Functions supported include determination of operational requirements, allocation of aircraft, processing of ATOs and airspace control orders, planning and monitoring of air operations, and coordination with naval and joint agencies. TBMCS runs at the secret level on UNIX-based servers on the TACC LAN. The MWCS provides each TBMCS workstation with an IP host address and connects the TACC LAN to remote airfields, the DASC, the TAOC, and other-Service command centers over the SIPRNET by using IP routers and organic transmission assets. TBMCS replaces the CTAPS.

Fires

The Initial Fire Support Automated System provides automated support for technical artillery fire control and limited automated support for fire planning and tactical fire direction. AFATDS fully automates support of fire planning, tactical and technical fire direction, and fire support coordination. AFATDS is employed at FDCs down through the firing battery level, at FSCCs down through the battalion level, at the SACC, and by the MAGTF CE. AFATDS assists the commander in improving tactical planning and control of supporting arms operations. Supporting arms fires, including rocket and tube artillery, mortar, and naval surface fires support, are planned and coordinated within the MAGTF by AFATDS. AFATDS provides the ability to integrate supporting arms assets into maneuver plans, provide battlefield information, target analysis, and unit status, while coordinating target damage assessment and sensor operations.

The AFATDS workstation, the main component of AFATDS, receives, transmits, edits, displays, and processes fire support requests, and stores data to facilitate artillery fire support directions and coordination. It displays a full range of fire support, maneuver control, coordination measures, and geometry data for fire support at the workstation. AFATDS operates within the current and planned communications architecture, using wire and tactical radio, and assists the commander with automated message delivery for coordination of supporting arms fires.

Logistics

Logisticians employ information systems to plan, coordinate, and direct logistic operations and to maintain visibility of logistic status. Currently fielded logistic information systems include the Asset Tracking Logistics and Supply System

(ATLASS) and the MAGTF II/Logistics Automated Information System (LOGAIS) family of systems. The MAGTF II/LOGAIS family of systems includes MAGTF II, the MAGTF Deployment Support System (MDSS) II, the computer-aided embarkation management system (CAEMS), and the Transportation Coordinator's Automated Information for Movement System (TC-AIMS).

ATLASS provides automated support for supply and maintenance. It is replacing two mainframe-based systems, the Marine Corps Integrated Maintenance Management System and the Supported Activities Supply System (SASSY), with a client-server system running on PCs. ATLASS is being implemented through phased development, with the current phase focusing on integrating user-unit supply and shop-level maintenance functions.

MAGTF II is a system that allows planners to select and tailor MAGTF force structures, estimate sustainment, and estimate airlift requirements for plan feasibility analysis. MAGTF II serves as the bridge between the MAGTF II/LOGAIS family of systems and JOPES, permitting MAGTF commanders to submit TPFDD refinements to JOPES. Additionally, MAGTF II has the capability to download plans from JOPES. MAGTF II runs on PCs. It includes TC-AIMS and MDSS II. (TC-AIMS II, a joint system, will eventually replace TC-AIMS and MDSS II). TC-AIMS and ATLASS will be the primary systems to provide functional logistic management for sustainment and distribution.

TC-AIMS provides the MAGTF commander and staff with an automated capability to plan, coordinate, manage, and execute MAGTF movement from the point of origin to the air and sea port of embarkation and from the port of debarkation to the final destination. TC-AIMS runs on PCs.

MDSS II enables planners at various echelons of a MAGTF to build and maintain a database that contains force and equipment data reflecting how a MAGTF is configured for deployment. This data can be updated during plan development and execution. Extracted MDSS II data is passed through MAGTF II to JOPES to provide an accurate picture of MAGTF composition, including the lift requirement. MDSS II runs on PCs.

CAEMS is an interactive database/graphics tool for producing amphibious, MPF, and MSC ship load plans and associated reports. CAEMS employs linked computer-aided design (CAD) and database systems to recognize ship and cargo characteristics, to conduct cargo loading and offloading flowpath analysis, to allocate cargoes to stowage spaces, and to ensure that stowage compatibility requirements are met. Additionally, CAEMS provides input to trim, stability, and stress calculations and produces accurate "as-loaded" ship load plans and reports. During the planning and execution phases of an operation, CAEMS updates MDSS II. CAEMS runs on PCs.

Communications and Information Systems

The Systems Planning, Engineering, and Evaluation Device (SPEED), with its associated software, is the primary information system supporting the planning and employment of MAGTF CIS. SPEED provides the Marine Corps with the capability to rapidly engineer tactical communications systems by using automated radio propagation and network planning tools on a PC-based system. SPEED can also be used to evaluate system performance before installation. SPEED supports radio path profiling and area coverage analysis, HF propagation analysis, network planning (line of sight and position location information studies), and unit level circuit switch (ULCS) network planning. SPEED incorporates the Revised Battlefield Electronic Communications-Electronics Operating Instruction System (RBECS), which is the software required to operate the SINCGARS in a frequency hopping mode. SPEED is fielded down to the infantry regiment level with a database that includes the technical profiles of communications-electronics equipment and a set of National Imagery and Mapping Agency digital terrain maps.

SECTION III. DEFENSE COMMUNICATIONS ARCHITECTURE

DISA is responsible for implementing, as the information transfer segment of the COE, a single, integrated, common-user, global communications network. This network, the DISN, will provide support for the exchange of voice, data, imagery, and video from strategic to tactical levels, at all echelons, in garrison or when deployed. The DOD and the Services are implementing the DISN in an evolutionary manner by interfacing and integrating existing communications networks and making maximum use of commercial services and standards.

The Marine Corps has combined its private enterprise network, the MCEN, with the DISN. Just as the GCCS and the COE are shaping the development of MAGTF information systems, DISN implementation is shaping the MAGTF communications architecture. For the near term, the communications networks supporting the MAGTF will include the current MAGTF tactical communications networks: the switched backbone, SCR, LANs, and special-purpose networks with an interface to the DISN for long-haul communications. However, change is

occurring rapidly with the introduction of IP router-based data communications systems and equipment augmenting the switched backbone and providing enhanced connectivity among tactical networks and between tactical networks and the DISN.

It is these IP router-based systems, combined with COTS software, that allow the MAGTF to establish an intranet. That intranet rides on the backbone provided by the MAGTF communications architecture, and the data communications overlay provided by the TDN. This MAGTF intranet should be designed and employed based on a well-thought-out information management plan.

Defense Information Systems Network

The DISN is evolving toward a single, integrated telecommunications infrastructure that will provide end-to-end communications connectivity in support of military operations worldwide. Ongoing efforts include upgrades to switching and transmission centers around the world and consolidating and integrating satellite and terrestrial communications networks. The DISN currently provides long-haul, common-user, dedicated, secure and nonsecure, voice, data, and video service through a mix of DOD-dedicated and standard commercial communications services.

The DISN provides the communications backbone for DOD-wide subnetworks including the following:

- The Defense Switched Network (DSN).
- The Secure Voice System.
- The Defense Data Transport Network (NIPRNET and SIPRNET).
- The JWICS.
- Separate systems and networks serving the combatant commanders, Services, and agencies.

Deployed forces access the DISN through 14 DISA standardized tactical entry points (STEPs), commonly referred to as STEP sites. MAGTFs use these STEP sites to access the DISN to support training, exercises, and operations. When ashore, the primary means available to the MAGTF to access the STEP sites is through TACSAT communications over the Defense Satellite Communications System (DSCS). Shipboard access is provided through the Navy Tactical Network. Five entry points with Navy-unique configurations are located at Naval Computer and Telecommunications Area Master Stations (NCTAMSs) to provide ship-to-shore and ship-to-ship communications.

The services provided to the deployed MAGTF through the DISN STEP sites include voice, data, and video.

Defense Switched Network

Each STEP provides one T1 (1.544 Mbps) circuit supporting 44 interswitch trunks to a DSN multi-function switch. These 32 kilobits per second (kbps) interswitch trunks allow tactical users to place nonsecure or secure telephone unit-III (STU-III) calls to a DSN subscriber.

Defense Red Switch Network

A single STEP accommodates up to four 56 kbps circuits to the Defense Red Switch Network switch. Each circuit provides two interswitch trunks between the tactical and Defense Red Switch Network switches. These eight interswitch trunks allow tactical users to place secure red switch calls from the field.

Nonsecure Internet Protocol Router Network

The NIPRNET is an information network that is based on IP routers and Integrated Digital Network Exchange (IDNX) smart multiplexers.

NIPRNET is designed for sensitive but unclassified information transfer. It supports unclassified networks such as the MCEN and the Tactical Automated Weather Distribution System. Under the Integrated Tactical-Strategic Data Network program, 10 of the 14 STEP sites were configured with NIPRNET routers. MAGTFs use the NIPRNET in garrison and when deployed, and aboard ship and during operations ashore to transfer administrative data.

Secure Internet Protocol Router Network

The SIPRNET is an information network based on IP routers and IDNX smart multiplexers, and is designed for exchange of classified information up to and including the secret level. It supports the exchange of classified data between the GCCS, Defense Message System (DMS), TBMCS, IOSv1, IOSv2, and other tactical information systems. SIPRNET routers are collocated with NIPRNET routers at 10 STEP sites. MAGTFs use the SIPRNET in garrison and when deployed, aboard ship and during operations ashore to transfer operational data.

Joint Worldwide Intelligence Communications System

JWICS is an information network based on IP routers and IDNX smart multiplexers. It is designed for exchange of SCI-level video and data information. It supports the MAGTF's use of intelligence link (INTELINK) and other services accessed by using joint deployable intelligence support system (JDISS) and TCAC. MAGTFs use JWICS in garrison and when deployed, aboard ship and during operations ashore to exchange SCI data.

Video Teleconferencing

VTC is used at MSC and higher echelons with increasing frequency. When deployed, it is primarily used for MAGTF-to-component/JTF/ combatant commander coordination.

Defense Message System

The DMS is a secure X.500 and X.400 based e-mail system developed by the USG with industry partners to ensure safety for critical operations. Essentially an enhanced version of various commercial e-mail products, DMS was developed for the DOD as a replacement for the automatic digital network (AUTODIN).

At the user level, DMS looks like a typical e-mail application and is designed to feature familiar user-friendly functionality, such as global directory service and transmission support for digital files of various types and sizes. Security and delivery assurance mechanisms are approved by the National Security Agency for information classified at all levels, up to and including Top Secret. DMS policies require that all messages be signed and encrypted with Class IV Public Key Infrastructure protection through Fortezza, the National Security Agency's trademarked security products suite.

DMS was designed to incorporate components from a variety of leading hardware and software vendors and to leverage the best current and emerging messaging technologies within the defense information infrastructure, a worldwide connectivity transport infrastructure. The DMS development program began in response to joint staff requirements for an integrated messaging service that could be accessed from any DOD location in the world and by designated government users or contractors.

DMS uses the DISN IP router-based network and supports messaging in garrison or in the tactical environment. DMS, once fully implemented, will eliminate AUTODIN.

Marine Corps Enterprise Network

The Marine Corps is provided global computer network communications through the MCEN. The MCEN is connected to the DISN, which provides

access to the NIPRNET and SIPRNET networks. MCEN connectivity to the commercial internet is accomplished via its links to the NIPRNET.

Overall management of daily operations and security of the MCEN is accomplished by the mutually supporting efforts of the Marine Forces Integrated Network Operations (MARFOR-INO) and the Marine Corps Information Technology and Network Operations Center (MITNOC). These two organizations are collocated in Quantico, Virginia. Both fall under the direct cognizance of the Director, C4 Department, Headquarters Marine Corps.

The MARFOR-INO is the Marine Corps' Service component to the US Space Command's Joint Task Force-Computer Network Operations (JTF-CNO). The JTF-CNO is responsible for coordinating and directing DOD efforts to secure and defend the DISN. The Commandant of the Marine Corps has vested authority in the MARFOR-INO to direct network defensive actions across the Marine Corps and to fulfill Service responsibilities assigned by JTF-CNO and higher authority.

The MITNOC is responsible for the overall management of the global MCEN. The MITNOC controls the network connection points between Marine Corps installations (base-to-base communication links) and to external networks, such as the NIPRNET and SIPRNET. It is also responsible for maintaining enterprise-wide network services, to include the global e-mail address directory. The MITNOC provides the highest echelon of technical support in the Marine Corps for computer problem resolution.

The MCEN is a global network with over 100,000 users located at 30 geographically separate locations around the world. Although the MITNOC has overall responsibility for the daily operation of the MCEN, there is an underlying network management and computer technical support structure based on a hierarchy of four mutually supporting echelons.

First Echelon

The ISC is the central point of contact within a small unit or work section. Technical problems beyond the ISC's capabilities or authority are referred to the second echelon of support.

Second Echelon

The LAN manager is normally located within the G-6 at an operational command or the information technology division at a base/station. The LAN manager is responsible for all LANs operating within subordinate or tenant organizations and units. LAN managers are specifically tasked to provide technical support to ISCs under their cognizance. Technical problems beyond the scope of the LAN manager's capabilities or authority are referred to the third echelon of support.

Third Echelon

Each base/station network manager serves as a third echelon organization. Base/station network control centers provide technical guidance and support to LAN managers within their geographic area of concern. Technical problems beyond the scope of the base/station network control center are referred to the fourth echelon for resolution. Third echelon organizations house the connection point between the internal base/station network and the rest of the MCEN and to the DISN and other external networks. Although these connection points are housed by third echelon organizations, management and control of these are exercised centrally by the MITNOC.

Fourth Echelon

The MITNOC manages the overall operation of the MCEN and is the fourth and highest echelon of network and computer technical support within the Marine Corps.

Deployed Units

The senior command in an operating force that has established a tactical network is temporarily designated a third echelon organization while deployed and may receive support directly from the fourth echelon. Unlike the supporting establishment network environment, the connection point between the tactical network and external networks is not centrally managed by the MITNOC. The operating forces maintain these tactical network connection points.

Many management issues are involved in deployed network support; i.e., effecting a communications shift when switching between NCTAMS or when the MAGTF transitions from

ship-to-shore. While afloat, MAGTFs will be supported by the ship's technical communications center with reachback to the Navy Network Operations Center or NCTAMS site. When a MAGTF is deployed as part of a JTF, a joint communications control center will provide network management throughout the JTF area of responsibility. The MITNOC has a deployed support section. Its mission is to provide network technical advice and assistance during all phases of a deployment and coordinate the timely resolution of technical problems. It works in partnership with DISA, NCTAMS, the Marine Corps Tactical Systems Support Activity, and operating force commands to provide coordinated support to deploying units.

SECTION IV. ROLES AND RESPONSIBILITIES

Responsibilities *must* be understood to establish and maintain an effective communications network. Failure of any single individual, unit or activity to carry out assigned responsibilities can have catastrophic results.

Commander

The commander has the responsibility to establish communications within his unit, and to higher, adjacent, and subordinate units according to his mission and organic capabilities. Although the authority to plan and employ communications systems may be delegated, ultimate responsibility for communications planning and employment remains with the commander. The commander must provide adequate guidance, including necessary assumptions and constraints, to support the development of communications estimates, plans, and orders.

Communications Officer/G-6/S-6

The communications officer is responsible to the commander for all matters on the planning and employment of communications within the command. As a general/executive staff officer, the G-6/S-6 serves as an advisor, planner, supervisor, and coordinator. Specific responsibilities include the following:

- Provides the commander and other staff officers with—
 - Estimates of the supportability of COAs.
 - Estimates of requirements for communications resources (personnel, equipment, supplies, and facilities).
 - Recommendations for the allocation and use of communications resources.
 - Recommendations for communications training for the command.

- Recommendations on the location, echelonment, and displacement of the command post and other command and control facilities.
- Advice on operational aspects of INFOSEC.
- Prepares communications plans, orders, and SOPs to implement the commander's policies and decisions on communications employment.
- Assists the staff with communications to prepare studies, estimates, plans, orders, instructions, and reports.
- Complies with the commander's orders and instructions by supervising the following:
 - Employment of communications personnel.
 - Installation, operation, and maintenance of communications networks.
 - LAN and WAN management, including IP address and routing management.
 - Technical support for functional users in the installation, operation, and maintenance of information systems hardware and common user software.
 - Communications systems training and, in coordination with functional users, information systems administration training.
 - Supply and maintenance of communications systems and equipment.
 - Compliance with SOPs and interoperability standards.
 - COMSEC in coordination with other staff sections.
- Coordinates communications matters with cognizant staff sections and with staffs of other units.
- Establishes communications liaison with senior, subordinate, adjacent, supported, and supporting units.

Supported Unit/Agency

Communications support is more and more frequently considered a service, much like electricity or water service delivered to a household. Responsibilities of the service recipient—whether an entire unit, a small agency or an

individual—are an important factor in successful employment of the service delivered.

No longer is the bulk of information processing done through a batch job on a faraway mainframe computer, staffed with specialists, and delivered in hard copy to the requester. Today, users within staff sections administer and use information systems that deliver specialized information that permits unparalleled effectiveness. Most of it is done in an information-pull environment. The user employs his system to obtain information over the communications network to accomplish a specific goal or mission. This relatively new power comes at a cost, namely that of individual knowledge and training.

On the modern battlefield, it is essential that functional users of information be able to configure and operate the information systems supporting their functional area. Such ability increases the speed and effectiveness that a distributed network can be established and employed. It also ensures functional area users are able to best exploit and control the capabilities of systems that support their needs. Functional users include every staff section supported by communications systems. Consequently, all staff principals have functional user responsibilities for the function-specific systems under their staff cognizance; e.g., the G-3/S-3 has functional user responsibilities for IOSv1.

Functional user responsibilities include the following:

- Serves as the primary point of contact—internal and external to the command—for issues affecting information systems supporting the functional area.
- Serves as the configuration manager for information systems supporting the functional area.
- Conducts routine information system administration (assigning user identification, passwords, and privileges; performing data/file storage and management; conducting system backups of functional area information systems).

- Coordinates with the G-6/S-6 to ensure that adequate hardware, software, trained personnel, and procedures are in place before implementing or modifying a new system.
- Coordinates with the G-6/S-6 to develop and maintain user training programs for communications.
- Identifies information system support requirements to the G-6/S-6.
- Identifies specific communications requirements, including requirements to interface with other information systems and potential interface problems, to the G-6/S-6.
- Complies with applicable COMSEC measures.
- Reports malfunctions and outages and coordinates with the G-6/S-6 to restore service.
- Designates an IMO for the staff section.

CHAPTER 9

INFORMATION MANAGEMENT

The commander makes decisions based on his understanding of the location, disposition, and status of friendly and enemy forces. Historically, a commander achieved situational awareness by personally viewing the battle. As the size and scope of competing forces and the battlespace increased, the commander's ability to fully understand the battle became more limited. To achieve understanding, a commander began to use situation maps, textual material; e.g., messages, reports, status boards, and voice reports with his experience—intuitive reasoning and judgment, and personal contact with frontline units—to make decisions. However, information that provided enhanced understanding of the situation was often available, but it was not provided in a timely manner or in an understandable form.

Information and Command and Control

Today, the commander's and staff's information requirements remain relatively constant. They still rely on quality information to understand the battlespace. What has changed is the technological capability to produce and disseminate enormous amounts of data.

The role of information management is to provide a timely flow of relevant information that supports all aspects of the PDE&A cycles of numerous and potentially widely dispersed units. Automated capabilities and commonly understood procedures display battlespace information in a dynamic environment and rapidly gain understanding to make effective decisions.

Effective information management delivers critical information in a timely manner to those who

need it in a form that they can quickly understand. Information management includes all activities involved in identifying, collecting, filtering, fusing, processing, focusing, disseminating, and using information. It assembles information that promotes understanding of the battlespace and enables the commander to better form and analyze COAs, make decisions, execute those decisions, and understand results from previous decisions. Information management provides the quality information a commander needs to support the decisionmaking process.

Information Theory

It is important to understand that information, in its broadest sense, includes everything from raw data to data that has been extensively analyzed and processed. Ultimately, study and analysis of information leads to an understanding of the situation; i.e., situational awareness. Naval Doctrine Publication 6, *Naval Command and Control*, and MCDP 6 describe a four-step cognitive process that transforms raw data to gain situational awareness. Figure 9-1 on page 9-2 depicts these four steps, which may be viewed as defining an information hierarchy.

Step 1, Collect Raw Data

Collected raw data takes many forms: radar signals, intercepted radio signals, meteorological data from a weather balloon, or even bar-coded logistic data scanned from the side of a container. This data may be transmitted in analog or digital format over communications media or sent by messenger. Whatever the form or method, this raw data must be processed into an understandable form for the ultimate user.

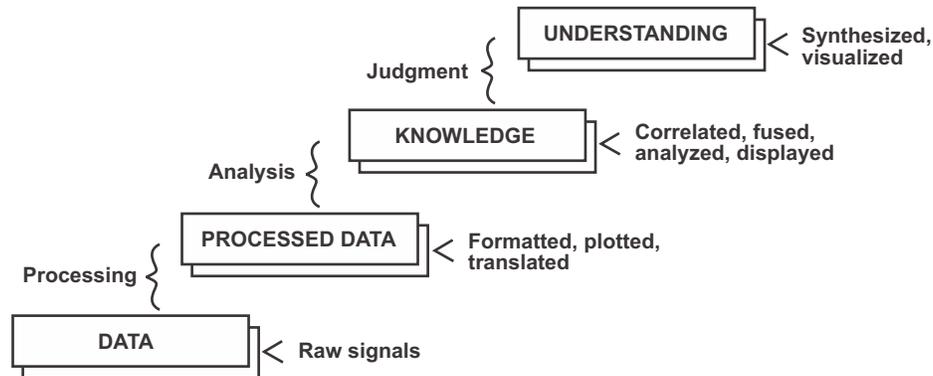


Figure 9-1. Information Hierarchy.

Step 2, Process Data

Examples of processing data include decoding and translating intercepted communications, filtering and correlating sensor returns, developing film, and a wide range of other activities. Processing includes placing information into a form that can be readily interpreted. Some information comes to the MAGTF in processed form and does not require further processing. Once data has been processed, it may have immediate value for Marines in close contact with the enemy. Such information is known as *combat information*. Combat information is usually extremely perishable and must be disseminated to using units as rapidly as possible.

Step 3, Analyze and Evaluate

Through analysis and evaluation comes the knowledge required to support decisionmaking; e.g., the analysis of intelligence information provides a picture of the enemy situation. Although some part of that picture may have been provided by combat information, analysis and evaluation provide a more accurate and complete picture of the enemy situation.

Step 4, Situational Awareness

Step 4 is developing an understanding of the situation on the basis of the information avail-

able. Understanding is the result of applying human judgment based on individual experience, expertise, and intuition to gain a full appreciation of the battlespace. This understanding is what we call situational awareness, and it provides a sound basis for operational decisions. Situational awareness allows the commander to anticipate events and to uncover critical vulnerabilities for exploitation. As we strive to gain an understanding of the situation, we must recognize that time works against us. We may not be able to gain complete situational awareness before acting. Developing situational awareness with limited and uncertain information under severe time constraints is the fundamental challenge of command and control.

Characteristics of Quality Information

To be of value, information must have certain qualities. Information that lacks one or more of these qualities may be worse than having no information at all.

Relevance

Information must apply to the mission, task or situation. Exhaustive information provided without filtering often detracts from, rather than enhances, the commander's ability to make timely, effective

decisions. Transmitting and processing exhaustive information ties up CIS.

Timeliness

Information must be available at the appropriate place and time to be useful. Information management procedures and techniques must ensure the timely, unimpeded flow of relevant information. Well-planned and well-implemented CIS; clearly identified information requirements; effective collecting, reporting, and dissemination; and decisiveness by commanders and staffs all contribute to timely information.

Accuracy

Information must be as accurate as possible. Although information systems can collect, transport, process, disseminate, and display information, Marines must still evaluate the information and make decisions as to its accuracy, timeliness, and relevance.

Completeness

Information may be useful only when it is complete. However, by the time complete information is obtained, it may no longer be timely. If subordinates are aware of the commander's intent and CCIRs, they can provide only the information needed.

Objectivity

Information must be provided in the most undistorted, factual, and unbiased way possible. Any assumptions or interpretations should be highlighted.

Usability

The display or presentation of information to the user must be understandable and useful. Standard and clear formats, symbols, and terms should be used. Information exchanged and presented in nonstandard methods delays interpretation and is more easily misunderstood, thereby leading to

longer decision and execution cycles and, ultimately, to less reliable decisions.

Commander's Critical Information Requirements

Identifying information management requirements avoids the generation of irrelevant information, prevents information overload, and focuses limited resources on satisfying the most critical information needs. The goal of information management is to facilitate a rapid, unconstrained flow of useful information throughout an organization. Information is needed to support the development of a common situational awareness; dissemination of the commander's intent, orders, and instructions; and feedback from subordinate units. CCIRs are tools for the commander to reduce information gaps generated by uncertainties that he may have concerning his own force, the threat or the environment.

Only a fraction of the information that is theoretically available can be collected and processed rapidly enough to support combat decisionmaking. The commander, therefore, identifies CCIRs to focus and direct the collection and processing of information. CCIRs are that information regarding the enemy, his own forces, and the environment that the commander deems critical to maintaining situational awareness, planning future activities, and making timely decisions. Designating CCIRs reduces the volume of information reported to the commander to a manageable level and focuses staff efforts on obtaining relevant and timely information.

During the conduct of an operation, CCIRs must be continually reviewed for relevance, and modified or deleted. Each staff section should designate an IMO who is responsible for collecting and reporting information in his respective area of staff cognizance. Each staff section must ensure that processes are in place to filter and fuse raw data before submitting information that addresses a CCIR. While the COC is the primary

location for the command to track, monitor, and display CCIRs, each staff section and MSC has a responsibility to monitor the status of current CCIRs in their respective cells and command centers. When a CCIR is answered, the director of the COC or senior watch officer makes an immediate report to the commander, affected staff sections, and subordinate units. Continuous management of CCIRs is required to ensure that the command's information gathering is focused on the CCIRs.

Shared Situational Awareness

The capability to share a common picture of the battlespace has been assigned the highest priority in current efforts to improve command and control capabilities. At the combatant commander level, this battlespace picture is the COP, which is a composite of the battlespace pictures of subordinate commanders' CTPs. The COP/CTP enables commanders in different geographical locations and Services to collaboratively communicate and assess the military situation, make decisions for future operations, and transmit those decisions to the proper forces. Procedures must also be in place to validate and verify the data that is being input to the database. This data may or may not be valid. Even if the data is valid, it may be showing only what the enemy commander wants to reveal; i.e., be part of an enemy deception.

The COP/CTP provides commanders and staffs with a shared, graphic depiction of the battlespace, including the following:

- Current locations and all available status information for friendly, neutral, and enemy ground, maritime, and air units.
- All available planned movement information for friendly, neutral, and enemy ground, maritime, and air units.
- All available environmental information that could affect the disposition of friendly, neutral,

and enemy ground, maritime, and air units; e.g., weather and terrain data.

- Generated control measures, features, and projections; e.g., operating area and fire support coordinating measures.

Common Operational Picture/ Common Tactical Picture

COP information is required at all levels. COP/CTP information is scalable because each unit may require a different level of detail. Commanders control the information in their areas of responsibility by establishing a COP correlation site to pull information together, build a common tactical data set, apply overlays, and filter information. Subordinate commanders will develop and submit their CTPs, which are correlated and fused for inclusion in the next higher headquarters COP. The primary tool for viewing the data in the COP/CTP is the chart application of the GCCS, which generates the situational display from the track database. Accuracy of the situational display depends completely on the quality and timeliness of data input from multiple sources and the effective correlation and fusion of that data.

Track Database Management

The COP/CTP is developed through the concept of tracks. A track represents an object in graphic or text format. The position and characteristics of that object—which may be a friendly or enemy ship, aircraft or ground unit—are collated from sensors and other data sources including manual input. Tracks are plotted on a map background to provide a tactical display as described below. (The data describing these tracks is stored in a database used to generate the COP/CTP.)

Each command level that generates a COP/CTP has the responsibility for track management: entering, correlating, updating, fusing, deconflicting, and otherwise maintaining assigned tracks. This may be done by using automated tools or manually.

Normally tracking is through a combination of automated and manual procedures. Although much of the track data is fed into the database, correlated, and displayed automatically, the data must be managed effectively to prevent obsolete tracks from being displayed.

Information Dissemination

Required information must be available to decisionmakers in a usable form when and where needed. This can be done only through implementation of effective information dissemination techniques. A flexible, responsive information dissemination architecture is required that pushes relevant, time-sensitive information to the user while allowing the user to pull additional detail as required. This architecture is increasingly based on the exploitation of networking techniques. These techniques support improved situational awareness and collaborative planning.

Networking techniques are most effective when a unit can set up a LAN and establish reliable, high-capacity data communications connectivity to higher echelons. In a tactical environment, data transmission is usually limited to that which can be provided over SCRs. This may restrict the ability of maneuver units to use networking techniques and would limit information exchange to conventional messaging (voice and data). The MAGTF must ensure that it can operate effectively in the most austere command and control environments.

The information manager will coordinate with the G-6/S-6 to establish a MAGTF intranet to support information networking. The MAGTF intranet will consist of MAGTF LANs linked by a WAN with global connectivity provided through DISN IP router-based networks.

E-mail

One of the most widely used network communication technique is e-mail. E-mail provides a

convenient means for exchanging information between organizations and individuals and is a highly effective means of communication. E-mail supports rapid dissemination of time-critical information between a headquarters and subordinate organizations and across staff sections. Although generating and sending e-mail is easy, messages that contain large attachments are often a problem. The information management plan must address these issues with a disciplined approach to establish and use e-mail accounts or chat rooms. Organizational or billet e-mail should be emphasized over individual e-mail; minimize procedures must be clearly defined.

Information-Pull Techniques

Other networking techniques employ the concept of information pull, in which information is obtained via the network when the user requires it. This approach to information dissemination has the potential to reduce the load on the communications network and thereby improve the information flow. These information-pull techniques include the use of web pages, newsgroups, and shared network drives on a LAN. When selective access to large quantities of information is required, pull techniques are far more efficient than push techniques. However, posting information to a newsgroup or a home page or updating a file on a LAN server is no guarantee of receipt of that information by the intended audience. Pull techniques are generally unacceptable for the promulgation of time-sensitive critical information such as fragmentary orders, warning orders or fire support coordinating measures and missions.

Web Pages

Web sites are a useful technique for sharing information with all users who have a web browser and access to the MAGTF intranet. If web sites are used, the information management plan must provide guidance to staff sections and subordinate commands on their responsibilities for developing

and maintaining web pages. Guidance should include instructions on format and content as well as frequency of update. The information manager must ensure that the information provided via web pages is a coordinated part of the overall information dissemination effort.

Newsgroups

Newsgroups function like electronic bulletin boards. This technique disseminates information throughout the MAGTF intranet. Newsgroups run from a web browser application and create, post, read, and transfer information. Information consists of files posted to sites throughout the intranet. As with other web techniques, newsgroups should be a coordinated part of an overall information dissemination plan. The MAGTF newsgroup structure should be designed to permit users easy access to desired information. The MAGTF IMO is responsible for coordinating the use of newsgroups on the MAGTF intranet. Newsgroups should be based on the structure of the MAGTF and the desired flow of information. Each staff section must monitor assigned newsgroups to ensure that only appropriate information is posted. The IMO must ensure that the newsgroup structure and procedures are promulgated in the information management plan.

Shared Drives

The use of shared drives as an information sharing technique predates web-based technologies. Any LAN can be set up by the LAN manager with shared hard drive space. Shared drives can be set up with varying levels of security and access depending on organizational and individual requirements. They are then accessible by anyone on the LAN in accordance with their access needs. The use of shared drives, organized with appropriate subdirectories and files, increases visibility of files and facilitates the use of information in those files. Staff sections are responsible for the

currency, accuracy, and maintenance of their shared drive information.

Broadcasting

The Global Broadcast Service (GBS), serves the information needs of military users with a variety of high-volume products, such as high-resolution imagery, weather, mapping, logistics, and video services. The Navy UHF Follow-On satellite system provides the interim GBS capability. The high level of power available on the GBS satellites allows deployed forces to receive the broadcast streams at high data rates with small, lightweight, low-cost terminals.

GBS will augment existing communications capabilities with a high-speed, one-way information flow of high-volume data to units whether in garrison or deployed. This will lessen the load on existing two-way communications systems. The GBS system will not replace existing military satellite communications systems, but will augment them by providing the capability to quickly distribute large information products to deployed users. GBS will employ a “smart push/user pull” philosophy to avoid burdening deployed forces with information overload. Data available for download is based on user direction and priorities. The information manager must employ procedures to ensure that the MAGTF can make effective use of GBS.

Video Teleconferencing

Improvements in digital video compression combined with high-capacity data transmission systems have made it possible to provide a VTC capability to deployed units. Bandwidth demands limited VTC capability. However, when available, VTC provides an extremely useful means of exchanging information and supports distributed, collaborative planning while in garrison or shipboard.

Information Display

Information presented graphically is easier for the user to assimilate than information presented in narrative form. Whenever possible, information should be provided to commanders and staffs via maps, overlays, and charts. Such displays may be generated by using automated or manual means and should employ standard formats, terminology, and symbology in accordance with MCRP 5-12A, *Operational Terms and Graphics*. Visual displays should display essential information clearly, understandably, accurately, reliably, and in a timely manner. It should also be designed for ease of update.

Briefings

Briefings are designed for the rapid dissemination of information to a group of people. There are many kinds of briefings: decision, informational, staff, and situational. The daily briefing schedule establishes the operational cycle for the entire staff, sometimes called the “battle rhythm.” This rhythm is based not only on the unit’s internal requirements for meetings, briefings, and updates, but also on the requirements imposed by higher headquarters. At lower echelons, formal staff briefings in the COC would likely occur only during the planning phase of an operation. During execution, staff briefings would take the form of staff estimates presented as an integral part of the MCPP.

Information Protection

Information protection is a critical component of information management. Networks and the information that they contain represent a high-value target and must be adequately protected to maintain the MAGTF command and control capability. Increasing reliance on automated information systems is a potential critical vulnerability for enemy exploitation. Mission accomplishment depends on safeguarding information and information systems from destruction,

disruption, corruption, intrusion, and exploitation. All users should assume that their information and information systems are targets. All users share responsibility for adequately protecting and defending friendly information and information systems through aggressive application of information assurance measures. The predominant means to apply information assurance is through an INFOSEC program that includes intrusion detection, effect isolation, and rapid response to restore information integrity and system security.

Information Management Plan

The information management plan describes the processes by which information will be created, processed, maintained, displayed, and disseminated within the organization. Normally, the information management plan will consist of a set of SOPs that are updated to fit the circumstances of a particular exercise or operation and promulgated as Annex U to the OPLAN or OPOD. The unit IMO, with the guidance of the C/S or executive officer and in coordination with the IMOs of each staff section and subordinate units, develops the plan. Each staff section identifies its information requirements, including the nomination of CCIRs. These requirements must then be integrated and prioritized into overall unit information requirements, and the information management procedures must be developed to satisfy them. The information management plan must be closely coordinated with the G-6/S-6 to ensure adequate CIS support. The information management plan should include procedures for the following:

- Identifying, developing, and prioritizing information requirements, including nominating, approving, collecting, reporting, maintaining, and disseminating CCIRs.
- Maintaining and displaying the CTP. Guidance should include the level of detail displayed; assignment of responsibility for the quality and integrity of the database; and assignment of

responsibility for maintaining the status of friendly and enemy units. Each staff section will be assigned responsibility for providing status information for their functional areas.

- Designating information exchange standards (symbology, report/message formats, and data elements).
- Effective dissemination of routine and time-sensitive information (manual and automated procedures).
- Information reporting, including the originator, the recipients, reporting frequency, the method of transmission, and report formats.
- Configuration, maintenance, access, use, synchronization, and integration of systems and databases supporting command and control.

- Staff briefing schedules.
- Security and integrity of information.

Information Management Officer

The unit IMO may be a special staff officer operating under the staff cognizance of the C/S or executive officer. Each principal staff section should also assign an IMO to conduct internal staff information management functions. The unit IMO is responsible for establishing the policy and procedures for information management within the command. See chapter 4 for details on IMO responsibilities.

APPENDIX A

STAFF ACTIONS

Military Briefings

The need for an accurate and thorough but brief and quick response has given rise to a highly specialized style of speech. This type of speech has been designated the military briefing. It requires specific techniques with respect to the role of the briefer, the purpose the briefing serves, and the nature of the required response.

At all levels, commanders and staff officers communicate and exercise control using the military briefing. It is used so extensively that it has become an accepted staff procedure. The primary reasons for frequent use are to save the senior officer time; enable that officer to question the briefer and clarify points; and facilitate a rapid, coordinated response. All reduce reaction time.

The principles and techniques of effective speaking apply to the military briefing just as to any other type of speech. However, the military briefing is more concise, usually limited to bare, un glossed facts, the minimum needed for comprehension. There are no attention-getters. Essentials are delivered in a purely objective manner. The military briefing is a one-time-only presentation of facts, with reference to enough familiar material to establish a basis for understanding by the listeners. Briefers often are required to discuss a very broad subject in a limited time. Some briefing officers give daily or weekly briefings, but action officers most often find their briefings situational-oriented to a specific listener or audience and dealing with a specific subject in their expertise.

The term 'briefing' has been applied loosely to almost every form of oral communication that a military person is involved or that a military subject is discussed. There are four recognizable

types of military briefings: information, decision, staff, and mission. Although there are elements common to all, each type is distinct. The briefer must understand precisely what is required in each situation. The objective common to every briefing is to facilitate a rapid, coordinated response.

Information Briefing

The information briefing presents facts to keep listeners abreast of the current situation or to supply specific requested information. It does not require a decision. The desired response is comprehension.

Decision Briefing

The decision briefing contains the elements of the information briefing, but is usually more comprehensive and is presented for an entirely different purpose. The specific response to the briefing is an answer to a question or a decision about possible COAs to be taken.

Staff Briefing

The staff briefing is perhaps the most widely used form of military briefing. It is designed for the rapid oral exchange of information within a group. In this sense it is similar to the information briefing. It is also similar to the decision briefing whenever it leads to a command decision. It is known and used at every military echelon to keep a commander and staff mutually informed of the current situation. The anticipated response is a coordinated effort.

Mission Briefing

The mission briefing is designed especially for combat operations. It is also used to brief training missions that simulate combat conditions. Its purpose can be a combination of imparting

last-minute information, giving specific instructions or instilling an appreciation of the overall mission. The desired response is a thorough and up to date understanding of operational conditions that could affect successful mission execution. It is also closely related to the information briefing.

Staff Action Papers and Formats

There are some differences between commands' formats and peculiarities of each. Formats reflect the unit's mission and that of the parent organization of the combatant commander and the combatant commander's preference. Generally, major differences among the commands' formats are not found, nor are there major differences between a particular Service's formats and joint formats. It is essential that the use of whatever format a command uses is mastered. Each format represents a preferred method that the organization uses to operate in the staff environment and is the vehicle that most of the communication travels. The following are types of staff action papers and formats used by Marine staffs.

Information Papers

Information papers convey information to prepare for a meeting or briefing. Facts are presented in clear, concise wording using bullet format. See figure A-1. The three types of information papers are fact sheets, memorandum for the record (fig. A-2), and memorandums.

Fact sheets convey information to an informed principal. They update the combatant commander returning from trips, furnish material for a Congressional hearing, submit material for briefing books for a trip or answer a query. There is no established format. The only mandatory information is writer's name, rank, division, directorate, phone number, and date of presentation. They should be one page and normally give a rapid update on a specific topic familiar to the user. *Brevity is key.*

Memorandums for record report on an event or action that would not otherwise be recorded and are normally limited to one page. They are used to record the minutes of a meeting, a telephone conversation or information from a one-time source.

Memorandums are often informal notes to individual staff members in the daily conduct of routine business. Enclosures such as itineraries and schedules may be attached.

Point Papers

Point papers guide the user in discussions outside the command. They should not exceed two pages. An abbreviated sentence structure is desirable, but clarity must be maintained. Point papers are often compiled into books for use during trips, command visits, discussion with visitors, and conferences. See figure A-3.

Discussion Papers

Discussion papers are prepared for subjects to initiate discussion, obtain views or decisions, extend a commendation, emphasize a command position, or other reasons. A good discussion summary advises the commander about the discussion objectives, subjects to avoid, and the recommended position to take.

Talking Papers

Talking papers are prepared in bullet format. Intended use is in oral discussions for an audience fully familiar with the subject. See figure A-4.

Position/Decision Papers

Position/decision papers present the command position on unresolved issues with background information to substantiate that position and to oppose contrary views. They may include a talking paper as an enclosure if a discussion is anticipated and would assist the user in covering the subject. They summarize an issue, including its status and any recommendations. Papers are

written in simple narrative style using direct, active sentences and do not exceed two pages. Level of detail is determined by knowledge level of the intended user. See figure A-5.

Staff Summary Routing Sheets

Routing sheets coordinate routine actions within the staff. They are an informal means of communicating with the various elements of the Marine Corps. Format is self-explanatory. These standard multipurpose formats serve as referral slips, memorandums, summaries of action, and permanent records of the internal coordination on an action. Action papers and routine correspondence submitted for information are often forwarded with routing sheets.

Letters

Frequently, a letter is the recommended action and is attached to a decision paper for approval, signature, and dispatch. Commands are free to choose the style of letter for their use. (See Secretary of the Navy Instruction 5216.5D, *Department of the Navy Correspondence Manual*, for formats.)

Messages

Some actions may recommend dispatching a message. Messages may be transmitted electronically or sent by mail or courier, depending on requirements for speed of delivery and security. Precedence categories indicate the relative order that a message is processed in the telecommunications system and how fast it must be handled during internal headquarters processing. The time objective established as a general guide follows:

Precedence Code	Time Objective
FlashZZ	As fast as possible (10 minutes or less)
Immediate00	30 minutes
PriorityPP	3 hours
RoutineRR	6 hours

Whenever a message is prepared that includes the word “not” (where the accidental omission of the “not” would produce the opposite or other action than that desired) add the words “repeat not.” For example, “Execution will not, repeat not, be made pending receipt of further orders.”

References should be listed in messages, briefly summarized in the first part of the message so that the message stands alone and can be completely understood without reading the other documents. Avoid the use of not to all (NOTAL) references whenever possible. See also Military Standard 6040, *US Message Text Formatting Program*.

Staff Studies

Staff studies are a flexible problem-solving procedure. Mainly used for administrative and managerial problems, studies list conclusions and recommendations on a specific, clearly stated problem. See figure A-6. These formal papers are flexible in content and can be applied to a variety of problems. They are best understood by discussing the six main paragraph headings below.

The Problem

Stating the problem concisely and accurately is one of the more difficult tasks in any problem-solving process. A correct statement is the foundation for all that follows. The problem may be stated as a question, a statement of need or an infinitive phrase.

Assumptions

Assumptions are suppositions about the current situation or about future events that are assumed to be true in the absence of facts. Assumptions are made for friendly and threat situations, and should only be used when necessary to allow the commander to make a COA decision.

Facts Bearing on the Problem

A list of every fact related to the study may be lengthy and involved. Select only those facts that need to be highlighted and list in logical sequence. Facts may also be introduced in the discussion paragraph. Facts must always be authenticated.

Discussion

The discussion is the heart of the staff study. It is where the problem is analyzed and options are considered. One method is to describe the advantages and disadvantages of possible solutions, introducing facts and reasoning sequences. Another technique is to list criteria and test each possible solution against each criterion.

Conclusions

The conclusion is where the best solution is selected. Conclusions must follow logically from the discussion and should contain a brief statement of the recommended solution. A conclusion does not contain new material or new viewpoints.

Action Recommended

This paragraph explains how the conclusions can be implemented. The basic question to answer is, "If the commander agrees with the recommendation, will the problem be solved?" If a letter, memorandum or message is needed to implement the conclusions, it is customarily attached as an enclosure. All that should remain for the commander to do is to approve and, if necessary, sign the enclosure.

CLASSIFICATION

Office Symbol/Code
Date

INFORMATION PAPER

- (U) SUBJECT
Address concisely.
- (U) ISSUE
State the issue in question.
- (U) FACTS
 - 1. (U) List facts and salient points in logical order.
 - 2. (U) . . .
 - 3. (U) . . .

/s/
Title

Classified by _____

Declassify on _____

Page number

CLASSIFICATION

Figure A-1. Information Paper.

CLASSIFICATION

(SSIC)
(Code)

MEMORANDUM FOR THE RECORD

(U) SUBJECT

1. (U) Information on the (meeting, conference, telephone conversation, person involved, etc.).
2. (U) This and subsequent paragraphs will contain the following:
 - a. (U) Background and discussion when necessary for clarity.
 - b. (U) Conclusions reached and decisions made.
 - c. (U) Staff agencies responsible for specific action, if applicable.

/s/
(Name)
(Grade)

Classified by _____

Declassify on _____

Page number

CLASSIFICATION

Figure A-2. Memorandum for the Record.

CLASSIFICATION

Code/Office
Date

POINT PAPER

(U) SUBJECT

Indicate the subject matter briefly but in enough detail for filing and reference.

1. (U) List the salient points that relate to the subject.
2. (U) Write these points as short, concise statements.
3. (U) Arrange the points in logical sequence, time permitting.
4. (U) . . .
5. (U) . . .

(U) SUMMARY

Salient points are followed by an even more concise summary. Include any appropriate conclusion or position.

Classified by _____

Declassify on _____

Page number

CLASSIFICATION

Figure A-3. Point Paper.

CLASSIFICATION

Code/Office
Date

TALKING PAPER

● (U) FOR USE BY

List the name or title of person for whose use the paper is prepared.

● (U) SUBJECT

Indicate briefly but in enough detail for filing and reference.

● (U) BACKGROUND

Indicate concisely what has gone before. Does it provide answers to such questions as is this an ongoing thing? Did something suddenly create this requirement?

● (U) DISCUSSION

A concise narrative of all the salient points related to the topic under discussion. References used as a source are cited in the discussion.

● (U) RECOMMENDATION

Reduce to clear, concise statements permitting simple approval or disapproval by the approving authority.

● (U) APPROVAL

Provide an approval block for authentication by the approving authority.

● (U) ACTION OFFICER

Indicate the action officer who prepared the paper.

Classified by _____

Declassify on _____

Page number

CLASSIFICATION

Figure A-4. Talking Paper.

CLASSIFICATION

Code/Office
Date

POSITION/DECISION PAPER

(U) SUBJECT

Indicate briefly but in enough detail for filing and reference.

(U) REFERENCE

a. (U) List as appropriate.

b. (U) If none are appropriate, enter “none”.

1. (U) Problem. Tell what the problem is for the position paper being developed. Usually stated as “To develop a . . . position”

2. (U) Why Required

a. (U) State why the paper is required.

b. (U) Is it directed by higher headquarters?

c. (U) . . .

3. (U) Background

a. (U) Sets forth concisely what has gone before.

b. (U) Answers such questions as is this an ongoing thing? Did something suddenly occur requiring reexamination?

c. (U) . . .

4. (U) Position of Other Agencies. Address when appropriate, otherwise insert “not applicable”.

Page number

CLASSIFICATION

Figure A-5. Position/Decision Paper.

CLASSIFICATION

5. (U) Recommended Marine Corps Position. State clearly and concisely. When the position is to be promulgated, it is usually attached on a separate sheet.

6. (U) Rationale

a. (U) Concise statements that support the position taken.

b. (U)

7. (U) Recommendation. What is recommend be done; e.g., “Approve the Marine Corps position contained in paragraph 5,” or “reconsider” A decision block is also included for the decision to be recorded by the approving authority.

/s/
(Staff Agency Head)

For Decision by the Commandant of the Marine Corps

C/S Recommends: Approval _____

Disapproval _____

Assistant Commandant of the Marine Corps Recommends: Approval _____

Disapproval _____

Commandant of the Marine Corps Decision: Approved _____

Disapproved _____

Figure A-5. Position/Decision Paper - Continued.

Page number

CLASSIFICATION

CLASSIFICATION

STAFF STUDY

(Local variations and modifications to meet requirements are authorized.)

Copy no. of copies
Originating section
Parent headquarters
Place of Issue
Date/time of issue

(U) SUBJECT

Indicate briefly but in enough detail for filing and reference.

(U) INTRODUCTION

An introduction is not necessary but may be used to clarify an understanding of the problems or limit the scope. It should be brief and not include discussion material.

1. (U) Problem. State in concise and specific terms. A statement beginning with an infinitive is commonly used, but other forms of expression may be used.
2. (U) Assumptions. If no assumptions, so state. Assumptions are used to bridge gaps between known facts and their use may be necessary to complete the problem solving process. Unnecessary assumptions are avoided, and care is taken to avoid substituting assumptions for ascertainable factors or for conclusions. An assumption is defined as a supposition regarding the current situation or a presupposition on the future course of events, either or both assumed to be true in the absence of positive proof to the contrary. They may be necessary to enable the commander, in the process of planning, to complete his estimate of the situation and make a decision on his COA.
3. (U) Facts Bearing on the Problem. Known and established facts having a direct bearing on the problem. These are stated concisely and the source shown; e.g., (A/5p.6) indicates Annex A (bibliography), 5th reference, page 6. They are indicated and numbered in the order of first appearance in the study. Page numbers are not shown in the bibliography.
4. (U) Discussion. Facts and assumptions and their implications are analyzed in this paragraph. The reasoning that leads to the conclusions and recommendations is set forth. This paragraph is a logical development of all pertinent aspects of the problem, including the formulation, analysis, and comparison of possible solutions and COAs. An essay-type statement of facts, assumptions, and their inter-relation to the problem does not satisfy the requirements of this paragraph. If a detailed discussion is attached as an annex, then the discussion paragraph in the body of the study should be a summary of the annex. However, the discussion paragraph must contain enough information for understanding without reference to the annex. A statement "See Annex B, detailed discussion" does not suffice.

Page number

CLASSIFICATION

Figure A-6. Staff Study.

CLASSIFICATION

5. (U) Conclusions. The reasoning set forth in the discussion culminates in conclusions that are presented here in concise form. Statements should begin with "That the" Do not restate facts or assumptions; state solutions that are logically derived from the analysis in the discussion.

6. (U) Action Recommended. Recommendations are reduced to clear, concise statements permitting simple approval or disapproval by the approving authority. Normally recommendations begin with "That" or "It is recommended that" (list subparagraphs). If an implementing document is required, it should be attached with a recommendation for signature to implement and forward as necessary.

/s/ _____

(Name)
(Rank and Service)
(Title)

Recommendations	Approved	Disapproved
6.a		
6.b		
6.c		

ANNEX A: Bibliography

1. Author, title, year of publication, name of publisher.
- 2.
- 3.
- 4.

Page number

CLASSIFICATION

Figure A-6. Staff Study - Continued.

APPENDIX B

GLOSSARY

Section I. Acronyms and Abbreviations

AAV	assault amphibious vehicle	CIS	communications and information systems
ACE	aviation combat element	CJCS	Chairman of the Joint Chiefs of Staff
ACI	air combat intelligence	CJCSI	Chairman of the Joint Chiefs of Staff instruction
AC/S	assistant chief of staff	CLF	commander, landing force
ADCON	administrative control	CM/DO	collection management/dissemination officer
AF	amphibious force	CMOC	civil-military operations center
AFATDS	Advanced Field Artillery Tactical Data System	CMPF	Commander, Maritime Prepositioning Force
AFSOUTH	Allied Forces South Europe	COA	course of action
AFNORTH	Allied Forces North Europe	COC	combat operations center
AO	area of operations	COCOM	combatant command (command authority)
ARG	amphibious ready group	COE	common operating environment
ASC(A)	assault support coordinator (airborne)	COMSEC	communications security
ASE	air support elements	CONPLAN	concept plan
ATF	amphibious task force	CONUS	continental United States
ATFIC	ATF intelligence center	COP	common operational picture
ATLASS	Asset Tracking Logistics and Supply System	COTS	commercial-off-the-shelf
ATO	air tasking order	CRP	Command Religious Program
AUTODIN	Automatic Digital Network	C/S	chief of staff
bps	bits per second	CSS	combat service support
C2PC	command and control personal computer	CSSD	combat service support detachment
C4I	command, control, communications, computers, and intelligence	CSSE	combat service support element
CAD	computer-aided design	CSSOC	combat service support operations center
CAEMS	computer-aided embarkation management system	CTAPS	contingency theater automated planning system
CAG	civil affairs group	CTP	common tactical picture
CAT	crisis action team	CTT	commander's tactical terminal
CATF	commander, amphibious task force	DACT	data automated communications terminal
CBIRF	Chemical/Biological Incident Response Force	DASC	direct air support center
CCIR	commander's critical information requirements	DASC(A)	direct air support center (airborne)
CE	command element	DIRLAUTH	direct liaison authorized
CHOP	change of operational control	DISA	Defense Information Systems Agency
CI	counterintelligence	DISN	Defense Information Systems Network
CIC	combat intelligence center		

DMS	Defense Message System	IIP	imagery intelligence platoon
DOD	Department of Defense	IMINT	imagery intelligence
DS	direct support	IMO	information management officer
DSCS	Defense Satellite Communications System	INFOSEC	information security
DSN	Defense Switched Network	INTELINK	intelligence link
EASTLANT	East Atlantic Area	IO	information operations
EHF	extremely high frequency	IOC	intelligence operation center
ENM	EPLRS network manager	IOSv	Intelligence Operations Server Version
EMW	expeditionary maneuver warfare	IP	internet protocol
EPLRS	enhanced position location reporting system	IPB	intelligence preparation of the battlespace
EPW	enemy prisoner of war	IR	intelligence requirements
EWCC	electronic warfare coordination center	ISC	informations systems coordinator
FAC(A)	forward air controller (airborne)	JAC	joint analysis center
FDC	fire direction center	JAOC	joint air operations center
FFCC	force fires coordination center	JDISS	joint deployable intelligence support system
FOB	forward operating base	JFACC	joint force air component commander
FOIA	Freedom of Information Act	JFC	joint force commander
FSC	fire support coordinator	JFLCC	joint force land component commander
FSCC	fire support coordination center	JFMCC	joint force maritime component commander
FSSG	force service support group	JIC	joint intelligence center
GBS	Global Broadcast Service	JISE	joint intelligence support element
GCCS	Global Command and Control System	JOPEX	Joint Operation Planning and Execution System
GCE	ground combat element	JP	joint publication
GCSS	Global Combat Support System	TF	joint task force
GENSER	general service (message)	JTF-CNO	Joint Task Force-Computer Network Operations
GEOINT	geographic intelligence	JTIDS	Joint Tactical Information Distribution System
GIG	global information grid	JTT	joint tactical terminal
GPS	global positioning system	JUMPS	Joint Uniform Military Pay System
GS	general support	JWICS	Joint Worldwide Intelligence Communications System
GS-R	general support-reinforcing	kbps	kilobits per second
HDC	helicopter direction center	LAAD	low altitude air defense
HF	high frequency	LAN	local area network
HMMWV	high-mobility, multipurpose wheeled vehicle	LF	landing force
HQCOMDT	headquarters commandant	LFOC	landing force operations center
HUMINT	human intelligence	LFSP	landing force support party
IAS	intelligence analysis system	LNO	liaison officer
IBS	integrated broadcast service		
ICR	intelligence collection requirements		
IDNX	Integrated Digital Network Exchange		
IDR	intelligence dissemination requirements		

LOGAIS	Logistics Automated Information System	MP	military police
LVTC-7	landing vehicle, tracked, command-mark 7	MPF	maritime repositioning forces
MACCS	Marine air command and control system	MPSRON	maritime repositioning ships squadron
MACG	Marine air control group	MSBL	MAGTF software baseline
MACS	Marine air control squadron	MSC	major subordinate command
MAFC	MAGTF all-source fusion center	MTACS	Marine tactical air command squadron
MAGTF	Marine air-ground task force	MWCS	Marine wing communications squadron
MALS	Marine aviation logistics squadron	MWR	morale, welfare, and recreation
MAN	Metropolitan Area Network	MWSS	Marine wing support squadron
MARFOR	Marine Corps forces	NATO	North Atlantic Treaty Organization
MARFOR-INO	Marine Forces Integrated Network Operations	NBC	nuclear, biological, and chemical
MASS	Marine air support squadron	NCIS	Naval Criminal Investigative Service
MAW	Marine aircraft wing	NCO	noncommissioned officer
Mbps	megabytes per second	NCS	network control station
MCCC	MEF communications control center	NCTAMS	Naval Computer and Telecommunications Area Master Station
MCDP	Marine Corps doctrinal publication	NGO	nongovernmental organization
MCEN	Marine Corps Enterprise Network	NIPRNET	Nonsecure Internet Protocol Router Network
MCO	Marine Corps order	NOTAL	not to all
MCPP	Marine Corps Planning Process	NSE	Navy support element
MCRP	Marine Corps reference publication	OCAC	operations control and analysis center
MCWP	Marine Corps warfighting publication	OIC	officer in charge
MDSS	MAGTF Deployment Support System	OMFTS	operational maneuver from the sea
MEB	Marine Expeditionary Brigade	OPCOM	operational command
MEF	Marine Expeditionary Force	OPCON	operational control
METL	mission-essential task list	OPLAN	operation plan
METT-T	mission, enemy, terrain and weather, troops and support available-time available	OPORD	operation order
MEU	Marine Expeditionary Unit	OPT	operational planning team
MEU(SOC)	Marine Expeditionary Unit (Special Operations Capable)	OSCC	operational systems control center
MITNOC	Marine Corps Information Technology and Network Operations Center	OTAR	over-the-air rekeying
MLC	Marine Corps Logistic Command	P&A	production and analysis
MMS	Manpower Management System	PAO	public affairs officer
MOOTW	military operations other than war	PC	personal computer
MOPP	mission-oriented protective posture	PDE&A	planning, decision, execution, and assessment
MOS	military occupational specialty	PIR	priority intelligence requirements
		PLGR	precision lightweight GPS receiver
		PM	provost marshal
		PMO	provost marshal office
		PSYOP	psychological operations

PTP	Predeployment Training Program	SUBACLANT	Submarine Allied Command Atlantic
PW	prisoner of war	SYSCON.	systems control
R	reinforcing	TAC(A).	tactical air coordinator (airborne)
RACP	rear area command post	TACAIR	tactical air
RAOC	rear area operations center	TACAN.	tactical air navigation
RBECS	Revised Battlefield Electronic Communications-Electronics Operating Instruction System	TACC	tactical air command center (USMC), tactical air control center (Navy)
RFI	request for intelligence	TACLOG	tactical-logistical group
ROE	rules of engagement	TACON.	tactical control
RP	Religious Program Specialist	TACP	tactical air control party
SACC	supporting arms coordination center	TACSAT.	tactical satellite
SACEUR.	Supreme Allied Commander, Europe	TAOC	tactical air operations center
SACLANT	Supreme Allied Commander, Atlantic	TBMCS.	theater battle management core system
SARC	surveillance and reconnaissance center	TCAC	technical control and analysis center
SASSY	Supported Activities Supply System	TC-AIMS	Transportation Coordinator's Automated Information for Movement System
SCAMP.	sensor control and management platoon	TCO	tactical combat operations
SCI	sensitive compartmented information	TCP.	transmission control protocol
SCR.	single-channel radio	TDN	tactical data network
SHF.	super high frequency	TECHCON	technical control
SIGINT	signals intelligence	TIO	target intelligence officer
SINCGARS.	single-channel ground and airborne radio system	T/O	table of organization
SIPRNET	Secret Internet Protocol Router Network	TO&E	table of organization and equipment
SJA	Staff Judge Advocate	TPFDD	time-phased force and deployment data
SME	subject matter expert	TRI-TAC.	Tri-Service Tactical Communications System
SNCO	staff noncommissioned officer	TTP	tactics, techniques, and procedures
SOP.	standing operating procedure	UAV	unmanned aerial vehicle
SORTS	Status of Resources and Training System	UHF	ultrahigh frequency
SOUTHLANT	South Atlantic Area	ULCS	unit level circuit switch
SPEED	Systems Planning, Engineering, and Evaluation Device	UNAAF.	Unified Action Armed Forces
SPMAGTF	special purpose MAGTF	UOC	unit operations center
STANAG	standardization agreement	US	United States
STEP	standard tactical entry point	USG	United States Government
STOM.	ship-to-objective maneuver	USTRANSCOM.	US Transportation Command
STRIKFLTLANT	Striking Fleet Atlantic	VHF	very high frequency
STU-III	secure telephone unit-III	VTC	video teleconferencing
		WAN.	wide area network
		WESTLANT.	West Atlantic Area

Section II. Definitions

administrative control—Direction or exercise of authority over subordinate or other organizations in respect to administration and support, including 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 the subordinate or other organizations. Also called ADCON. (JP 1-02)

application—**1.** The system or problem to which a computer is applied. Reference is often made to an application as being either of the computational type (arithmetic computations predominate) or of the data processing type (data handling operations predominate). **2.** In the intelligence context, the direct extraction and tailoring of information from an existing foundation of intelligence and near real time reporting. It is focused on and meets specific, narrow requirements, normally on demand. (JP 1-02)

architecture—A framework or structure that portrays relationships among all the elements of the subject force, system, or activity. (JP 1-02)

assign—To place units or personnel in an organization where such placement is relatively permanent, and/or where such organization controls and administers the units or personnel for the primary function, or greater portion of the functions, of the unit or personnel. (JP 1-02)

attach—The placement of units or personnel in an organization where such placement is relatively temporary. (JP 1-02)

backbone—The high-traffic-density connectivity portion of any communications network.

bandwidth—The difference between the limiting frequencies of a continuous frequency band expressed in hertz (cycles per second). The term bandwidth is also loosely used to refer to the rate

at which data can be transmitted over a given communications circuit. In the latter usage, bandwidth is usually expressed in either kilobits per second or megabits per second. (JP 1-02)

bomb—A computer program, generally malicious in nature, hidden within or emulating another program and designed to execute at a specific future time or upon the occurrence of a specific event.

chain of command—The succession of commanding officers from a superior to a subordinate through which command is exercised. Also called command channel. (JP 1-02)

client-server architecture—A computer networking architecture (a software architecture, not a hardware architecture). A client software entity (client) requests a service from a server software entity (server), which in turn fulfills the request. To fulfill the request, the server may provide data, perform processing tasks, control a peripheral, or request the services of another server. A client can request services from multiple servers, and a server can service multiple clients. Because clients and servers are software entities, they can reside on the same computer or be on different computers in a network. Servers are designated according to the services provided; for example, a server providing access to communications services would be called a communications server.

close support—That action of the supporting force against targets or objectives which are sufficiently near the supported force as to require detailed integration or coordination of the supporting action with the fire, movement, or other actions of the supported force. (JP 1-02)

command—The authority that a commander in the Armed Forces lawfully exercises over subordinates by virtue of rank or assignment. Command includes the authority and responsibility for effectively using available resources and for planning the employment of, organizing, directing, coordinating, and controlling military

forces for the accomplishment of assigned missions. It also includes responsibility for health, welfare, morale, and discipline of assigned personnel. (JP 1-02)

command and control—The exercise of authority and direction by a properly designated commander over assigned and attached forces in the accomplishment of the mission. (excerpt from JP 1-02)

command and control warfare—The integrated use of operations security, military deception, psychological operations, electronic warfare, and physical destruction, mutually supported by intelligence, to deny information to, influence, degrade, or destroy adversary command and control capabilities, while protecting friendly command and control capabilities against such actions. Command and control warfare is an application of information operations in military operations. Also called C2W. C2W is both offensive and defensive: **a.** C2-attack. Prevent effective C2 of adversary forces by denying information to, influencing, degrading, or destroying the adversary C2 system. **b.** C2-protect. Maintain effective command and control of own forces by turning to friendly advantage or negating adversary efforts to deny information to, influence, degrade, or destroy the friendly C2 system. (JP 1-02)

commander, amphibious task force—The Navy officer designated in the order initiating the amphibious operation as the commander of the amphibious task force. Also called CATF. (JP 1-02)

commander, landing force—The officer designated in the order initiating the amphibious operation as the commander of the landing force for an amphibious operation. Also called CLF. (JP 1-02)

commander's critical information requirements—A comprehensive list of information requirements identified by the commander as being critical in facilitating timely information manage-

ment and the decisionmaking process that affect successful mission accomplishment. The two key subcomponents are critical friendly force information and priority intelligence requirements. Also called CCIR. (JP 1-02)

command post—A unit's or subunit's headquarters where the commander and the staff perform their activities. In combat, a unit's or subunit's headquarters is often divided into echelons; the echelon in which the unit or subunit commander is located or from which such commander operates is called a command post. Also called CP. (JP 1-02)

command relationships—The interrelated responsibilities between commanders, as well as the operational authority exercised by commanders in the chain of command; defined further as combatant command (command authority), operational control, tactical control, or support. (JP 1-02)

communications—A method or means of conveying information of any kind from one person or place to another.

component—One of the subordinate organizations that constitute a joint force. Normally a joint force is organized with a combination of Service and functional components. (JP 1-02)

computer network attack—Operations to disrupt, deny, degrade, or destroy information resident in computers and computer networks, or the computers and networks themselves. Electronic attack (EA) can be used against a computer, but it is not computer network attack (CNA). CNA relies on the data stream to execute the attack while EA relies on the electromagnetic spectrum. An example of the two operations is the following: sending a code or instruction to a central processing unit that causes the computer to short out the power supply is CNA. Using an electromagnetic pulse device to destroy a computer's electronics and causing the same result is EA. Also called CNA. (JP 1-02)

control—Authority that may be less than full command exercised by a commander over part of the activities of subordinate or other organizations. (JP 1-02)

coordinating authority—A commander or individual assigned responsibility for coordinating specific functions or activities involving forces of two or more military departments or two or more forces of the same Service. (JP 1-02)

correlation—**1.** In air defense, the determination that an aircraft appearing on a detection or display device, or visually, is the same as that on which information is being received from another source. **2.** In intelligence usage, the process which associates and combines data on a single entity or subject from independent observations, in order to improve the reliability or credibility of the information.

database replication—Process by which like databases reflect commonality in information and timeliness of that information.

data terminal equipment—A networked device, such as a PC, that is capable of transmitting and receiving digital data signals over a communications circuit.

digital signature function—A cryptographic technique for authenticating electronic documents, much as a written signature that verifies the authenticity of a paper document. A message is encrypted with the sender's digital private key, and the recipient decrypts the signature with the sender's digital public key.

digital switch—A switch that performs time-division multiplexed switching of digitized signals. When used with analog inputs, analog-to-digital and digital-to-analog conversions are necessary.

digital transmission—The transmission of a digital bit stream that may include digitized voice, data, or both. The transmission signal itself may be either discrete or continuous (analog).

digital transmission group—A group of digitized voice and/or data channels that have been combined (multiplexed) into a single digital bit stream for transmission over communications media.

direct liaison authorized—That authority granted by a commander (any level) to a subordinate to directly consult or coordinate an action with a command or agency within or outside of the granting command. Direct liaison authorized is more applicable to planning than operations and always carries with it the requirement of keeping the commander granting direct liaison authorized informed. Direct liaison authorized is a coordination relationship, not an authority through which command may be exercised. Also called DIRLAUTH. (JP 1-02)

directory services—Network services that identify all resources on a network and make them accessible to users and applications. Resources include e-mail addresses, servers, and peripheral devices such as printers.

direct support—A mission requiring a force to support another specific force and authorizing it to answer directly to the supported force's request for assistance. Also called DS. (JP 1-02)

domain name—The symbolic name assigned to a host on an IP network. Syntactically, the domain name consists of a sequence of names separated by periods. A domain is a logical grouping of IP hosts.

domain name system—The online distributed database system used to relate (map) readable, alphabetic domain names with numeric IP addresses.

electronic mail—A system of electronic communication in which a computer user can compose a message for transmission over communications networks. Some electronic-mail systems are confined to a single computer system or network, but others have gateways to the internet, enabling

users to send electronic mail anywhere in the world. Also called e-mail.

functional component command—A command normally, but not necessarily, composed of forces of two or more Military Departments which may be established across the range of military operations to perform particular operational missions that may be of short duration or may extend over a period of time. (JP 1-02)

gateway—In a communications network, a network node equipped for interfacing with another network that uses different protocols. The term is loosely applied to a computer or computer software configured to perform the tasks of a gateway.

general support—That support which is given to the supported force as a whole and not to any particular subdivision thereof. (JP 1-02)

home page—The main page of a web site. Typically, the home page serves as an index or table of contents to other documents stored at the site.

host—In a computer network, a computer that provides services to end users. The services are considered to be hosted on that computer. The term host also refers to the computer on a network that performs network control functions.

information—**1.** Facts, data, or instructions in any medium or form. **2.** The meaning that a human assigns to data by means of the known conventions used in their representation. (JP 1-02)

information correlation—Comparing data from multiple sources to improve the reliability or credibility of information.

information filtering—Assessing the value of information and culling out that which is not pertinent or important.

information fusion—Logically merging and integrating information from multiple sources into an accurate, concise, and complete summary.

information management—The processes by which information is obtained, manipulated,

directed, and controlled. Information management includes all processes involved in the creation, collection and control, dissemination, storage and retrieval, protection, and destruction of information.

information prioritization—Assigning a relative importance to individual items of information. The designation of CCIRs is one means of prioritizing information.

information security—The protection of information and information systems against unauthorized access or modification of information, whether in storage, processing, or transit, and against denial of service to authorized users. Information security includes those measures necessary to detect, document, and counter such threats. Information security is composed of computer security and communications security. Also called INFOSEC.

information system—The entire infrastructure, organization, personnel, and components that collect, process, store, transmit, display, disseminate, and act on information. (JP 1-02)

information warfare—Information operations conducted during time of crisis or conflict to achieve or promote specific objectives over a specific adversary or adversaries. Also called IW. (JP 1-02)

in-line network encryptor—A cryptographic device permitting the transmission of classified data on unclassified networks or SCI data on secret networks. A key feature of in-line network encryptors is that they encrypt only the data, not the address information. In-line network encryptors, through software configuration and appropriate keying material, may be used to link multiple LANs of one classification level by using a data communications network operating at a lower classification level.

internet—The worldwide interconnection of individual computer networks operated by government, industry, academia, and private parties. The internet was originally developed by the Defense Advanced Research Projects Agency

to interconnect laboratories and academic institutions engaged in government-sponsored research.

internet protocol—A DOD standard protocol designed for use in interconnected systems (internets) of packet-switched communications networks. The IP provides for transmitting blocks of data called datagrams from sources to destinations, where sources and destinations are identified by fixed-length addresses (IP addresses). Also called IP.

interoperability—The condition achieved among communications-electronics systems or items of communications-electronics equipment when information or services can be exchanged directly and satisfactorily between them and/or their users. The degree of interoperability should be defined when referring to specific cases. (JP 1-02)

intranet—A network based on transmission control protocol (TCP)/IP protocols (an internet) belonging to an organization, usually a corporation, and accessible only by the organization's members, employees, or others with authorization. An intranet's web sites look and act just like any other web sites, but the firewall surrounding an intranet fends off unauthorized access.

IP address—A unique numerical address assigned to each host on an IP network based on a standard scheme and by a central agency. Used to communicate between hosts on the network.

joint task force—A joint force that is constituted and so designated by the Secretary of Defense, a combatant commander, a subunified commander, or an existing joint task force commander. Also called JTF. (JP 1-02)

local area network—A data communications system that lies within a limited geographic area, has a specific user group, and uses a specific topology. It is not part of a public switched telecommunications network, although it may be connected to such a network. Also called LAN.

loop—A communications channel from a switching center or an individual message distribution point to the user terminal. In a telephone system, the loop is a pair of wires running from a central office to a subscriber's telephone.

media access method—The method by which a terminal on a LAN accesses the LAN transmission medium.

message handling system—Provides a store-and-forward service for conveying messages between system users. DMS is an example of a message handling system.

modem—In computer communications, a device used for converting digital signals into, and recovering them from, quasi-analog signals that are suitable for transmission over analog communications channels.

modulation—The process of varying a characteristic (e.g., frequency, phase, or amplitude) of a carrier signal in accordance with an information-bearing signal.

multichannel—Pertaining to communications, usually full duplex, on more than one channel simultaneously. Multichannel transmission may be accomplished by either time-, frequency-, code-, and phase-division multiplexing or space diversity. (JP 1-02)

multiplexer—A device that combines (multiplexes) multiple input signals (information channels) into an aggregate signal (common channel) for transmission. (JP 1-02)

multipurpose internet mail extension (MIME)—The internet standard protocol for sending multipart, multimedia, and binary data by using e-mail. Typical uses include sending images, audio, word processing documents, programs, or even plain text files when it is important that the mail system does not modify any part of the file. MIME also allows for labeling message parts so that a recipient (or

mail program) may determine what to do with them. The MIME internet standard is described in RFC-1521.

mutual support—That support which units render each other against an enemy, because of their assigned tasks, their position relative to each other and to the enemy, and their inherent capabilities. (JP 1-02)

network management—Refers to the broad subject of managing computer and communications networks. A wide variety of software and hardware products help network system administrators manage a network. Network management includes ensuring that the network is protected from unauthorized users, preventing or eliminating bottlenecks in the network, making sure that the network is available to users, and responding to hardware and software malfunctions.

newsgroup—An online discussion group. On the internet, there are newsgroups covering every conceivable interest. A news reader is needed to view and post messages to a newsgroup. The news reader is an application that connects to a news server on the internet or intranet.

open system—A system with characteristics that comply with specific, publicly maintained (rather than proprietary), readily available standards. Such a system, by virtue of adherence to the standard, may be connected to other systems that comply with those same standards.

packet switch—A switch that breaks messages into data packets for transmission over a network and reassembles data packets into messages upon receipt.

protocol—A formal set of specifications governing the format and control of interaction among terminals communicating over a network.

radio and wire integration—The combining of wire circuits with radio facilities. Also called RWI. (JP 1-02)

reachback—The ability to exploit resources, capabilities, expertise, etc., not physically located in the theater or a joint operations area, when established. (MCRP 5-12C)

repeater—A device that amplifies, reshapes, retimes, or performs a combination of these functions on an input signal for retransmission. The input signal may be either analog or digital. Repeaters are used to extend the distance that network signals can be transmitted.

request for comment—A document used by the Internet Activities Board (the governing body for IPs) to develop and configuration manage IPs.

router—A device used to interconnect two or more data communications networks. The router reads the network address of all data packets and forwards them to the addressee via the best available communications path.

Service component command—A command consisting of the Service component commander and all those Service forces, such as individuals, units, detachments, organizations, and installations under that command, including the support forces that have been assigned to a combatant command or further assigned to a subordinate unified command or joint task force. (JP 1-02)

simple mail transfer protocol (SMTP)—The Internet standard protocol used to facilitate the exchange of e-mail across an internet. SMTP establishes a link to a remote host and handles the translation of different mail file formats between hosts. To arrange for mail delivery, e-mail applications running on a particular host must make a call to SMTP, which then handles the delivery. SMTP uses domain names to find a connection, relying on the domain name service to make the translations to IP numeric addresses.

simple network management protocol (SNMP)—The internet standard protocol used to provide the network management capabilities needed to monitor and control a network.

specified command—A command that has a broad, continuing mission, normally functional, and is established and so designated by the President through the Secretary of Defense with the advice and assistance of the Chairman of the Joint Chiefs of Staff. It normally is composed of forces from a single Military Department. Also called specified combatant command. (JP 1-02)

split base—Two or more portions of the same force conducting or supporting operations from separate physical locations. (MCRP 5-12C)

switched backbone—A term loosely applied to the TRI-TAC-based circuit-switched communications network employed by the Marine Corps.

system administration—The maintenance of a multiuser information system, including LANs. Typical duties include adding and configuring new workstations, setting up user accounts, installing system-wide software, and allocating mass storage space.

systems network architecture—A proprietary network architecture developed by IBM.

T1 circuit—A communications circuit providing 1.544-Mbps capacity.

task-organizing—The act of designing an operating force, support staff, or logistic package of specific size and composition to meet a unique task or mission. Characteristics to examine when task-organizing the force include, but are not limited to: training, experience, equipment, sustainability, operating environment, enemy threat, and mobility. (JP 1-02)

TELNET—The internet standard virtual terminal protocol that is used for remote terminal connection service. TELNET allows a remote terminal to log into and access services from a host computer by using dial-in or other network connections.

tempest—An unclassified term referring to technical investigations for compromising

emanations from electrically operated information processing equipment; these investigations are conducted in support of emanations and emission security. (JP 2-01.2)

terminal emulation—Making a computer respond like a particular type of terminal. Terminal emulation capabilities can allow access to a mainframe computer by using a PC.

timing—The synchronization of communications signals. Of critical importance for digital communications networks and for secure communications.

topology—In the context of a communications network, the way in which the stations or terminals attached to the network are interconnected. The common topologies for LANs are the star, ring, and bus.

Trojan horse—A computer program containing an apparently or actually useful function that also contains hidden functions that allow unauthorized collection, falsification, or destruction of data.

trunk—A single circuit between two switching centers or individual message distribution points. This is in contrast to a loop, which is a single circuit between the switching center or message distribution point and the individual subscriber terminal. A trunk group is formed by two or more trunks between the same two points.

trusted workstation—A workstation meeting strict security accreditation standards and considered secure from exploitation.

unified command—A command with a broad continuing mission under a single commander and composed of significant assigned components of two or more Military Departments, that is established and so designated by the President through the Secretary of Defense with the advice and assistance of the Chairman of the Joint Chiefs of Staff. Also called unified combatant command. (JP 1-02)

UNIX—An operating system developed at Bell Laboratories in the early 1970s. As a result of its portability, flexibility, and power, UNIX became the leading operating system for workstations. UNIX is widely used in military command and control systems. However, the proliferation of variants has limited its portability, and its lack of user friendliness is a major drawback for military applications.

virus—A self-replicating malicious computer program segment that attaches itself to an application program or other executable system component.

web browser—A software application used to locate and display web pages. The two most popular browsers are Netscape Navigator and Microsoft Internet Explorer. Both of these are graphical browsers; this means that they can display graphics as well as text.

web site—A site (location) on the World Wide Web. Each web site contains a home page, which is the first document that users see when they enter the site. The site might also contain additional documents and files. Each site is owned and managed by an individual, company, or organization.

wide area network—A term loosely applied to any communications network extending over a large geographic area. Also called WAN.

World Wide Web—A system of internet servers that support specially formatted documents. The documents are formatted in a language called HTML (HyperText Markup Language), which supports links to other documents, as well as graphics, audio, and video files. This means that users can jump from one document to another simply by clicking on hot spots. Not all internet servers are part of the World Wide Web.

worm—An independent computer program designed to self-replicate from computer to computer across computer networks, often clogging networks and monopolizing computer system resources as it spreads.

X.400—Open system standard for e-mail.

X.500—Open system standard for network directory service.

X.509 certificate—Open system standard for security. Many IPs and applications employ public-key technology for security purposes and require a public-key infrastructure to securely manage public keys for widely distributed users or systems. The X.509 standard provides the basis for such an infrastructure and defines data formats and procedures related to distribution of public keys via certificates that are digitally signed by certification authorities.

APPENDIX C

REFERENCES AND RELATED PUBLICATIONS

Joint Publications (JPs)

0-2	Unified Action Armed Forces (UNAAF)
1-02	Department of Defense Dictionary of Military and Associated Terms
3-02	Joint Doctrine for Amphibious Operations

Marine Corps Doctrinal Publications (MCDPs)

1-0	Marine Corps Operations
1-0.1	Componency
5	Planning
6	Command and Control

Marine Corps Warfighting Publications (MCWPs)

2-1	Intelligence Operations
3-2	Aviation Operations
3-16	Fire Support Coordination in the Ground Combat Element
3-16.1	Artillery Operations
3-25	Control of Aircraft and Missiles
3-40.2	Information Management
3-40.3	Communications and Information Systems
3-41.1	Rear Area Operations
4-1	Logistics Operations
4-11	Tactical-Level Logistics
5-1	Marine Corps Planning Process

Marine Corps Reference Publications (MCRPs)

5-1B	MTTP for Joint Task Force Liaison Officer Integration (JTF-LNO)
5-12A	Operational Terms and Graphics

Miscellaneous

CJCS Manual 6231.07, Joint Network Management and Control
Marine Corps Order (MCO) 3120.9B, Policy for Marine Expeditionary Unit (Special Operations Capable)
Military Standard 6040, US Message Text Formatting Program
Naval Doctrine Publication 6, Naval Command and Control
Secretary of Defense Memorandum, Forces for Unified Commands
Secretary of the Navy Instruction 5216.5D, Department of the Navy Correspondence Manual
Title 10, United States Code: Armed Forces
Unified Command Plan