NAVY WARFARE PUBLICATION

NAVY STRIKE AND FIRE SUPPORT

NWP 3-09.1

EDITION JULY 2005

DEPARTMENT OF THE NAVY
OFFICE OF THE CHIEF OF NAVAL OPERATIONS

DISTRIBUTION AUTHORIZED TO THE DEPARTMENT OF DEFENSE AND US DOD CONTRACTORS ONLY FOR OPERATIONAL USE TO PROTECT TECHNICAL DATA OR INFORMATION FROM AUTOMATIC DISSEMINATION. THIS DETERMINATION WAS MADE 1 MARCH 2005. OTHER REQUESTS SHALL BE REFERRED TO NAVY WARFARE DEVELOPMENT COMMAND, 686 CUSHING ROAD, NEWPORT RI 02841-1207.

PRIMARY REVIEW AUTHORITY:
COMMANDING OFFICER, EXPEDITIONARY WARFARE TRAINING GROUP PACIFIC

URGENT CHANGE/ERRATUM RECORD		
NUMBER	DATE	ENTERED BY

0411LP1044876

INTENTIONALLY BLANK

DEPARTMENT OF THE NAVY
NAVY WARFARE DEVELOPMENT COMMAND
686 CUSHING ROAD
NEWPORT RI 02841-1207

July 2005

LETTER OF PROMULGATION

1. NWP 3-09.1 (JUL 2005), NAVY STRIKE AND FIRE SUPPORT, is UNCLASSIFIED. Handle in accordance with the administrative procedures contained in NTTP 1-01.

2. NWP 3-09.1 (JUL 2005) is effective upon receipt.

3. NWP 3-09.1 (JUL 2005) provides operational-level doctrine that articulates how the Navy organizes, plans, coordinates, and employs sea-based strike and fire support. This doctrine serves as a broad overview of Navy strike and fire support and provides operational commanders and their staffs with basic organization, methods, and command and control to integrate these capabilities into their campaigns.

4. Distribution of NWP 3-09.1 (JUL 2005) is authorized to the Department of Defense and US DOD contractors only for operational use to protect technical data or information from automatic dissemination. This determination was made 1 March 2005. Other requests shall be referred to Navy Warfare Development Command, 686 Cushing Road, Newport, RI 02841-1207.

JOHN M. KELLY

INTENTIONALLY BLANK

July 2005

PUBLICATION NOTICE

ROUTING

1. NWP 3-09.1 (JUL 2005), NAVY STRIKE AND FIRE SUPPORT, is available in the Navy Warfare Library. It is effective upon receipt.

2. Summary. The purpose of this publication is to illustrate to the operational commander the strike- and fire-support capabilities that Navy forces provide ashore. It addresses the Navy's organization, planning considerations, and command and control of naval fires at the joint and tactical levels.

Navy Warfare Library Custodian

Navy Warfare Library publications must be made readily available to all users and other interested personnel within the US Navy.

Note to Navy Warfare Library Custodian

This notice should be duplicated for routing to cognizant personnel to keep them informed of changes to this publication.

INTENTIONALLY BLANK

CONTENTS

Page No.

CHAPTER 1 — SCOPE

1.1 IDENTIFICATION 1-1

1.2 OVERVIEW 1-1

1.3 TERMINOLOGY 1-1

CHAPTER 2 — NAVAL FIRES

2.1 JOINT COMBAT OPERATIONS 2-1

2.2 FIRE RESOURCES 2-1

2.3 FIRES COMMAND AND CONTROL 2-1

2.4 STRIKE MISSIONS, PLANNING, AND COORDINATION 2-2
2.4.1 Interdiction 2-3
2.4.2 Counterair 2-3
2.4.3 Time-Sensitive Target Attack 2-4

2.5 FIRE-SUPPORT MISSIONS, PLANNING, AND COORDINATION 2-4
2.5.1 Scheme of Maneuver 2-5
2.5.2 Fire-Support Missions 2-7

2.6 NONLETHAL FIRES 2-9
2.6.1 Information Operations 2-9
2.6.2 Pillars of Information Operations 2-10
2.6.3 Supporting Activities of Information Operations 2-10

CHAPTER 3 — FIRES RESOURCES

3.1 PRINCIPLES 3-1
3.1.1 Carrier Strike Group 3-1
3.1.2 Expeditionary Strike Group 3-1

3.2 AVIATION FIRE RESOURCES 3-1
3.2.1 Carrier Air Wing 3-1
3.2.2 Marine Air-Ground Task Force 3-3
3.2.3 Maritime Patrol and Reconnaissance Aircraft 3-5
3.2.4 Aviation Fires Munitions 3-5

3.3 SURFACE FIRE RESOURCES 3-6
3.3.1 AEGIS Combatants 3-6
3.3.2 Other Naval Combatants 3-6

Page No.

3.4 SUBSURFACE FIRE RESOURCES 3-7
3.4.1 Fast-Attack Submarine 3-7
3.4.2 Guided Missile Submarine 3-7

3.5 SURFACE AND SUBSURFACE MUNITIONS 3-7
3.5.1 Surface and Subsurface Tomahawk Weapon System 3-7
3.5.2 Surface Gunfire Systems 3-8
3.5.3 Marine Air-Ground Task Force Ground Combat Element Fire-Support Systems. 3-9

3.6 NAVAL SPECIAL WARFARE FIRES RESOURCES 3-9
3.6.1 Naval Special Warfare Fires Mission Areas 3-9
3.6.2 Naval Special Warfare Components 3-11

CHAPTER 4 — JOINT FIRES COMMAND AND CONTROL

4.1 OVERVIEW 4-1

4.2 COMMAND ORGANIZATION 4-1
4.2.1 Levels of Authority 4-1
4.2.2 Joint Staff Support to Naval Fires 4-3
4.2.3 Functional Command Roles and Responsibilities 4-9

4.3 COORDINATION AND CONTROL 4-13
4.3.1 Air Coordination and Control Centers 4-13
4.3.2 Ground Coordination and Control Centers 4-16
4.3.3 Liaison Elements 4-17
4.3.4 Control and Coordinating Measures 4-19

4.4 JOINT TARGETING 4-23
4.4.1 Joint Targeting Cycle 4-24
4.4.2 Joint Force Maritime Component Commander Support to the Joint Targeting Process 4-25

4.5 JOINT COMPONENT PLANNING PROCESS 4-25
4.5.1 Joint Strike Management 4-25
4.5.2 Joint Fire-Support Management 4-31

4.6 TIME-SENSITIVE TARGET TARGETING 4-35

4.7 JOINT FIRES COMMAND AND CONTROL SYSTEM SUPPORT 4-36
4.7.1 Global Command and Control System-Joint 4-36
4.7.2 Joint Targeting Toolbox 4-38

4.8 FUNCTIONAL COMMANDER COMMAND AND CONTROL SYSTEM 4-38
4.8.1 Theater Battle Management Control System 4-38
4.8.2 Advanced Field Artillery Tactical Data System 4-38
4.8.3 Global Command and Control System-Maritime 4-39

Page No.

CHAPTER 5 — TACTICAL FIRES COMMAND AND CONTROL

5.1 OVERVIEW 5-1

5.2 TACTICAL FIRES LEADERSHIP 5-2
5.2.1 Principal Warfare Commanders 5-2
5.2.2 Functional Warfare Commanders 5-3
5.2.3 Composite Warfare Coordinators 5-3

5.3 TACTICAL FIRES COORDINATING AGENCIES 5-5
5.3.1 Amphibious Force Agencies 5-5
5.3.2 Landing Force Agencies 5-6
5.3.3 Approval and Conflict Resolution Authorities 5-7
5.3.4 Request and Approval Scenarios 5-9
5.3.5 Naval Tactical Air Control System 5-11
5.3.6 Close Air Support for Joint Force Operations 5-11

5.4 PLANNED AND UNPLANNED REQUESTS FOR AIR SUPPORT 5-12
5.4.1 Naval Surface Fire Support 5-12
5.4.2 Artillery 5-13
5.4.3 Mortars 5-13
5.4.4 Naval Electronic Warfare 5-13
5.4.5 Tactical Tomahawk 5-13
5.4.6 Time-Sensitive Targets 5-14

5.5 FIRE-SUPPORT COORDINATION SHIP-TO-SHORE 5-14

5.6 REQUEST FOR FIRE — APPROVAL AND CLEARANCE PROCEDURES 5-15
5.6.1 Approval Procedures 5-15
5.6.2 Clearance Procedures 5-16

5.7 TACTICAL FIRES COMMAND AND CONTROL SYSTEM 5-16
5.7.1 Advanced Field Artillery Tactical Data System 5-16
5.7.2 Intelligence Operations Server 5-17
5.7.3 Theater Battle Management Core System 5-17
5.7.4 Command and Control Personal Computer 5-17
5.7.5 Other Tactical Fires Command and Control Systems 5-18

5.8 TARGET ACQUISITON SYSTEMS 5-18

REFERENCES References-1

GLOSSARY Glossary-1

LIST OF ACRONYMS AND ABBREVIATIONS LOAA-1

LIST OF EFFECTIVE PAGES LEP-1

LIST OF ILLUSTRATIONS

Page No.

CHAPTER 1 — SCOPE

Figure 5-1. Request and Approval Scenarios 5-10

PREFACE

NWP 3-09.1 (JUN 2005), NAVY STRIKE AND FIRE SUPPORT, illustrates to the operational commander the strike- and fire-support capabilities that Navy forces provide ashore. It addresses the Navy's organization, planning considerations, and command and control of naval fires at the joint and tactical levels.

Report any page shortage by letter to Commander, Navy Warfare Development Command.

ORDERING DATA

Order a new publication or change, as appropriate, through the Navy supply system.

Changes to the distribution and allowances lists (to add or delete a command from the distribution list, or to modify the number of copies of a publication that is received) must be made in accordance with NTTP 1-01.

RECOMMENDED CHANGES

Recommended changes to this publication may be submitted at any time using the accompanying format for routine changes.

Fleet units and stations submit recommendations through the chain of command to:

OFFICE OF THE CHIEF OF NAVAL OPERATIONS — N34
2000 NAVY PENTAGON
WASHINGTON, DC 20350-2000

In addition, forward two copies of all recommendations to:

COMMANDER
NAVY WARFARE DEVELOPMENT COMMAND
686 CUSHING ROAD
NEWPORT, RI 02841-1207

WEB-BASED CHANGE SUBMISSIONS

Recommended change submissions for this publication may be submitted to the Navy doctrine discussion group site. This discussion group may be accessed through the Navy Warfare Development Command SIPRNET website at http://www.nwdc.navy.smil.mil/.

URGENT CHANGE RECOMMENDATIONS

When items for changes are considered to be urgent (as defined in NTTP 1-01, and including matters of safety), this information shall be sent by message (see accompanying sample message format) to the primary review authority, with information copies to Navy Warfare Development Command, and all other commands concerned, clearly explaining the proposed change. Information addressees should comment as appropriate. See NTTP 1-01 for additional guidance.

(CLASSIFICATION)

RECOMMENDED CHANGE TO: _____ **DATE:** _____

(PUBLICATION NUMBER / REVISION / CHANGE)

LOCATION: _____ (PAGE) _____ (PARA) _____ (LINE) _____ (FIG. NO.)

TYPE OF CHANGE: ADD ____ DELETE ____ MODIFY ____ | TEXT ____ FIGURE ____

EXACT CHANGE RECOMMENDED: USE ADDITIONAL SHEETS IF NEEDED. GIVE VERBATIM TEXT CHANGES. IF FIGURE IS TO BE ADDED, SUPPLY ROUGH SKETCH OR IDENTIFY SOURCE. IF FIGURE IS TO BE CHANGED, INCLUDE A MARKED UP COPY OF EXISTING FIGURE.

RATIONALE:

SUBMITTED BY: _____ (ORIGINATING COMMAND) _____ (ORIGINATOR SEQUENCE NO.)

_____ (POINT OF CONTACT) _____ (PHONE - IDENTIFY DSN OR COMM)

PRA ACTION: ACCEPTED _____ MODIFIED _____ REJECTED _____

REMARKS: (USE ADDITIONAL SHEETS IF NEEDED)

_____ (PRA POINT OF CONTACT) _____ (PHONE - IDENTIFY DSN OR COMM)

CONFERENCE DATE: _____ **CONFERENCE AGENDA ITEM NO.:** _____

PAGE _____ OF _____

(CLASSIFICATION)

FM ORIGINATOR
TO EWTGPAC SAN DIEGO CA//JJJ//
INFO COMNAVWARDEVCOM NEWPORT RI//N5//
NAVWARCOL NEWPORT RI//213//
Others as appropriate
BT
CLASSIFICATION//N03510//
MSGID/GENADMIN/(*Organization ID*)//
SUBJ/URGENT CHANGE RECOMMENDATION FOR NWP 3-09.1 (JUL 2005)//
REF/A/DOC/NWDC//
AMPN/REF A IS NTTP 1-01, THE NAVY WARFARE LIBRARY//
POC/(*Command Representative)*//
RMKS/1. IAW REF A URGENT CHANGE IS RECOMMENDED FOR NWP 3-09.1 (JUL 2005)
2. PAGE _____ ART/PARA NO _____ LINE NO _____ FIG NO _____
3. PROPOSED NEW TEXT (*Include classification*)

4. JUSTIFICATION.

BT

Message provided for subject matter; ensure that actual message conforms to MTF requirements.

CHANGE SYMBOLS

Revised text in changes is indicated by a black vertical line in the outside margin of the page, like the one printed next to this paragraph. The change symbol shows where there has been a change. The change might be added material or restated information. A change symbol in the outside margin by the chapter number and title indicates a new or completely revised chapter.

WARNINGS, CAUTIONS AND NOTES

The following definitions apply to "WARNINGs," "CAUTIONs" and "Notes" found throughout the manual.

WARNING

An operating procedure, practice or condition that may result in injury or death if not carefully observed or followed.

CAUTION

An operating procedure, practice or condition that may result in damage to equipment if not carefully observed or followed.

Note

An operating procedure, practice or condition that is essential to emphasize.

WORDING

The concept of word usage and intended meaning that has been adhered to in preparing this publication is as follows:

"Shall" has been used only when application of a procedure is mandatory.

"Should" has been used only when application of a procedure is recommended.

"May" and "need not" have been used only when application of a procedure is optional.

"Will" has been used only to indicate futurity, never to indicate any degree of requirement for application of a procedure.

EXECUTIVE SUMMARY

> "Combined sea-based and land-based striking power will produce devastating effects against enemy strategic, operational, and tactical pressure points — resulting in rapid, decisive operations and the early termination of conflict."
>
> Admiral Vern Clark, USN
> *Proceedings,* October 2002

EX. 1 INTRODUCTION

Naval fires consist of fires and Navy strike warfare and fire support:

1. Fires are the effects of lethal and nonlethal weapons.

2. Strike warfare is an attack that is intended to inflict damage on, seize, or destroy an objective.

3. Fire support is fires that directly support land, maritime, amphibious, and special operations forces to engage adversary forces, combat formations, and facilities in pursuit of tactical and operational objectives.

EX. 2 NAVAL FIRES

Conduct of Naval Fires. The conduct of naval fires is accomplished through the execution of strike warfare and fire support operations. Naval fires command and control produces combat power by coordinating and synchronizing the application of naval fires with the operations of amphibious warfare (expeditionary maneuver warfare) and other joint force combat resources.

Command and control extends from the joint force maritime component commander (JFMCC) down to specific fire resources. These resources include Navy and Marine Corps air-delivered weapons from carrier air wings and Marine air-ground task force aviation combat element units; land-attack missiles from surface combatants and fast attack and cruise missile submarines; naval gunfire; and naval special warfare units.

Strike Mission. The strike mission helps shape the battlefield to support decisive operations or future maneuver. Joint and theater-level command and control, targeting, and combat assessment resources are required to support the execution of strike missions.

Fire Support Mission. The fire support mission involves air-to-surface and surface-to-surface employment of weapons effects. Successful fire support requires the coordination and integration of airspace and the coordination of air-to-surface and surface-to-surface fire resources.

EX. 3 JOINT FIRES

Command and Control. The conduct of fires may require the joint force commander (JFC) to establish a joint fires command and control system. This must encompass functional land, air, maritime, and special operations commanders with assigned warfighting responsibilities; operational control over forces; and delegation authority for tactical control of assigned forces at subordinate commander levels. The command and control system includes Service commanders; staffs to support the joint force commander and coordination boards and planning processes to facilitate centralized planning and decentralized execution of fires.

Fires Integration. The JFMCC is the JFC maritime warfighter. The JFMCC plans and executes JFC-assigned missions by translating operational objectives and tasking into tactical action by subordinate commanders.

The JFMCC is responsible for the planning and employment of operational fires within the area of operations and directs the maritime segment of the joint targeting process by acting as the single focal point for integrated and synchronized maritime operations to include adjusting targets and tasks for joint capabilities and forces. The maritime operations center is the primary agent for JFMCC operational-level coordination, synchronization, and guidance of maritime targeting oversight and review.

In an amphibious operation, the commander of the amphibious task force exercises overall responsibility for coordination of naval surface fire support, air support, and landing force artillery fire support. The joint force air component commander is the Service component commander who can provide and coordinate air support for amphibious and other land operations.

Synchronization of joint fires requires the integration of the simultaneous activities of intelligence, air operations, ground operations, maritime operations, and logistics in time and space to achieve the JFC goals and objectives.

EX. 4 TACTICAL FIRES

Command and Control. Naval tactical fires command and control systems provide near-real-time tactical viewing of the battlefield, battlefield geometry, rapid target-with-firing-unit pairing, and rapid, unambiguous flow of intelligence information, fires requests, tasking orders for fires, and fires logistics information.

Integrated Operations. The naval fires mission includes the combined mission areas of sea-based battlespace-shaping strikes and fire support to maneuvering forces. Naval fires resources include naval aviation units, ship-based land-attack missiles and gunfire, and command and control. Fire support may be preplanned fire support or immediate calls-for-fire support from a littoral commander such as the amphibious task force commander or landing force commander. The fire support plan establishes how each means of fire support will support the maneuvering force.

Plans and Execution. Supporting arms agencies, working for tactical leaders, conduct fire planning for the coordinated employment of fires in support of the maneuver commander's concept of operations and scheme of maneuver. Delivery of fire is the execution of direct, general, or reinforcing fire plans and necessary coordination of operations. The proper execution of fire plans is the responsibility of individuals from joint and component commanders down to gunfire support officers, coordinating agencies, and fires elements such as gun and aircraft crews.

EX. 5 CONCLUSION

This publication provides commanders and their staffs with the organization, planning considerations, and command and control of naval strike and fire support at the joint and tactical levels, and an overview of Marine Corps fires as part of Navy strike and fire support. The scope of this publication is limited to conventional naval fire capabilities and the joint and tactical operations associated with projecting these capabilities ashore. The strategic application of fires; nuclear, biological, or chemical fires; and fires against airborne, seaborne, or undersea threats is not addressed.

CHAPTER 1

Scope

1.1 IDENTIFICATION

This Navy warfare publication (NWP) articulates how the Navy operationally organizes, plans, coordinates, and employs naval fires in support of a joint task force commander and in the context of sea-based strike and fire support.

1.2 OVERVIEW

This publication provides naval commanders and their staffs with the organization, planning considerations, and command and control of naval strike and fire support at the joint and tactical levels. The scope is limited to conventional naval fire capabilities and the joint and tactical operations associated with projecting these capabilities ashore. The strategic application of fires, nuclear, biological, or chemical fires, and fires against airborne, seaborne, or undersea threats are not addressed, since these topics are covered in joint publications (JPs) and other NWPs.

This publication provides an overview of Marine Corps fires as part of the discussion of Navy strike and fire support. The reader should refer to the Marine Corps warfighting publication (MCWP) series for more detailed information. The term joint force commander (JFC) is used, and in general, refers to an existing commander, joint task force (CJTF) who is authorized to exercise combatant command (command authority) (COCOM) or operational control over a joint force.

1.3 TERMINOLOGY

Navy strike and fire support may be termed naval fires for this publication. JP 1-02, Department of Defense (DOD) Dictionary of Military and Associated Terms, defines “fires” as “the effects of lethal or nonlethal weapons.” The targeteer develops target sets that when effected in a specified way through the direct or indirect application of lethal or nonlethal fires, will achieve the commander’s objectives. The weaponeer determines the quantity of a specific weapon to apply against the specified target to achieve the desired effects. Lethal weapons apply destructive physical impact, penetration, blast overpressure, and/or thermal radiation to achieve desired effects on a target. Nonlethal weapons are designed to minimize damage and personnel injury. In the context of this publication, nonlethal weapon effects include measures to deceive or disrupt the information flow to a target. There are targeting and weaponeering scenarios where the desired target effects are achieved through the application of lethal and nonlethal weapons.

The conduct of naval fires is accomplished through the execution of strike warfare and fire-support operations. JP 1-02 defines “strike” as “an attack that is intended to inflict damage on, seize, or destroy an objective,” and defines “fire support” as “fires that directly support land, maritime, amphibious, and special operations forces to engage adversary forces, combat formations, and facilities in pursuit of tactical and operational objectives.” In the context of this publication, naval fires are the application of battlespace-shaping strike and fire support designed to affect the commander’s ground force maneuverability.

The Marine Corps doctrinal publication (MCDP) 1, Warfighting, defines maneuver warfare as “a warfighting philosophy that seeks to shatter the adversary cohesion through a series of rapid, focused, and unexpected actions, which create a turbulent and rapidly deteriorating situation with which the adversary cannot cope.”

In the execution of this offensive military operation, naval fires command and control produces combat power by coordinating and synchronizing the application of naval fires with the operations of maneuver warfare.

Naval fire resources are sea based or sea supported, and include Navy and Marine Corps lethal and nonlethal air-delivered weapons, maritime-based gunfire and land-attack missiles, and maritime-based naval special warfare units. The concept paper Naval Operating Concept (NOC) for Joint Operations discusses how the sea basing of naval fires resources generates overwhelming offensive Navy and Marine Corps joint power with integrated naval fires.

CHAPTER 2

Naval Fires

2.1 JOINT COMBAT OPERATIONS

In the initial stages of combat operations, the CJTF seeks to shock, demoralize, and disrupt the adversary into capitulation by using all available means of combat resources. Force projection by air and ground attack on adversary centers of gravity is one means of effecting that capitulation. Naval fire supports the CJTF force projection by the conduct of air- and sea-based strike to achieve tactical and operational effects and to shape the battlespace forward of the ground force movement. In a direct fire-support role, naval fire resources add to the organic attack and force projection of the maneuvering and attacking ground forces. Deep operations shape the battlespace to influence future operations, and close operations project decisive fires against adversary forces in immediate contact.

2.2 FIRE RESOURCES

Naval fire resources include Navy and Marine Corps air-delivered weapons from carrier air wing (CVW) and Marine air-ground task force (MAGTF) aviation combat element (ACE) units; land-attack missiles from AEGIS combatants, fast-attack and cruise missile submarines (SSNs, SSGNs); AEGIS combatant-based gunfire; and naval special warfare units.

Aviation fires resources from the CVW and MAGTF ACE units are capable of employing weapons such as air-to-ground guided and unguided unitary and cluster munitions, guided missiles, unguided rockets, as well as offensive electronic warfare systems to deceive and disrupt information flow. In support of the planning and execution of naval fires, some manned and unmanned aviation resources can provide real-time targeting for fires assets.

Surface gunfire resources from guided missile cruisers and guided missile destroyers are incorporating new capabilities to include the ability to deliver precision gunfire over long ranges and well inland from the littorals. New technology in land-attack missiles streamlines the targeting, mission planning, and command and control execution processes so that this naval fires resource may be employed in a fire-support role in addition to the traditional strike warfare role. SSNs and SSGNs are capable of employing the same land-attack missiles, but with the added benefit of covert execution.

2.3 FIRES COMMAND AND CONTROL

Naval fires command and control (C2) coordinates, synchronizes, and integrates the application of naval fires with other joint task force (JTF) combat resources. Command and control extends from the joint force maritime component commander (JFMCC) down to specific fire resources, and consists of leadership and coordination personnel; communication, display, and decision aid equipment; and a variety of related doctrinal targeting, planning, and execution procedures. The centralized implementation of C2 by the JFMCC is the most direct way to employ warfighting experience and joint combat support resources. At the tactical level, the implementation of C2 is decentralized to meet the requirements of the operational plan.

The degree of centralized or decentralized control of naval fires depends on many factors:

1. Mission
2. Threat
3. Need for quick action or reaction
4. Necessity to carry out many actions in different places at the same time
5. Practical inability of the senior combatant commander to exercise all functions because of excessive workload
6. Lack of appropriate display and communication capabilities
7. Force size and composition.

Fire support, in general, requires rapid decisionmaking time lines, the highest-fidelity battlefield pictures, and the shortest communication loop between maneuvering forces and fire-support assets. These three factors necessitate decentralized fire-support command and control. The strike mission falls in the mission area of shaping the battlefield to support decisive operations or future maneuver. An exception is a time-sensitive target attack that is executed as a quick reaction engagement or as an attack against a lucrative target. Generally, joint- and theater-level command and control, targeting, and combat assessment resources are required to support the execution of strike missions.

2.4 STRIKE MISSIONS, PLANNING, AND COORDINATION

The air tasking order (ATO) derives from the targeting cycle. The ATO, as discussed in NWP 3-56.1, Naval Air Operations Center Organization and Processes, is the tool used to assign a strike mission and target to a strike resource. The ATO special instructions (SPINS) provide battlespace, individual mission coordination, and communication information that use a standardized message format readable by all naval fires C2 systems. In support of JFC force projection, targets may be chosen to shock or destroy the adversary centers of gravity, including leadership, in hopes of quick capitulation. In support of a ground force commander, targets may be chosen to destroy a battlefield threat, allowing for a more permissive ground force movement in a future zone of action.

At the joint level, strike planning entails exercising the doctrinal joint targeting cycle. (See JP 3-60, Joint Doctrine for Targeting.) The joint targeting cycle has six phases:

1. Commander's objectives, guidance, and intent
2. Target development, validation, nomination, and prioritization
3. Capabilities analysis
4. Commander's decision and force assignment
5. Mission planning and force execution
6. Combat assessment.

The Navy tactics, techniques, and procedures (NTTP) publication, NTTP 3-03.4, Naval Strike and Air Warfare, discusses the strike planners' checklist in detail, and the procedures exercised in the conduct of strike planning. The strike planners' checklist includes:

1. Tasking
2. Research
3. Initial planning
4. Concept approval
5. Detailed element planning
6. Administrative planning.

The use of sea-based, land-attack missiles as a naval fire resource is a consideration made at the component commander level. The strike planner may consider and request the support of these weapons as a coordinated support resource to the ATO strike mission. For the purposes of this publication, the term "Navy strike" incorporates three strike mission types — interdiction, counterair, and time-sensitive target attack.

2.4.1 Interdiction

JP 3-03, Doctrine for Joint Interdiction Operations, defines interdiction as "an action to divert, disrupt, delay, or destroy the adversary surface military potential before it can be used effectively against friendly forces." The operational objectives of interdiction are to:

1. Divert adversary forces to a location more advantageous to maneuvering forces. Planning for a diversion objective may address destruction of key bridge crossings or aerial mining of potential maneuvering areas.

2. Disrupt adversary operations including force movement, logistic operations, and information networks so the adversary has to use less reliable or secure means. Planning for disruption may include physical destruction of the primary means by conducting air interdiction with aviation or land-attack missiles, or by conducting direct action missions on key nodes using naval special warfare resources.

3. Delay adversary movement and supplies to create massing and increased exposure. Delay is critical to achieving additional air interdiction payoffs from the massing and increased exposure of forces and supplies. Synchronized with maneuver, delay also provides for follow-on massing of organic ground force fires on the adversary.

4. Destroy adversary offensive capability, support elements, and materiel. Destruction is the most direct of the four interdiction objectives; however, destruction may also inhibit follow-on friendly freedom of action.

2.4.2 Counterair

JP 3-01, Joint Doctrine for Countering Air and Missile Threats, defines counterair as a mission that integrates offensive and defensive operations to attain and maintain a desired degree of air superiority. Counterair missions are designed to destroy or negate adversary aircraft and missiles before and after launch. Although counterair operations include defensive counterair, counterair strike missions specifically focus on offensive counterair and suppression of enemy air defenses.

1. Offensive counterair (OCA). OCA is an offensive operation designed to destroy, disrupt, or neutralize adversary aircraft, missiles, and launch platforms with their supporting structures and systems both before and after launch, but as close to their source as possible. OCA ranges throughout adversary territory and is generally conducted at the initiative of friendly forces.

2. Suppression of enemy air defenses (SEAD). SEAD operations are those activities that neutralize, destroy, or temporarily degrade surface-based adversary air defenses by destructive and/or disruptive means. Electronic attack may disrupt air defenses. (See Paragraph 2.6.2 for more information.)

2.4.3 Time-Sensitive Target Attack

JP 1-02 defines a time-sensitive target (TST) as "a target requiring an immediate response because it poses (or will soon pose) a danger to friendly forces, or are highly lucrative, fleeting targets of opportunity." High-value targets (HVTs) or high-payoff targets (HPTs) requiring immediate responses are identified by the JFC staff or component commanders during the target development phase of the joint targeting cycle or nominated by component commanders during execution. Subsequently, if approved, the JFC may designate them as TSTs and prioritize them in the JFC TST guidance. Time-sensitive targets that pose a significant threat may include multiple rocket launchers, mobile long-range surface-to-air missile systems, theater ballistic missiles, launchers and support infrastructure, and weapons of mass destruction.

Time-sensitive targets can be anticipated and planned for on the joint integrated prioritized target list, or managed on a separate TST list. However, some TSTs may be unanticipated and so the fire missions are unplanned. This increases the risk of fratricide when conducting a TST attack unless a procedural framework is developed in advance to expedite the TST attack. Planning for TST engagement includes:

1. Establishing planned and deconflicted fire support coordinating measures against specific TSTs

2. Defining TST engagement authority based on a component commander's operational area, functional mission, or a combination of both

3. Identifying specific communication data links between component C2 elements of the joint force to conduct rapid TST attacks.

2.5 FIRE-SUPPORT MISSIONS, PLANNING, AND COORDINATION

JP 3-09, Doctrine for Joint Fire Support, defines fire support as the coordinated engagement of lethal and nonlethal fires against adversary forces, combat formations, and facilities that hinder the scheme of maneuver of land, maritime, amphibious, and special operations in pursuit of tactical and operational objectives. Fire support involves air-to-surface and surface-to-surface employment of weapons effects. Successful fire support requires the coordination and integration of airspace, and the coordination of air-to-surface and surface-to-surface fire resources. The fire-support planner and coordinator are guided by the following basic fire-support tasks:

1. Support forces in contact. Responsive fire support protects and ensures the freedom of maneuvering forces.

2. Support the concept of operation. The supported commander sets the conditions for decisive operations by successfully attacking high-payoff targets, the loss of which prevents adversaries from interfering with friendly operations or developing their own operations.

3. Synchronize fire support. Fire support must be planned for continuously and concurrently with the development of the ground force scheme of maneuver.

4. Sustain fire-support operations. Fire-support plans reflect logistic requirements for ammunition, fuel, food, water, maintenance, transportation, and medical support.

The planning and coordination principles inherent in the basic fire-support tasks are:

1. Plan early and continuously. Fire support is most effectively integrated with the scheme of maneuver when fire-support planners and coordinators begin planning as soon as the commander states the mission and provides command guidance.

2. Ensure the continuous flow of targeting information. Fire-support planners and coordinators identify target acquisition requirements for fire support. Establish a target area of interest to focus intelligence collection on detecting high-priority targets. Establish a common geodetic target-reference grid system for use by ground, aviation, and naval fires resources.

3. Consider using all available lethal and nonlethal fires.

4. Use the lowest echelon capable of furnishing effective fires. This measure will keep the fire support responsive. Coordinate for joint fire support at the lowest possible echelon of the Service or functional components.

5. Furnish the type of fire requested. Weigh the request against the commander's guidance on priority targets and current and future needs.

6. Use the most effective fire available. Consider the priority of the target, engagement time window, availability of the attack assets, and the results desired.

7. Avoid unnecessary duplication.

8. Coordinate airspace. Establish an effective airspace control system that is responsive, standardized, and contains minimal restrictions. Ensure that conflicts between indirect fires and air operations are minimized.

9. Provide adequate support. Mission and commander's guidance determine the amount and types of fire support needed. Fire-support planners and coordinators must conserve capabilities, and inform the maneuver commander when requirements exceed capabilities.

10. Provide for rapid coordination. Establish procedures and responsibilities for rapid-fire-support coordination. Fire-support planners and coordinators must know the availability of fires resources, the concept of operations, the commander's intent, any restrictions in effect including fire support coordinating measures, and the rules of engagement.

11. Protect the force from fratricide.

12. Analyze effects from the fires to ensure meeting the commander's guidance.

13. Provide for flexibility and anticipate future contingencies.

2.5.1 Scheme of Maneuver

JP 3-0, Doctrine for Joint Operations, defines maneuver as the movement of forces in relation to the adversary to secure or retain positional advantage, usually in order to deliver or threaten delivery of, the direct and indirect fires of the maneuvering force. Direct-fire weapons use a line-of-sight trajectory. Indirect-fire weapons include field artillery or naval gunfire using a ballistic trajectory. The weapon impact from indirect fire may or may not be observed. Effective maneuver keeps the adversary off balance and protects the friendly force. The scheme of maneuver operations can be classified as offensive, defensive, and retrograde.

2.5.1.1 Ground Offensive Operations

Based on the tactical situation and mission, fires during offensive operations may support the battlefield preparation phase, movement to contact phase, attack phase, consolidation phase, and exploitation phase.

1. Battlefield preparation. Adversary defenses are disrupted by friendly fire support engaging adversary indirect-fire weapons, command and control centers, logistics and assembly areas, and front-line defenses. Prior to movement, fires may be used to attack targets as a deception for the intended movement. The use of nonlethal fires, such as smoke, screens the movement of friendly forces preparing for the attack.

2. Movement to contact. Movement to contact is designed to gain or reestablish contact with the adversary. Fire support ensures that momentum of the supported unit is not impeded due to counterattack by bypassed adversary defenses. Fires support the main effort by attacking deep targets and critical points along the march with indirect fires (fire delivered on a target that is not used as a point of aim). Counterfire is used to ensure that the adversary indirect fire does not delay the advance.

3. Attack. All available fire support means are applied to suppress targets that could impede or react to the attack. Types of attacks include hasty attack, deliberate attack, and raids.

   a. Hasty attack. In land operations, hasty attack trades preparation time for speed to exploit an opportunity.

   b. Deliberate attack. Deliberate attack is characterized by preplanned coordinated employment of fire support and maneuver to close with and destroy or capture the adversary.

   c. Raids. A raid is usually a small-scale operation, involving a swift penetration of hostile territory to secure information, confuse the adversary, or destroy installations. It ends with a planned withdrawal upon completion of the assigned mission. Fires support is employed during all phases of the operations including direct fires against the objective immediately before the operation.

4. Consolidation. During consolidation, friendly forces may merge to prepare for an attack or break from contact. Fire support is used to protect friendly units during reorganization, break up an adversary counterattack, and prevent adversary reinforcement, disengagement, or resupply.

5. Exploitation. Exploitation usually follows a successful attack and disorganizes the adversary in depth. Fires support maintains the momentum by suppressing pockets of resistance and attacking fleeting targets.

2.5.1.2 Defensive Operations

The battlespace can be organized either linearly or nonlinearly into geographic zones called the security area, main battle area, and the rear area. Defensive fires are employed reactively in these areas around the battlespace, as opposed to offensive operations where fires are employed in support of tactical and operational objectives.

The defended areas of the supported maneuvering ground component are:

1. Security area. This area is forward of the forward edge of the battle area. Forces in the security area furnish information on the adversary; delay, deceive, and disrupt the adversary; and conduct counter-reconnaissance. Fire-support tasks include providing adequate and continuous close support for the security force in the security area and covering fires to facilitate its egress to the main battle area.

2. Main battle area. The main battle area extends rearward from the forward edge of the battle area to the rear boundaries of the forward main effort. The main effort is the unit whose mission at a given time is most critical to the success of the overall mission. The main effort is usually weighted with the preponderance of combat power and is directed against a center of gravity through a critical vulnerability. Fire support is used to canalize and slow the adversary forces. The goal is to disrupt the adversary breaching efforts and to isolate and fix adversary units for attack by mass fires. Nonlethal fires, smoke, and lethal fires assist supported units in disengaging and moving.

3. Rear area. The rear area is the area extending forward from a command's rear boundary to the rear of the main battle area. This area is provided primarily for combat service support functions. Rear operations include those functions of security and sustainment required to maintain continuity of operations by the force as a whole. Fire support to the rear area is complex because of the density of friendly units. Close coordination is required between rear area commanders and fire support units to prevent fratricide. Commanders may choose to require positive clearance for missions requested in the rear area.

2.5.1.3 Retrograde Operations

Retrograde operations are movements of a ground component to the rear, or away from the adversary. Retrograde movements may be classified as delay, withdrawal, or retirement operations.

1. Delaying operations. Fire support in delay operations is intended to provide time and geographical space to allow combat units to move to another location. Fire-support operations include direct attack of forward adversary forces; covering obstacles, gaps, and flanks with fire; and massing fires to slow the adversary from deploying to concentrate for attack.

2. Withdrawal operations. Fire support in withdrawal operations is similar to delay operations, and is intended to support disengagement with the adversary. In withdrawal operations, the adversary is normally closer to the combat units and greater emphasis is placed on close fires.

3. Retirement operations. Fire support during retirement operations is intended to provide a contingency fires response to those retiring forces no longer in contact with the adversary.

2.5.1.4 Other Operations

Other tactical operations requiring fire support are routinely conducted during offensive, defensive, and retrograde operations. These tactical operations may include encircled forces, linkups, relief in place, river crossings, helicopterborne operations, night operations, and joint air attack team operations. (See MCWP 3-16, Fire Support Coordination in the Ground Combat Element, for more information on the use of fire support in specific tactical operations.)

2.5.2 Fire-Support Missions

Fixed- and rotary-wing aircraft conduct fire-support missions involving air-to-surface weapons. Naval gunfire-capable combatants and organic artillery of the ground force commander conduct fire-support missions involving surface-to-surface weapons effects. Navy fixed-wing aircraft and Marine Corps fixed- and rotary-wing aircraft provide fire support in the form of close air support. In support of the MAGTF ground combat element (GCE), Marine Corps fixed-wing aircraft also provide a form of fire support called deep air support. The difference between close air support and deep air support is the proximity of the friendly force to the air action. Surface combatants provide fire support in the form of naval surface fire support.

2.5.2.1 Close Air Support

Close air support (CAS) is an air action by fixed- and rotary-wing aircraft against hostile targets that are in close proximity to friendly forces and that require detailed integration of each air mission with the fire and movement of those forces. Detailed integration with friendly forces is required in order to avoid friendly-fire casualties. This is accomplished using positive control provided by forward-deployed terminal controllers. (See JP 3-09.3, Joint Tactics, Techniques, and Procedures for Close Air Support, for the planning and execution of CAS missions.)

Normally CAS requests are submitted by the requesting ground force commander and processed by the joint force air component commander (JFACC), and then incorporated into the ATO as either an on-deck alert, airborne alert, or committed to support a specific ground unit. The MAGTF GCE CAS requests are processed by the MAGTF ACE. If the ACE cannot fill the request with organic ACE resources, the CAS request is forwarded to the JFACC for processing. In support of the MAGTF GCE, naval aircraft also adhere to procedures delineated in NWP 3-09.11M/FMFM 1-7, Supporting Arms in Amphibious Operations, and NTTP 3-02.2/MCWP 3-31.6, Supporting Arms Coordination in Amphibious Operations.

2.5.2.2 Deep Air Support

Deep air support (DAS), as defined in MCWP 3-23, Offensive Air Support, and MCWP 3-23.2, Deep Air Support, is an air action against targets at such a distance from friendly forces that detailed integration of each mission with fire and movement of friendly forces is not required. DAS missions are flown on either side of the fire support coordination line and include air interdiction (AI), armed reconnaissance (AR), and strike coordination and reconnaissance (SCAR). In offensive ground operations, the MAGTF GCE may position a battlefield coordination line at the maximum range of its organic field artillery. This would leave the permissive prosecution of hostile targets up to the organic MAGTF ACE fixed-wing air resources for the region from the battlefield coordination line to the fire support coordination line. This battlespace geometry provides for the Marine Corps deep fires doctrinal DAS mission. (See MCWP 3-16 for more information on the battlefield coordination line.)

2.5.2.3 Surface Strike

Naval surface strike is a ship-based, land-attack strike using long-range precision-guided gunfire and land-attack missiles intended to effect adversary targets ashore and inland from the littorals. Surface strike includes interdiction and counterair strike mission types.

2.5.2.4 Naval Surface Fire Support

Naval surface fire support (NSFS) has three fire-support branches: gunfire support, surface-fires missile support, and electronic warfare support. MCWP 3-16 and NWP 3-20.32, Surface Ship Gunnery list the following NSFS tactical missions:

1. Close supporting fire. Fires placed on adversary personnel, weapons or positions, which, because of proximity, present the most immediate and serious threat to the supported unit. These missions require detailed coordination with the supported unit.

2. Deep supporting fire. Longer-range fires directed on objectives not in the immediate vicinity of friendly forces. These fires can interdict adversary capabilities, shape the battlefield, or support the scheme of maneuver.

3. Counterfire. Fires intended to destroy or neutralize adversary weapons. Counterfire includes counterbattery and countermortar fire.

4. Countermechanized fire. Fires planned on routes of approach that logically would be used by adversary mechanized forces and normally scheduled for delivery on call of the supported landing force.

5. Preparation fire. An intense volume of fires delivered in accordance with a time schedule to support an assault.

6. Reconnaissance fire. Fires placed on a suspected adversary position to cause the adversary to disclose its presence by movement or return fire.

7. Suppression of enemy air defenses fire. Fires that neutralize, destroy, or temporarily degrade surface-based adversary air defenses.

8. Protective fire. Fires delivered during friendly reorganization after capture of an adversary position.

9. Obscuration fire. Fires (smoke) that suppress the adversary by obscuring the view of the battlefield. These fires are normally placed on, or surrounding, the adversary position.

10. Screening fire. Fire (smoke) used to mask maneuvering friendly forces and to conceal the nature of friendly operations. These fires are normally placed between the adversary position and the friendly activity to be concealed.

11. Illumination fire. Fires used to illuminate targets, the adversary, or terrain. Illumination fires facilitate the movement or targeting by friendly forces and hamper the movement of adversary forces.

2.6 NONLETHAL FIRES

Information operations are a form of nonlethal fires. They include measures to deceive or disrupt the information flow to a target.

2.6.1 Information Operations

Information operations (IO) involve actions taken to affect adversary information and information systems while defending one's own information and information systems in order to achieve specific objectives. The focus of IO is on the individual decisionmakers and the decisionmaking process. Stated differently, IO adversely influences adversary decisionmaking processes while enhancing and protecting one's own.

Information operations cover the entire spectrum of warfare. Peacetime IO can be used to influence the adversary through regional engagement and influence operations to help shape the strategic environment. Additionally, it can be used to impart a clearer understanding and perception of the mission and its purpose. In the precrisis stage, IO can help deter adversaries from initiating actions detrimental to the interests of the United States or its allies. Carefully conceived, coordinated and executed, IO can make an important contribution to defusing crises, reducing the period of confrontation and enhancing diplomatic, economic, military, and social activities, thereby forestalling and possibly eliminating the need to employ physical force.

During combat operations, IO can help shape the battlespace and prepare the way for future combat actions to accomplish the joint force objectives. Once the crisis is contained, IO can help to restore peace and order, and allow the successful termination of military operations. Information operations when conducted by the joint force will primarily consist of battlespace shaping, force enhancement, and force protection actions, and any other information-oriented activity the joint force can leverage to better facilitate the application of combat power. Information operations attempt to disrupt the observe, orient, decide, act (OODA) loop of the adversary by causing the adversary to receive information that is inaccurate, incomplete, or received at an inopportune time.

2.6.2 Pillars of Information Operations

Information operations is the merging of five traditionally separate functions into an integrated whole. To be effective, IO must be supported by intelligence. The five doctrinal pillars of IO are electronic warfare, operations security, psychological operations, military deception, and computer network operations.

1. Electronic warfare (EW). EW employs electronic support, electronic attack, and electronic protection operations to degrade, deny, and/or destroy an adversary command and control.

    a. Electronic warfare support (ES). ES comprises actions to search for, intercept, identify, and locate or localize sources of intentional and unintentional radiated electromagnetic energy for the purpose of immediate threat recognition, targeting, planning, and conduct of future operations. ES provides information required for decisions involving EW operations and other tactical actions such as threat avoidance, targeting, and homing.

    b. Electronic attack (EA). EA employs electromagnetic energy, directed energy, or antiradiation munitions (i.e., guide onto antennae emissions) to attack facilities or equipment with the intent of degrading, neutralizing, or destroying adversary combat capability. EA includes actions taken to prevent or reduce the adversary use of the electromagnetic spectrum. These actions include jamming and electromagnetic deception and the employment of weapons that use electromagnetic or directed energy as their primary destructive mechanism.

    c. Electronic protection (EP). EP is the passive and active means taken to protect friendly personnel, facilities, and equipment from any effects of friendly or adversary employment of electronic warfare.

2. Operations security (OPSEC). OPSEC measures are designed to deny the adversary access to critical information and prevent the adversary commander from accurately estimating the military situation.

3. Psychological operations (PSYOP). PSYOP are those activities that convey selected information and indicators to foreign audiences to influence objective reasoning, sentiment, emotions, motives, and behavior. PSYOP will target adversary commanders, soldiers, civilians, and civilian leaders in order to reduce and degrade the adversary will to fight and promote civilian noninterference with military operations.

4. Military deception (MILDEC). MILDEC operations will generally be limited in scope in order to retain a concentrated amount of combat power focused on the target objective.

5. Computer network operations (CNO). CNO consist of computer network attack, computer network defense, and computer network exploitation. The CNO objective is to establish and maintain the confidentiality, integrity, and availability of the information and information systems.

2.6.3 Supporting Activities of Information Operations

Supporting capabilities of IO include physical attack, physical security, information assurance, civil-military operations, legal affairs, meteorology, intelligence, cryptology, and oceanography. Information operations are an integral part of the Navy targeting process. Information operations involved with the weaponeering assessment phase of the targeting cycle can assist in determining the right mix of kinetic and nonkinetic weapons to produce the commander's desired effect. In addition to offering nonkinetic options to traditional strike warfare, IO campaigns occasionally require the use of kinetic strike warfare and special operations warfare to deny, disrupt, destroy, or degrade information systems to attain IO campaign objectives. While each capability of IO includes a specialized planning process and can be applied to military operations individually, their coordinated application maximizes friendly advantages.

The offensive and defensive applications of each element are intertwined and must be fully understood. Targeting a printing facility for physical destruction may remove a possible hiding place from the adversary, but it may be detrimental to producing civil affairs or psychological operations material in the future. Information operations personnel must be involved in all phases of the targeting process to determine the targeting impact on the IO campaign and ensure that alternatives to kinetic targeting are presented to the targeting board. The IO cell must be able to add targets to the no-strike/restricted-strike target lists to support or make IO campaign plans or intelligence-gathering efforts more effective. The IO officer attends joint targeting coordination board meetings to ensure that targets are properly prioritized in the target list.

INTENTIONALLY BLANK

CHAPTER 3

Fires Resources

3.1 PRINCIPLES

Naval Operating Concept (NOC) for Joint Operations discusses sea basing of naval fires resources within new organizational constructs including the carrier strike group (CSG), expeditionary strike group (ESG), and the traditional surface action group (SAG). The ESG, built around the amphibious task force (ATF) and the core fires capability of the MAGTF, now also includes submarine-based, land-attack missile systems, and AEGIS combatant missile and gunfire systems from surface combatants. The NOC further states that the forward expeditionary nature and rapid surge capability of this naval force makes the Services ideally suited to employ immediately combat ready forces to project power when and where needed in support of the national security strategy. In large-scale conflicts, the CSG, ESG, SAG, and additional amphibious forces may be combined to form an expeditionary strike force (ESF).

3.1.1 Carrier Strike Group

The CSG normally includes an aircraft carrier, a guided missile cruiser (CG), two guided-missile destroyers (DDGs), a nuclear attack submarine (SSN), and a fast combat support ship (T-AOE). The CSG retains the robust combat capability for continuous strike- and fire-support from aviation assets, land-attack missiles, naval gunfire, and naval special warfare units.

3.1.2 Expeditionary Strike Group

The ESG consists of three amphibious ships (LHD/A, LPD, LSD), a CG, two DDGs, and an SSN. The ESG builds on the inherent fires capability of the MAGTF and adds the AEGIS land-attack missiles and naval gunfire into an integrated combat force.

3.2 AVIATION FIRE RESOURCES

The CVW and MAGTF ACE provide aviation fires resources.

3.2.1 Carrier Air Wing

The CVW provides long-range strike and long loiter-time fire support aircraft from 80 aircraft of six types and numerous different types of munitions. This number of aircraft is standardized and based on the capacity of the carrier flight deck and hangar deck. The combination of munitions and aircraft allows the CVW to provide day/night, all-weather, precision/nonprecision, and area denial fires. Principal CVW aircraft include the F/A-18, F-14, EA-6B, and the S-3B. Standard CVW loadout include 10 F-14s, 36 F/A-18s, 6 EA-6Bs, 6 S-3Bs, 5 E-2Cs, and 6 H/SH-60F/H.

3.2.1.1 Aircraft Carrier

The aircraft carrier is a completely self-contained air base capable of operating autonomously or in support of the CJTF. The carrier can launch and recover aircraft in support of operations such as supplementing the MAGTF ACE organic fire support to the maneuvering MAGTF GCE, or in support of the JFC supplying long-range massed delivery of aviation weapons. In the first example, the carrier flight deck may need to continuously launch and recover a total of 15–20 CAS-configured aircraft in quick response cycles, every 45–60 minutes.

In the second example, a large strike package incorporating 30 aircraft conducting a long-range coordinated strike mission may require a launch and recovery cycle of 4 hours or more. These two examples are representative of carrier flight operations.

The aircraft carrier is a versatile platform. Many normal flight days in support of offensive operations may incorporate the launch and recovery of long-range strike packages and short-duration CAS missions. In this example, the carrier may "set up" for short cycles to accommodate the CAS missions, but may then launch large strike packages on much longer cycle times. To support "on call" fire-support needs, the carrier and CVW may maintain "alert" aircraft on the flight deck during nonflying and flying hours as required by the JFC, officer in tactical command (OTC), or composite warfare commander (CWC). There may be occasions when some of the CVW aircraft operate from a forward operating base. (For more on C2 of fires, see Chapters 4 and 5.)

3.2.1.2 Carrier Air Wing Aircraft

1. F/A-18C/D/E/F. The F/A-18 is a single (C/E) or two-seat (D/F), twin-engine, multimission fighter/attack aircraft that can operate from either aircraft carriers or land bases, day or night. The two-seat F/A-18 can also serve as a platform for a forward air controller (FAC). The F/A-18 fills a variety of fires roles employing a wide variety of air-dropped and forward-firing munitions. Fires missions include strike (AI, OCA, TST, SEAD), fire support with CAS supporting ground combat elements, and leaflet drops supporting information operations. The F/A-18 also supports the fires execution process as a superior air reconnaissance platform using the Advanced Targeting Forward-Looking Infrared (ATFLIR) Pod and Advanced Tactical Reconnaissance Airborne System (ATARS) for targeting and battle damage assessment.

   a. ATFLIR. The ATFLIR provides real-time thermal imagery in television format, day or night, for detection and identification of tactical targets.

   b. ATARS. The ATARS provides near-real-time high-resolution digital imagery in day, night, or under-the-weather conditions. The ATARS digital data link can transmit imagery and auxiliary data to any Common Imaging Ground/Surface Station (CIG/SS) compatible system including the Joint Service Imagery Processing System-Navy (JSIPS-N). This allows for near-real-time access of target-quality imagery for TST or fires support.

2. F-14B/D. The F-14 is a two-seat, twin-engine, multimission fighter/attack aircraft that can operate from aircraft carriers or land bases, day or night. Fire missions include strike (AI, OCA, TST) and fire-support missions. The F-14 is also a superior air reconnaissance platform using the Tactical Air Reconnaissance Pod System (TARPS) for targeting and battle damage assessment. TARP is not digital data link–capable; imagery intelligence is downloaded, processed, and entered into JSIPS-N.

3. EA-6B. The EA-6B is a four-seat, twin-engine, electronic warfare aircraft that can operate day or night from aircraft carriers or land bases. Its primary mission is to conduct electronic attack, tactical electronic support, electronic protection, and employ high-speed antiradiation missiles (HARMs).

4. S-3B. The S-3B is a four-seat, twin-engine, surface-surveillance aircraft capable of precision-guided strike and fire support. The S-3B equipped with precision surveillance and targeting (PS&T) can provide real-time, surveillance and targeting of littoral and overland targets of interest in a direct support, carrier-based role. This capability fills the mission space between the JSTARS aircraft of the Air Force and unmanned aerial vehicles (UAVs) such as Predator and Pioneer. The S-3B is also an aerial tanking resource in support of long-duration Navy strike missions.

5. SH-60F/HH-60H. The SH-60F operates primarily from aircraft carriers, providing close-in antisubmarine protection of the CSG and search and rescue (SAR) support during carrier flight operations. A variant of the SH-60F, the HH-60H is designed specifically as a combat search and rescue (CSAR) and logistics platform for naval special warfare. It can operate from aircraft carriers, and a variety of other naval and

merchant vessels, as well as land bases. The HH-60H is capable of limited fire support with forward firing munitions.

6. SH-60R. The SH-60R multimission helicopter is a new version of the Navy H-60 and features advanced radar, and fire support munitions.

7. E-2C. The E-2C is the eyes and ears for the CSG. This aircraft is equipped with long-range surveillance radar and has significant communication capabilities. The E-2C is a key C2 asset for naval fires.

3.2.2 Marine Air-Ground Task Force

MCDP 3, Expeditionary Operations, discusses the MAGTF in detail. The MAGTF is the Marine Corps principal organization for all missions across the range of military operations, composed of forces task-organized under a single commander capable of responding rapidly to contingencies anywhere in the world. Four tasked-organized MAGTFs are scaled to meet different mission requirements.

1. Special purpose MAGTF (SPMAGTF). The SPMAGTF is organized, trained, and equipped with narrowly focused capabilities designed to accomplish a specific mission, often of limited scope and duration. It may be of any size, but normally is the size of a Marine expeditionary unit, or smaller. SPMAGTF missions include raids, peacekeeping, noncombatant evacuations, disaster relief, and humanitarian assistance.

2. Marine expeditionary unit (special operations capable) (MEU(SOC)). The MEU(SOC) is a MAGTF that is constructed around an infantry battalion (reinforced), a composite helicopter squadron, and a task-organized combat service support element. It normally fulfills Marine Corps forward sea-based deployment requirements. The MEU(SOC) provides an immediate reaction capability for crisis response and is capable of limited combat operations.

3. Marine expeditionary brigade (MEB). The MEB is a MAGTF that is constructed around a reinforced infantry regiment, a composite Marine aircraft group, and a brigade service support group. The MEB, commanded by a general officer, is task-organized to meet the requirements of a specific situation. It can function as part of a joint task force, as the lead echelon of the Marine expeditionary force, or alone. The MEB varies in size and composition, is larger than a MEU, but smaller than a Marine expeditionary force, and is capable of conducting missions across the full range of military operations.

4. Marine expeditionary force (MEF). The MEF is the largest MAGTF and the Marine Corps principal warfighting organization, particularly for larger crises or contingencies. It is task-organized around a permanent command element and normally contains one or more Marine divisions, Marine aircraft wings, and Marine force service support groups. The MEF is capable of missions across the range of military operations, including amphibious assault and sustained operations ashore in any environment. It can operate from a sea or land base.

The types of forces in the MAGTF are grouped by function into four core elements: a command element, an aviation combat element, a ground combat element, and a combat service support element. The four core elements are categories of forces, not formal commands.

1. Command element (CE). The CE is composed of the MAGTF commander, special staff sections, and requisite communications support, intelligence, and reconnaissance forces. The CE provides command and control, intelligence, and other support essential for effective planning and execution of operations by the other elements of the task force.

2. Aviation combat element. The ACE provides all or a portion of the six functions of Marine aviation. These functions are antiair warfare, offensive air support, assault support, electronic warfare, air reconnaissance, and control of aircraft and missiles. The ACE is usually composed of an aviation unit headquarters and various other aviation units or detachments. It can vary in size from a small aviation detachment of specifically required aircraft to one or more Marine aircraft wings.

3. Ground combat element. The GCE is the core element of a MAGTF that is task-organized to conduct ground operations. It is usually constructed around an infantry organization but can vary in size from a small ground unit of any type, to one or more Marine divisions that can be independently maneuvered under the direction of the MAGTF commander.

4. Combat service support element (CSSE). The CSSE is the core element of a MAGTF that is task-organized to provide combat service support. The CSSE varies in size from a small detachment to one or more force service support groups. It provides supply, maintenance, transportation, general engineering, health services, and a variety of other services to the task force.

The basic structure of the MAGTF never varies, though the number, size, and type of Marine Corps units comprising each of its four elements will always be mission-dependent. The flexibility of the MAGTF organization allows the assignment of one or more of the subordinate task forces.

3.2.2.1 Marine Air-Ground Task Force Air Combat Element

The MAGTF ACE can be organized to support specific tasks, but is typically configured to provide a balance of logistics, air support, and special operations. Within the MEU, ACE aircraft are distributed across the large- and small-deck ships of the ESG. The number of aircraft assigned to the ACE is dependent on the mission and size of the task force. A three-ship ESG will embark a MEU-size ACE notionally including a mixed aircraft loadout of AV-8Bs, AH-1Ws, CH-46s, CH-53s, and UH-1Ns.

3.2.2.2 Air Combat Element Aircraft

1. AV-8B. The AV-8B is a vertical/short takeoff and landing (V/STOL), single-seat, single-engine aircraft capable of day/night armed helicopter escort and attack of surface targets with a wide variety of air-dropped and forward-firing munitions. The AV-8B deploys with the MEU(SOC) and operates from the LHD/A. The AV-8B has a significant role in the offensive air support (OAS) and TST missions.

2. F/A-18C/D. Marine F/A-18s operate from prepositioning bases or established forward operating bases, but cannot deploy from the ESG because of the lack of catapult launch and arresting gear recovery capability. They are well suited for AI, OCA, OAS, FAC(A), and TST missions. The F/A-18 also provides reconnaissance and targeting with the ATFLIR and ATARS systems.

3. EA-6B. Marine EA-6Bs operate from prepositioning bases or established forward operating bases, but cannot deploy from the ESG because of the lack of catapult launch and arresting gear recovery capability. EA-6Bss provide significant support for electronic warfare, including the employment of HARMs.

4. AH-1W. The AH-1W is a two-place, tandem-seat, twin-engine helicopter capable of land- or sea-based operations. The AH-1W is a day/night marginal weather attack helicopter that provides an en route escort for assault helicopters and their embarked forces. The AH-1W provides fire support and fire support coordination to the landing force during amphibious assaults and subsequent operations ashore and is a significant support for OAS, TST.

5. UH-1N. The UH-1N is a twin-piloted, twin-engine helicopter capable of airborne command and control, combat assault support, medical evacuation, maritime special operations, supporting arms control and coordination, fire support, and security for forward and rear area forces.

6. RQ-2A/B. The RQ-2A/B UAV squadron can support any size MAGTF. Normal employment would be as an integral unit of the ACE. The RQ-2A/B conducts electro-optical and infrared reconnaissance to support targeting.

3.2.3 Maritime Patrol and Reconnaissance Aircraft

Maritime patrol and reconnaissance (MPR) aircraft are land-based versions of the P-3 patrol aircraft. The P-3C is a four-engine, turboprop maritime surveillance aircraft. The P-3C was designed originally as a land-based, long-range, antisubmarine warfare patrol aircraft, but its mission evolved to include surveillance of the battlespace, either over sea or over land. Its long range and loiter time are invaluable in maintaining situational awareness of the battlespace while instantaneously providing information to ground troops. Mission upgrades include the ability to employ precision land-attack missiles to supplement Navy strike and fire support. Two other variants of the P-3C are the EP-3 supporting theater electronic warfare aircraft, and the P-3C (special configuration) supporting information operations and reconnaissance aircraft.

3.2.4 Aviation Fires Munitions

Navy CVW munitions include general-purpose bombs, cluster bombs, precision-guided munitions, and directed aviation gunfire. Precision-guided munitions can be forward-propelled terminally-guided missiles or terminally-guided bombs. Munitions are used tactically to destroy installations, armament, and personnel, and in direct support of land, sea, and air forces engaged in offensive or defensive operations.

1. General-purpose (GP) bomb. Approximately 50 percent of a GP bomb weight is explosive materials. These bombs usually weigh between 250 and 2,000 pounds and produce a combination of blast and fragmentation effects. The approximately one-half-inch-thick casing creates a fragmentation effect, and the explosive filler causes considerable damage from the blast effect. The most common GP bombs are the Mark (Mk) 80 series weapons. The Mk 80 series weapons may be tailored to control the point of detonation to optimize the use of the weapon against the physical design of the target to meet desired levels of physical destruction or functional degradation. The fuzing mechanism is critical in controlling the detonation point. The mass and configuration of the bomb provide the kinetic energy to penetrate, but the bomb fuzing controls the detonation. The bomb fuze setting can determine if the detonation occurs instantaneously, maximizing the blast and fragmentary effects in the open environment, or delayed, to allow bomb penetration to a desired point within the target structure prior to detonation.

2. Cluster munition. Cluster munitions contain antivehicle and antipersonnel submunitions used to deny the use of selected areas or against adversary forces to maximize mechanized and personnel attrition.

3. Precision-guided munition (PGM). In general, precision-guided munitions are GP bombs equipped with a terminal guidance system. The terminal guidance system may be a target acquisition system including radar, television, or forward-looking infrared system; or a terminal guidance system that can homes in on emitted energy such as reflected laser energy. The laser-guided bomb (LGB) is one of the most accurate of the PGM family but comes with environmental limitations and the need to illuminate the target for each LGB employed. Global positioning system (GPS)-guided bombs, using a highly accurate terminal guidance system incorporating receivers for the NAVSTAR GPS, make accuracies comparable to LGBs while immune to weather limitations, thereby eliminating the need for laser-target designation systems.

4. Precision-guided missile. Precision-guided missiles are warhead munitions mated with precision guidance and propulsion systems, and contained within an aerodynamic winged airframe. The precision guidance system has a terminal guidance component similar in capability to PGM. For precision-guided missiles capable of extended flyout, the guidance system also contains an en route guidance component.

5. Directed aviation gunfire. Most fixed-wing aviation gunfire comes from a hydraulically driven, 6-barreled, rotary action, air-cooled, electrically fired weapon, with selectable rates of fire of either 4,000 or 6,000 rounds per minute. The size of the round varies between 20-mm and 25-mm, depending on the type of aircraft. Munitions rounds include armor-piercing or high-explosive incendiary rounds. Fixed-wing aviation gunfire can be employed as a close-in fire-support weapon or to attack mechanized targets. For some rotary-wing aircraft, other lighter-weight versions may be employed in a fire-support role or for self-defense in high-threat environments.

3.3 SURFACE FIRE RESOURCES

Principal surface fire resources include AEGIS CGs and DDGs. Multimission surface combatants provide a significant combat capability for strike- and fire-support missions. Well suited for integration into the joint land battle, surface combatants can precisely and decisively project power ashore under all environmental conditions. Mission capability includes surface strike and naval surface fire support.

1. Surface strikes. Surface strikes attack adversary targets and interdict adversary reinforcements while isolating them from the battlefield.

2. Naval surface fire support. Navy surface gun and missile systems provide NSFS to ground units.

3.3.1 AEGIS Combatants

The mission of the AEGIS combatants is to conduct prompt, sustained combat operations at sea in support of a CSG/ESG. The CG has been designed to defend against coordinated saturation attacks involving adversary surface ships, submarines, aircraft, and missiles. Additionally, the CG/DDG is able to engage in offensive actions through employment of land-attack missiles and naval gunfire. The AEGIS combatant weapons include Tomahawk land-attack missiles (TLAMs), naval gunfire with the 54/62-caliber Mk 45 lightweight gun, and limited fires with the Standard Missile system in surface-to-surface mode. The TLAM and Standard Missile are contained in a 127-cell vertical launching system (VLS) on the CG, and a 90-cell VLS on the DDG.

AEGIS combatants are designed to function effectively across several warfare areas at the same time. However, operations in littoral regions that pose significant air, surface, and/or subsurface threats can severely affect a ship's ability to perform simultaneous missions. Although AEGIS combatants have a formidable fires capability, they are not intended to satisfy all ground force requirements for NSFS. A single AEGIS combatant does not have the gun or missile magazine capacity to provide the sustained volume of fire required to support land component offensive operations. Single 5-inch gun mounts on AEGIS destroyers lack a sufficient rate of fire over an extended period to support volume fire requirements. Gun ammunition is routinely replenished at sea, but due to the time off the gun line and the magazine capacity, sustained fire-support operations typically require two to three ships to maintain one ship on the gun line.

3.3.2 Other Naval Combatants

3.3.2.1 Patrol Coastal Boat

The primary mission of the patrol coastal (PC) class ships is to conduct coastal patrol, surveillance, and maritime interdiction operations in support of naval special warfare and other special operations forces. The PC class is equipped with two 25-mm Mk 38 machine guns, two .50-caliber machine guns, two Mk 19 automatic grenade launchers, and six Stinger antiaircraft missiles. The weapon complement provides limited fire support during the infiltration/exfiltration of naval special warfare elements.

3.3.2.2 Mark V Special Operations Craft

The Mk V special operations craft carries special operations forces, primarily naval special warfare/SEAL combat swimmers, into and out of operations where the threat to these forces is considered low to medium. The Mk V supports limited coastal patrol and the interruption of adversary activities. Its fire-support capability consists of the following: 7.62-mm Gatling gun, twin 12.7-mm guns, 25-mm gun, and Stinger missiles.

3.4 SUBSURFACE FIRE RESOURCES

3.4.1 Fast-Attack Submarine

The SSN flexibility provides the Navy with an undersea covert platform conducting TLAM strikes, and fire support with the newer Tactical Tomahawk (TACTOM) missile. There are two SSN classes — the Los Angeles class, and the newer Seawolf class. All SSN classes support surveillance, intelligence collection, special warfare, covert cruise missile strike, mine warfare, and antisubmarine/antiship warfare missions. The improved Los Angeles class has 12 additional TLAMs stored in its VLS than the unimproved Los Angeles class. The Seawolf class has 100 percent more weapon (torpedoes and TLAMs) storage racks in its torpedo room as compared to the Los Angeles class, but it does not have the VLS of the improved Los Angeles class. Several SSNs, outfitted for naval special warfare, are capable of supporting and deploying a small force via SEAL delivery vehicles (SDVs) deployed from attached dry deck shelters (DDSs).

3.4.2 Guided Missile Submarine

The SSGN key mission area is to carry and employ TLAMs and TACTOM land-attack cruise missiles, and transport and support a significant naval special warfare force. Secondary missions are the traditional attack submarine missions of intelligence, surveillance, and reconnaissance, battlespace preparation, and sea control. The SSGN is armed with a mix of up to 154 TLAMs or TACTOM missiles, and has the ability to carry and support a team of 66 personnel for up to 90 days as compared to 15 days for SSNs outfitted for naval special warfare. The clandestine insertion and retrieval of these forces are enhanced by the ability to host dual DDSs for the SDVs and/or the Advanced SEAL Delivery System (ASDS). The SSGN will be able to conduct a variety of peacetime, conventional deterrent and combat operations all within the same deployment. The first of the four SSGNs should reach initial operational capability (IOC) in 2007 followed by the remaining three as conversion and testing schedules allow.

3.5 SURFACE AND SUBSURFACE MUNITIONS

3.5.1 Surface and Subsurface Tomahawk Weapon System

The TLAM is a long-range, subsonic, terrain-following cruise missile used for land-attack warfare. Launch platforms include AEGIS combatants, SSNs, and SSGNs (IOC 2007). The Tomahawk Weapon System (TWS) enables surface ships and submarines to launch conventional TLAMs in support of strike missions. The TWS consists of three segments: the all-up-round, elements of the Tomahawk Command and Control System, and various versions of the Weapon Control System.

1. All-up-round (AUR). The AUR includes the missile and its container. The AUR is warheaded with a blast/fragmentary unitary warhead or a cluster bomblet, dispenser warhead.

2. Tomahawk command and control system (TC2S). The TC2S includes the systems that plan and distribute missions, plan strikes, and facilitate the operational command and control of the system.

3. Weapon control system (WCS). The WCS and launchers are the systems on the launch platforms that finalize the mission plan and then prepare and launch the missile.

TLAM missions are preplanned either at a theater-level planning facility or within the CSG/ESG. This creates an extended targeting cycle causing the majority of tactical targets not to be included in the TWS target set. After the mission is built and validated, the digital mission data is transmitted to the launch platform for storage until required for strike execution. The mission data is loaded into the missile guidance system prior to launch. The onboard navigation system is loaded with the navigation route and target coordinates. Preselected areas of digitized elevation data and digitized pictures (or scenes) may be loaded as part of the mission data.

The TLAM relies on its inertial navigation system (INS) throughout the route of flight, including the terminal attack maneuver. Prior to the terminal attack maneuver, INS updates may occur via three onboard systems: terrain contour matching (TERCOM), digital scene-matching area correlation (DSMAC), and GPS. TERCOM updates to the INS are the result of the comparison of onboard real-time radar altimeter measurements of overflown terrain with the digitized terrain elevation data stored in the missile's memory prior to launch. DSMAC updates to the INS are the result of the comparison of onboard real-time optically sensed and digitized ground scenes with digitized scenes stored in the missile's memory prior to launch. GPS updates to the INS are the result of comparing the missile track with the GPS constellation. Depending on the missile variant, INS updates may come from a combination of TERCOM/DSMAC, TERCOM/DSMAC/GPS, DSMAC/GPS, or just GPS.

There are currently two variants of the Tomahawk Weapon System:

1. Baseline III TWS with the Block III missile is in-service fleetwide:

   a. Baseline III TWS. The Baseline III TWS mission planning provides for time of arrival (TOA) control, GPS/DSMAC navigation, or GPS-only navigation. The mission plan is preplanned at either the theater Cruise Missile Support Activity (CMSA) (Camp Smith, HI/Norfolk, VA/Northwood, UK) using the Tomahawk Planning System (TPS) or aboard the aircraft carrier using the Afloat Planning System (APS). The UK CMSA performs its own mission planning but can also plan missions for the United States in NATO strikes. Sufficient lead-time is required to produce and validate each mission plan. Depending on the complexity of the en route navigation, planning for the terminal attack phase, and the availability of digital planning resources, a mission plan may take from two hours (GPS-only) to several days if required TERCOM maps are not immediately available.

   b. Block III missile. The Block III missile is GPS-capable, is able to exercise TOA control, and has an improved warhead. Target sets include heavily defended, stationary, nonhardened targets. TOA control allows the timing of the strike (from an en route to terminal attack phase) to be in concert with other operations.

2. The Baseline IV TWS with the Block IV missile introduces an evolutionary step in strike and land-attack warfare. The TWS mission planning may be done at the theater-level CMSA, within the CSG/ESG, or on Block IV capable launch platforms. Planning aboard Block IV capable launch platforms greatly reduces the time line of the traditional Tomahawk employment targeting cycle. In addition, the mission plan may contain multiple targets allowing the Block IV missile (TACTOM), via the missile's onboard two-way UHF/SATCOM, to be redirected in real time. The DSMAC camera is also improved to allow battle damage assessment pictures be taken of other strikes and then transmitted via UHF/SATCOM. Many more TWS and missile improvements significantly reduce the traditional Tomahawk targeting cycle time line to the point that the weapon system may be acceptable for tactical employment against a whole new tactical strike target set as well as employed in a fire-support role. The key to success in this new tactical role is integration with the NSFS system for real-time target acquisition and command and control for responding to calls for fire.

(Refer to the COMSURFWARDEVGRU TACMEMO for the Baseline IV TWS with the Block IV missile variant.)

3.5.2 Surface Gunfire Systems

The NSFS gunfire systems provide close-in and over-the-horizon gunfire support to amphibious operations in direct and general support tactical missions. Gunfire systems have sufficient range, accuracy, and lethality to meet the wide range of requirements for support of assault forces during all phases of the operation. The Mk 34 gun weapon system (GWS) installed on AEGIS combatants is the principal NSFS gunfire system providing fire support. The current gun mount is the Mk 45 lightweight gun mount (LWGM). The Mk 45 5-inch/54-caliber gun is the primary antisurface gun battery and NSFS gunfire weapon. When a target is within the engagement envelope, the 5-inch gun is significantly more economical than a guided weapon. Versatile and extremely

accurate, the gun is also used in an antiair defense-in-depth capacity. The Mk 45 lightweight gun provides surface combatants accurate naval gunfire against fast, highly maneuverable, surface targets, air threats, and shore targets. Its range is more than 13 nautical miles, and it can fire 16–20 rounds per minute. Each magazine has a capacity of 600 rounds.

3.5.3 Marine Air-Ground Task Force Ground Combat Element Fire-Support Systems

3.5.3.1 Direct Fires

Direct-fire infantry weapons constitute everything from the M-9 pistol to the M1A1 tank. The MCWP series is the best source of information for the many GCE direct-fire weapons. The GCE close quarters direct-fire battle is most effective when combined with coordinated indirect fires.

3.5.3.2 Indirect Fires

Indirect-fire weapons include howitzers, mortars, rockets, and missiles. The artillery's role is to provide fire support for the infantry, cavalry, armor, and other units. Indirect fire can cause casualties to troops, inhibit mobility, suppress or destroy weapon systems, damage equipment and installations, and demoralize the enemy.

The MAGTF GCE artillery includes the 155-mm howitzer, and the 60- and 81-mm mortars.

1. M198 lightweight 155-mm howitzer (LW155). The LW155 is a direct-support towed weapon. The two largest detractors of towed artillery are the amount of lift necessary for ship-to-shore movement of the battery and the difficulties of employment in an urban environment (turning radius, crew survivability, greater time and space needed to employ the gun). The LW155 provides close and deep fire support and interdiction fires.

2. M224 60-mm light mortar. The M224 provides air assault, special operations forces, and light infantry rifle companies with an effective, efficient, and flexible weapon. The inherent limitations of a light mortar are its short range (3,490 meters) and small explosive charge (4 pounds).

3. M252 81-mm medium mortar. The M252 provides range and explosive power greater than the M224, yet is light enough to be man-packed over long distances. The 15-pound rounds can range out to 5,700 meters.

3.6 NAVAL SPECIAL WARFARE FIRES RESOURCES

3.6.1 Naval Special Warfare Fires Mission Areas

Naval special warfare (NSW) forces are the Navy-specific component of the special operations command (SOC). Control of these units is situationally dependent. There are nine core mission areas in which NSW forces are most effective. They are unconventional warfare, direct action, special reconnaissance, foreign internal defense, combating terrorism, civil affairs, information operations, psychological operations, and counterproliferation of weapons of mass destruction.

1. Unconventional warfare (UW). UW includes guerrilla warfare, subversion, sabotage, intelligence activities, evasion and escape, and other activities of a low-visibility, covert, or clandestine nature. When UW is conducted independently during conflict or war, its primary focus is on political and psychological objectives. When UW supports conventional operations, it shifts its focus to military objectives. UW can include working with indigenous people to support precision target designation, forward air control, and onsite covert post-strike assessment.

2. Direct action (DA). DA operations are short-duration strikes and other small-scale offensive operations principally undertaken by special operations forces (SOF) to seize, destroy, capture, recover, or inflict damage on designated personnel or material. In the conduct of these operations, SOF may employ raid, ambush, or direct-assault tactics; place mines and other munitions; conduct standoff attacks by fire from air, ground, or maritime platforms; and provide terminal guidance for precision weapons, and conduct independent sabotage and antiship operations.

3. Special reconnaissance (SR). NSW forces conduct a wide variety of information-gathering activities of strategic or operational significance. Collectively, these activities are called special reconnaissance. SR complements national and theater intelligence collection systems by obtaining specific, well-defined, and time-sensitive information when other systems are constrained by weather, terrain-masking, hostile countermeasures, or conflicting priorities. SR tasks include environmental reconnaissance, armed reconnaissance (locating and attacking targets of opportunity), coastal patrol and interdiction, target and threat assessment, and post-strike reconnaissance.

4. Foreign internal defense (FID). FID is generally a joint and interagency activity. Its primary mission for NSW forces is to train, advise, and otherwise assist friendly government military and paramilitary forces to protect their societies from subversion, lawlessness, and insurgency in support of theater and US national objectives. FID activities normally are of long duration and require patient adherence to and support of national policy.

5. Combating terrorism (CBT). CBT is a highly specialized, resource-intensive mission. Certain SOF units maintain a high state of readiness to conduct CBT operations and possess a full range of CBT capability. CBT activities include antiterrorism, counterterrorism, recovery of hostages or sensitive material from terrorist organizations, attacks on terrorist infrastructure, and reduction of vulnerability to terrorism.

6. Civil affairs. Civil affairs involves activities that establish, maintain, influence, or exploit relations between military forces, governmental and nongovernmental civilian organizations and authorities, and the civilian population in an area of operations in order to facilitate military operations and consolidate operational objectives. This may include the performance by military forces of activities and functions that would normally be the responsibility of the local government. NSW forces can conduct some of these activities independently, but frequently work in conjunction with other forces that may have more specialized civil affairs skills. Personnel from the NSW combat service support team can effectively coordinate with civil public utilities, transportation, sanitation, and environmental services or facilities management agencies.

7. Information operations. IO refers to actions taken to affect adversary information and information systems.

8. Psychological operations. PSYOP induces or reinforces foreign attitudes and behaviors favorable to the originator's objectives by conducting planned operations to convey selected information to foreign audiences to influence their emotions, motives, objective reasoning, and ultimately the behavior of foreign governments, organizations, groups, and individuals.

9. Counterproliferation (CP) of weapons of mass destruction (WMD). CP refers to the actions taken to seize, destroy, render safe, capture, or recover WMD. The use of SOF provides capabilities to monitor and support compliance with arms control treaties. If directed, SOF can conduct or support SR and direct-action missions to locate and interdict sea, land, and air shipments of dangerous materials or weapons. The SOF units are tasked with organizing, training, equipping, and otherwise preparing to conduct operations in support of US Government counterproliferation objectives.

10. Collateral activities. SOF collateral activities are security assistance, counterdrug activities, countermine activities, humanitarian assistance, search and rescue/personnel recovery, special activities, and coalition support. In these areas, SOF share responsibility with other forces as directed by geographic combatant commanders.

3.6.2 Naval Special Warfare Components

1. Naval special operations component (NAVSOC). The NAVSOC is the Navy component under the theater joint force special operations component commander (JFSOCC).

2. Naval special warfare unit (NSWU). The NSWU is the permanent in-theater operational staff that commands, controls, and supports forward-deployed NSW forces. The NSWU typically forms the nucleus of an NSW task group.

3. Naval special warfare task group (NSWTG). The NSWTG is tailored to meet the requirements of the theater combatant commander and is headquartered near the combatant commander. The NSWTG provides command, control, and communications (C3) for any number of deployed NSW task units in support of fleet commanders and joint force commanders.

4. Naval special warfare task unit (NSWTU). The NSWTU is a subordinate headquarters element of the NSWTG that provides C3 to NSW forces. It consists of a headquarters element, SEAL element, and a communications element. SEAL elements are normally SEAL platoons (two officers, one chief, 13 enlisted) or two squadrons of eight SEALs each. NSWTUs can take on many forms. Some of the more common deployment configurations include:

   a. Carrier strike group task unit (CSGTU). The CSGTU consists of a NSW C2 cell, a SEAL platoon, and a mobile communications team. It may include tactical cryptologic support.

   b. Expeditionary strike group task unit (ESGTU). The ESGTU consists of a NSW C2 cell or liaison officer (LNO) unit, a SEAL platoon, and two-boat special boat unit detachments. It may include a mobile communications team and tactical cryptologic support.

   c. SEAL delivery vehicle task unit (SDVTU). The SDVTU consists of a headquarters element, SEAL delivery vehicle element, and special reconnaissance element. If an SSN DDS is in theater, then the SDVTU will also include a DDS platoon. Although SDV personnel are qualified SEALs, they specialize in operating SDVs and typically provide special reconnaissance as well as infiltration and exfiltration support.

   d. Special boat unit detachment (SBUD). The SBUD consists of a 12-man rigid hull inflatable boat element, Mk V special operations craft, and associated maintenance equipment.

   e. Patrol coastal detachment (PCD). The PCD consists of one or more patrol coastal and maintenance support teams. It is typically forward deployed and can either operate independently or as part of a larger task group.

   f. Dry deck shelter equipped submarine. The DDS-capable attack submarine and the appropriate ordnance loadout is typically forward deployed. It can operate independently or as part of a larger task group.

INTENTIONALLY BLANK

CHAPTER 4

Joint Fires Command and Control

4.1 OVERVIEW

This section discusses the CJTF organization, staffing, boards, processes, and C2 systems that support the centralized planning and coordination and decentralized execution of fires. To execute timely decisions, the commander establishes clearly defined authorities, roles, and relationships. Unity of effort over complex operations is made possible by the decentralized execution of centralized overarching plans, and understanding situational awareness. The level of control depends on the nature of the operation or task, the risk or priority of its success, and the associated comfort level of the commander. (See JP 0-2, Unified Action Armed Forces (UNAAF).)

Depending on the level of conflict and disposition of forces, a course of action (COA) that includes the conduct of fires may require the CJTF to establish a joint fires command and control system. The C2 system consists of functional land, air, maritime, and special operations commanders with assigned warfighting responsibilities; operational control over apportioned forces; and delegation authority for tactical control of assigned forces at subordinate commander levels. The C2 system includes Service commanders with assigned training and logistic responsibilities; J-code staffs to support the CJTF; established coordination boards and planning processes to facilitate centralized planning and decentralized execution of fires; and C2 systems to facilitate command and control over forces.

Synchronization of fires includes the integration of the simultaneous activities of intelligence, air operations, ground operations, maritime operations, and logistics in time and space. The success of executing synchronized fires is not dependent on whether the battlefield geometry is linear or nonlinear, or on the level of control permitted. The Global Command and Control System-Joint (GCCS-J) is the CJTF C2 system. It facilitates joint-level planning and execution using functional tools for force readiness, force protection, force projection, force sustainment, force employment, intelligence, and situational awareness.

4.2 COMMAND ORGANIZATION

The CJTF may establish a three-tier command organization to support operations: traditional staff J-codes, Service component commanders, and functional commanders. (See JP 3-0.)

4.2.1 Levels of Authority

JP 0-2 lists the four types of command relationships: combatant command, operational control, tactical control, and support authority.

4.2.1.1 Combatant Command

The CJTF or combatant commander exercises COCOM over forces assigned by the President of the United States (POTUS)/Secretary of Defense (SecDef). Operational control is inherent in COCOM and may be delegated within the command to the CJTF by the combatant commander.

4.2.1.2 Operational Control

Operational control (OPCON) is inherent in COCOM and normally provides full authority to organize commands and forces and employ those forces as the commander considers necessary to accomplish assigned missions. The JFMCC will have OPCON of carrier and expeditionary strike group (CSG/ESG) forces. A caveat may be if the embarked MEU disembarks from the ESG ATF and becomes OPCON to the joint force land component commander (JFLCC). The JFMCC may also have OPCON over other non-CSG/ESG-based fires resources such as maritime patrol aircraft and unmanned aerial vehicles. Specifically these resources may support littoral fires targeting for the JFMCC even though operational and airframe constraints require the assets to operate from land bases.

4.2.1.3 Tactical Control

Tactical control (TACON) is inherent in OPCON and may be delegated to and exercised by commanders at any echelon at or below the level of combatant command. Functional component commanders typically exercise TACON over inherent fire resources or fire resources made available to the functional component for tasking. The JFMCC may have TACON of non-Navy resources such as Air Force aerial refueling tankers or special operations aviation regiment (SOAR) fires resources. TACON of these resources normally is defined for periods of time and in support of specific operations.

4.2.1.4 Support Authority

The designation of supporting relationships conveys priorities to commanders and staffs that are planning or executing joint fire operations. In a support relationship, the CJTF is responsible for ensuring that both the supported and supporting commanders understand the degree of authority that the supported commander is granted. The supported commander should ensure that the supporting commander understands the assistance required. The supporting commander then provides the assistance needed, subject to the supporting commander's existing fire resources and other assigned tasks. When the supporting commander cannot fulfill the needs of the supported commander, the CJTF will be notified by either the supported or the supporting commander. The CJTF is responsible for determining a solution. An establishing directive normally is issued to specify the purpose of the support relationship, the effect desired, and the scope of the action to be taken. It should include:

1. The forces and resources allocated to the supporting effort
2. The time, place, level, and duration of the supporting effort
3. The relative priority of the supporting effort
4. The authority, if any, of the supporting commander to modify the supporting effort in the event of exceptional opportunity or an emergency
5. The degree of authority granted to the supported commander over the supporting effort.

Unless limited by the establishing directive, the supported commander will have the authority to exercise general direction of the supporting effort. General direction includes the designation and prioritization of targets or objectives, timing and duration of the supporting action, and other instructions necessary for coordination and efficiency. The supporting commander determines the forces, tactics, methods, procedures, and communications to be employed in providing this support. The supporting commander will advise and coordinate with the supported commander on matters concerning the employment and limitations (logistics) of such support, assist in planning for the integration of such support into the supported commander's effort as a whole, and ensure that support requirements are appropriately communicated within the supporting commander's organization.

4.2.2 Joint Staff Support to Naval Fires

4.2.2.1 J-2 Intelligence Directorate

JP 0-2 states that the primary function of the intelligence directorate (J-2) is to support the commander and staff by ensuring the availability of reliable intelligence and timely indications and warning on the characteristics of the area and to support staff planning with this information. The J-2 is also responsible for planning, coordinating, directing, integrating, and controlling intelligence activities in collecting and disseminating critical information requirements for the JTF organization.

4.2.2.1.1 Joint Intelligence Center

At the theater level, a joint intelligence center (JIC) exists to support theater intelligence requirements, and is responsible for providing and producing the intelligence required to support the combatant commander and staff, components, subordinate joint forces and elements, and the national intelligence community. At a subordinate level, a tailored joint intelligence support element (JISE) forms as the focus for intelligence support for joint operations, providing the joint force commander, joint staff, and components with the complete air, space, ground, and maritime adversary situation. The different echelons of intelligence centers interface using the GCCS-J. The naval service commander and staff N-2 uses Global Command and Control System-Maritime (GCCS-M) to interface with the joint intelligence center. In normal circumstances, the JFMCC N-2 will interface with a JTF-level JISE (or theater JIC) for support with current intelligence and indications and warning, collections management, targets, dissemination, and counterintelligence.

The JTF may require that the JISE setup intelligence support teams and centers in addition to the primary JISE because of the conduct of offensive action. For example, the JFMCC, as the JTF littoral combatant commander, may need intelligence support in the area of captured materiel and document exploitation, and interrogation and debriefing. The JISE will set up centers and elements providing services to the component commanders in these areas.

4.2.2.1.2 Joint Intelligence Preparation of the Battlespace

The J-2 supports joint fires command and control through the accomplishment of joint intelligence preparation of the battlespace, targeting support, and collections management as defined below. (See Paragraph 4.5.2.1 for the specific joint targeting process.)

1. Joint intelligence preparation of the battlespace (JIPB). JIPB, as discussed in JP 2-01.3, Joint Tactics, Techniques, and Procedures for Joint Intelligence Preparation of the Battlespace, is the analytical process used by joint intelligence organizations to produce intelligence assessments, estimates, and other intelligence products in support of the JFC decisionmaking process. A continuous process includes defining the total battlespace environment; describing the battlespace effects; evaluating the adversary; and determining and describing the adversary potential courses of action. The process is used to analyze the air, land, sea, space, electromagnetic, cyberspace, and human dimensions of the environment and to determine an opponent's capabilities to operate in each. JIPB products are used by the joint force and component command staffs in preparing estimates and are applied during the analysis and selection of friendly courses of action. The four-step JIPB process is:

    a. Step 1. Define the total battlespace environment.

    b. Step 2. Describe the battlespace effects.

    c. Step 3. Evaluate the adversary.

    d. Step 4. Determine and describe probable adversary courses of action.

2. Targeting. Targeting is the process of selecting and prioritizing targets and matching the appropriate response to them taking into account operational requirements and capabilities. (See Paragraph 2.4.)

3. Collections management. Collections management is the process of converting intelligence requirements into collection requirements, establishing priorities, tasking or coordinating with appropriate collection sources or agencies, monitoring results, and retasking.

4.2.2.1.3 The Intelligence Cycle

The JTF J-2 and functional component intelligence personnel use the intelligence cycle to support the planning and conduct of fires. The intelligence cycle, as discussed in JP 2-0, Doctrine for Intelligence Support to Joint Operations, is a six-phase process by which information is converted into intelligence and made available to users. These phases are:

1. Planning and direction phase. For each phase of an operation, the CJTF establishes priority intelligence requirements (PIRs). These requirements are intelligence requests vital to the joint force ability to conduct the assigned mission. An example of a PIR that is critical to an amphibious assault is the location of adversary submarines. If the intelligence does not already exist, then intelligence personnel issue requests for information (RFIs). A RFI initiates either an intelligence production requirement or a collection requirement, if the request requires collection of new intelligence. Collection planning matches RFIs with the appropriate collection capabilities and synchronizes the timing of the collection with the operational scheme of maneuver. The JTF J-2 and the maritime component commander use imagery access, intelligence mission support, and collaborative planning capability common to the GCCS-J/M to pass, track, and answer PIRs and RFIs, and to develop the collection plan.

2. Collection phase. The collection plan is executed in the collection phase. Identified intelligence resources in the collection plan collect information about the battlespace environment and adversary. Collection requirements are managed to ensure that they are being fulfilled and to assess the overall effectiveness of the collection strategy. Collected information is provided by the GCCS-J/M and other secure means to the appropriate processing and exploitation elements.

3. Processing and exploitation phase. Processing and exploitation converts raw information into usable forms of intelligence for the CJTF and functional components including the maritime component commander. Actions include imagery interpretation, data conversion and correlation, and document translation and decryption. Results of these actions are made available to intelligence production personnel.

4. Analysis and production phase. During this phase, analysis and production intelligence personnel at all echelons convert processed information into intelligence through the integration, analysis, evaluation, and interpretation of all source data and the preparation of intelligence products in support of known or anticipated user requirements. A key tool for intelligence production is the JIPB process. Intelligence products are generally placed in one of six categories: indications and warning; current; general military; target; scientific and technical; and counterintelligence.

5. Dissemination and integration phase. Dissemination and integration includes delivery of intelligence products to users in a suitable form and includes addressing the application of the intelligence to appropriate missions, tasks, and functions. The intelligence products are repositoried in the GCCS-J integrated imagery and intelligence database accessible by the GCCS-M remote terminal access.

6. Evaluation and feedback phase. Continuous assessment of intelligence operations during each phase of the intelligence cycle ensures that the commander's intelligence requirements are being met. Attributes of intelligence include timeliness, accuracy, usability, completeness, relevance, objectiveness, and availability.

4.2.2.2 J-3 Operations Directorate

JP 0-2 states that the primary function of the operations directorate (J-3) is to assist the commander in the discharge of the assigned responsibility for the direction and control of operations, beginning with planning and follow-through until specific operations are completed. J-3 planning normally addresses operations within the 24- to 96-hour window. J-5 planning normally addresses operations beyond 96 hours. Within 24 hours, the focus is on the execution of current operations. In support of naval fires, the J-3 is also responsible for rules of engagement, information operations, psychological operations, combat assessment, combat search and rescue, and reconnaissance, surveillance, and target acquisition. The modern joint battlefield requires close coordination and control. (See JP 5-00.2, Joint Task Force Planning Guidance and Procedures, for a complete discussion.)

The following is a summary of the J-3 boards, cells, centers, and elements that support that requirement.

1. Joint fires element (JFE). The JFE provides recommendations to the JTF J-3 to accomplish fires planning and synchronization. When established, this element would be composed of a variety of experts from the CJTF staff (including the J-3 staff), the JFMCC and other components, the combatant command, and elsewhere as needed. The JFE would provide the capability to accomplish fires planning and coordination functions.

2. Rules of engagement (ROE) planning cell. The ROE planning cell for operational forces defines the circumstances and extent to which force is used. Normally the JTF J-3 is responsible for developing ROE in crisis-action planning, and the JTF J-5 is responsible for developing ROE in deliberate planning. The ROE planning cell provides a formal planning structure through which the J-3 can effectively perform this responsibility.

   As discussed in the Chairman of the Joint Chiefs of Staff Instruction (CJCSI) 3121.01 series, Standing Rules of Engagement for US Forces, the starting point for mission-specific ROE is the standing ROE (SROE). The SROE provides ROE for self-defense that remains in effect at all times (from peace to war) and provides a menu list of supplemental measures from which appropriate ROE can be drawn for a given operation to provide additional ROE for mission accomplishment. The ROE are tailored to the individual mission and threat environment and must remain responsive to changes in either. The application of force in self-defense requires the following two elements:

   a. Necessity. Exists when a hostile act occurs or when a force exhibits hostile intent.

   b. Proportionality. Force used to counter a hostile act or demonstrated hostile intent must be reasonable in intensity, duration, and magnitude to the perceived or demonstrated threat.

3. Information operations cell. The CJTF may establish an IO cell to coordinate operations focused on affecting adversary information and information systems, while defending the JTF information and information systems. The overall composition of each IO cell varies, but key individuals may include the JTF J-3 operations officer, EW planner, MILDEC planner, OPSEC planner, J-2 planner, J-6 planner, and PSYOP planner.

4. Joint targeting coordination board (JTCB). The JTCB is a group formed by the CJTF to accomplish broad targeting oversight functions that may include but are not limited to coordinating targeting information, providing targeting guidance and priorities, and refining the joint integrated prioritized target list. The board is normally composed of representatives from the joint staff, the JFMCC and all other components. Normally, JTCB meetings are conducted daily to disseminate the CJTF targeting guidance and objectives, monitor the effectiveness of targeting efforts, and validate no-fire areas. The results of the JTCB meetings should be provided to JTF components and supporting forces. These results include suggestions and recommendations to NFAs and the joint target list, modifications to JTF targeting strategy, and summaries of the daily combat assessment reports received from component and supporting forces.

5. Joint search and rescue center (JSRC). The JSRC, as discussed in JP 3-50.2, Doctrine for Joint Combat Search and Rescue, is a primary search and rescue facility staffed and equipped for planning, coordinating, and executing joint search and rescue and combat search and rescue operations within the geographical area assigned to the joint force. Personnel from the JFMCC and other functional and service components operate the facility jointly. The JSRC disseminates guidance via joint ATO SPINS. During joint operations, the JSRC coordinates CSAR support requirements for those missions involving forces from more than one component; or when one component force conducts CSAR missions in support of another component.

   If a component force is unable to facilitate the recovery of their own element, then the JSRC receives requests for CSAR support from the component force and initiates action to locate and task CSAR-capable forces within the joint force as appropriate. The JSRC coordinates CSAR operations between the JSRC and the rescue coordination centers (RCCs) to prevent duplication of CSAR efforts, facilitate efficient exchange of CSAR information, and provide the most efficient use of CSAR-capable resources. This coordination is particularly important when a CSAR incident occurs near the boundary between two component areas of operation. Each RCC should coordinate CSAR operations within its designated area of operations and in support of its own forces.

4.2.2.3 J-5 Plans Directorate

The plans directorate (J-5) assists the CJTF in long-range or future planning, preparation of campaign and joint plans for fire operations, and associated estimates of the situation. Long-range planning is defined as beyond 96 hours. The J-5 may contain an analytic cell that conducts simulations and analyses to assist the CJTF in combat power wargaming. J-5 planning can be categorized as deliberate or crisis action planning (CAP).

1. Deliberate planning is conducted principally in peacetime to develop joint operation plans (OPLANs) and operation orders (OPORDs) for contingencies identified in strategic planning documents.

2. Crisis action planning is based on current events, and is conducted in time-sensitive situations and emergencies using assigned, attached, and allocated forces and resources. Crisis action planners base their plan on the actual circumstances that exist at the time planning occurs.

4.2.2.3.1 Joint Planning Group

The CJTF may form a planning element to improve the CAP process called the joint planning group (JPG). This group is tailored to the planning needs of future operations and may include representatives of the JTF J-codes and LNOs from the JTF components. The immediate concern of the JPG is to commence the CAP process. (See JP 0-2.)

4.2.2.3.2 Crisis Action Planning Process

JP 5-00.2 delineates the CAP process as a structured six-phase process consisting of the following:

1. Phase I. Situation development

   a. Potential problem detected, reported, and assessed.

   b. Focus is on the combatant commander in whose area the event occurs.

   c. Combatant commander prepares an assessment of the event and submits it to the POTUS/SecDef and Chairman of the Joint Chiefs of Staff (CJCS).

   d. COA may be submitted depending on the time sensitivity of the situation.

   e. If established, the JTF would monitor the situation and make preparatory plans to commence CAP.

2. Phase II. Crisis assessment

   a. The POTUS/SecDef, CJCS, and other members of the Joint Chiefs of Staff (JCS) analyze the situation to determine whether a military option should be prepared.

   b. The POTUS/SecDef makes a decision concerning progressing to the next phase, remaining in the current phase, or returning to the precrisis situation.

   c. Specific guidance on COA development may be provided by the POTUS/SecDef.

   d. Supported commander would continue to monitor the situation and conduct planning as required, including providing necessary information to the JTF.

   e. The JTF, if established, would continue to monitor the situation and review any existing documentation (plans and area studies) pertaining to the area in question.

   f. The JTF may conduct informal discussions with potential components and retransmit message traffic or other pertinent information.

3. Phase III. Course of action development

   a. Implements the POTUS/SecDef decision or CJCS planning directive to develop military options.

   b. The CJCS transmits a warning order to the supported commander to prepare a COA.

   c. The directive establishes command relationships, identifies the mission, and provides any planning constraints. In addition, this directive will either identify forces and strategic mobility resources and establish tentative timing for execution, or request the supported commander to develop these factors.

   d. In the event the POTUS/SecDef directs development of a specific COA, the directive will describe the COA and request the supported commander's assessment.

   e. Upon receipt of the CJCS directive (warning order), the supported commander develops and analyzes the COA.

   f. Based on the CJCS directive, the supported commander would transmit a directive, perhaps a warning order, to the JTF and other commands as appropriate to provide necessary guidance and information.

   g. Force requirements are established and time-phased force and deployment data (TPFDD) development commences for each COA (time permitting).

   h. The United States Transportation Command (USTRANSCOM) reviews the proposed COA and prepares deployment estimates.

   i. The Services monitor development of the COA and begin planning for support forces, sustainment, and mobilization.

   j. If not previously established, the JTF would be established and commence the CAP process.

   k. Guidance from the supported commander should prescribe the extent of the JTF involvement in CAP (e.g., JTF components identified and activated for planning, mission analysis, and COA/TPFDD development).

   l. The CJTF prepares and issues a directive to JTF components concerning the current situation. This directive may be in the form of a warning order.

m. The CJTF should be evaluating requirements (forces and equipment) for the JTF and discussing these issues with the supported commander.

n. The supported commander analyzes the COA and submits recommendations to the POTUS/SecDef and the CJCS as the supported commander's estimate. The COA development phase of CAP ends with the submission of the supported commander's estimate.

4. Phase IV. Course of action selection

a. The CJCS and the other members of the JCS review and evaluate the COA and prepare recommendations and advice for consideration by the POTUS/SecDef.

b. The POTUS/SecDef selects a COA and initiates execution planning.

c. Upon receipt of the POTUS/SecDef decision, the CJCS issues an alert order. The POTUS/SecDef approves and issues the order to the supported commander and other members of the joint planning and execution community to announce the COA and to initiate execution planning.

d. A CJCS alert order provides sufficient detail to allow the supported combatant commander to conduct detailed planning required to deploy forces. Additionally, this order contains direction to amplify or change earlier guidance provided in the CJCS warning order.

e. A CJCS planning order (vice alert order) may be issued to initiate execution planning prior to selection of a COA by the POTUS/SecDef. The planning order normally is not used to direct the deployment of forces or to increase force readiness. If force deployment is directed, the planning order will require the approval of the POTUS/SecDef.

f. The supported commander issues a directive (i.e., an alert or planning order) to the CJTF to commence detailed execution planning. Additional information would be provided, as appropriate.

g. The CJTF commences execution planning that is more detailed. Determination of JTF force requirements continues as well as the overall JTF organization.

h. The CJTF issues a directive (i.e., alert or planning order) to the JTF components to execute planning.

5. Phase V. Execution planning

a. Execution planning commences when the alert or planning order is issued.

b. The COA approved by the POTUS/SecDef is transformed into an OPORD by the supported commander.

c. Actual forces, sustainment, and strategic mobility resources are identified and the concept of operations is described in OPORD format.

d. The CJTF develops an OPORD based on the supported commander's OPORD. Joint Operation Planning and Execution System (JOPES) procedures are used to develop the OPORD and TPFDD.

e. The CJTF develops unsourced force requirements, enters them into the appropriate TPFDD, and validates them to the supported combatant commander. The combatant commander, supporting commanders, component commanders, and providing organizations source the force requirements and validate the sourcing, accurate cargo, and personnel detail to the supported combatant commander. The CJTF monitors the sourcing process and validates to the supported combatant commander that the sourced requirements satisfy JTF operational needs. The JTF components must be familiar with TPFDD preparation. Provision should be made for the CJTF input to the GCCS-J JOPES strategic database.

f. The supported combatant commander validates and transmits TPFDD to the combatant commander, USTRANSCOM. All changes to the validated TPFDD by the CJTF and/or sourcing commanders and organizations must be coordinated through the supported combatant commander, who revalidates the TPFDD prior to any action by the USTRANSCOM.

g. The USTRANSCOM develops transportation schedules.

h. The CJTF issues an OPORD to the JTF components.

i. Execution planning phase ends with the POTUS/SecDef decision to implement the OPORD.

6. Phase VI. Execution

a. Execution phase commences when the POTUS/SecDef determines to execute a military option in response to the crisis.

b. When authorized by the POTUS/SecDef, the CJCS issues an execute order to the supported commander that directs the deployment and employment of forces, defines the timing for the initiation of operations, and conveys guidance not provided in earlier orders and directives.

c. The supported commander issues an execute order to the CJTF that directs the execution of the JTF OPORD.

d. The CJTF issues an execute order to the JTF components and other commands as necessary. As with other directives, the CJTF should provide in the execute order only that information required by the JTF components.

e. This phase continues until the crisis is terminated or the mission is terminated and force redeployment has been completed.

(For more information on the JOPES TPFDD process, refer to the CJCS Guide 3122, Time-Phased Force and Deployment Data (TPFDD) Primer. Doctrine that is more detailed can be found in the CJCS Manual 3122.01, three-volume series starting with Joint Operation Planning and Execution system (JOPES), Volume I, (Planning Policies and Procedures)). (See Paragraph 4.7.1 for additional information on the GCCS-J.)

4.2.3 Functional Command Roles and Responsibilites

JP 5-00.2 states functional commands may be appropriate when forces from two or more Service components must operate in the same dimension or medium, or there is a need to accomplish a distinct aspect of the assigned mission. The CJTFs establish functional warfighting commanders depending on the makeup of the assigned forces and the operational requirements. In support of operations requiring fires, functional commanders may include the JFLCC, JFMCC, and JFACC.

The functional commander assignment normally goes to the Service commander with the preponderance of warfighting resources including command and control. The Service commanders are part of the CJTF command organization and are responsible to the CJTF for the logistics support of their Service-specific forces including those forces reassigned under a functional commander. Functional component commanders have authority over forces or military capability made available to them. Normally when a functional component command is stood up, the Service component commander with the preponderance of forces to be assigned under the functional component is designated the functional component commander.

Functional component commanders have the following common responsibilities:

1. Advise the CJTF on the proper employment of all forces (maritime, land, air, special operations) under CJTF control.

2. Plan and coordinate their respective battlespace operations and employ their designated forces in support of the CJTF concept of operations.

3. Issue planning guidance.

4. Analyze various courses of action.

5. Coordinate with other component commanders and subordinate forces to ensure that the most efficient support is provided.

6. Evaluate the results of operations under their control within their respective battlespaces.

7. Function as a supported and supporting commander as directed by the CJTF.

8. Establish combat identification standing operating procedures and other directives based on CJTF guidance.

According to JP 0-2, the functional component command aligns its staff according to the staff alignment of the CJTF. In support of the joint operation, each component commander establishes the J-1, J-2, J-3, J-4, J-5, and J-6 staff organizations. Each functional commander normally will also be a Service commander while retaining the responsibilities associated with the Service component command for those assigned forces. (See Paragraphs 4.2.3.1 to 4.2.3.4 for examples of functional component commanders.)

The functional component commander retains force protection responsibility for those Services and other forces assigned to it. Force protection responsibility may include fires to support as follows:

1. Defensive counterair (i.e., air and joint theatre missile defense)

2. Nuclear, biological, and chemical defense

3. Combating terrorism to include antiterrorism programs

4. Defensive information operations

5. Security for operational forces and means

6. Physical security

7. Operations security.

4.2.3.1 Joint Force Maritime Component Commander

JP 1-02 defines the maritime environment as the oceans, seas, bays, estuaries, islands, coastal areas, littorals, and the airspace above them. The littorals are the battlespace seaward from the shore to the open ocean that must be controlled to support operations ashore and the battlespace landward from the shore to the area inland from the shore that can be supported and defended directly from the sea. The JFMCC aligns its warfighting staff organization with the CJTF organization in support of the CJTF mission. If the naval force commander is assigned as the JFMCC, then the JFMCC is also responsible to the CJTF for all assigned naval service forces under the maritime command. This responsibility extends to force protection in the maritime environment.

At the tactical level, the CWC structure lends itself to support the JFMCC execution of fires within the JFMCC assigned maritime area of operations (AO). The three-tiered structure incorporates the principal warfare commanders, functional warfare commanders, and coordinators. If the JFMCC force consists of multiple CSGs and ESGs, a CWC structure may be established for each group, in which case a maritime force CWC structure may be established and report to the JFMCC on maritime force-level issues. (See NWP 3-56, Composite Warfare Commander's Manual.)

The embarked ESG MEU is a JFMCC warfighting resource for maritime operations. Fleet Marine Force Manual (FMFM) 2-7/MCWP 3-43.3, Fire Support in Marine Air-Ground Task Force Operations, states that in many OPLANs and contingency plans, the MAGTF is OPCON or TACON to the JFLCC. In fact, a JFMCC MEU resource, once disembarked and established ashore, may CHOP to the JFLCC. There are many examples why this may occur, but the primary example is mission change from support of the JFMCC littoral operation to support of the JFLCC land operation. A scenario-based example would be that the JFMCC ATF conducts a debarkation and establishment ashore of the Marine expeditionary unit. The MEU then conducts a movement across the defined JFMCC/JFLCC boundary and transitions to the mission of direct support to the JFLCC. Depending on the support, the MEU may be OPCON or TACON to the JFLCC. In either case, once the MEU crosses the operational boundary, the JFLCC assumes force protection responsibility for the unit.

(Refer to JP 3-02, Joint Doctrine for Amphibious Operations, for a discussion of the movement of an MEU from afloat to ashore; JP 3-18, Joint Doctrine for Forcible Entry Operations, for a discussion of an amphibious assault; and JP 0-2 for a discussion of the transfer of operational forces from one commander to another.)

4.2.3.2 Joint Force Land Component Commander

According to JP 5-00.2, the designation of a JFLCC may occur when major land forces or more than one Service component participates in a major land operation, and the CJTF determines this will assist in achieving unity of command and maintaining unity of effort among land forces. If designated, the JFLCC is normally the commander with the preponderance of land forces and the requisite C2 capabilities. Field Manual (FM) 3-31/MCWP 3-40.7, Joint Force Land Component Commander Handbook, defines the JFLCC battlespace as that area of the joint operations area (JOA) that is significantly large enough to accomplish the assigned mission and protect the force. The JFLCC establishes an operational framework based on the mission and then assigns battlespace to subordinate land commanders.

The functions of the JFLCC and staff includes a number of core functions that are critical for successfully conducting land operations. These functions are:

1. Movement and maneuver. The JFLCC makes recommendations to the CJTF on the employment and support of land forces. These include force structure; land force scheme of maneuver and fire support; priorities of operations for land forces; fire support coordinating measures and JFLCC boundaries within the battlespace; priority intelligence requirements; joint fire support for the land forces; joint fires to support other components; space support to the land force; and input on the airspace control measures in the airspace within the JFLCC battlespace boundaries.

2. Intelligence, surveillance, and reconnaissance (ISR). The JFLCC states operational requirements and provides continuous feedback to ensure optimal intelligence support.

3. Firepower. The JFLCC is responsible for the planning and employment of operational firepower in terms of both developing an integrated multidimensional/multimedia attack on the adversary center of gravity and shaping the land force battlefield. The JFLCC should provide guidance for the employment of operational firepower, including lethal and nonlethal means.

4. Command and control. The JFLCC is the single focal point for integrated and synchronized land force operations for the CJTF and has significant responsibility for operational command and control. The JFLCC is responsible for developing and integrating the land component command, control, communications, and computers (C4) architecture and plans that support the CJTF operational

requirements. Additionally, the JFLCC establishes the policy and guidance for land component implementation and integration of interoperable C4 systems to exercise command. The JFLCC provides standardized direction and guidance on C4 matters to the joint command and any other communications supporting elements.

4.2.3.3 Joint Force Air Component Commander

According to JP 5-00.2, the designation of a JFACC may occur based on the overall mission, concept of operations (CONOPS), the missions and tasks assigned to subordinate commanders, forces available, and the duration and nature of C2 of joint air operations required. The JFACC responsibility is assigned to the component commander having the preponderance of air assets and the capability to plan, task, and control joint air operations. The JFACC usually has OPCON over assigned and attached forces and TACON over military assets made available for tasking. JP 3-30, Command and Control for Joint Air Operations, states that JFACC responsibilities include planning, coordinating, and monitoring of joint air operations, and the allocation and tasking of joint air operations forces based on the CJTF CONOPS and air apportionment decision.

The JFACC shall:

1. Develop a joint air operations plan (JAOP) to best support the CJTF objectives.

2. Recommend to the CJTF apportionment of the joint air effort, after consulting with other component commanders, by either percentage and/or priority that should be devoted to the various air operations for a given period.

3. Allocation and tasking of air capabilities and forces made available based on the CJTF air apportionment.

4. Provide oversight and guidance during execution of joint air operations to include making timely adjustments to taskings of joint air capabilities and forces. The JFACC will coordinate with the CJTF and affected component commanders, as appropriate, when the situation requires changes to planned joint air operations.

5. Coordinate joint air operations with operations of other component commanders and forces assigned to or supporting the CJTF. For example, to achieving integration, synchronization and deconfliction, coordination may be required with CSAR operations, information operations, and the JFSOCC, JFMCC, and JFLCC.

6. Evaluate the results of joint air operations and forward assessments to the CJTF to support combat assessment.

7. Perform the duties of the airspace control authority; unless a separate airspace control authority is designated.

8. Perform the duties of the area air defense commander (AADC), unless a separate AADC is designated.

9. In concert with the above responsibilities, accomplish various mission areas to include, but not limited to, counterair, strategic air attack, airborne intelligence, surveillance, and reconnaissance, air interdiction, intratheater and intertheater air mobility, and close air support.

10. Function as a supported/supporting commander as designated by the CJTF.

4.2.3.4 Joint Force Special Operations Component Commander

The United States Special Operations Command (USSOCOM) is a unified command with theater-specific functional special operations, subunified commands. The theater special operations component commander (SOCC) also supports the CJTF as a JFSOCC. According to JP 3-05, Doctrine for Joint Special Operations, the JFSOCC is responsible to the CJTF for making recommendations on the proper employment of special operations forces and assets; planning and coordinating special operations; or accomplishing such operational missions as may be assigned. The JFSOCC is given the authority necessary to accomplish missions and tasks assigned by the CJTF.

Under given conditions, the theater SOCC may elect not to establish a JFSOCC but to establish instead a joint special operations task force (JSOTF) assigned to the JTF. A JSOTF is a temporary joint SOF headquarters established to control the SOF of more than one Service in a specific theater of operations or to accomplish a specific mission. Establishment of a JSOTF is appropriate when SOF C2 requirements exceed the capabilities of the theater SOC staff. A JSOTF is normally formed around elements from the theater SOC or an existing SOF unit with augmentation from other Service special operations forces. A JSOTF may also be established as a joint organization and deployed as a complete package from outside of the theater. The theater SOC commander may form a JSOTF and then pass TACON to a service or functional component requiring SOF support.

Other theater and special operations command C2 commanders are:

1. Joint special operations air component commander (JSOACC). The commander within the joint force special operations command is responsible for planning and executing joint special air operations and for coordinating and deconflicting such operations with conventional nonspecial operations air activities. The JSOACC normally will be the commander with the preponderance of assets (e.g., SOAR) and/or greatest ability to plan, coordinate, allocate, task, control, and support the assigned joint special operations aviation assets.

2. Commander, joint psychological operations task force (JPOTF). The commander JPOTF assists the CJTF in developing strategic, operational, and tactical psychological operation plans for a theater campaign or other operations. Mission requirements will determine its composition and assigned or attached units.

4.3 COORDINATION AND CONTROL

Two structures within the CJTF organization improve coordination and control of fires. The first is the establishment of a liaison network, and the second is the establishment of coordination centers, boards, and cells. Regardless of the command structure established, the need for effective liaison is vital in any force executing fires. The use of liaison is an invaluable confidence-building tool between the components and subordinate Service commands. Liaison fosters a better understanding of missions and tactics, facilitates the transfer of vital information, enhances mutual trust, and develops an increased level of teamwork. Liaison also is a significant source of information about subordinate force readiness, training, and other factors. The use of coordination centers, boards, and cells established at the joint force and Service-specific level of operations is another means of enhancing stability, synchronization, deconfliction, interaction, and control within the joint force.

4.3.1 Air Coordination and Control Centers

4.3.1.1 Airspace Management

Airspace management in the joint operating area encompasses air defense and air control functions. In this publication, airspace control is discussed in relationship with strike- and fire-support operations. Accordingly, airspace management messages precede specific air control and air defense messages. Basic airspace management information should be contained in the JTF OPLAN and in the area airspace control plan (ACP). However, during the course of combat operations, new requirements may be generated and a means of disseminating new information must be provided.

This is accomplished by the AADC and may be supplemented by regional air defense commanders (RADCs) and sector air defense commanders (SADCs) using the following messages:

1. Airspace control means request (ACMREQ). The OTC/CWC/CATF, MAGTF COC, TACC/Marine TADC, and TAOC use the ACMREQ to request a defined block of airspace be designated as having significance for air operations within the designated area of responsibility (AOR). These areas include drop zones, ground free-fire zones, jettison areas, landing zones, pickup points, restricted areas, staging areas, restrictive fire plans, resource recovery zones, designated areas for the recovery of evaders (DAREs), selected areas for evasion (SAFEs), and potential evasion locales (PELs). The requesting C2 element may use the message to request any of the zones described. Zones may be defined as a circle around a central point, a corridor centered on a line, an area bounded by line segments, or airspace bounded by altitude.

2. Airspace control order (ACO). The joint operations center (JOC), OTC/CWC/CATF, AOC, and TACC/Marine TADC use the ACO to provide specific detailed orders for airspace management and control. This message defines and establishes special-purpose airspace for military operations as required by the appropriate military/civilian authority. It notifies the appropriate C2 elements of the effective time of activation and the composite structure of the airspace to be used. The message may include drop zones, ground free-fire zones, jettison areas, landing zones, pickup points, restricted areas, staging areas, restrictive fire plans, and rescue recovery zones, DAREs, SAFEs, and PELs. The originating C2 element may use this message to establish any of the zones described above.

4.3.1.2 Joint Air Operations Center

The joint air operations center (JAOC) is a jointly staffed JFACC coordination and control center established for planning, directing, and executing joint air operations. The JAOC director, assigned by the JFACC, is responsible for current operations; planning future operations; strategy, including combat assessment, intelligence, surveillance, and reconnaissance; collection management; and air mobility.

The JAOC staff organization supporting the planning, coordinating, and execution of aviation fires includes:

1. Strategy division. This division conducts the overall joint air operations strategy and operational assessment.

2. Combat plans division. This division develops future joint air operations plans based on the guidance, apportionment, and targeting requirements agreed to by the CJTF and component commanders. The joint integrated prioritized target list is a prioritized list of targets and associated data approved by the CJTF and maintained by the joint force. Targets and priorities are derived from the requirements from the components commanders in conjunction with their proposed operations supporting the CJTF objectives and guidance.

   The combat plans division develops the master air attack plan (MAAP) from the joint integrated prioritized target list. The MAAP contains key information that forms the foundation of the ATO. The MAAP may include CJTF guidance, JFACC guidance, support plans, component requests, target update requests, availability of capabilities and forces, target information from target lists, aircraft allocation, etc. The ATO is the method used to task and disseminate to component commanders, subordinate units, and C2 agencies the projected matching of sorties/capabilities to forces and specific mission requirements for a specified period. To coordinate airspace, the Combat Plans Division also builds the ACO from the airspace usage requirements of the component commander. The ACO implements the ACP that provides the details of the approved requests for airspace control measures. The ACO may be published as part of the ATO. (See JP 3-60 for more information on the JIPTL, MAAP, and ATO.)

3. Combat operations division. This division executes joint airspace control and the ATOs developed by the Combat Plans Division. The Combat Operations Division is divided into offensive and defensive sections. These sections manage real-time coordination and change requirements to the orders in execution.

4. Intelligence, surveillance, and reconnaissance division. This division develops the air portion of the intelligence collection plan, and the processing, exploitation, and dissemination of aviation-gathered intelligence.

5. Air mobility division. This division plans, coordinates, tasks, and executes the air mobility mission. The division integrates and directs the execution of intratheater and intertheater air mobility forces that operate in the JOA in support of the JFC requirements and objectives.

4.3.1.3 Naval Air Operations Center

If the JFMCC has the preponderance of aviation and C2 resources, then the CJTF may delegate the JFACC roles and responsibilities to the JFMCC. In this event, the maritime-based JFACC may establish the naval air operations center (AOC). According to NWP 3-56.1, the naval AOC retains all the roles and responsibilities of the previously discussed JAOC. (See Paragraph 4.3.1.2.)

4.3.1.4 Navy Tactical Air Control Center

The Navy tactical air control center (Navy TACC) controls air operations within the amphibious operating area and is usually the senior Navy amphibious air control agency. The Navy TACC is ship-based within the amphibious squadron and is collocated with the supporting arms coordination center. During amphibious operations, the Navy TACC controls all air operations including joint aviation assets within the amphibious operating area or designated AO. The Navy TACC, augmented by aviation planners from the landing force, plans and conducts air operations including close air support with resources from naval and air force Service commanders.

The five sections of the Navy TACC are:

1. Air traffic control section (ATCS). The ATCS provides initial safe passage, radar control, and surveillance for CAS aircraft in the operational area and early detection, identification, and warning of adversary aircraft.

2. Air support control section (ASCS). The ASCS, located in the supporting arms coordination center, coordinates, controls, and integrates all CAS and assault support operations with the supporting arms coordination center.

3. Air defense section (ADS). The ADS provides liaison with air defense commanders and provides early detection, identification, and warning of adversary aircraft.

4. Helicopter coordination section (HCS). The HCS exercises coordination for helicopter operations and specific helicopter missions.

5. Plans, execution, and support (PES) section. The PES section is the planning cell for the Navy TACC. Within a joint force structure, this section aligns itself with the JFACC ATO cycle and forwards excess sorties and air support requests for tasking and allocation. In a nonjoint structure, this section supports the Navy TACC with the production of the naval ATOs, ACOs, and SPINS. In either case, CAS fire-support requests for future operations initially go through this section of the Navy TACC.

4.3.1.5 Marine Tactical Air Command Center

The Marine Corps tactical air command center (Marine TACC) is the principal Marine Corps air command and control agency from which air operations and air defense warning functions are directed. It is the senior agency of the Marine air command and control system (MACCS) and serves as the operational command post of the ACE commander. It provides the facility from which the ACE commander and battle staff, plan, supervise, coordinate, and execute all current and future air operations in support of the task force. The Marine TACC can provide integration, coordination, and direction for the JAOC.

4.3.1.6 Tactical Air Operations Center

The tactical air operations center (TAOC) is the principal air control agency of the MACCS responsible for airspace control and management. It provides real-time surveillance, direction, positive control, and navigational assistance for friendly aircraft. It performs real-time direction and control of all antiair warfare operations, to include manned interceptors and surface-to-air weapons. It is subordinate to the Marine TACC.

4.3.1.7 Supporting Arms Coordination Center

The commander of the ATF establishes the maritime-based supporting arms coordination center (SACC). The SACC is a single location aboard an amphibious command ship in which all communication facilities incident to the coordination of fire support of artillery, air, and naval gunfire are centralized. Along with organic fires, the SACC plans, coordinates, and controls joint fires within the littoral battlespace while in support of the amphibious force. Coordination and control is conducted within the naval surface fire-support section, air-support section, and target information center.

1. Naval surface fire-support section. The NSFS section coordinates the use of naval gunfire within the littoral battlespace in support of amphibious operations. Using the Advanced Field Artillery Tactical Data System (AFATDS) and the established naval gunfire control and support nets, this section, with liaison from the landing force, plans, coordinates, and executes all NSFS for the landing force.

2. Air-support section. The air support section supports the Navy TACC by controlling, supporting, or transferring control to subordinate tactical air controllers. With the assistance of landing force liaison, the air support section deconflicts air missions, routes, and requests for fires.

3. Target information center (TIC). The TIC is responsible for targeting and intelligence in support of the amphibious operation. Manned by the ATF staff, the TIC tracks target intelligence, combat assessment, and air intelligence. The TIC maintains close coordination with the JIC, landing force G2 personnel, and the Navy TACC.

4.3.2 Ground Coordination and Control Centers

4.3.2.1 Army Battlefield Coordination Detachment

As discussed in JP 3-09, the Army JFLCC establishes the battlefield coordination detachment (BCD) in the JAOC to act as the interface between the component commander and the JFACC. This interface includes the exchange of current intelligence and operational data, support requirements, coordinating the integration of Army JFLCC requirements for the airspace control measures, joint fire support coordinating measures, and theater airlift. The BCD commander presents JFLCC positions to the JFACC. In the JAOC, the BCD coordinates the JFLCC requirements for preplanned air interdiction and close air support and makes certain decisions when delegated authority by the JFLCC. The BCD also passes JFACC requests for JFLCC supporting fires and assists synchronization of joint air operations with Army maneuver and fires and the exchange of operational and intelligence data. This interactive joint coordination process is expedited by the use of the Service-specific AFATDS through the system interface with the Service-specific theater battle management core system (TBMCS). The BCD must be prepared to operate with Air Force, Marine Corps, and Navy components, depending upon which component is appointed as the JFACC.

4.3.2.2 Army Deep Operations Coordination Cell/Marine Force Fires Coordination Center

The JFLCC accomplishes fires synchronization and either coordination through the JFLCC J-3 in the Army deep operations coordination cell (DOCC) or Marine Corps force fires coordination center (FFCC) depending on whether the JFLCC is an Army or Marine Service member. The DOCC is an existing Army service coordination center frequently used from the division level, up through the corps level, to the Army level. The FFCC is an existing Marine Corps service coordination center used at the MAGTF CE from the MEU to the MEF level.

FM 3-31/MCWP 3-40.7 lists the functions of the DOCC/FFCC as follows:

1. Advise on application of operational fires/effects.
2. Identify fires effects requirements (AI/NSFS) from other components.
3. Review and comment on the JFACC apportionment recommendation.
4. Recommend JFLCC assets for CJTF allocation (ATACMS/attack helicopters).
5. Advise on fires asset distribution (priority) to land forces.
6. Develop JFLCC priorities, timing, and effects for air interdiction within the JFLCC battlespace.
7. Develop JFLCC targeting guidance and priorities.
8. Develop the JFLCC target lists and fire support coordination measures.
9. Plan, coordinate, and supervise the execution of JFLCC deep operations.
10. Integrate and synchronize lethal and nonlethal fires.
11. Coordinate with Army airspace command and control (A2C2) cell or Marine TACC for all planned airspace requirements.

4.3.3 Liaison Elements

Liaison teams contribute to successful integrated joint operations and reduced instances of fratricide. To be effective, liaison teams must be planned for, properly trained, and integrated into all major headquarters elements. The duties of LNOs are to advise the sending and receiving commanders. The sending commander is assisted in determining requirements, priorities, and required allocations. The receiving commander is advised on capabilities, tactics, and doctrine of the sending command. LNOs act as a two-way conduit to coordinate and facilitate the flow of support and information between commands. Prior to operations, the CJTF normally publishes liaison requirements for each Service as well as each component commander.

The JFMCC staff may provide the naval fires liaison requirements at the force level. At the unit or tactical level, additional liaisons may be established for successful integration and coordination of forces planning and executing a specific fires operation or mission. JP 3-30 describes the typical component LNO elements supporting the planning and execution of aviation fires as the battlefield coordination detachment, naval and amphibious liaison element, Marine liaison officer, air mobility element, Air Force liaison element, Army air and missile defense liaison team, and special operations liaison element.

1. Battlefield coordination detachment. The Army component commander establishes a BCD to act as the interface between the component commander and the JFACC. The BCD is collocated with the JFACC staff in the JAOC. The BCD processes land force requests for CAS, monitors and interprets the land battle situation, and provides the necessary interface for the exchange of operational and intelligence data. The BCD expedites the exchange of information through face-to-face coordination with elements in the JAOC,

and coordinates air defense and airspace control matters. Theater airlift LNOs pass immediate and emergency airlift requests to the BCD via the airlift advance notification/coordination net. The BCD is organized into sections that are incorporated throughout the JAOC (e.g., plans, intelligence, operations, fusion, air defense artillery and Army management, and airlift).

2. Naval and amphibious liaison element (NALE). The NALE is responsible to the JFACC on matters pertaining to Navy and Marine Corps amphibious operations. The NALE processes Navy forces and Marine Corps landing forces requests for air support, and monitors and interprets the maritime battle situation in the JAOC. The NALE provides the necessary interface for the exchange of operational and intelligence data; coordinates maritime requirements for air defense support and interdiction; and monitors Navy and Marine Corps airspace, air traffic control requirements, and changes. The NALE provides feedback to the organizations within the JAOC on current and future joint air operations concerning integration of naval fires requirements.

3. Marine liaison officer (MARLO). The MARLO is the Marine Corps commander's representative within the JAOC and is responsive to the JFACC on matters pertaining to Marine Corps operations. The MARLO provides feedback to organizations within the JAOC on current and future joint air operations concerning integration of force requirements.

4. Air mobility element (AME). The AME, as one of the teams within an air mobility division, deploys to the theater as an extension of the Air Force Air Mobility Command (AMC) tanker airlift control center. The AME is requested when air mobility forces assigned by USTRANSCOM are operating in support of the CJTF. Direct-delivery intertheater, air mobility missions, if required, will be coordinated through the air mobility division and tasked by the AMC tanker airlift control center. The commander of the center maintains OPCON during execution of direct-delivery missions. The AME ensures the integration of intertheater air mobility missions with intratheater air operations planning.

5. Air Force liaison element (AFLE). The AFLE provides an interface between the Air Force and the JFACC for coordinating and synchronizing Air Force units in support of joint air operations. Normally, the AFLE is composed of personnel and equipment for a general-purpose numbered Air Force staff and component organizations. The AFLE manning is based on a cadre concept with personnel selected for their battle management expertise and knowledge of C2 concepts and procedures. The cadres are augmented by additional personnel who are specialists and knowledgeable in the capabilities and tactics of the aircraft, intelligence, or weapons systems being employed. The AFLE can be tailored to perform a variety of missions and management functions to match the contingency or operation.

6. Army air and missile defense (AAMD) liaison team. The AAMD liaison team is the senior Army air defense element and is the primary interface for all land-based air and missile defense force operations. The BCD air defense section will coordinate its activities with the AAMD liaison team and may augment the team as needed. The responsibilities of the AAMD liaison team normally include assisting the JFACC/AADC with developing the area air defense plan; integrating land-based air and missile defense into theater defensive operations; advising the JFACC/AADC regarding ROE, airspace and weapons control measures, fire control orders and air defense warnings; and advising the JFACC/AADC on land-based air and missile defense operations.

7. Special operations liaison element (SOLE). The JFSOCC provides a SOLE to the JFACC or appropriate Service component air C2 facility, to coordinate and synchronize air and surface operations with joint air operations. The SOLE director places LNOs throughout the JFACC staff. The SOLE coordinates, integrates, and deconflicts all SOF air and surface activities by providing a SOF presence in the JAOC that is aware of the activities of special operations units in the field by providing visibility of SOF operations in the JFACC ATO and ACO. Special operations must be closely coordinated with joint air operations planning and execution to prevent fratricide and to ensure achievement of mission objectives.

4.3.4 Control and Coordinating Measures

Along with the roles and command relationships, the CJTF establishes various control and coordination measures to support joint operations in general and the specific employment of fires in close proximity of maneuvering ground forces. As discussed in JP 3-09, these measures include boundaries, phase lines, objectives, coordinating altitudes for the deconfliction of air operations, and measures for joint fire-support coordination. Fire-support coordination is the planning and execution of fires to support efficiently and effectively the maneuver unit's mission.

4.3.4.1 Fire Support Coordinating Measures

The type and number of fire support coordinating measures (FSCMs) employed depend on the operation and tactical situation. At each echelon of the ground force, fire support coordinators plan FSCMs consistent with the scheme of maneuver and established maneuver control measures such as phase lines and boundaries. When used properly, FSCMs enable commanders to open areas of the battlefield to engage targets rapidly with fires or to restrict and control the application of fires.

In establishing FSCMs, the location and implementation instructions are disseminated through command and fire-support channels to adjacent, higher, and lower echelons using all communication means. Not all FSCMs are used at the joint operations level, but knowledge of them at that level supports necessary situation awareness. FSCMs are established at the division (Marine Corps) or brigade (Army) level but can also be established by the maneuver battalions including battalions conducting amphibious operations. Formal FSCMs are established at the maneuver battalion level and above. Measures can be permissive or restrictive.

4.3.4.2 Permissive Measures

The primary purpose of permissive measures is to support rapid target engagement. By establishing a permissive measure, the CJTF ensures that no further coordination is required for engaging targets affected by the measure. The most common permissive measures include the coordinated fire line, fire support coordination line, free-fire area, and MAGTF doctrinal battlefield coordination line.

1. Coordinated fire line (CFL). The CFL is a line beyond which conventional direct and indirect surface fire support means may fire at any time within the boundaries of the establishing headquarters. The purpose of the CFL is to support the rapid application of fire support. It is located as close to the establishing unit as possible without interfering with the unit's maneuvering forces. CFLs are not used with aviation fires and so do not need to follow terrain features visible to aircraft. The CFL is portrayed graphically by a dashed black line labeled "CFL" with the establishing headquarters in parentheses above the line, and the effective date-time group (DTG) below the line.

2. Fire support coordination line (FSCL). The FSCL delineates the coordination requirements for the attack of surface targets by all types of land-, sea-, and air-based fires systems. The appropriate land or amphibious commander, in consultation with superior, subordinate, supporting, and affected commanders, establish the FSCL to ensure the coordination of fire within the establishing commander's AO. Supporting fires elements may permissively attack targets forward (also, outside or beyond) of the FSCL, without previously coordinating with the establishing commander, provided the effects of the attack do not cross to the rear (also, inside or short) of the FSCL. Attacks against targets short of the FSCL must be coordinated with the establishing commander. Placement of the FSCL should take into consideration the location of adversary forces, anticipated rates of movement, concept and tempo of operations, and the location of the forward line of own troops (FLOT). Since the FSCL is used with aviation fires against surface targets, the FSCL should be established along readily visible terrain features. Changes to the theater FSCL require notification of all affected forces within the battlespace and must allow sufficient time for those forces to incorporate the FSCL change.

The joint ATO is developed with consideration of the location of the theater FSCLs. A rapidly advancing JFLCC element may require the theater FSCLs be revised well within the 24-hour execution cycle of the published ATO. This may create a situation where strike targets on the ATO are now to the rear (also, inside or short) of the FSCL where coordination with the maneuver is required prior to crossing the line. Conditions like these are resolved real-time through the BCD element collocated with the JFACC at the JAOC or through the Airborne Warning and Control System (AWACS) aircraft controlling the strike aircraft. The FSCL is graphically portrayed by a solid black line with the letters "FSCL" followed by the establishing headquarters in parentheses above the line, and the effective DTG below the line.

3. Free-fire area (FFA). The FFA is a specific, designated area into which any weapon system may fire without additional coordination with the establishing headquarters. The FFA is used to expedite fires onto a target or as an aviation ordnance emergency jettison area. Only the commander with juridiction of the area can establish a FFA. The FFA should be located on visible terrain features. The FFA is portrayed graphically by a solid black line with letters "FFA" labeled within the FFA boundary and followed by establishing headquarters and the effective DTG inside the line.

4. Battlefield coordination line (BCL). The BCL is a Marine Corps doctrinal permissive FSCM facilitating the rapid attack of surface targets between the BCL and the FSCL. A key factor in establishing a BCL is the range and positioning of GCE organic weapon systems and positioning of the theater FSCL. If the theater FSCL is placed so that a sanctuary exists between the range of organic Marine artillery and the FSCL, then the MAGTF commander can use this internal FSCM to facilitate the attack of targets within the area. Attacking within this surface battlespace does not require the permission of the coordinating GCE commander. An airspace coordination area (ACA) will always overlie the surface battlespace between the BCL and FSCL. This ACA facilitates air-delivered fires and deconflicts air and surface fires. The ACE direct air support center will coordinate any surface fires into this area that may violate the ACA. The BCL is portrayed graphically by a solid black line with the letters "BCL" followed by the establishing headquarters in parentheses above the line and effective DTG below the line.

4.3.4.3 Restrictive Measures

A restrictive measure imposes certain requirements for specific coordination before engaging targets affected by the measure. The primary purpose is to provide safeguards to friendly forces. Common restrictive measures include the restrictive fire line, no-fire area, airspace coordination area, restrictive fire area, and zone of fire.

1. Restrictive fire line (RFL). A RFL is established between converging friendly forces to prohibit fires or effects from fires across the line without coordination. The higher commander common to the converging forces establishes the RFL. Graphically the RFL is portrayed by a solid black line labeled with "RFL" with the establishing headquarters in parentheses above the line and the effective DTG below the line.

2. No-fire area (NFA). An NFA is established to prohibit fires or their effects into an area. Exceptions are when establishing headquarters approval of fires on a mission-by-mission basis, when an adversary in the NFA engages a friendly force, and when the commander of that force returns fire in a defense mode. Graphically the NFA is portrayed by a solid black line surrounding the area labeled "NFA" with the establishing agency and effective DTG inside and solid black diagonal lines drawn through the area.

3. Airspace coordination area. An ACA is a block or corridor of airspace in which friendly aircraft are reasonably safe from friendly surface fires. It acts as a safety measure for friendly aircraft while allowing other supporting arms to continue fires in support of the maneuvering force. ACAs help ensure aircrew safety and the effective use of indirect supporting surface fires by deconfliction through time and space. Formal and informal ACAs may be established.

    a. Formal ACA. The airspace control authority is a commander whose responsibility lies within the JFACC. The airspace control authority establishes formal ACAs at the request of the appropriate ground commander. The formal ACA includes minimum and maximum altitudes; a baseline designated by grid coordinates at each end; the width; and the effective times for the measure. A formal ACA

is shown as an area enclosed by a solid black line. Depicted inside the enclosed area are "ACA," the establishing headquarters, the minimum and maximum altitudes, the grid coordinates for each end of the baseline, and the effective DTG or the words "on order."

b. Informal ACA. When time for coordination is limited, an informal ACA is more appropriate. Aircraft and surface fires may be deconflicted by time, lateral distance, and/or altitude distance. Informal ACAs are not normally displayed on maps, charts, or overlays.

4. Restrictive fire area (RFA). The RFA is an area in which specific firing restrictions are imposed. Fires that exceed those restrictions will not be delivered into an RFA without coordinating with the establishing headquarters. The maneuver battalion or higher echelon normally establishes RFAs. They are usually located on terrain identifiable to aircrews, by grid, or by a radius from a center point. On-call RFAs may support rapidly changing operations. Their dimensions, locations, and restrictions are prearranged. A solid black line defining the area, and the letters "RFA" within, followed by the establishing headquarters and the effective DTG, graphically portray the RFA. The restrictions may be included within the graphic, if space allows, or reference may be made to a specific OPLAN or OPORD.

4.3.4.4 Maneuver Control Measures

Maneuver control measures define the limits of a unit's assigned battlespace. They include boundaries, phase lines, and fire support areas for combatants assigned NSFS duties.

1. Boundaries. The maneuver commander uses boundaries in various operations to indicate the geographical area for which a particular unit is responsible. They are normally designated along terrain features easily recognizable on the ground. Boundaries are the basic maneuver control measure and may be permissive or restrictive. A unit may execute fire and maneuver within its own boundaries without close coordination with neighboring units unless otherwise restricted. Normally units do not fire across boundaries unless the fires are coordinated with the adjacent unit, or the fires are beyond a FSCM (as a CFL). When fires such as smoke and illumination affect an adjacent unit, coordination with that unit is normally required.

   A commander, in certain situations, can decide to fire across boundaries at positively identified enemy elements without coordination. However, direct and observed fires should be used when firing across boundaries at positively identified enemy forces when there is no time to coordinate with adjacent friendly units. Any commander given a battlespace can establish boundaries for subordinate units. All service and functional components will respect these boundaries. Boundaries are depicted as solid black lines with a symbol placed on the boundary to show the size and designation of the highest echelons that have the boundary in common. If the units are of unequal size, the symbol of the higher unit is shown and the designation of the lower unit is given completely.

2. Phase line (PL). A PL is a maneuver control measure used by land forces for control and coordination of military operations. They are usually recognizable terrain features extending across the zone of action. Units normally report crossing PLs, but do not halt unless specifically directed. PLs can be used to identify limits of advance, control fires, or define a battlespace. The OPORD of the establishing headquarters will specify the purpose of each PL and any actions required by forces affected by the PL. Any commander given a battlespace can establish PLs. A PL is depicted as a solid black line labeled "PL" and assigned letters, numbers, or code-name designations.

3. Fire support area (FSA)/fire support station (FSS). An FSA is a maneuver area assigned by the JFMCC to fire support ships that deliver naval surface fires to support an operation ashore. An FSA is normally associated with amphibious operations but can be used whenever it is desirable to have a fire-support ship occupy a certain geographic position. A FSS is a specific location at sea within an FSA from which a fire support ship delivers fire. This designation is used to station ships within boat lanes of the assaulting force, or in areas where maneuvering room is restricted by other considerations. Typically, the commander, amphibious task force (CATF) establishes FSAs and FSSs.

In amphibious operations, when attack groups are formed and separate landing areas are designated, CATF may assign each attack group commander with the responsibility for control of naval gunfire support within the area. FSAs are designed with roman numerals (FSA I, II, III) and are shown on the GCCS naval gunfire support operations overlay. FSSs are designated by numbers (FSS 1, 2, 3) and are shown on the GCCS NSFS operations overlay as a black dot indicating the exact position of the ship.

4.3.4.5 Airspace Control Measures

Airspace control measures (ACMs) are nominated from subordinate headquarters, through the component command headquarters, and then forwarded to the JFACC airspace control authority according to the air control plan. Most ACMs affect indirect-fires trajectories and unmanned reconnaissance aircraft by their use of airspace. Some ACMs may be established to permit specific surface fires such as the high-trajectory Army Tactical Missile System (ATACMS) or UAV operations. The JFMCC and other component commanders ensure that ACM nominations support upcoming operations prior to forwarding to the JAOC. The airspace control authority approves formal ACM nominations and includes them in the ACO.

Normally, ACMs such as low-level transit routes will terminate near the FSCL. However, the situation may require establishing active and planned ACMs beyond the FSCL to facilitate rapid change of the FSCL and ACM requirements. ACMs may be established to facilitate operations between the FSCL and JFLCC forward boundary. Ground infiltration and aerial insertion and/or extraction of special operations forces or long-range surveillance teams as well as attack helicopter maneuvers are examples of operational ACMs. The component air control element with the approval of the airspace control authority initiates changes to ACMs within the JFLCC battlespace. The airspace control authority is the final approving authority for changes that are requested through airspace coordination channels.

Common ACMs supporting fires include:

1. High-density airspace control zone (HIDACZ). A HIDACZ, designated in an ACP or ACO, is airspace in which there is a concentrated employment of numerous and varied weapons and airspace users. A HIDACZ has defined dimensions that usually coincide with geographical features or navigational aids Access to a HIDACZ is normally controlled by the maneuver commander who can also direct a more restrictive weapons status within the HIDACZ.

2. Restricted operations area (ROA). An ROA is airspace, designated by the airspace control authority, in response to specific operational situations/requirements that restrict the operation of one or more airspace users.

3. Coordinating altitude. A coordinating altitude is a procedural ACM to separate fixed- and rotary-wing aircraft by determining an altitude below which fixed-wing aircraft will normally not fly and above which rotary-wing aircraft normally will not fly. A coordinating altitude fixes the altitude for fixed- and rotary-wing fire-support assets and may affect the delivery of fire support. The coordinating altitude is normally specified in the ACP and may include a buffer zone for small altitude deviations. Aircraft planning extended operations penetrating this altitude, whenever possible, should notify the appropriate airspace control facility; however, approval acknowledgement is not required.

In a combat zone, airspace control becomes even more critical because of the high concentration of friendly aircraft, potential adversary aircraft, and the need to deconflict airspace for weapons employment such as the high-apex indirect fires from ATACMS or the low-altitude cruise capability of the surface- and subsurface-launched TLAM. JP 3-52, Doctrine for Joint Airspace Control in the Combat Zone, states airspace control includes coordinating, integrating, and regulating airspace to increase operational effectiveness; however, the airspace control authority does not have the authority to approve, disapprove, or deny combat operations. That authority is vested only in operational commanders. Combat zone airspace control needs to provide a commander the operational flexibility to employ forces effectively.

4.3.4.6. Kill Box Reference System

A kill box is a two- or three-dimensional area reference that enables timely, effective coordination and control, and facilitates rapid attacks. The kill box reference system is used in the AO to coordinate, deconflict, and synchronize attack operations. The system is complementary to, and does not preclude or conflict with, other FSCMs. Developing a kill box reference system should be done in consultation with superior, subordinate, supporting, and affected commanders. Kill box management is accomplished through a CJTF-assigned functional commander who is responsible for the opening and closing of them. The JFLCC would normally be the functional commander responsible for kill boxes within the battlespace, or MAGTF commander, when acting as a separate component with an assigned sector and ground combat responsibilities. The JFACC would be responsible for those kill boxes beyond the forward boundary. Kill box management is critical to preventing fratricide.

Kill boxes short of the FSCL are normally closed until opened by the applicable ground commander. Aircraft may overfly closed kill boxes. An open kill box short of the FSCL is clearance from the ground commander for specified CAS assets to fire on specified targets/target sets in accordance with JFLCC priorities. Direct positive terminal control is not required. Reasonable assurance is in effect for tactical air (TACAIR) expending ordnance in an open kill box short of the FSCL. The ground commander opening a kill box short of the FSCL may close the kill box at any time. Friendly troops should not be inserted into a newly closed kill box until confirmation that air attacks into the kill box have been terminated. Direct positive control is required for TACAIR to expend ordnance in a closed kill box.

4.3.4.7 Zone of Fire

Zones of fire (ZFs) are used during amphibious operations and include the area within which a designated fire-support ship delivers, or is prepared to deliver, fire support. Fire may or may not be observed. Ships assigned zones of fire are responsible for attacking known targets and targets of opportunity according to their mission and the guidance of the supported commander. Zones of fire are graphically portrayed by broken lines and are designated with the label “ZF” followed by the zone of fire number.

4.4 JOINT TARGETING

The purpose of the joint targeting process as discussed in JP 3-60 is to provide the commander with a methodology linking objectives with effects throughout the battlespace. The targeting process provides a logical progression as an aid to decisionmaking and ensures consistency with the commander’s objectives.

The CJTF may use the following target lists:

1. Joint target list (JTL). The JTL is a consolidated list of all targets considered to have military significance in a combatant commander’s AOR. National agencies, the combatant commander’s staff, joint forces that are subordinate to the combatant commander, and supporting unified commands and components all nominate targets to the combatant commander for validation and inclusion.

2. Target nomination list (TNL). The TNL is a list of targets nominated by component commanders, national agencies, supporting commands, or the CJTF staff for inclusion on the joint integrated prioritized target list to support CJTF objectives and priorities.

3. Joint integrated prioritized target list (JIPTL). The JIPTL is a list of targets that are prioritized and based upon the effects their attacks will have on achieving CJTF objectives. The JIPTL is derived from the integration of TNLs and usually contains more targets than available resources for attack. Exactly how many targets is determined by prioritization once attack resources are matched to targets on the JIPTL. Low-priority targets may be scheduled for attack some time later.

4. No-strike list (NSL). The NSL is a list of geographic areas, complexes, or installations not planned for capture or destruction. Attacking these may violate the law of armed conflict, interfere with friendly relations with indigenous personnel or governments, or the value of these targets for intelligence exploitation may be greater than the destruction value.

5. Restricted target list (RTL). The RTL includes restricted targets nominated by elements of the joint force and approved by the CJTF. This list also includes restricted targets directed by higher authority. When targets are restricted from lethal attacks, commanders should consider nonlethal options.

6. High-payoff target list (HPTL). The HPTL is a prioritized list of HPTs by phase of the joint operation. A HPT is a target whose loss to the enemy will significantly contribute to the success of the friendly course of action. A HVT is a target the enemy commander requires for the successful completion of the mission. The loss of HVTs would be expected to seriously degrade important enemy functions throughout the friendly commander's area of interest.

4.4.1 Joint Targeting Cycle

The joint targeting cycle begins with the CJTF objectives and guidance, proceeds through execution, and ends with combat assessment. The process matches objectives and guidance with inputs from component commanders and intelligence and operations personnel to select specific targets and identify the forces necessary to achieve the CJTF objectives. This targeting cycle employs combined forces and provides a repetitive process for the planning, coordination, allocation, and tasking of combined missions. The six-phase targeting cycle that follows is not time-dependent; some phases may be conducted concurrently.

1. Phase 1. Commander's objectives, guidance, and intent. The CJTF guidance and objectives will identify targeting priorities and procedures, appropriate maneuver and movement control, joint fire support coordinating measures, and rules of engagement. This guidance also includes the CJTF apportionment decision. At the component level, functional commanders' objectives, guidance, and tasks drive targeting and targeting objectives. These objectives and tasks must be understandable, achievable, measurable, and obtainable.

2. Phase 2. Target development, validation, nomination, and prioritization. Targeteers on the CJTF staff and at each component level systematically evaluate potential target systems from a strategic, operational, and tactical perspective to identify the critical components and interrelationships of adversary military, political, and economic systems. This systems-oriented analysis helps identify critical nodes and specific target sets that most likely satisfy stated objectives, if attacked. Once potential targets are identified and validated, they are nominated for approval, generally in a coordinating body such as the JTCB. The JTCB represents the interests of all the joint force components. The targets are prioritized and produce a TNL from the approved targets including a list with the functional outcomes to achieve the CJTF objectives.

3. Phase 3. Capabilities analysis. This analysis involves estimating the effects of lethal or nonlethal fires against specific targets. The purpose is to estimate the efficiency of available fires under situation-specific conditions of employment. These estimates build upon the analysis performed in target development that determined physical characteristics, functional, and psychological vulnerability, and the fit within the CJTF objectives and guidance. Once the capabilities-analysis phase is completed, the results can be merged with individual component TNLs to create the target recommendations for the CJTF.

4. Phase 4. Commander's decision and force assignment. Representatives of the joint force components scrutinize the TNLs and associated forces to ensure compliance with CJTF objectives, guidance, and intent. The TNLs are combined into the JIPTL and approved by the CJTF. Once approved, the CJTF prepares and releases tasking orders to the JFMCC and other executing components and forces. Tasking orders include documentation that maintains the logical linkage among objectives, guidance, and operations.

5. Phase 5. Mission planning and force execution. During this phase, detailed tactical planning is performed for the execution of the operation.

6. Phase 6. Combat assessment (CA). The CA is the determination of the overall effectiveness of force employment during military operations. It consists of three major components:

   a. Battle damage assessment (BDA). The BDA is the timely and accurate estimate of damage resulting from the application of fires. It can be applied to the employment of all types of weapon systems (air, ground, naval, and special forces) throughout the range of military operations. The BDA is primarily an intelligence responsibility with required inputs and coordination from the operators. It is composed of physical damage, functional damage, and target-system assessment.

   b. Munitions effectiveness assessment (MEA). The MEA is an assessment of the fires applied in terms of the weapon system and munitions effectiveness to determine and recommend any required changes to the methodology, tactics, weapon system, munitions, fusing, and/or weapon delivery. The MEA is conducted concurrently and interactively with the BDA.

   c. Reattack recommendation or future targeting. This component is an assessment, derived from the results of the BDA and MEA. It provides the commander with systematic advice on the reattack of targets and further target selection to achieve objectives. The reattack recommendation considers objective achievement, target and aimpoint selection, attack timing, tactics, and weapon system and munitions selection.

4.4.2 Joint Force Maritime Component Commander Support to the Joint Targeting Process

The JFMCC responsibility to joint targeting includes:

1. Attack targets identified in the joint targeting cycle.

2. Identify critical targets in the maritime battlespace.

3. Assist the CJTF in formulating guidance.

4. Conduct target development.

5. Consolidate and nominate deconflicted and prioritized targets for inclusion in the JIPTL.

6. Provide appropriate representation to the JTCB process to justify JFMCC-nominated targets and target prioritizations.

7. Coordinate targeting in the maritime battlespace via the NALE to the JAOC.

8. Conduct combat assessment.

4.5 JOINT COMPONENT PLANNING PROCESS

4.5.1 Joint Strike Management

In a JTF, there are normally several air-capable components operating with separate roles and missions under the CJTF. In this situation, it is necessary for the CJTF to exercise a degree of management of component air assets by using apportionment guidance and the cross-force allotment of component excess sorties. The JFACC (if designated), in consultation and coordination with the other air-capable components, allocates sorties in accordance with CJTF direction. This is accomplished through an interrelated series of message exchanges that provide a means of requesting and scheduling air sorties to achieve specific JTF objectives on a preplanned and immediate basis.

When the amphibious objective area (AOA) is established, CATF maintains overall authority for operations within the AOA and exercises command authority over the entire ATF. CATF consolidates Marine Corps air requests within the requirements of the ATF and will internally obtain Navy air support from the supporting CSG. CATF will submit a consolidated air operations schedule to the commander, CSG for inclusion in the overall air employment or allocation plan. As conditions warrant, CATF passes control of supporting arms ashore to commander, landing force (CLF), while retaining overall authority. Once control is ashore and the AOA remains in effect, CLF is then responsible for consolidating and submitting the Navy and Marine Corps air requirements to the commander, CSG. The commander, CSG, will normally only report excess sorties to the CJTF after meeting CLF and CATF requirements. If a CSG is not assigned, CLF will submit the air operations schedule and requests directly to the CJTF.

During sustained operations ashore, the MAGTF commander will retain OPCON of organic air assets. The primary mission of the MAGTF ACE is support of the MAGTF GCE. During joint operations, MAGTF air assets will normally operate in support of the MAGTF mission. The MAGTF commander will make sorties available to the CJTF for tasking through the air component commander for air defense, long-range interdiction, and long-range reconnaissance. Sorties in excess of MAGTF direct support requirements will be provided to the CJTF for tasking through the air component commander for the support of other components of the joint force or the joint force as a whole. Nothing infringes on the authority of the CJTF in the exercise of OPCON. The CJTF assigns missions, redirects efforts (e.g., the reapportionment and reallocation of any MAGTF TACAIR sorties), and directs coordination among subordinate commanders to ensure unity of effort in accomplishing the overall mission, or to maintain integrity of the force.

4.5.1.1 Joint Guidance, Apportionment, and Targeting Team

The joint guidance, apportionment, and targeting (JGAT) team facilitates the joint air targeting cycle for the JFACC. The JGAT team will:

1. Link targets to be attacked by JFACC aviation forces to the commanders' guidance.

2. Deconflict and coordinate target nominations based on estimates of how many targets can be attacked.

3. Make recommendations for air apportionment.

4. Provide other targeting support requiring component input at the JFACC level.

If the CJTF delegates joint targeting coordination authority to the JFACC, the JGAT team also receives all target nominations and prioritizes them into the draft JIPTL. The JGAT team formulates air apportionment recommendations that the JFACC submits to the CJTF for upcoming targeting cycles. The JGAT team provides a useful forum for component input into the air apportionment recommendation process. With the air capabilities required to attack targets on the draft JIPTL as a benchmark, the team can recommend the level of air effort to be applied to air interdiction, counterair, close air support, strategic attack, and other air missions. The result is the draft JIPTL and air apportionment recommendation that are forwarded to the JTCB for coordination and final approval by the CJTF.

4.5.1.2 Joint Air Tasking Cycle

A joint air tasking cycle begins with the CJTF apportionment process. Apportionment is based upon priorities established by the CJTF during consultation with the subordinate commanders, and is designed to ensure the optimal distribution of limited assets among various air missions (e.g., air interdiction, counterair, close air support, tactical air reconnaissance, air logistic support, and special air operations). The cycle accommodates changing tactical situations or CJTF guidance, as well as requests for support from the JFMCC and other component commanders.

The joint ATO articulates tasking for joint air operations for a specific time, normally 24 hours. The execution time may be dependent on the required operations and is published in the CJTF OPLAN and JFACC JAOP. The ATO matches specific targets compiled by the JFACC with the capabilities and forces made available to the JFACC for the given air tasking day. Other component air missions that appear on the ATO are not under the control of the JFACC, but their presence on the ATO provides visibility to assist overall coordination and deconfliction. Planning normally begins 46–72 hours in advance of the execution period to enable the integration of all component requirements. The net result of this planning effort is that there are usually four ATOs in various stages of progress at any time: the ATO currently being executed; the ATO being developed/produced; the ATO in planning and the ATO being assessed.

The air tasking cycle consists of six phases that are based on the joint targeting cycle. The difference between the two is that the air tasking cycle is time-dependent and interrelates with the phases of producing and executing the ATO. As discussed in JPs 3-30 and 3-60, the phases of the joint air tasking cycle, and how they interrelate with the ATO are:

1. Phase 1. JFACC guidance. The JFACC provides the Combat Plans Division with broad guidance based on CJTF priorities and guidance, coordination with other component commanders, and the JFACC objectives. This is normally transmitted in a commander's intent statement and guides the planning for the duration of that ATO cycle. At the JFMCC level, JFMCC objectives, guidance, and tasks drive targeting and determine targeting objectives in line with the CJTF. After consulting with the JFMCC and other component commanders, the JFACC makes the air apportionment recommendation to the CJTF. If a JFACC is not used, this process will be conducted for each Service component performing air operations.

2. Phase 2. Target development. The CJTF objectives are used to focus target development. The JGAT team collates target nominations from the JFMCC and other components. It screens all nominated targets for relevance to ensure compliance with CJTF guidance. It prioritizes the nominated targets based on the best potential achievement of CJTF guidance and the components' priorities and timing requirements. The JIPTL, when approved and signed by the JFACC, is the product of this effort.

3. Phase 3. Weaponeering assessment/allocation. The JFACC targeting personnel, including JFMCC targeting representatives, quantify the required results of lethal and nonlethal weapons employment against the JIPTL to satisfy the desired effects. All approved targets are weaponeered to include detailed recommended aimpoints, options for number/type missiles or aircraft and weapons, fusing, target identification and description, target attack objectives, target area threats, and percentage/probability of destruction. During this step, targeteers consider any required effects by the nominating component, such as duration of effects and type of kill (firepower vs. mobility vs. personnel vs. catastrophic) while minimizing collateral damage. The final prioritized target lists are then provided to a MAAP team. The MAAP team allocates air power by melding available capabilities with the JGAT recommendations. The result is the plan of employment that forms the foundation of the ATO.

   The JFMCC may submit critical changes to target requests and asset availability during this final phase of ATO development. Following the CJTF air apportionment decision, the JFACC translates that decision into the total number of sorties by aircraft type available for each objective/task. Based on the CJTF air apportionment decision, internal requirements, and air-support request messages, the JFMCC and other air-capable components prepare air allocation/request messages for transmission to the JFACC. The air allocation/request message reports excess sorties not required by the JFMCC and available for tasking by the JFACC. The message also includes a request for air support and is sent to the JFACC normally 36 hours prior to the start of the air-tasking day that coincides with the start of the MAAP process.

4. Phase 4. ATO production. The ATO tasks units to specific targets, assigns time on targets, tasks supporting assets and controlling agencies, and contains the ACO and SPINS. The SPINS address specific issues such as command and control, frequency plans, on-order and planned FSCMs, ROE, and other mission planning information at the unit level. The CJTF and JFACC guidance, including the air operations directive, target worksheets, MAAP, and JFMCC and other component requirements are used to finalize the ATO/ACO/SPINS. Airspace control and air defense instructions must be provided in sufficient detail

to allow the JFMCC to plan and execute all missions listed in the ATO. These directions must enable combat operations without undue restrictions, balancing combat effectiveness with the safe, orderly, and expeditious use of airspace. Instructions must provide for quick coordination of task assignment or reassignment and must direct aircraft identification and engagement procedures and ROE that are appropriate to the nature of the threat. These instructions should also consider the volume of friendly air traffic, friendly air defense requirements, identification, friend or foe technology, weather, and adversary capabilities. Instructions are contained in the ACO and SPINS and are updated as required.

5. Phase 5. Force execution. Detailed mission planning occurs at the unit level (decentralized execution) when the ATO frags are received. During joint ATO execution, the Combat Operations Division within the JAOC manages and revises the ATO to ensure that CJTF objectives are achieved. The Division retargets missions as necessary to support new objectives, current intelligence, or changing priorities. Critical mission-specific operational data during this phase is required to plan intelligence collection and perform the BDA. The JFACC directs the execution of air capabilities and forces made available for joint air operations. Inherent in that is the authority to redirect joint air assets. The JFACC will coordinate with the JFMCC and other affected component commanders upon redirection of joint sorties previously allocated for support of component operations. JFMCC aircraft or other capabilities and forces not apportioned for joint air operations, but included in the ATO for coordination purposes, will be redirected only with the approval of the JFMCC or respective component commander.

6. Phase 6. Combat assessment. CA, the final phase of the joint targeting process, is where the determination is made on the effectiveness of force employment. To ensure successful campaign planning and execution, the CJTF CA cell continually evaluates the impact of joint force combat operations on the overall campaign. CA considers the desired effects against the targets attacked, clues as to the actual effectiveness of weapon systems employed, and the remaining adversary warfighting capabilities relative to the objectives and strategy. Clearly established measures of merit are closely linked to the CJTF objectives and are vital to the feedback received in the CA phase. Adversary capabilities and future courses of action are weighed against established CJTF and component targeting priorities to determine future targeting objectives and reattack recommendations. As CA marks the end of the air tasking cycle, it also provides the inputs for reinitiating the process and subsequent target development, weaponeering/allocation, ATO development, force execution, and combat assessment.

4.5.1.3 Joint Air Tasking Cycle Messages

A detailed discussion and message text formats are found in the Chairman of the Joint Chiefs of Staff Manual (CJCSM) 6120.05, Manual for Tactical Command and Control Planning Guidance for Joint Operations. The Manual provides procedures for each of the joint air tasking cycle messages listed below:

1. Air Support Request (AIRSUPREQ)

2. Air Allocation/Request (ALLOREQ)

3. Sortie Allotment (SORTIEALOT)

4. Air Tasking Order/Confirmation (ATOCONF)

5. Request Confirmation (REQCONF)

6. Air Mission Request Status/Tasking (REQSTATASK)

7. Alert Launch Order (ALORD)

8. Joint Launch Report (JLNCHREP)

9. Air Tasking Order (ATO).

There are three voice-only messages associated with the AIRSUPREQ that are a backup to the record message used to request preplanned air support. These voice-only messages are:

1. Air Request Support (AIRREQSUP)

2. Air Request Jammer (AIRREQJAM)

3. Air Request Reconnaissance (AIRREQRECON).

4.5.1.4 Joint Air Tasking Cycle Preplanned Mission Communication

The process of preparing for an upcoming 24-hour air-tasking day involves the formulation of a specific category of missions known as preplanned missions, and in the context of this publication, preplanned strike- and fire-support missions. The CJTF OPLANs specify the precise definition of the air-tasking day (start time, end time). The times specified for the message flow of the air tasking cycle are also specified. Apportionment guidance may be issued by the CJTF as required, depending on the tactical situation within the JOA. With this guidance, the JFACC and the Service component commanders allocate and task air mission support identified by the CJTF. The following paragraphs discuss the exchange of messages in accomplishing overall objectives.

1. Request. Supported Service components prepare preplanned mission requests (air support requests) for the next air-tasking day. The AIRSUPREQ message format *may be* used intra-Service, but *must be* used inter-Service. These messages must be forwarded to the appropriate supporting air-capable Service component prior to the applicable air-tasking day (usually more than 24 hours prior) in accordance with established OPLANs. Each Service component should establish and specify the exact deadline in their OPLANs.

2. Allocation. Upon receipt of all AIRSUPREQ messages, each air-capable Service component prepares an ALLOREQ message for transmission to the JFACC NLT 24 hours prior to the air-tasking day. This message addresses two areas:

   a. A description of how the Service component plans to allocate the air sorties as the result of the CJTF apportionment guidance and internal requirements. Assigned mission and type aircraft report the number of sorties flown during the air-tasking day. Excess sorties that are not needed by the Service component, and that are available for joint support or cross-force tasking by the JFACC, are also reported.

   b. Requests for additional air support, beyond the capability of the Service component. The Service components provide mission details to enable the JFACC to determine if a request warrants approval and, if so, to allow the supporting Service component to fulfill the mission.

3. Allotment. The JFACC reviews each Service component ALLOREQ and prepares a SORTIEALOT message for transmission back to the Service component NLT 19 hours prior to the applicable air-tasking day or in accordance with established OPLANs. This message addresses four basic requirements:

   a. Revisions, if any, to a Service component planned allocation of sorties necessitated by unforeseen requirements and within the CJTF apportionment guidance.

   b. Approval or disapproval of Service component requests and allotment of other Service component excess sorties to fill the approval requests.

   c. Allotment of Service component excess sorties to fill mission requirements for the benefit of the force as a whole or for cross-force tasking.

   d. Revisions to mission data for Service component requests such as a changed mission priority or time on target. This is usually the result of informal coordination between Service components and the JFACC.

4. Tasking/confirmation. Upon receipt of the SORTIEALOT message, each Service component determines how it will satisfy the cross-force tasking assigned by the JFACC. Once this is accomplished, the Service component will task designated subordinate units and confirm to the requesting Service component and the tasking authority that it will provide the support. This may be accomplished using an ATOCONF message, a REQCONF message, or ATO, which must be transmitted NLT 12 hours prior to the next air-asking day or in accordance with established plans for the theater of operations.

5. Amplification. If, after transmission of the original request in the ALLOREQ and subsequent approval by the JFACC in the SORTIEALOT message, additional information on the requested mission becomes available, the requesting Service component will send the additional mission detail information to the tasked Service component using an AIRSUPREQ message.

6. On-call missions. When requests have been approved in the SORTIEALOT that do not involve implicit mission start times, it may be necessary to establish on-call or deck-alert missions, pending receipt of exact launch times or other formal missions details from the supported Service component. When this information becomes available, these missions may be executed by the supported Service component using the ALORD. When a mission is launched, or is delayed, aborted, or canceled, the supporting Service component uses the JLNCHREP to inform the supported Service component. This message is then used by the supporting Service component as follow-up until the mission is finally launched or canceled.

7. Close support relationship. When a close support relationship has been established (e.g., the Air Force supporting the Army, or a CVW supporting amphibious operations), or direct liaison or coordination has been authorized, the preplanned mission request begins with the supported Service component sending the supporting Service component an AIRSUPREQ, and ends with the supporting Service component responding with the ATOCONF, REQCONF, or ATO. Preplanned mission requests that cannot be filled by the supporting Service component will be included as requests in the ALLOREQ that is sent to the JFACC. The supporting Service component will handle these requests throughout the remainder of the air tasking cycle, until the requests are satisfied by a task or are disapproved. The supporting Service component will ensure that the supported Service component is kept informed.

4.5.1.5 Joint Air Tasking Cycle Immediate Mission Communication

The requirement to respond to AIRSUPREQ messages that cannot be identified in sufficient time to be included in the preplanned strike- and fire-support mission planning is handled by formulating immediate missions. For the purpose of cross-force tasking, this is usually after transmission of the ALLOREQ. It is caused by unforeseen changes in the tactical situation and results in adjusted priorities for the use of air resources on short notice. Aircraft used to fill immediate mission requests normally come from on-call missions established for this purpose or on-call or scheduled preplanned missions diverted from their original purpose.

The following situations apply to the use of immediate mission requests:

1. Close support relationship. When a close support relationship exists, immediate air requests can be handled in two ways:

   a. On-call support package established. In this case, the supporting Service component agrees in advance to identify a predetermined number of sorties as on-call, alert, or deck alert in expectation of the supported Service component immediate request. When these sorties are needed, the supported Service component sends an ALORD to the supporting Service component that responds with a JLNCHREP in the same manner as described for preplanned missions.

   b. No on-call support package. When the supported Service component commander identifies an immediate requirement, an AIRSUPREQ message is sent to the supporting Service component. If the supporting Service component can fill the request, and a quick response launch is required, the supported Service component replies with a JLNCHREP message. If a quick response launch is not required, but a time-on-target is requested later, and the supporting Service component can provide

the support requested, a REQCONF message is sent back to the supported Service component. If the supporting Service component cannot fill the AIRSUPREQ, the AIRSUPREQ is referred to the JFACC while keeping the supported Service component informed. If the JFACC approves the request and can identify through coordination that appropriate sorties are available from another Service component, a REQSTATASK message is sent to task the sorties and inform the requesting Service component. The tasked Service component then responds with a JLNCHREP or REQCONF message to the requesting Service component, depending on the response for time on target. If the JFACC disapproves the request, a REQSTATASK message is sent to the supporting Service component indicating disapproval and informing the requesting Service and CJTF.

2. No close support relationship. In this situation, the requesting Service component goes directly to the JFACC with an AIRSUPREQ. If the JFACC approves the request and determines through coordination that another Service component has appropriate sorties available, a REQSTATASK message is sent, tasking the sorties and informing the requesting Service components of the action taken. The tasked Service component then responds to the requesting Service component with either a JLNCHREP or REQCONF message depending on the required response for time on target. If, however, the JFACC does not approve the request, it will send a REQSTATASK back to the requesting Service component and CJTF indicating disapproval.

4.5.1.6 Joint Tomahawk Mission Tasking

The CJTF and OTC/CWC/CATF are authorized to order a subordinate command to execute the employment of TLAMs, but only after first receiving tasking from higher authority. The INDIGO mission order message is addressed to the firing unit and/or controlling authority. The launch sequence plan (LSP) message is used to plan one or more TLAM engagements. This message is not an authorization for missile selection, powerup, or launch. The firing unit uses the INDIGO firing report to provide a summary of the completed TLAM mission. Included with the INDIGO firing report are the missiles, missions, and times en route, times at first waypoint or on target, and missiles remaining on board ship.

4.5.2 Joint Fire-Support Management

Fire support is the collective and coordinated use of indirect-fire weapons, armed aircraft, and other lethal and nonlethal means such as mortars, field artillery, air support, and naval surface fire in support of battle plans. These weapon systems are the parts of the total fire-support system that provide long-range, responsive, flexible combat power. In joint operations ashore, the JFLCC and field artillery commander, acting as the fire support coordinator (FSCOORD), integrate maneuver, fire support, and direct fire concurrently into the battle plan.

The FSCOORD is the principal assistant to the maneuver commander and is responsible for the proper integration and application of all fire support. When NSFS is available to the land forces, it is incorporated into the fire support plan by the FSCOORD. Many of the measures used to coordinate fires of the NSFS ships are identical to those used by the FSCOORD for the field artillery and tactical air. The fire-support system consists of target acquisition, weapons and ammunition, and command, control, and coordination. The Army and Marine Corps use the automated AFATDS C2 system in the employment of fire support in joint operations.

4.5.2.1 Joint Fire-Support Targeting Cycle

Effective fire-support planning enables the commander to provide synchronized, responsive, and sustained fire support that protects and ensures freedom of maneuver to forces in contact with the enemy. The maritime and land components use two interrelated processes to conduct fire-support planning and at the same time interface with the joint targeting cycle.

The first process incorporates the same fundamental functions of the joint targeting cycle and is known as the decide, detect, deliver, assess (D3A) methodology. The D3A methodology facilitates the synchronizing of maneuver, intelligence, and fire support. (See JPs 3-09 and 3-60.)

The four phases of the D3A targeting process are:

1. Phase 1. Decide. Target categories are identified for engagement. Fire support, intelligence, and operations personnel decide what targets to look for, where the targets can be found on the battlefield, who can locate those targets, and how the targets should be attacked, based on the commander's intent and the desired end state. Together, they determine the available assets to be allocated and what additional assets are required. They also identify channels needed to provide acquisition information on a real-time basis.

2. Phase 2. Detect. The detect phase is designed to acquire the targets selected in the decide phase. In this phase, target acquisition assets and agencies execute the ISR collection plan and focus on specific areas of interest. Targets must be monitored after detection (especially mobile targets). Tracking is an essential element of the detect function. Tracking priorities are based on the commander's concept of the operation and targeting priorities. Detection and tracking are executed using an ISR collection plan.

3. Phase 3. Deliver. The deliver phase involves selecting the right attack system (lethal or nonlethal) and attacking specific threat functions and targets in accordance with the attack guidance.

4. Phase 4. Assess. Assess is the estimate of damage resulting from the use of military force against a target. Assessment requires extensive coordination between operational and intelligence elements to be effective, timely, and accurate. A key element of the assess function is the decision as to whether the target requires reattack in order to achieve the desired level of effects specified by the commander.

The second process involves the development of a COA and war-gaming. For any given operation, planners must look at the desired outcome and by changing key variables such as weather, forces made available, and anticipated adversary reaction, develop various courses of action to achieve the desired result. Each COA is then war-gamed using computer-based war-gaming systems or simple tabletop gaming procedures. The business of the land commander's operational planning team is to develop and war-game courses of action.

4.5.2.2 Fire-Support Intelligence Acquisition

Target acquisition is the timely detection, identification, and location of targets in sufficient detail to permit effective attack by supporting weapons. The target acquisition process involves Service C2 elements exchanging target information, establishing and announcing targeting criteria, and requesting artillery target data in order to develop or amend a fire-support fire plan.

The artillery target intelligence messages used in the fire-support system in joint operations are:

1. Artillery Target Intelligence-Target Criteria (ATI.TCRIT)

2. Artillery Target Intelligence-Target Information Request (ATI.TIR)

3. Artillery Target Intelligence-Artillery Target Report (ATI.ATR).

The Service components use the ATI.TCRIT to send the commanders' established criteria to other Service components. Only those targets meeting the commanders' established criteria will be reported. The targets will be reported using one of two methods. In the first method, those targets meeting criteria for immediate engagement will be reported using the ATI.ATR message (with the effects required for an immediate fire mission). In the second method, those targets meeting planning criteria will be reported using the ATI.ATR message. The ATI.TCRIT message may be used to amend or cancel the established criteria. When requesting target information, the Service component C2 elements send the ATI.TIR message to another Service component.

4.5.2.3 Fire-Support Planning and Coordination

Fire-support planning begins when a force commander gets (or assumes) a mission. The planning sequence is as follows: receipt of mission, planning guidance, information collection, commander's estimate, concept of operation, preparation of plans, approval of orders, and execution. Fire-support planning may be formal or informal, depending on the level at which the planning occurs and the time available.

Fire-support coordination includes the implementation of the fire-support plan and the managing of fire-support assets. Planning dominates during the beginning stages of an operation, while the coordination becomes more and more important as the execution approaches.

The MTF messages exchanged during fire-support planning and coordination in joint operations are:

1. Modification-Attack Criteria (MOD.ATTACK)
2. Modification-Exclude Criteria (MOD.XCLUDE)
3. Fire Planning-Reserve Fire Unit (FP.RESFU)
4. Support-Air Corridor (SPRT.AIRCOR)
5. Support-Battlefield Geometry (SPRT.GEOM)
6. Ammunition Fire Unit-Deployment Command (AFU.DCMD)
7. Fire Planning-Fire Plan Target List (FP.FPT)
8. Fire Planning-Compute a Fire Plan (FP.COMPFP)
9. Fire Support Element-Friendly Unit Location (FSE.FRD)
10. Support-Damage Avoidance Area (SPRT.DAACAT)
11. System-Request for Report (SYS.RFR)
12. System-Reply or Remarks Message (SYS.RRM)
13. Ammunition Fire Unit-Mission Fired Report (AFU.MFR).

In a formal or informal fire-support planning process, the maneuver OPLAN or OPORD creates the environment and parameters within which the total forces must operate. A fire-support plan is then generated that tells how the fire-support assets (field artillery, air support, NSFS) will be employed to support the maneuver OPLAN or OPORD. Fire-support plans are further amplified by field artillery support plans, NSFS plans, and/or air-support plans depending on which of the fire-support assets are allocated to the force.

Each separate plan details how its respective assets will be used to comply with the fire-support plan. Next, the field artillery support plan, NSFS, and/or air-support plan may be further amplified by creating a fire plan or fire plans that describe specifically how the respective fire-support assets will be used for conduct of certain operations. For example, a field artillery support plan may include fire plans dealing with preparatory fires, counterbattery programs, or movement series to support a particular maneuver phase. When all these fire plans are combined, they make up most of the field artillery support plan. Specifically, for a particular fire plan, identified in the fire-planning messages, the only fire-plan product is a schedule of fires. The schedule of fires is published using the FP.FPT and FP.COMPFP messages.

Message exchanges for fire-support planning prior to and during amphibious operations are as follows:

1. Prior to the formation of the amphibious objective area, the OTC/CWC/CATF will transmit and receive the AFU.DCMD, SYS.RFR, and MOD.XCLUDE.

2. During the amphibious assault, prior to the transition of CLF ashore, the OTC/CWC/CATF as the CATF C2 element is responsible for the coordination of artillery and naval surface fire units.

The OTC/CWC/CATF will transmit the following messages:

1. Ammunition Fire Unit-Ammunition Status (AFU.AMS)

2. FP.FPT

3. FP.COMPFP

4. MOD.XCLUDE

5. SPRT.AIRCOR

6. SPRT.GEOM

7. SYS.RRM.

4.5.2.4 Fire-Support Execution

The AFATDS fire-support C2 system automates actions with standardized message formats. Fire-support execution includes the following actions:

1. Initiate request for surface-delivered fire support. The fire mission call-for-fire message (FM.CFF) is used to request or order surface-delivered fire support on a target. The FM.CFF is exchanged jointly between a fire-support facility of one Service and a fire support facility of another Service.

2. Order surface-delivered fire support. The fire mission-message to observer (FM.MTO) is used to provide the requestor of fire support with data on an approved fire mission. The FM.MTO will be exchanged jointly when an observer of one Service will be observing (or adjusting) the fire delivered on target by fire-support units of another Service.

3. Initiate fire control. The fire mission-fire mission command (FM.FMC) is used to fire, check fire, cease loading, cancel check fire, cancel cease loading, and to provide specified information. The FM.FMC should be used by a C2 element of one Service and that of another Service to exchange fire-support safety commands and reports to an observer. This message should be used to provide to the observer shot, splash, ready, rounds complete, and when the fires element cannot comply with the fire mission.

4. Initiate fire adjustment. The fire mission-subsequent adjustment (FM.SUB) adjusts the fall of munitions against a target, changes elements of an initial call for fire, or reports the results of the mission. It reports surveillance information and end of mission for adjust and fire-for-effect missions. The FM.SUB message will be exchanged between C2 elements when an observer of one Service is observing or adjusting the fire delivered on a target by fire-support units of another Service.

5. Report fire-support results. The ammunition fire unit-mission fired report (AFU.MFR) message is used to report results evaluation providing target information, the type of ammunition expended on the target, and target status.

(See NTTP 3-09.2/MCRP 3-16.6, JFIRE, Multiservice Procedures for the Joint Application of Firepower, for voice message templates that may be used with radio procedures. For NATO-specific procedures, see Allied Tactical Publication (ATP) 4, Allied Naval Gunfire Support.)

4.6 TIME-SENSITIVE TARGET TARGETING

JP 2-01.1, Joint Tactics, Techniques, and Procedures for Intelligence Support to Targeting, states that time-sensitive targets are those targets of such high priority that the CJTF designates them as requiring immediate response. This category of target is considered to impose an immediate or soon-to-be immediate danger to the joint force, or to be a highly lucrative but fleeting target of opportunity. This requires the conduct of all the steps of the joint targeting cycle to be limited to a short time cycle. The time-critical nature of TST operations requires that the joint targeting cycle support assets conducting ISR, strike, or fire support, and BDA assets to be continuously active or immediately on-call.

The TST targeting cycle is a compressed six-step cycle incorporating phases from the joint targeting cycle, joint air tasking cycle, and the joint fire-support targeting cycle. The six steps are detection, location, identification, decision, strike, and assessment.

1. Step 1. Detection. Detection notification should flow to designated ISR battle management agencies/cells or to appropriate command agencies as directed. It is the responsibility of the detecting element to ensure that information is sent to and received by the appropriate coordinating/executing agency. In turn, such agencies fuse multisensor data (when available) and notify targeting agents of possible TST detection. The accelerated TST execution cycle begins with the detection of an event as reported by various intelligence sources (SIGINT, IMINT, HUMINT, MASINT, OSINT). Examples of events include the launch of a theater ballistic missile reported by a national ISR platform, observation of a group of vehicles by an unmanned aerial vehicle, or the sighting of a tactical radar system by special operations forces.

2. Step 2. Location. If detection yields a potential TST, the detecting element receiving indications initiates procedures to locate the potential target. If the element assesses the target as potentially time-sensitive based on location and indications, it notifies appropriate TST execution authorities for further development and decisionmaking. If a detecting element source data can be exploited by another component, this information should be forwarded via appropriate component liaisons or systems. If assets and priorities allow, mobile TSTs should be tracked throughout the mission attack cycle to support dynamic retasking and rapid restrike if necessary.

3. Step 3. Identification. Identification determines the existence and validity of a detected TST, fuses TST information, and provides a recommendation for attack. Unplanned and unanticipated TSTs are evaluated in this phase, which consists of two subfunctions: intelligence analysis and operational assessment.

   a. Intelligence analysis evaluates and compares acquired data with existing guidance, plans, and available information to confirm the existence of a TST and the need to prosecute. Acquired data is compared with intelligence preparation of the battlespace (IPB) baselines and fused with multiple source data. If insufficient information exists to confirm the existence of a TST, targeting analysts determine the need to continue collection. If sufficient information exists confirming the presence of a TST, targeting personnel evaluate the emerging target with commanders' objectives, guidance, and intent. If it matches commander-established priorities and thresholds, criticality and perishability is evaluated.

      The TST receives a relative importance ranking based on the target environment, the target-type priority, and current operations. For TSTs requiring immediate response, target vulnerabilities are identified and desired points of impact (DPIs)/designated mean points of impact (DMPIs) are developed (if applicable). If a measure of effectiveness does not exist for the TST, targeting personnel recommend desired effects and measures of effectiveness to the target. From this intelligence assessment, targeting analysts develop a strike/no-strike recommendation for consideration by operations planners. Planners evaluate this information to decide whether to continue or discontinue development on the potential TST.

b. Operational assessment determines the best weapon/target pairing and availability of assets to prosecute the TST. Further, it prioritizes prosecutable TSTs and makes a force reapportionment recommendation for approval by the appropriate commander. Targeting analysts develop weaponeering solutions, or use weapon/target pairings developed in the preplanned targeting cycle for each DPI/DMPI. Additionally, targeting analysts perform a collateral-damage assessment. For fixed facilities, targeting personnel mensurate coordinates for each DPI/DMPI.

   These tasks are executed at the component level for potential diversion of assets from preplanned targets. In developing solutions, ROE and law of armed conflict considerations are applied to ensure that the target and DPI/DMPI are executable. Where potential conflict exists, targeting analysts should notify operations personnel and legal representatives of such concerns and provide additional recommendations to include guidance changes, passing of target execution to another Service, or no strike. Targeting personnel assign a priority to the developed TST. Consideration of the battlespace environment, current objectives, and available assets are utilized in this prioritization. Operations and targeting personnel pass the nomination of the TST to battle managers. Targeting personnel assemble and present the necessary materials supporting recommendations to attack a target.

4. Step 4. Decision. The TST decision step represents the selection of force and assignment tasking. Targeting and intelligence analysts provide planners and operations personnel updated intelligence of threats and target status. Additionally, targeting personnel supporting TST operations notify ISR, CA, and planners of impending attacks and diverts from planned missions. Targeting personnel reincorporate non-executed targets (based on diverted planned missions) into the JIPTL. ISR and BDA personnel, in turn, notify collection managers of changes, as needed. Additionally, targeting personnel ensure that information is provided to those units executing the mission.

5. Step 5. Strike. During the strike step, targeting personnel continue to monitor operations for additional emerging threats, and return to the normal monitoring roles within the preplanned joint targeting cycle and await the BDA.

6. Step 6. Assessment. In this phase, CA analysts are responsible for monitoring, reporting, and making reattack recommendations and future targeting decisions based on mission results of current operations.

4.7 JOINT FIRES COMMAND AND CONTROL SYSTEM SUPPORT

4.7.1 Global Command and Control System-Joint

The GCCS-J v 4.0 is the DOD joint command and control system. The GCCS-J provides critical joint warfighting C2 capability throughout the various command levels from the POTUS/SecDef and CJCS down to the JTF and respective functional and Service component commanders and their staffs. The mission of the GCCS-J is to provide a C2 system for joint battlefield commanders to plan, execute, and sustain military operations ranging in size from regional tactical conflicts to full-scale, conventional wars.

The GCCS-J provides common situational awareness, fused, real-time representation of the battlespace, integrated imagery and intelligence, force and equipment readiness, force projection and planning, and mobility and agility of deployable C2 forces. The GCCS-J may support force readiness, force projection, situational awareness, intelligence, and force protection. It interfaces with the JFMCC command and control systems including the GCCS-M, TBMCS, and AFATDS. The GCCS-J functional components include:

1. GCCS common operational picture (COP). The GCCS COP provides the combatant commander with a tactical display of the battlespace within their AOR. The COP operator maintains and disseminates information concerning the warfighter in an AOR and integrates mapping and database functions in a multiwindow environment. The COP offers decision support to provide all available planned movement information for friendly, neutral, and enemy ground, maritime, and air units. The COP also incorporates features enabling the commander to predict and influence future dispositions. The amount of data displayed is tailored by filtering at the local level.

2. GCCS Integrated Imagery and Intelligence (GCCS-I3). The GCCS-I3 imagery system provides operators with a comprehensive, geographical, and timely display of the tactical situation, fused with intelligence and imagery. It allows operators to access intelligence databases and services via the COP. There are two segments: the intelligence shared data server (ISDS), and imagery transformation services (ITS) server. The ISDS handles all intelligence requirements for the COP and serves as a database management system. It manages a catalog of available imagery, known as the imagery management database (IMDB), and brokers IMDB queries by ITS and other imagery application systems. The ITS server is the actual imagery repository and the engine responsible for imagery formatting, storage, and retrieval.

3. GCCS joint threat analysis tools (JTAT)/ground template toolkit (GTT). The JTF and JFMCC J-2 analysts use the JTAT/GTT application to generate terrain suitability and other tactical decision aids based on the military aspects of terrain. The JTAT/GTT threat analysis, modeling, and templating capability aids in identifying, assessing, and estimating the adversary battlespace and centers of gravity, critical vulnerabilities, capabilities, limitations, intentions, most likely courses of action, and courses of action most dangerous to friendly forces.

   The JTF and JFMCC J-2 can rapidly evaluate the enemy situation within the AO through the review of terrain suitability and auto-generation of situation analysis products. Specifically, JTAT/GTT allows JTF and JFMCC J-2 analysts to conduct computer-assisted IPB for fires planning. This directly supports the fourth step of the process by integrating current intelligence information with terrain suitability models and auto-generation of battlefield observation refinements (BORs) and movement projections (MPs). Analysts can also provide added value to other analytical efforts in working TSTs by disambiguating intelligence information in order to provide situation assessments, actionable targeting data, and locational data for ISR planning.

4. GCCS joint targeting toolbox (JTT). The JTT is a set of automated and interoperable targeting tools that greatly enhance the ability of the JFMCC and joint forces, to support the joint targeting cycle. The products produced by the JTT include:

   a. Targets lists (JTL, JIPTL, no-strike target list)

   b. Target briefings (weapon selection, collateral damage considerations, and combat assessment)

   c. BDA reports (time-phased physical and functional damage assessments)

   d. Annotated and plotted targets overlaid onto digital maps

   e. Charts and images

   f. Target planning worksheets to support development of the ATO

   g. Mission-planning requests for Tomahawk missions

   h. Automated target folders with a web-enabled federated production capability.

5. GCCS improved many-on-many (IMOM). The IMOM is a computer simulation of electronic warfare effects. This 2-D graphical depiction of the EW environment uses digitized terrain data to show the effects of terrain masking on ground radar. In producing the simulation, IMOM also takes into consideration threat radar parametric and aircraft radar cross sections. IMOM supports the JTF J-2/5 and the JFMCC in IPB and COA analysis.

4.7.2 Joint Targeting Toolbox

The JFMCC uses the JTT to facilitate the joint targeting cycle as follows:

1. Phase 1. Commander's objectives, guidance, and intent. The JFMCC uses JTT to maintain, track, and update the CJTF objectives and guidance throughout the joint targeting cycle.

2. Phase 2. Target development, validation, nomination, and prioritization. During target development, the JFMCC uses JTT to query and provide data from the modernized intelligence database (MIDB), the joint source of targeting data, and apply the data to potential targets. JTT can also write to the MIDB. The JFMCC can use JTT to request and receive point mensuration products from various systems and workstations. JTT provides for the production of the automated target folder to catalog essential data on the target.

3. Phase 3. Capabilities analysis. The JFMCC conducts weaponeering using the JTT to obtain solutions through Joint Munitions Effectiveness Manuals (JMEMs), and store multiple solutions against many targets.

4. Phase 4. Commander's decision and force assignment. For force assignment, the JFMCC can use JTT in conjunction with joint and Service system mission-planning tools and output products to assist the warfighter in accomplishing the mission.

5. Phase 5. Mission planning and force execution. For execution planning, the JFMCC uses JTT to perform real-time queries on the status of targets, review and validate weaponeering solutions, create target imagery, and process hard-copy automated target folders.

6. Phase 6. Combat assessment. For this phase, the JFMCC can use JTT to create postmission reports and target-system assessments.

4.8 FUNCTIONAL COMMANDER COMMAND AND CONTROL SYSTEM

4.8.1 Theater Battle Management Core System

The TBMCS provides automated C2 and decision support tools to improve the planning, preparation, and execution of joint air combat. The system provides full support to force-level and unit-level warfighters throughout all phases of military operations. At the force level, the TBMCS supports the naval AOC and the Marine TACC. The TBMCS provides tasking for all air assets in the AOR, produces the ATO, and provides the JFACC with the means to plan, direct, and control all theater air operations in support of command objectives and coordinate with ground and maritime elements engaged in the same operation. Functionalities of the TBMCS are used to produce, generate, disseminate, and monitor the execution of the ATO, air defense plan, MAAP, TNLs, JIPTL, and ACO. In a joint force, the JFMCC and forces assigned use the TBMCS to make input to the ATO and ACO as well as to parse and support execution of the published ATO. In a nonjoint environment, the maritime forces can use the TBMCS to produce a Navy- or Marine-only ATO.

4.8.2 Advanced Field Artillery Tactical Data System

The AFATDS assists the commander in improving tactical planning and control of supporting arms operations. The main system component is its workstation. The AFATDS operates within the current and planned communication architecture including a local area network, combat radio, SATCOM, and the enhanced position, location, reporting system (EPLRS), and assist the commander with automated message delivery for coordination of supporting arms.

4.8.3 Global Command and Control System-Maritime

The GCCS-M is the Navy implementation to the GCCS-J. The GCCS-I3 and the TBMCS functionalities are integrated into the GCCS-M.

INTENTIONALLY BLANK

CHAPTER 5

Tactical Fires Command and Control

5.1 OVERVIEW

The naval fires mission includes the combined mission areas of sea-based battlespace-shaping strikes and fire support to maneuvering forces. Naval fires resources include naval aviation units; ship-based, land-attack missiles and gunfire; and command and control. The conduct of strike is in response to precoordinated tasking orders from higher authority such as the JFACC or JFMCC in a joint operation. In naval Service operations, the conduct of strike is in response to tasking orders from the strike warfare commander (STWC) or CATF. The conduct of strike will doctrinally follow the six-phase targeting cycle. The MAAP depicts the weapon-target paring for the conduct of strike and is the foundation of the ATO.

The conduct of fire support is in response to preplanned fire support or immediate calls-for-fire support from a littoral commander such as CATF or CLF. The maneuvering commander may maneuver to establish forces ashore or land based to attain an objective. The conduct of fire support will doctrinally follow the D3A methodology. The fire-support plan establishes how each means of fire support will support the maneuvering force.

Supporting arms agencies, working for tactical leaders, conduct fire planning for the coordinated employment of fires in support of the maneuver commander's CONOPS and scheme of maneuver. Delivery of fire is the execution of direct, general, or reinforcing fire plans and necessary coordination of operations. The proper execution of fire plans is the responsibility of different leadership individuals from joint and component commanders down to gunfire support officers, coordinating agencies, and fires elements such as gun and aircraft crews.

Naval coordinating agencies and firing units may be sea or land based. Naval tactical fires C2 systems provide near-real-time tactical viewing of the battlefield, battlefield geometry, rapid target-with-firing-unit paring, and rapid, unambiguous flow of intelligence information, fires requests, tasking orders for fires, and fires logistics information. The observer may be airborne with a direct view of the tactical situation, on the ground and in contact with an adversary, or remotely viewing the tactical situation. The observer provides targeting information through direct observation and/or illumination of the target, or indirectly through the sensors of surveillance systems such as UAVs and counterfire radar systems.

The real-time delivery of fire support is the result of a chain of events that includes:

1. An observer making a decision based on the tactical situation to transmit a fires request through either a digital or voice call for fire

2. A coordination agency validating, prioritizing, and tasking the fire-support mission

3. The firing unit receiving, processing, scheduling, and executing the fire-support mission tasking

4. The naval tactical fires C2 systems managing and expediting the chain of events.

5.2 TACTICAL FIRES LEADERSHIP

The CJTF assigns to the JFMCC required maritime forces to execute assigned tactical missions and tasking. The JFMCC is the CJTF maritime warfighter. Whether the JFMCC is a numbered fleet commander or a CSG OTC, the JFMCC is responsible for accomplishing the CJTF objectives within the JFMCC AO, as well as to establish a warfighting structure that allows the maritime force to protect itself. The JFMCC may establish a separate subordinate OTC depending on the level of resources and duties assigned. The OTC has overall responsibility for accomplishing the tactical mission of the maritime force and for executing defense of the force. Depending on the mission and the threat, the OTC may establish a CWC, principal warfare commanders (PWCs), functional warfare commanders (FWCs), and coordinators, and the force under their TACON. The Marine Corps does not subscribe to the CWC concept for amphibious operations. In support of planning and executing strike and fire support, the responsible PWCs, FWCs, and assigned coordinators maintain defined support relationships and staff augmentation.

5.2.1 Principal Warfare Commanders

The following describes the responsibility and involvement in the planning and execution of strike and fire support for principal warfare commanders:

1. Air defense commander (ADC). The ADC is responsible for the protection of the maritime force against air threats; collecting, evaluating, and disseminating air defense surveillance information and plans; and managing the employment of air defense resources. These resources include surface and aviation assets employed either in an air defense or support role. The ADC coordinates with the other warfare commanders on the employment of ships that may have dual roles. An example is the coordination between the STWC and TLAM strike coordinator (TSC) for an AEGIS platform designated to support a TLAM strike while at the same time providing air defense support to the ADC. The optimal position to launch a TLAM strike may not be the optimal position to provide air defense support. In this example, the STWC coordinates with the ADC, TSC, and TLAM launch area coordinator (LAC) to ensure that TLAM-capable air defense ships are in position and ready when required to execute TLAM strikes and that overwater flyout missile paths are deconflicted with air defense units.

2. Undersea warfare commander (USWC). The USWC is responsible for operations conducted with the intention of denying the adversary the effective use of submarines. The USWC does not execute strikes or fires support but may have TACON of TLAM-capable submarines required for strikes by the surface warfare commander. The surface warfare commander will work with the USWC, TSC, and LAC to ensure that the submarines are in position and ready when required.

3. Information warfare commander (IWC). The IWC provides the CWC with full-spectrum IO support to include electronic warfare, operations security, military deception, psychological operations, computer network defense, physical destruction of IO targets, and special IO capabilities. The IWC coordinates with the STWC on the physical destruction of IO targets.

4. Sea combat commander (SCC). In a suitable threat environment, the surface warfare commander and USWC responsibilities may be combined under the SCC.

5. Strike warfare commander. The STWC researches, plans, coordinates, directs, and executes strikes ashore. Outside of an amphibious operation, the STWC also integrates or coordinates TLAM missions via the LAC and TSC, and NSFS missions via the naval gunnery strike coordinator or naval fire support coordinator. This requires close coordination with other PWCs to manage limited strike assets and allow attainment of all mission objectives assigned to all warfare commanders. The STWC coordinates with the USWC and surface warfare commander for TLAM strike assets, and with the TSC and LAC for TLAM strike execution.

6. Surface warfare commander (SUWC). The SUWC is responsible to the CWC for the protection of the force against surface threats. The STWC may apportion fixed-wing strike assets to support the SUWC in this responsibility. The SUWC may have TACON of TLAM-capable surface ships for strikes required by the STWC. The STWC will coordinate with the SUWC, TSC, and LAC to ensure that TLAM-capable ships are in position and ready when required to execute TLAM strikes, and that overwater missile flight paths are deconflicted with each other and with other maritime vessels.

7. Commander, landing force. The CLF commands the forces ashore and is normally the MAGTF commander. CLF coordinates with CATF for requests for fires support from subordinate units.

8. Amphibious warfare commander (AMWC). The AMWC is responsible to the CWC for the movement of the landing force (LF) between the amphibious force (AF) and the shore. Based on the level of the littoral threat, the AMWC is the supported warfare commander and coordinates with the STWC, SUWC, ADC, and ASWC to create and maintain a low-threat environment in the amphibious operations area. Normally the commanding officer of the amphibious squadron (PHIBRON) is assigned the responsibilities of AMWC. The PHIBRON is the tactical organization composed of the amphibious-assault shipping used to transport troops and their equipment for an amphibious-assault operation. The PHIBRON does not include the LF.

   Amphibious operations apply maneuver principles to expeditionary power projection. Amphibious operations seek to exploit the element of surprise and capitalize on adversary weakness by projecting and applying combat power precisely at the most advantageous location and time. If the JFMCC were directed by the CJTF to carry out an amphibious operation against an adversary, then the JFMCC assigned resources would at least include the resources of the ATF and embarked MEU. In order to accomplish the amphibious operation effectively, the OTC may align the CWC to include the AMWC. (See JP 3-02.)

5.2.2 Functional Warfare Commanders

FWCs are usually established to perform duties that are more limited in scope and duration than those acted upon by PWCs. FWCs are responsible for collecting and disseminating information, and may be delegated authority to respond to threats with assigned assets. They are not normally directly involved with the C2 of strike and fire support.

Examples of functional commands are:

1. Maritime intercept operations commander (MIOC)

2. Mine warfare commander (MIWC)

3. Operational deception group commander

4. Screen commander (SC)

5. Underway replenishment group (URG) commander.

5.2.3 Composite Warfare Coordinators

Coordinators are asset and resource managers within the CWC organization. They differ from warfare commanders in that they execute policy but do not initiate autonomous actions, nor do they normally exercise TACON over strike- and fire-support assets. Coordinators are critical to the tactical planning and tactical execution of strike and fire support.

Coordinators within the CWC organization include:

1. Air resources element coordinator (AREC). The AREC manages and coordinates sea-based, fixed-wing air assets. The AREC must be keenly aware of the aircraft needs of the principal warfare commanders' directly supporting strike and fire support, ensuring the aircraft are assigned effectively; and monitoring aircraft availability, accessibility, maintenance readiness, configuration, and weapons loadout. In support of joint force responsibilities to the JFACC, the AREC is responsible to the CWC for providing naval fixed-wing air assets for theater missions. The AREC management tool is the daily carrier air plan built from the requirements in the ATO and the daily intentions messages published by the CWC warfare commanders.

2. Airspace control authority. A naval force assigns an airspace control authority only if it is operating independently and not part of a larger joint force that includes an airspace control authority for the joint theater. The airspace control authority is responsible for coordinating and managing the use of airspace by aircraft assigned to, or supporting the naval force. In support of strike and fire support, the airspace control authority develops broad policies and procedures for airspace utilization to provide control and deconfliction. Working in conjunction with the TSC and LAC, the airspace control authority may publish TLAM flyout corridors to deconflict the littoral TLAM flight paths with other aircraft. (See TLAM strike coordinator for additional TLAM deconfliction procedures.)

3. Cryptologic resources coordinator (CRC). The CRC is responsible for cryptologic direct-support operations, signals security operations, special intelligence communications, and direct Service interfaces. The CRC is not normally in direct support of strike- and fire-support operations.

4. Force over-the-horizon track coordinator (FOTC). The FOTC is responsible for establishing, maintaining, ensuring quality of, and disseminating the fused all-source common tactical picture. The CWC and subordinate warfare commanders use this picture to maintain tactical situational awareness critical in the execution of strike- and fire-support operations.

5. Force track coordinator (FTC). The FTC is responsible for ensuring an effective link 11/16 picture is available to the force. Maintaining the link picture is critical in the execution of strike and fire support.

6. Helicopter element coordinator (HEC). The HEC is responsible for managing naval force helicopter assets not in direct support of the MAGTF ACE.

7. TLAM strike coordinator. The TSC is responsible for all TLAM strike planning, coordination, and reporting in a strike or series of strikes. In a joint force operation, the TSC coordinates with the JFACC, JFMCC, CSG commanders, and subordinate commanders to ensure the effective integration of TLAMs into daily operations. A major concern in this effort is the deconfliction of TLAM flight paths. The many planning and execution options available with the Baseline IV Tomahawk Weapon Control System (TWCS) and Block IV missile require close coordination among the TSC, CJTF theater commanders, and CWC tactical commanders for deconfliction of the missile overwater and overland flight paths.

8. TLAM launch area coordinator. The LAC is the TSC principal deputy who is responsible for coordinating the launch of TLAM strike operations and overwater deconfliction.

9. Submarine operations coordinating authority (SOCA). The SOCA functions as the primary point of contact for coordinating and employing submarine support. The TSC and LAC coordinate TLAM strike operations with the SOCA.

5.3 TACTICAL FIRES COORDINATING AGENCIES

Fire support is the assistance to ground, amphibious, maritime, and special operations forces rendered by firing units to engage the adversary to delay, disrupt, neutralize, or destroy adversary forces, combat formations, and facilities. It includes artillery, mortars, and naval surface fire support (land-attack missiles and gunfire), and tactical air support (deep and close air support). Fire support entails the collective and coordinated use of weapons for optimal effectiveness, while protecting friendly forces and installations.

Successful C2 of fire support operations involves fire-support planning and coordination, tactical fire direction procedures and air operations, and technical fire direction procedures to achieve a commander's desired effects. Command and control agencies assist a commander in the coordinating, planning, and delivery of fire support.

1. Coordination. Fire-support coordination includes the planning and execution of fire so that a suitable weapon or groups of weapons adequately cover targets.

2. Planning. Supporting arms agencies conduct fire planning for the employment of their weapons so that fires will be coordinated for the maneuver commander's CONOPS. Likewise, fire-support planning must be integrated with the commander's scheme of maneuver.

3. Delivery. Delivery of fire is the execution of fire plans and necessary coordination of operations. The proper application of these parts is the responsibility of different individuals, agencies, and elements such as commanders, gunfire support officers, joint and component unit staffs, coordination agencies, and gun and aircraft crews.

5.3.1 Amphibious Force Agencies

5.3.1.1 Supporting Arms Coordination Center

Upon the initiation of planning for an amphibious operation, CATF establishes a SACC. Through this agency, CATF exercises overall coordination of all supporting fires during the amphibious assault including NSFS and air support. Representatives from the AF and assigned LF staff the SACC. Although CATF coordinates planning, CATF and CLF are equal in planning matters and decisions. They refer differences to their common superior in the operational chain of command. Once the LF is embarked aboard amphibious shipping, CATF assumes full responsibility for the AF and for the amphibious operation. If the mission changes after operations begin, an equal planning relationship will again apply.

The SACC is located aboard an amphibious ship configured with the communications facilities required to coordinate the employment of mortars, artillery, air, and naval surface fires. It functions under the supervision of the supporting arms coordinator (SAC). The SAC, with the advice of the LF fire support coordinator (FSC), integrates the fire plans of the supporting arms to ensure their most effective use in furthering CLF CONOPS and supporting the LF scheme of maneuver.

During an amphibious operation, the SACC is the primary agency that coordinates and controls all supporting fires for CATF to establish the LF ashore. CATF and CLF maintain situational awareness in the landing force operations center, located adjacent to the SACC. At the center, CATF and CLF view the operation using the GCCS-M COP. The naval gunfire officer (NGO) is a member of CATF staff who assists the SAC in planning and coordinating the execution of the NSFS plan. The LF force fires coordinator (FFC) advises the SAC of fire support requirements, coordination, and the tactical situation of the LF. The LF NGO assists the LF FSC in the SACC.

When CLF is ashore and control and coordinating agencies are operating effectively, CATF normally passes responsibility for control and coordination of supporting arms to CLF upon CLF request. Thereafter, CLF coordinates the fires of supporting arms through the Marine FFCC and subordinate Marine fire support coordination centers (FSCCs) or Army fire-support elements. CLF is then authorized to assign NSFS missions directly to NSFS ships and to supervise execution of these missions. The change in responsibility for fire-support

coordination is based on established criteria, including the capability to coordinate all ground and air fires, and is contingent on CATF decision. After passage of control and coordination responsibilities ashore, the SACC assumes a monitoring status, prepared to resume control and coordination functions, if required. (See Paragraph 5.3.2.1 for information on the FFCC/FSCC relationship.)

5.3.1.2 Navy Tactical Air Control Center

The Navy TACC is ship based within the amphibious squadron. During amphibious operations, the Navy TACC controls all air operations within the amphibious operating area or designated AO. The Navy TACC, with augmentation from LF aviation planners, is responsible for planning and conducting air operations, including CAS. Normally, the Navy TACC is collocated with the SACC.

5.3.1.3 Naval Surface Fire Support Ship Combat Information Center

On the surface combatant, land-attack operations are performed in the combat information center. The ship's commanding officer or tactical action officer maintains situational awareness over the tactical picture. Time and accuracy requirements may dictate land-attack operations to be delegate to a land-attack warfare officer. These responsibilities include reviewing and approving NSFS fire plans, and coordinating and managing calls for fire.

5.3.2 Landing Force Agencies

Various agencies and elements are established within the MAGTF to assist commanders in the execution of their fire support responsibilities. These agencies may be used for either amphibious or sustained land operations.

5.3.2.1 Force Fires/Fire Support Coordination Centers

The MAGTF CE organizes a FFCC that is responsible for overall fire-support coordination. The FFCC complements and extends the fire-support coordination of other MAGTF elements. At each level (division, regiment, and battalion) below the MAGTF CE, a FSCC is established as an advisory and coordination agency within the ground combat element. The FFCC and each FSCC assign centralized personnel, equipment, and communications facilities for the coordination of all supporting arms required at each level. The FFCC and each FSCC are staffed with representatives of the various Marine Corps and Navy supporting arms.

Typically, during the initial phase of an amphibious operation while control and coordination responsibility of supporting arms is still afloat, the FFCC provides LF representatives to the SACC. Through the FFCC and FSCCs, CLF (in the case of an amphibious operation) and subordinate commanders, respectively, plan, control, and coordinate the fires of supporting arms with the scheme of maneuver. CLF presents the fire-support plan, including the detailed support requirements from air, naval surface fire support, and artillery, to CATF for approval and implementation. The FFCC handles fire-support matters beyond the capability of the FSCCs such as resolving fire-support issues that affect the MAGTF as a whole, interfacing with appropriate staff agencies of higher, adjacent, and external commands as required. The FSCs organize and supervise the FFCC and FSCCs. The FSCs are responsible for implementing their commanders' fire-support coordination policies and directly represent their commanders in matters involving fire-support coordination.

The NGO, a member of CLF staff, provides expertise and advice on NSFS to CLF and the FFCC. The NGO reviews NSFS requirements from subordinate echelons of the LF and oversees the consolidation of these and other LF requirements into a recommended naval gunfire plan for the entire landing force. Each GCE FSCC (division, regiment, and battalion) includes a permanent NSFS section (division level) or a liaison team from the headquarters battery of the supporting artillery battalion (regimental and battalion levels) that coordinates and performs liaison between supported units and appropriate control agencies, advises the ground commander on NSFS employment, and requests and controls NSFS. A NGO controls the division NSFS section. A naval gunfire liaison officer (NGLO) heads the regimental and battalion teams.

During sustained land operations, either subsequent to an amphibious operation when CLF has moved ashore or during a nonamphibious operation, the FFCC and each FSCC continue as the primary agencies for planning and coordinating fires in support of the CONOPS of the commander, MAGTF and the scheme of maneuver, within their respective zones of action. The FFCC maintains close coordination with the GCE FSCCs in order to effect the integration of plans for close and deep supporting fires.

During sustained operations ashore, subsequent to an amphibious assault when the MAGTF is firmly established ashore, CLF may choose to exercise C2 while remaining afloat. This decision may be based on the scheme of maneuver and extended battlespace, or the desire to minimize the buildup of forces ashore. By remaining sea based, CLF and staff do not consume LF combat and logistic resources nor do they create a lucrative target ashore. Still, CLF must affect positive control over LF fire support, to include NSFS, just as if a command ashore was established. In this case, CATF would pass responsibility for fire-support coordination to CLF, with the FFCC remaining afloat. The FFCC would occupy SACC spaces. SACC representatives would continue to monitor activities and support the FFCC representatives as needed.

5.3.2.2 Marine Tactical Air Command Center

The ACE TACC (formerly Marine TACC) provides the facilities for the ACE commander and battle staffs to command, supervise, and direct Marine air operations. During amphibious operations, the ACE TACC may be incrementally phased ashore. Upon initial establishment ashore, it is a tactical air direction center (TADC) subordinate to the ATF TACC (formerly Navy TACC (afloat)) and is responsible for air operations in the landward sector of the amphibious operational area. Upon completion of its buildup, it assumes the title and responsibilities of the ACE TACC when airspace management functions are passed from afloat to ashore. The ATF TACC then becomes a TADC, in support of the ACE TACC.

5.3.2.3 Direct Air Support Center

The direct air support center (DASC) is the principal air control agency of the MACCS and is responsible for the direction and control of air operations that directly support the ground combat element. It processes and coordinates requests for immediate air support and coordinates air missions requiring integration with ground forces and other supporting arms. The DASC assigns direct air support aircraft to terminal control agencies, provides aircraft ingress and egress route instructions, and disseminates advisory information. It normally collocates with the senior FSCC within the ground combat element and is subordinate to the Marine TACC. The DASC shall:

1. Coordinate and track the ATO inclusion of joint tactical air strike requests (JTARs) for preplanned direct air support.

2. Adjust preplanned schedules and divert aircraft assets in coordination with the senior FSCC.

3. Receive and disseminate pertinent tactical information reported by aircraft in performing direct air support missions, including the BDA.

4. Receive, process, and coordinate JTARs for immediate air support.

5.3.3 Approval and Conflict Resolution Authorities

Naval fires C2 coordinates, synchronizes, and integrates the application of naval fires with other JTF combat resources. Command and control stretches from the level of the JFMCC down to specific fire-support resources and to the ultimate application of those fires. This section articulates how the amphibious commanders coordinate, approve, and resolve naval fire support requests, and potential conflicting priorities in support of the JTF, ESF, ATF, or CLF.

5.3.3.1 Joint Force Commander

The JFC is a general term that includes combatant commanders, subunified commanders, and joint task force commanders. Combatant commanders exercise COCOM. Subordinate JFCs exercise OPCON. Whether COCOM or OPCON, the JFC goal is to achieve unity of effort through unity of command. The JFC establishes the guidance and priorities for naval and land fire support in the CONOPS, operation or campaign plans, and air apportionment decision by making capabilities and forces available to the components.

If conducting operations through the Service components, the JFC may establish a support relationship between the Navy component commander and the Service component commander of the LF, or delegate OPCON or TACON of the assigned or attached AFs to a Service component. If conducting operations through a combination of Service and functional component commands with operational responsibilities, the JFC may establish a support relationship between the functional components, Service components, or other appropriate commanders, or delegate OPCON or TACON of the assigned or attached amphibious forces to a functional component or Service component commander.

Normally, joint forces are organized with a combination of Service and functional component commands with operational responsibilities. The land and naval force commanders are the supported commanders within the AO designated by the JFC. Within their designated AO, they synchronize maneuver, fires, and interdiction by designating the target priority, effects, and timing of fires.

5.3.3.2 Joint Force Maritime Component Commander

The JFMCC is the JFC maritime warfighter. The JFMCC plans and executes the JFC assigned missions by translating operational objectives and tasking into tactical action by subordinate commanders. Planning serves to direct and coordinate actions. Planning also develops a shared situational awareness among the staff and commanders, generates expectations about how actions will evolve, and how those actions will affect the desired outcome. The JFMCC synchronizes operational fires by the active participation of the JFMCC Strike/NSFS Cell. For fires support, the JFMCC may exercise C2 through the SACC in the amphibious task group flagship, or the FFCC within the amphibious force organization assigned to the JFMCC.

Note

> The amphibious operations area must be of sufficient size to conduct necessary sea, land, and air operations required to execute the mission of the amphibious force. The operational areas that may be assigned to an amphibious force in an order initiating the amphibious operation are an AOA or AO normally in conjunction with a HIDACZ.

5.3.3.3 Joint Force Air Component Commander

The JFC assigns responsibilities to the JFACC. These include, but are not limited to, planning, coordination, allocation, and tasking based on the JFC apportionment decision. Normally, the JFACC is the Service component commander with the preponderance of air assets and the capability to plan, task, and control joint air operations. Using the JFC guidance and authority, and in coordination with other Service component commanders, the JFACC will recommend to the JFC the apportionment of air sorties to various missions or geographic areas.

If a JFACC is not designated, the JFC may plan, direct, and control joint air operations. If this option is exercised, the JFC staff will assist in providing direction and coordination of the forces assigned. The responsibilities of the JFACC, AADC, and airspace control authority are interrelated and are normally assigned to one individual; however, they may be assigned to two or more individuals when the situation dictates. Based on the situation, if the JFC decides not to assign the JFACC, AADC, or airspace control authority as one individual, then close coordination between all three positions is essential.

5.3.3.4 Commander, Amphibious Task Force/Landing Force

In an amphibious operation, CATF exercises overall responsibility for coordination of naval surface fire support, air support, and landing force artillery fire support. When CLF, normally the MAGTF commander, is established ashore, CATF may pass this responsibility to CLF. Once the passage of control ashore is executed, CLF will coordinate fires within designated operational areas. When the MAGTF is embarked aboard amphibious shipping, the MAGTF commander serves concurrently as CLF. While embarked, the MAGTF commander and staff direct the actions of the task force from C2 facilities aboard the amphibious ships. The MAGTF C2 may remain afloat throughout the expeditionary operation. Shipboard C2 also supports CATF and staff that are collocated aboard the flagship.

5.3.4 Request and Approval Scenarios

Three notional command relationships in Figure 5-1 illustrate potential pitfalls and friction points that may occur during certain fire support request and approval scenarios. In each scenario there is a joint force commander (other Service) with a numbered fleet commander designated as the JFMCC. The JFMCC has organized and designated an ESF (AFs and CSGs). A MAGTF ground unit makes a valid request for an immediate CAS sortie that the amphibious force cannot fill from organic or excess sorties under task force control. The amphibious force requires air support.

Each scenario has a separate initiating directive.

1. Command relationship number one. The amphibious force has direct liaison authorized (DIRLAUTH) with the JFC or designated fire support agent (JOC/JFE, JAOC).

   Potential solution: the SACC or FFCC makes a request directly to the JFC fire-support agent (JOC/JFE, JAOC, JFACC). The two intermediate command elements, ESF and JFMCC, monitor the request. The JFC grants the request by diverting or generating additional sorties.

2. Command relationship number two. The amphibious force has NOT been granted DIRLAUTH with the JFC. However, the next-higher command element, the ESF, is granted DIRLAUTH with the JFC or designated fire-support agent (JOC/JFE, JAOC).

   Potential solution 1: the amphibious force via the SACC or FFCC makes a request directly to the ESF fire-support agent (STWC). The ESF STWC validates the request and is able to fill it from organic or excess sorties.

   Potential solution 2: the amphibious force via the SACC or FFCC makes a request directly to the ESF fire-support agent (STWC). The ESF STWC validates the request that it cannot fill and forwards it to the JFACC/JAOC for action. The one intermediate command element, the JFMCC, monitors the request. The JFC or designated fire-support agent grants the request by diverting or generating additional sorties.

3. Command relationship number three. The amphibious force and expeditionary strike force commanders are NOT granted DIRLAUTH with the JFC or designated fire-support agent. The next-higher command element, the JFMCC, has the inherent authority, via the established commander relationship, as the designated component commander to make requests directly to the JFC designated fire-support agent (JOC/JFC, JOC).

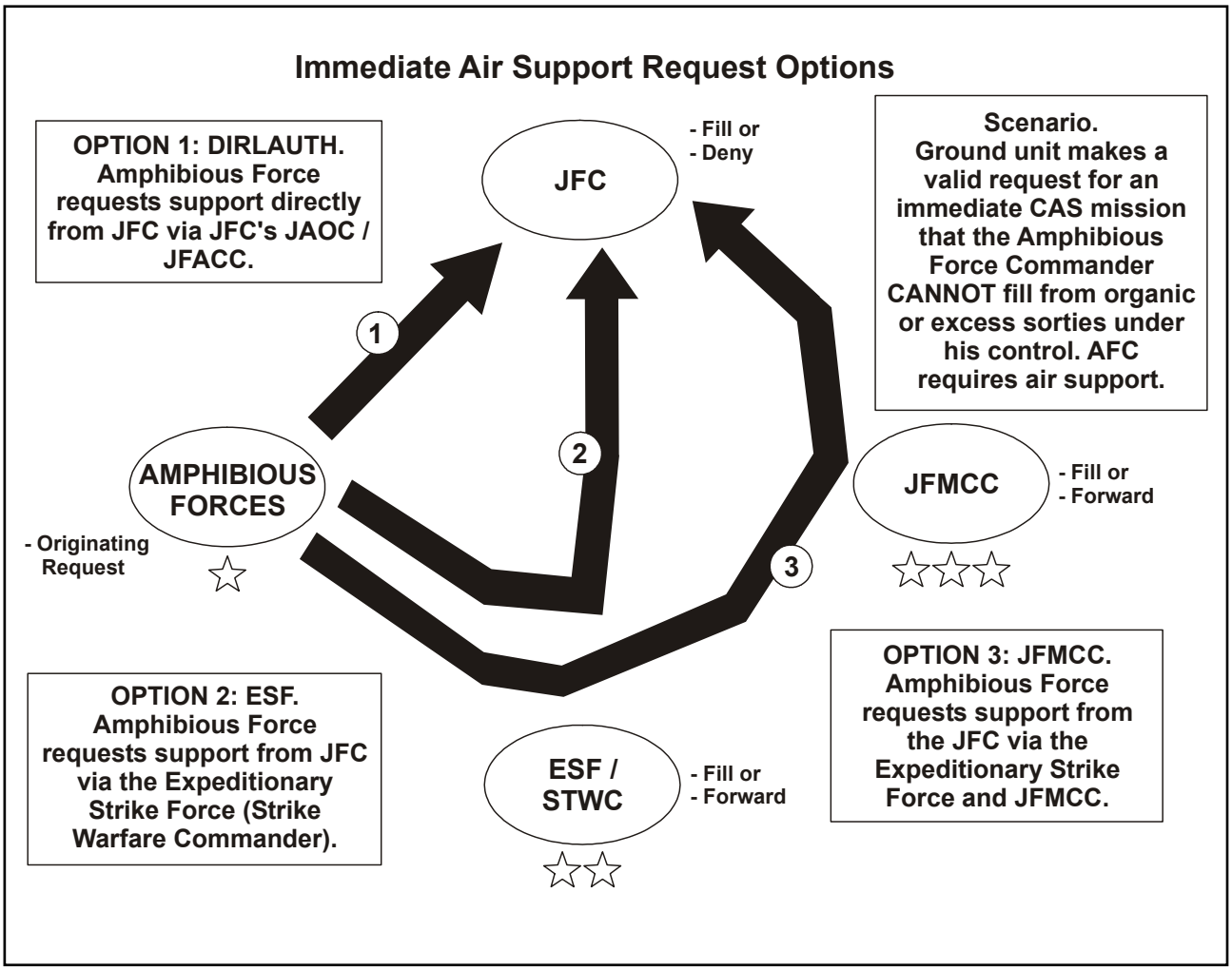

Figure 5-1. Request and Approval Scenarios

Potential solution 1: the amphibious force commander, via the SACC or FFCC, makes a request via the ESF fire-support agent (STWC). The ESF STWC validates the request, and if it cannot be filled at that level, forwards it to the JFMCC maritime operations center (MOC) current operations (COPS) fires cell for action. The JFMCC validates the request and fills it by diverting or generating excess sorties.

Potential solution 2: the amphibious force commander, via the SACC or FFCC, makes a request via the ESF fire-support agent (STWC). The ESF SWTC validates the request, and if it cannot be filled at that level, forwards it to the JFMCC (MOC–COPS fires cell) for action. The JFMCC validates the request and forwards it to the JFC or designated fire-support agent.

Note

The above potential solutions should not be construed as the textbook or definitive answers for establishing or resolving command relationship problems concerning fire-support issues. The solutions are merely provided as a starting point for further discussion and to stimulate additional possible solutions.

In accordance with the UNAAF, the MAGTF commander will retain OPCON of organic air assets. 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. Conflicts may arise when a Marine Corps TACAIR squadron is assigned to the CSG that is not part of the amphibious or expeditionary MAGTF. The MAGTF commander will not have OPCON over Marine Corps TACAIR assets assigned to a Navy command. The MAGTF commander, like other ground maneuver units without organic aviation assets, will be required to request preplanned and immediate air support.

5.3.5 Naval Tactical Air Control System

The commander's guidance forms the basis for decisions to modify missions or direct attacks that deviate from planned activity. These decisions are made with the understanding of the perspective and target priorities of other component targeting effects throughout the campaign. The intent is to resolve fire-support conflicts and achieve approval at the lowest possible echelon.

The Navy tactical air control system (NTACS) is the principal air control system afloat. The senior Navy air control agency is the ATF TACC. It is composed of the Navy TACC, TADC, and helicopter direction center. The ATF TACC is the focal point for the commander, Navy forces (COMNAVFOR) for tasking and exercising OPCON over Navy air forces. During amphibious operations and before control is passed ashore, ATF TACC controls all air operations within the amphibious operating area. The ATF TACC is responsible for planning and conducting air operations, including CAS. Typically, the ATF TACC is onboard the ATF flagship. If the JFACC command operations center is afloat, the ATF TACC may support operations for the JAOC.

The commander, Marine Corps forces (COMMARFOR), when also the JFACC, will augment the Marine TACC with elements from other components to create a JAOC. Other Services' comparable agencies include the Air Force air and space operations center (AFAOC) and the Navy TACC. The DASC is the central coordination point for all aircraft support to GCE user agencies at all echelons. The DASC assigns direct air support aircraft to terminal control agencies, provides aircraft ingress and egress route instructions, and disseminates advisory information. Depending on whether control is afloat or ashore, the ATF TACC and/or TADC supervise the DASC operation. The DASC is normally the first major air control agency to land in an amphibious operation. The DASC becomes operational when control of the operation is passed ashore and collocates (physically or electronically) with the senior GCE FSCC.

The Navy and the Marine Corps air control systems are capable of independent operations; however, in the conduct of an amphibious operation, elements of both systems are used to different degrees from the beginning of the operation until the C2 of aircraft and missiles is phased ashore. Under CATF, the Navy TACC, typically onboard the amphibious flagship, will normally be established as the agency responsible for controlling all air operations including supporting arms within the allocated airspace regardless of mission or origin. As the amphibious operation proceeds, command and control of aviation operations is phased ashore as MACCS agencies are established on the ground.

5.3.6 Close Air Support for Joint Force Operations

If a support relationship is established between components, the supporting component uses the CAS C2 system of the supported component. For example, if an Army brigade is under OPCON to a MAGTF, the Army brigade submits CAS requests through the brigade fire support element (FSE) to the Marine Corps FFCC in the MAGTF combat operations center (COC). The CAS request is handled the same as any other CAS request in the MACCS system.

If a command relationship is not established between components, each component forwards CAS requests utilizing its respective CAS process to the JAOC for consideration/fill. For example, if a MAGTF and an Army division operate as adjacent units under the JFC, each component would direct CAS requests through its respective CAS process to the JAOC.

5.4 PLANNED AND UNPLANNED REQUESTS FOR AIR SUPPORT

Fire-support planning is deliberate and continuous. Preplanned requests may be filled with either scheduled or on-call air missions, while most immediate requests are filled with on-call missions. Those CAS requirements foreseen early enough to be included in the ATO are submitted as preplanned requests. As soon as the requirements for CAS are identified during the planning process, CAS planners submit a preplanned request for CAS prior to the request cutoff time, as specified by higher headquarters. Immediate requests arise from situations that develop outside the ATO planning cycle. Because these requirements cannot be identified early on, tailored ordnance loads may not be available for specified targets.

General request and approval guidelines for air support:

1. Air support within the ability of the amphibious force and its direct support components is initiated by the AIRSUPREQ.

2. Air support beyond the ability of the amphibious force and its direct support components is initiated by the ALLOREQ.

The JFACC or equivalent approval authority approves and disseminates all requests for air support by means of the SORTIEALOT message.

1. Preplanned fixed-wing request. When adequate planning time exists (normally a minimum of 36 hours), a commander requests a JTAR with an AIRSUPREQ message.

2. Immediate fixed-wing request. When the preplanning time is not available to submit the request in time for publication in the ATO, the tactical air control party will submit an immediate air support request (JTAR). Voice requests are made using the JTAR voice format.

5.4.1 Naval Surface Fire Support

CATF allocates NSFS assets to support the landing force. During actual operations, requests are transmitted from forward observers directly to the direct support ship over the NSFS Ground Spot Net and ultimately approved by the supported unit FSCC.

Requests for reinforcing fires or general support NSFS are made by using the division NSFS support net. Requests for NSFS support by subordinate LF echelons are made by either the LF communications circuits or the division NSFS net, or both. Requests are passed to each successive higher echelon for fulfillment at a level at which an NSFS ship is available. If NSFS ships are not available or have not been assigned prior to the passing of control of NSFS ashore, the FFC submits a request to the SAC for assignment of a ship or assignment of the specific task.

Note

Direct support (DS) is a mission requiring a force to support another specific force and authorizing it to answer directly to the supported force request for assistance. General support (GS) is a mission that executes the fire directed by the commander of the unit to which it organically belongs or is attached. It fires in support of the operation as a whole rather than in support of a specific subordinate unit. Naval surface fire support, artillery, and mortar units are usually assigned DS or GS missions.

5.4.2 Artillery

Requests for direct support originate at the maneuver company, battalion, or regimental level. They are transmitted to the artillery fire direction center (FDC) that provides direct support for the requesting unit, and are normally approved by the first FSCC common to the requesting organization and artillery FDC.

Requests for reinforcing fires or general support artillery are made directly from the reinforced artillery unit to the artillery unit providing reinforcement. Requests are normally made on the reinforced artillery unit's fire direction net. Requests are not approved by the SACC or FFCC as the GS mission provides inherent approval authority to the reinforced artillery unit.

5.4.3. Mortars

Requests for mortar fire originate at the maneuver company or battalion and are transmitted to the mortar FDC. The battalion FSCC ultimately approves requests.

5.4.4 Naval Electronic Warfare

In naval task forces, the IWC is normally collocated with the CWC and is directly responsible for all aspects of electronic warfare, including necessary coordination at the joint level. When naval task forces are operating as a component of a joint force, the IWC provides an assessment of Navy EW capabilities to the other component operation centers and coordinates preplanned EW operations with appropriate component agencies.

The MAGTF headquarters electronic warfare coordination center (EWCC), if established, or the MAGTF electronic warfare officer (EWO), if there is no EWCC, is responsible for coordination of the joint aspects of MAGTF EW requirements. Requirements for other component EW support are established by the operations staff, in coordination with the aviation combat element, the ground combat element, and the combat service support element of the task force. The EWCC or EWO translate these requirements into tasks and coordinate them with the EW staffs of other component commands.

Note

> Airborne EA/ES assets, such as the EA-6B Prowler, when employed in a strike support role will be the responsibility of the STWC. The STWC is responsible for coordinating the integration of air wing assets into the ATO with the airspace control authority.

5.4.5 Tactical Tomahawk

Forward observers or forward air controllers will have the capability and authority to request TACTOM missiles direct from Tomahawk firing units. All requests will be forwarded through a fires coordination agency such as the SACC/FFCC or TSC. When a fires coordination agency is not present, the firing unit's combat information center will perform this function.

The existing amphibious warfare planning process, strike planning, and fire-support doctrine remain valid for the purpose of requesting and using TACTOM missile assets. The SACC (or possibly the FFCC) remains responsible for coordinating fire support, and must coordinate with the TSC and CWC to determine the expected level of support from the Tomahawk firing unit(s). This coordination must occur prior to the time that fire support is required. The TSC or CWC must commit to a definitive number of missiles during a particular period from specifically identified firing units. The FFCC performs similar functions ashore as the SACC does afloat. The FFCC major limitation in employing TLAM and TACTOM missiles is the availability of over-the-horizon communications assets. (See Chapter 2.)

5.4.6 Time-Sensitive Targets

To facilitate rapid engagement, distinctive ROE govern time-sensitive targets. CATF, in consultation with CLF, determines those situations where immediate engagement of a TST outweighs other operational considerations. The JFC guidance is dependent on the current situation, phase of the campaign, enemy capabilities, intelligence updates, and potential for friendly casualties, collateral damage, or duplication of effort, etc. The guidance may be changed or updated, as CATF deems necessary. Component commanders who first acquire specified TSTs may be specifically delegated the authority by CATF for immediate engagement responsibility regardless of their assigned area of operations or mission.

5.5 FIRE-SUPPORT COORDINATION SHIP-TO-SHORE

Until CLF is established ashore, control of supporting arms normally rests with CATF in support of the initial landing. Control of artillery landed with the LF is CLF responsibility. CATF can pass control of air, naval surface fire support, and artillery used in support of the initial landing to CLF after the required C2 agencies are established ashore. CATF begins passing control of supporting arms to CLF once coordination agencies are established ashore; when reliable communications are established among the DASC, ACE TACC, FSCCs ashore, and SACC; and when all other conditions warrant.

On order of CLF (or appropriate subordinate commander), the FFCC displaces ashore, leaving sufficient personnel in the SACC to provide continuity of coordination until the LF fire-support agency is established and functioning ashore. When the necessary control agencies are established ashore, control of NSFS may be passed to CLF. CLF then has the authority to assign NSFS missions directly to the fire-support ships. CATF, or a designated subordinate, retains responsibility for the allocation of available fire-support ships, their logistical support, and TACON of the ships for functions other than fire support.

During amphibious phases of a joint operation, a naval task force provides interface with the land force senior fire-support cell through the ship-based SACC. The SACC is responsible for coordinating all fires during the assault. The SACC staff is augmented with personnel and equipment from the senior landing force fire-support facility. To minimize dependence on ship-to-shore communications, landing force units coordinate laterally whenever possible and when fires clearance is required from only one other landing force unit. When ashore and prepared to do so, the landing force commander assumes responsibility for fire-support coordination. The change in responsibility for fire-support coordination is based on preestablished criteria, to include the capability to coordinate all ground and air fires, and is contingent on the decision of CATF. Often, responsibility for controlling naval surface fires and artillery is phased ashore before the responsibility for controlling aerial delivered fires.

The FFCC is usually one of the first organizations to become operational when the MAGTF CE goes ashore. However, if this is not the case, the SACC and subordinate FSCCs must be ready and able to coordinate with each other. Once FSCCs are established ashore, CATF may pass control (delegate authority) over certain functions to CLF. CLF may exercise authority through the LF staff rather than requesting that CATF conduct direct action missions that are LF functions. For example, in transferring control of NSFS to CLF, CATF delegates authority to work directly with the NSFS group commander and coordinate which LF units have DS and GS ships.

To achieve the most effective fire-support coordination, the commander responsible for overall coordination of supporting fires should also have control of all supporting fires. When CATF passes control of DAS to CLF, the situation normally permits a concurrent shift in responsibility for NSFS control and the overall coordination of supporting fires. When responsibility for control of supporting fires is passed to CLF, the appropriate supporting arms circuits continue to be monitored in the SACC. If, after the shift of responsibility, returning control of one function or another to the SACC becomes necessary, the difficulties in the separation of responsibility for supporting arms must be accepted on a temporary basis.

As soon as conditions permit, ACE air control agencies are established ashore that parallel the ATF Navy control agencies afloat. These agencies ashore are initially in a standby status, monitoring all air control circuits. At the discretion of CATF and upon the request and recommendation of CLF, control of air operations in the operating area is passed to CLF ashore. The passage of control may be incremental (e.g., control of DAS may be passed ashore before control of other aspects of air operations). After passage of any or all control to CLF, the Navy control centers afloat continue to monitor appropriate circuits, ready to assume control if necessary.

5.6 REQUEST FOR FIRE — APPROVAL AND CLEARANCE PROCEDURES

Message routing protocol determines routing of a request for fire (i.e., whether it goes initially to the SACC, FFCC, or supporting arm). Both decisions depend on communications net structure, type of transmission (data or voice), expected volume of traffic, and the training level of the SACC/FFCC. Routing requests for fire can be centralized and decentralized.

1. Centralized option. In this option, all requests for fire are sent to the SACC/FFCC for approval, and then relayed to the appropriate supporting arm. The advantage of this option is the ability of the SACC/FFCC to modify, coordinate, and clear every mission. The SACC/FFCC may be the only unit in direct communication with observers when operating on a dispersed battlefield. The primary disadvantage is the delay caused when mission coordination/deconfliction occurs prior to forwarding the mission to the appropriate supporting arm. In amphibious operations, the FFCC may be in the SACC.

2. Decentralized option. In this option, requests for fire support are sent directly to the supporting arm (NSFS ship, artillery/mortar FDC, DASC). The supporting arm processes the mission while the SACC/FFCC concurrently coordinates and clears or denies the request for fire. Advantages to this option are the speed that concurrent processing and coordinating provide and the ability of the observer to communicate directly with the supporting arm for clarification or special missions (e.g., final protective fires (FPFs), illumination fires (ILLUMs), copperhead (CPHD) artillery, or TLAM). Disadvantages to this option are the possibility of firing an uncoordinated mission when employing passive clearance and the requirement for the observer to maintain communications with the supporting arm.

5.6.1 Approval Procedures

Each naval fire-support asset comes with its specific request and approval procedures. Two options for clearing requests for fire are positive and passive clearance. These procedures specify the communication required between the SACC/FFCC and the supporting arm before firing or engaging a target.

1. Positive clearance. This procedure requires a transmission from the SACC/FFCC to the supporting arm indicating clearance or denial. This includes NSFS requests. NSFS spotters and ships must wait for the SACC/FFCC to provide clearance before giving “Ready. Break. Fire.” Voice transmissions indicating clearance or denial must be sufficiently different to avoid the chance of misunderstanding. For example, “Artillery on grid 123 456 cleared,” for approval, and, “denied clearance on grid 123 456,” are unmistakably different. Data transmissions use a plain text message stating the target number and cleared/denied. The supporting arms receipt of a call for fire from the SACC/FFCC can indicate mission clearance when utilizing centralized SACC/FFCC message routing.

2. Passive clearance. This procedure (silence is consent) does not require a transmission from the SACC/FFCC to the supporting arm to clear the mission. The supporting arm assumes the mission is cleared unless the SACC/FFCC indicates the mission is denied. This requires the FSC quickly determine which conflicts may necessitate cancellation of the mission, and perform the required coordination. The FSC should acknowledge that the message/mission has been monitored to preclude conflicts resulting from loss of communications whether using voice or data transmission.

Passive clearance can only be used in conjunction with decentralized SACC/FFCC message routing. Passive clearance (silence is consent) does not require a transmission from the SACC/FFCC to the supporting arm to clear the mission. The supporting arm assumes the mission is cleared unless the SACC/FFCC indicates the mission is denied. This requires the FSC perform the required coordination and determine conflict that may necessitate cancellation of the mission.

5.6.2 Clearance Procedures

Maneuver commanders clear fires. Normally, managing clearance of fires is delegated to their main command posts and executed by the battle staff under the lead of the FSE. In either analog or digital operations, silence is not consent. The clearance of fires requires positive action. It begins with receipt of the mission and is a part of every step in the military decisionmaking process.

The first step in effective clearance of fires is the use of maneuver control measures. The more land ownership is procedurally depicted, the better for clearing fires. If no boundaries are established, all fires short of the CFL (if established) must be cleared by the higher headquarters instead of the headquarters closest to the fires. While clearing fires is potentially more complicated in distributed, nonlinear operations, serious consideration should be given for establishing areas of operation for each subordinate maneuver unit, consistent with the scheme of maneuver.

During the execution phase of operations, the battle staff (targeting team) is continually assessing the current situation, tracking decision points, possibly preparing some type of update briefing for the commander, and looking toward the future (whether that is 6 to 36 or more hours depends on the level of command and situation). The targeting process allows for the extension of the military decisionmaking process throughout the operation by providing a forum to reconsider *who kills who* decisions and to modify or initiate actions to implement those decisions. The process normally occurs within the setting of (informal) targeting meetings. At battalion level, an abbreviated form of a targeting meeting is generally used.

The timing of the targeting meeting is critical. It must be effectively integrated into the unit's battle rhythm and nested in the higher headquarters' targeting cycle to ensure that the results of the targeting process can be implemented. Task organization changes, such as modifications to the reconnaissance and surveillance plan, ATO nominations, and changes to the HPTL and specified essential fire-support tasks, must be made with full awareness of time available to prepare and execute. While the time-focus for brigade or higher targeting meetings is normally 24–36 hours out, certain targeting decisions, such as ATO nominations, must be planned for in conjunction with the theater or corps ATO cycle, usually a 72-hour cycle.

5.7 TACTICAL FIRES COMMAND AND CONTROL SYSTEM

The naval tactical fires C2 system architecture provides for rapid voice and/or digital communication to support units in contact and the prosecution of TSTs. The architecture incorporates nodal systems and functional networks to facilitate targeting cycles for fire support and the prosecution of TSTs.

5.7.1 Advanced Field Artillery Tactical Data System

The AFATDS provides an automated capability for fire planning, tactical fire direction, and fire-support coordination at the battery level FDC and FSCC. Supporting arms fires that include rocket and tube artillery, mortar, naval surface fire support, and close air support are coordinated within the MAGTF by AFATDS. The AFATDS also provides an automated capability at the FFCC, DASC, CATF SACC, TACC, and rear area operations center (RAOC) of the CSSE to integrate all supporting arms assets into maneuver plans. The AFATDS workstations will receive, transmit, edit, display, and process fire-support requests and store FSCMs to facilitate artillery fire-support direction and coordination. A full range of fire support and maneuver control and coordination measures and geometry are displayed for fire-support coordination.

The AFATDS assists the commander by:

1. Providing for rapid fire planning and scheduling of fires
2. Providing for rapid dissemination of information via digital message transmission
3. Performing target duplication checks and suspect target processing for targets that are still subject to intelligence gathering
4. Serving as a relay station for remote stations
5. Distributing data allowing information to be transmitted automatically
6. Functioning as a single- or dual-terminal operations facility
7. Providing queries or searches of remote terminals for targets.

Using the internal and external tactical communication interface modem (TCIM), the AFATDS terminals exchange fixed and variable message formats (VMF) via EPLRS and data networks. Specifically configured in a centralized mode of operation (at the FSCC), the AFATDS can approve or disapprove all fires in its zone of fire by monitoring calls for fire and mission information copies from subordinate operational facilities and comparing missions against FSCMs. The AFATDS communicates with NSFS ships with VMF messages and transmits calls for fire and firing plans. NSFS ships transmit the ship's weapons capabilities, messages to the observer, and mission data.

5.7.2 Intelligence Operations Server

The intelligence operations servers (IOSs) are linked with adjacent, subordinate, and senior commands by networks. The IOS v1 provides automated support to the command center and each command post within the MAGTF. It supports the GCE at the regiment and division levels, the ACE at the group and wing levels, the CSSE at the group level, and the CE at the MEF and MEU levels. The IOS v1 provides map displays with overlays, friendly unit locations with status and plans of intended movement, and hostile-unit locations.

The IOS v2 automates the MAGTF direction, collection, processing, production, and dissemination of multisource critical tactical intelligence. Information received by the IOS v2 is automatically processed and archived in a journal workbook, and sorted and distributed to various databases. These databases support the situation map, provide access to plans for intelligence collection, and process and display information to the operator. Administrative support is provided through word processing, graphics, and database management system programs. The IOS v2 receives information that displays all-source data to the decisionmakers. This data is disseminated over tactical HF and UHF satellite communications. The IOS v2 mapping program uses data from the National Geospatial-Intelligence Agency (NGA) to display three-dimensional images, including terrain, which can be overlaid with tactical data such as unit positions, boundaries, and system locations.

5.7.3 Theater Battle Management Core System

The TBMCS provides the means to plan, direct, and control air operations in support of command objectives. In the joint operating area, the TBMCS provides the means to coordinate air requirements (strike and fire support) with and receive ATOs from the JFACC.

5.7.4 Command and Control Personal Computer

The command and control personal computer (C2PC) facilitates MAGTF C2 functions. The C2PC has the capability of depicting the locations of friendly and adversary units that have been entered into a tactical database, instantly share overlays and message traffic, and display mapping products from the NGA. This allows the user to choose the best digital product to understand the battlespace. The C2PC, as a situational awareness

tool, may be used to produce and export georegistered overlays depicting FSCMs. Unit-location tracks can be entered into the C2PC and universally shared. The scheme of maneuver can be entered as routes that may include predetermined destination positions and arrival times at those positions.

The C2PC decision support tool (DST) allows for the import, manipulation, and analysis of terrain data to better understand the effects of terrain on operations. By analyzing digitized terrain elevation data (DTED), the DST assists in performing terrain categorization, finding high-speed mobility corridors for tactical movement, identifying fast cross-country travel routes, and determining travel times for routes. The Intel Client tool is used to receive, manage, validate, analyze, and disseminate intelligence data. It contains specific intelligence attributes for non-US units, facilities, equipment, individuals, and unknown entities, and assists with fusing all source tactical information and intelligence into a coherent view of the threat picture. The tool's objective is to support the current intelligence picture for the commander, the commander's staff, and supported units.

5.7.5 Other Tactical Fires Command and Control Systems

The Automated Deep Operations Coordination System (ADOCS) is a nondoctrinal mission-management system. ADOCS draws information from the AFATDS, GCCS-M, and TBMCS to allow battlespace visualization and FSCM analysis to rapidly manage counterfire missions, especially near no-strike targets, and depict and evaluate ATO targets near the fire support coordination line.

5.8 TARGET ACQUISITION SYSTEMS

Target acquisition systems locate and provide targeting data that is necessary to the fire-support mission. These capabilities range from the use of national assets and intelligence to identify preplanned targets, to the use of data from forward observers deployed with combat units. All combat units can be important sources of target acquisition intelligence. Individual units, reconnaissance patrols, scouts, observation posts, surveillance radars, and special operations forces can provide time-sensitive information about adversary troops and equipment and confirm or deny the accuracy of previous information.

The following systems are representative of the target acquisition systems that are available to feed targeting data to surface fire support.

1. Lightweight laser designator rangefinder (LLDR). The LLDR is a man-portable system that will support dismounted and mounted operations with 24-hour precision target location and designation. The target location module (TLM) of LLDR is tripod-mounted. It includes day optics, thermal imager, laser rangefinder, digital electronic compass and vertical angle measurement, an internal GPS receiver for self-location and electronic interfaces to the precision lightweight GPS receiver, battery, microprocessor, operator interface/display, and data/image export capability. For target designation missions, a target designation module interfaces with the TLM to provide laser designation of targets for PGM.

2. Target location designation hand-off system (TLDHS). The TLDHS is a Marine Corps man-portable automated equipment suite that will give forward observers, forward air controllers, naval gunfire spot teams, and reconnaissance teams the ability to quickly acquire, locate, laser-designate, and digitally transmit (hand off) target data to fire support coordination and direction agencies or weapon delivery platforms. The baseline system consists of two major components: an LLDR for target locating interfacing with a data automated communications terminal.

3. AN/TPQ-46 FIREFINDER radar system. The Firefinder V(8) is a counterfire detection radar system that is deployed on high mobility multipurpose wheeled vehicles (HMMWVs), operates in all climatic conditions, and provides discrimination capabilities to identify type and caliber of incoming projectiles. The radar system forwards counterfire information to the unit FDC that coordinates counterfire activities and processes, evaluates, and verifies information. The Firefinder radar is interoperable with the AFATDS.

4. Joint surveillance target attack radar system (JSTARS). The JSTARS is a joint surveillance, targeting, and battle management C2 system designed to provide near-real-time wide-area surveillance and targeting information on moving and stationary ground targets. The system has airborne and ground-based segments. The ground-based segment consists of common ground stations that receive data from the airborne segment and other intelligence sensors. The airborne segment consists of an E-8C aircraft equipped with phased-array ground surveillance radar, operations and control subsystem, and a communications subsystem. Ground crews analyze and disseminate JSTARS data to commanders. JSTARS can detect, locate, and track moving ground targets. This dynamic targeting information can be passed to the appropriate fire control agency for assignment to the most suitable and available fire-support asset. JSTARS via its ground station module, interfaces with AFATDS, which could select naval surface fire support for a given fire-support mission.

5. Unmanned aerial vehicle. The tactical UAVs can be operated effectively above the battlefield to provide real-time, accurate, target-acquisition intelligence. UAVs linked to AFATDS may feed fires missions to sea-based fire control nodes. By using AFATDS, NSFS ships can engage suitable targets, independently acquired, using an unmanned aerial vehicle as a spotter.

INTENTIONALLY BLANK

REFERENCES

The development of NWP 3-09.1 is based upon the most recent version of the following sources. All references are cited within this publication.

Joint Publications

JP 0-2, Unified Action Armed Forces (UNAAF).

JP 1-02, DOD Dictionary of Military and Associated Terms.

JP 2-0, Doctrine for Intelligence Support to Joint Operations.

JP 2-01.1, Joint Tactics, Techniques, and Procedures for Intelligence Support to Targeting.

JP 2-01.3, Joint Tactics, Techniques, and Procedures for Joint Intelligence Preparation of the Battlespace.

JP 3-0, Doctrine for Joint Operations.

JP 3-01, Joint Doctrine for Countering Air and Missile Threats.

JP 3-02, Joint Doctrine for Amphibious Operations.

JP 3-03, Doctrine for Joint Interdiction Operations.

JP 3-05, Doctrine for Joint Special Operations.

JP 3-09, Doctrine for Joint Fire Support.

JP 3-09.3, Joint Tactics, Techniques, and Procedures for Close Air Support.

JP 3-18, Joint Doctrine for Forcible Entry Operations.

JP 3-30, Command and Control for Joint Air Operations.

JP 3-50.2, Doctrine for Joint Combat Search and Rescue.

JP 3-52, Joint Doctrine for Airspace Control in a Combat Zone.

JP 3-60, Joint Doctrine for Targeting.

JP 5-00.2, Joint Task Force Planning Guidance and Procedures.

Multiservice

FM 3-31/MCWP 3-40.7, Joint Force Land Component Commander Handbook.

FMFM 2-7/MCWP 3-43.3, Fire Support in Marine Air-Ground Task Force Operations.

Navy and Marine Corps, Naval Operating Concept (NOC) for Joint Operations.

Navy

NTTP 3-02.2/MCWP 3-31.6, Supporting Arms Coordination in Amphibious Operations.

NTTP 3-03.4, Naval Strike and Air Warfare.

NTTP 3-09.2/MCRP 3-16.6, JFIRE, Multiservice Procedures for the Joint Application of Firepower.

NWP 3-09.11M/FMFM 1-7, Supporting Arms in Amphibious Operations.

NWP 3-20.32, Surface Ship Gunnery.

NWP 3-56, Composite Warfare Commander's Manual.

NWP 3-56.1, Naval Air Operations Center Organization and Processes.

Marine Corps

MCDP 1, Warfighting.

MCDP 3, Expeditionary Operations.

MCWP 3-16, Fire Support Coordination in the Ground Combat Element.

MCWP 3-23, Offensive Air Support.

MCWP 3-23.2, Deep Air Support.

Other

ATP-4, Allied Naval Gunfire Support, (NATO-specific).

CJCS Guide 3122, Time-Phased Force and Deployment Data (TPFDD) Primer.

CJCSI 3121.01 series, Standing Rules of Engagement for US Forces.

CJCSM 3122.01, Joint Operation Planning and Execution System (JOPES), Volume 1, (Planning Policies and Procedures).

CJCSM 6120.05, Manual for Tactical Command and Control Planning Guidance for Joint Operations: Joint Interface Operational Procedures for Message Text Formats.

Joint Technical Coordinating Group for Munitions Effectiveness (JTCG/ME), Joint Munitions Effectiveness Manual(s).

GLOSSARY

A

airspace control order. An order implementing the airspace control plan that provides the details of the approved requests for airspace control measures. It is published either as part of the air tasking order or as a separate document. Also called **ACO.** (JP 1-02)

air tasking order. A method used to task and disseminate to components, subordinate units, and command and control agencies projected sorties, capabilities and/or forces to targets and specific missions. Normally provides specific instructions to include call signs, targets, controlling agencies, etc., as well as general instructions. Also called **ATO.** (JP 1-02)

C

call for fire. A request for fire containing data necessary for obtaining the required fire on a target. (JP 1-02)

close air support. Air action by fixed- and rotary-wing aircraft against hostile targets which are in close proximity to friendly forces and which require detailed integration of each air mission with the fire and movement of those forces. Also called **CAS.** (JP 1-02)

combatant command. A unified or specified command with a broad continuing mission under a single commander established and so designated by the President through the Secretary of Defense and with the advice and assistance of the Chairman of the Joint Chiefs of Staff. Combatant commands typically have geographic or functional responsibilities. (JP 1-02)

combatant command (command authority). Nontransferable command authority established by title 10 (Armed Forces), United States Code, section 164, exercised only by commanders of unified or specified combatant commands unless otherwise directed by the President or the Secretary of Defense. Combatant command (command authority) cannot be delegated and is the authority of a combatant commander to perform those functions of command over assigned forces involving organizing and employing commands and forces, assigning tasks, designating objectives, and giving authoritative direction over all aspects of military operations, joint training, and logistics necessary to accomplish the assigned missions. Combatant command (command authority) should be exercised through the commanders of subordinate organizations. Normally this authority is exercised through subordinate joint force commanders and Service and/or functional component commanders. Combatant command (command authority) provides full authority to organize and employ commands and forces as the combatant commander considers necessary to accomplish assigned missions. Operational control is inherent in combatant command (command authority). Also called **COCOM.** (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. Command and control functions are performed through an arrangement of personnel, equipment, communications, facilities, and procedures employed by a commander in planning, directing, coordinating and controlling forces and operations in the accomplishment of the mission. Also called **C2.** (JP 1-02)

composite warfare commander. The officer in tactical command is normally the composite warfare commander. However, the composite warfare commander concept allows an officer in tactical command to delegate tactical command to the composite warfare commander. The composite warfare commander wages combat operations to counter threats to the force and to maintain tactical sea control with assets assigned; while the officer in tactical command retains close control of power projection and strategic sea control operations. Also called **CWC.** (JP 1-02)

D

dry deck shelter. A shelter module that attaches to the hull of a specially configured submarine to provide the submarine with the capability to launch and recover special operations personnel, vehicles, and equipment while submerged. The dry deck shelter provides a working environment at one atmosphere for the special operations element during transit and has structural integrity to the collapse depth of the host submarine. Also called **DDS.** (JP 1-02)

F

fires. The effects of lethal or nonlethal weapons. (JP 1-02)

fire support. Fires that directly support land, maritime, amphibious, and special operations forces to engage enemy forces, combat formations, and facilities in pursuit of tactical and operational objectives. (JP 1-02)

fire support element. That portion of the force tactical operations center at every echelon above an Army company or troop (to corps) that is responsible for targeting coordination and for integrating fires delivered on surface targets by fire support means under the control, or in support, of the force. Also called **FSE**. (JP 1-02)

H

high-payoff target. A target whose loss to the enemy will significantly contribute to the success of the friendly course of action. High-payoff targets are those high-value targets that must be acquired and successfully attacked for the success of the friendly commander's mission. Also called **HPT.** See also **high-value target; target.** (JP 1-02)

high-value target. A target the enemy commander requires for the successful completion of the mission. The loss of high-value targets would be expected to seriously degrade important enemy functions throughout the friendly commander's area of interest. Also called **HVT.** See also **high-payoff target; target.** (JP 1-02)

I

information operations. Actions taken to affect adversary information and information systems while defending one's own information and information systems. Also called **IO.** (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)

intelligence. 1. The product resulting from the collection, processing, integration, analysis, evaluation, and interpretation of available information concerning foreign countries or areas. 2. Information and knowledge about an adversary obtained through observation, investigation, analysis, or understanding. See also **signals intelligence (SIGINT); imagery intelligence (IMINT); human intelligence (HUMINT); measurement and signature intelligence (MASINT); open-source intelligence (OSINT).** (JP 1-02)

J

joint air operations center. A jointly staffed facility established for planning, directing, and executing joint air operations in support of the joint force commander's operation or campaign objectives. Also called **JAOC.** (JP 1-02)

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

joint targeting coordination board. A group formed by the joint force commander to accomplish broad targeting oversight functions that may include, but are not limited to, coordinating targeting information, providing targeting guidance and priorities, and preparing and/or refining joint target lists. The board is normally comprised of representatives from the joint force staff, all components, and, if required, component subordinate units. Also called **JTCB.** (JP 1-02)

M

Marine air-ground task force. The Marine Corps principal organization for all missions across the range of military operations, composed of forces task-organized under a single commander capable of responding rapidly to a contingency anywhere in the world. The types of forces in the Marine air-ground task force are functionally grouped into four core elements: a command element, an aviation combat element, a ground combat element, and a combat service support element. The four core elements are categories of forces, not formal commands. The basic structure of the Marine air-ground task force never varies, though the number, size, and type of Marine Corps units comprising each of its four elements will always be mission dependent. The flexibility of the organizational structure allows one or more Marine air-ground task forces to be assigned. Also called **MAGTF.** (JP 1-02)

Marine expeditionary unit. A Marine air-ground task force that is constructed around an infantry battalion reinforced, a helicopter squadron reinforced, and a task-organized combat service support element. It normally fulfills Marine Corps forward sea-based deployment requirements. The Marine expeditionary unit provides an immediate reaction capability for crisis response and is capable of limited combat operations. Also called **MEU.** (JP 1-02)

master air attack plan. A plan that contains key information that forms the foundation of the joint air tasking order. Sometimes referred to as the air employment plan or joint air tasking order shell. Information that may be found in the plan includes joint force commander guidance, joint force air component commander guidance, support plans, component requests, target update requests, availability of capabilities and forces, target information from target lists, aircraft allocation, etc. Also called **MAAP.** (JP 1-02)

O

officer in tactical command. In maritime usage, the senior officer present eligible to assume command, or the officer to whom the senior officer has delegated tactical command. Also called **OTC.** (JP 1-02)

operational control. Command authority that may be exercised by commanders at any echelon at or below the level of combatant command. Operational control is inherent in combatant command (command authority) and may be delegated within the command. When forces are transferred between combatant commands, the command relationship the gaining commander will exercise (and the losing commander will relinquish) over these forces must be specified by the Secretary of Defense. Operational control is the authority to perform those functions of command over subordinate forces involving organizing and employing commands and forces, assigning tasks, designating objectives, and giving authoritative direction necessary to accomplish the mission. Operational control includes authoritative direction over all aspects of military operations and joint training

necessary to accomplish missions assigned to the command. Operational control should be exercised through the commanders of subordinate organizations. Normally this authority is exercised through subordinate joint force commanders and Service and/or functional component commanders. Operational control normally provides full authority to organize commands and forces and to employ those forces as the commander in operational control considers necessary to accomplish assigned missions; it does not include, in and of itself, authoritative direction for logistics or matters of administration, discipline, internal organization, or unit training. Also called **OPCON.** (JP 1-02)

organic. Assigned to and forming an essential part of a military organization. Organic parts of a unit are those listed in its table of organization for the Army, Air Force, and Marine Corps, and are assigned to the administrative organizations of the operating forces for the Navy. (JP 1-02)

P

power projection. The ability of a nation to apply all or some of its elements of national power — political, economic, informational, or military — to rapidly and effectively deploy and sustain forces in and from multiple dispersed locations to respond to crises, to contribute to deterrence, and to enhance regional stability. (JP 1-02)

S

strike. An attack that is intended to inflict damage on, seize, or destroy an objective. (JP 1-02)

T

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

target. 1. An area, complex, installation, force, equipment, capability, function, or behavior identified for possible action to support the commander's objectives, guidance, and intent. Targets fall into two general categories: planned and immediate. 2. In intelligence usage, a country, area, installation, agency, or person against which intelligence operations are directed. 3. An area designated and numbered for future firing. 4. In gunfire support usage, an impact burst that hits the target. Also called **TGT.** (JP 1-02)

W

weapons system. A combination of one or more weapons with all related equipment, materials, services, personnel, and means of delivery and deployment (if applicable) required for self-sufficiency. (JP 1-02)

LIST OF ACRONYMS AND ABBREVIATIONS

A2C2	Army airspace command and control
AADC	area air defense commander
AAMD	Army air and missile defense
ACA	airspace coordination area
ACE	aviation combat element (MAGTF)
ACM	airspace control measure
ACMREG	airspace control means request
ACMREQ	airspace control means request
ACO	airspace control order
ACP	airspace control plan
ADC	air defense commander
ADOCS	Automated Deep Operations Coordination System
ADS	air defense section
AF	amphibious force
AFAOC	Air Force air and space operations center
AFATDS	Advanced Field Artillery Tactical Data System
AFLE	Air Force liaison element
AI	air interdiction
AME	air mobility element
AMWC	amphibious warfare commander
AO	area of operations
AOA	amphibious objective area
AOC	air operations center (USAF)
AOR	area of responsibility

AR	armed reconnaissance
AREC	air resources element coordinator
ASCS	air support control section
ASDS	Advanced SEAL Delivery System
ASWC	antisubmarine warfare commander
ATACMS	Army Tactical Missile System
ATARS	Advanced Tactical Reconnaissance Airborne System
ATCS	air traffic control section
ATF	amphibious task force
ATFLIR	Advanced Targeting Forward-Looking Infrared
ATO	air tasking order
ATP	Allied Tactical Publication
BCD	battlefield coordination detachment (USA)
BCL	battlefield coordination line (USMC)
BDA	battle damage assessment
C2	command and control
C2PC	command and control personal computer
C3	command, control, and communications
C4	command, control, communications, and computers
CA	combat assessment
CAP	crisis action planning
CAS	close air support
CATF	commander, amphibious task force
CBT	combating terrorism
CE	command element (MAGTF)
CFL	coordinated fire line
CG	guided missile cruiser
CHOP	change of operational control

CJCS	Chairman of the Joint Chiefs of Staff
CJCSI	Chairman of the Joint Chiefs of Staff Instruction
CJCSM	Chairman of the Joint Chiefs of Staff Manual
CJTF	commander, joint task force
CLF	commander, landing force
CNO	computer network operations
COA	course of action
COC	combat operations center
COCOM	combatant command (command authority)
COMMARFOR	commander, Marine Corps forces
COMNAVFOR	commander, Navy forces
COMSURFWARDEVGRU	commander, surface warfare development group
CONOPS	concept of operations
COP	common operational picture
CP	counterproliferation
CRC	cyptologic resources coordinator
CSAR	combat search and rescue
CSG	carrier strike group
CSGTU	carrier strike group task unit
CSSE	combat service support element (MAGTF)
CVW	carrier air wing
CWC	composite warfare commander
D3A	decide, detect, deliver, and assess
DA	direct action
DAS	deep air support (USMC)
DASC	direct air support center (USMC)
DDG	guided missile destroyer
DDS	dry deck shelter

DIRLAUTH	direct liaison authorized
DMPI	designated mean point of impact
DOCC	deep operations coordination cell
DOD	Department of Defense
DPI	desired point of impact
DS	direct support
DSMAC	digital scene-matching area correlation
DTG	date-time group
EA	electronic attack
EP	electronic protection
EPLRS	enhanced position, location, reporting system
ES	electronic warfare support
ESF	expedionary strike force
ESG	expeditionary strike group
ESGTU	expeditionary strike group task unit
EW	electronic warfare
EWCC	electronic warfare coordination center
EWO	electronic warfare officer
FAC	forward air controller
FAC(A)	forward air controller (airborne)
FDC	fire direction center
FFA	free-fire area
FFC	force fires coordinator
FFCC	force fires coordination center
FID	foreign internal defense
FM	field manual (USA)
FMFM	Fleet Marine Force Manual (USMC)
FOTC	force over-the-horizon track coordinator

FSA	fire support area
FSC	fire support coordinator (USMC)
FSCC	fire support coordination center
FSCL	fire support coordination line
FSCM	fire support coordinating measure
FSCOORD	fire support coordinator (USA)
FSE	fire support element
FSS	fire support station
FTC	force track coordinator
FWC	functional warfare commander
GCCS-I3	Global Command and Control System Integrated Imagery and Intelligence
GCCS-J	Global Command and Control System-Joint
GCCS-M	Global Command and Control System-Maritime
GCE	ground combat element (MAGTF)
GP	general purpose
GPS	global positioning system
GS	general support
GTT	ground template toolkit
HARM	high-speed antiradiation missile
HCS	helicopter coordination section
HEC	helicopter element coordinator
HIDACZ	high-density airspace control zone
HPT	high-payoff target
HPTL	high-payoff target list
HVT	high-value target
IMOM	improved many-on-many (GCCS)
INDIGO	Tomahawk strike orders
IO	information operations

IOC	initial operational capability
IOS	intelligence operations server
IPB	intelligence preparation of the battlespace
ISR	intelligence, surveillance, and reconnaissance
IWC	information warfare commander
JAOC	joint air operations center
JAOP	joint air operations plan
JCS	Joint Chiefs of Staff
JFACC	joint force air component commander
JFC	joint force commander
JFE	joint fires element
JFLCC	joint force land component commander
JFMCC	joint force maritime component commander
JFSOCC	joint force special operations component commander
JGAT	joint guidance, apportionment, and targeting
JIC	joint intelligence center
JIPB	joint intelligence preparation of the battlespace
JIPTL	joint integrated prioritized target list
JISE	joint intelligence support element
JMEM	Joint Munitions Effectiveness Manual
JOA	joint operations area
JOC	joint operations center
JOPES	Joint Operation Planning and Execution System
JP	joint publication
JPG	joint planning group
JPOTF	joint psychological operations task force
JSOACC	joint special operations air component commander
JSOTF	joint special operations task force

JSRC	joint search and rescue center
JSTARS	Joint Surveillance Target Attack Radar System
JTAT	joint threat analysis tools
JTCB	joint targeting coordination board
JTF	joint task force
JTL	joint target list
JTT	joint targeting toolbox
LAC	launch area coordinator (TLAM)
LF	landing force
LGB	laser-guided bomb
LNO	liaison officer
MAAP	master air attack plan
MACCS	Marine air command and control system
MAGTF	Marine air-ground task force
MARLO	Marine liaison officer
MCDP	Marine Corps doctrinal publication
MCRP	Marine Corps reference publication
MCWP	Marine Corps warfighting publication
MEA	munitions effectiveness assessment
MEB	Marine expeditionary brigade
MEF	Marine expeditionary force
MEU	Marine expeditionary unit
MEU(SOC)	Marine expeditionary unit (special operations capable)
MILDEC	military deception
MIOC	maritime intercept operations commander
MIWC	mine warfare commander
MPR	maritime patrol and reconnaissance
NALE	naval and amphibious liaison element

NATO	North Atlantic Treaty Organization
NAVSOC	naval special operations component
NCC	naval component commander
NFA	no-fire area
NGA	National Geospatial-Intelligence Agency
NGLO	naval gunfire liaison officer
NGO	naval gunfire officer
NOC	naval operating concept
NSFS	naval surface fire support
NSL	no-strike list
NSW	naval special warfare
NSWTG	naval special warfare task group
NSWTU	naval special warfare task unit
NSWU	naval special warfare unit
NTACS	Navy tactical air control system
NTTP	Navy tactics, techniques, and procedures
NWP	Navy warfare publication
OAS	offensive air support
OCA	offensive counterair
OODA	observe, orient, decide, act
OPCON	operational control
OPLAN	operation plan
OPORD	operation order
OPSEC	operations security
OTC	officer in tactical command (USN)
PC	patrol coastal
PCD	patrol coastal detachment
PES	plans, execution, and support

PGM	precision-guided munition
PHIBRON	amphibious squadron
PL	phase line
POTUS	President of the United States
PSYOP	psychological operations
PWC	principal warfare commander
RADC	regional air defense commander
RAOC	rear area operations center
RFA	restrictive fire area
RFL	restrictive fire line
ROA	restricted operations area
ROE	rules of engagement
RTL	restricted target list
SAC	supporting arms coordinator
SACC	supporting arms coordination center
SADC	sector air defense commander
SAG	surface action group
SAR	search and rescue
SATCOM	satellite communications
SBUD	special boat unit detachment
SC	screen commander
SCAR	strike coordination and reconnaissance
SCC	sea combat commander
SDV	SEAL delivery vehicle
SDVTU	SEAL delivery vehicle task unit
SEAD	suppression of enemy air defenses
SEAL	sea-air-land team (NSW)
SecDef	Secretary of Defense

SOC	special operations command
SOCA	submarine operations coordinating authority
SOCC	special operations component commander
SOF	special operations forces
SOLE	special operations liaison element
SPINS	special instructions
SPMAGTF	special purpose Marine air-ground task force
SR	special reconnaissance
SROE	standing rules of engagement
SSGN	submersible, ship, guided, nuclear
SSN	attack submarine, nuclear
STWC	strike warfare commander
SUWC	surface warfare commander
TACAIR	tactical air
TACC	tactical air command center
TACMEMO	tactical memorandum
TACON	tactical control
TACTOM	Tactical Tomahawk
TADC	tactical air direction center
TAOC	tactical air operations center (USMC)
T-AOE	fast combat support ship
TARPS	Tactical Air Reconnaissance Pod System
TBMCS	theater battle management core system
TERCOM	terrain contour matching
TF	task force
TIC	target information center
TLAM	Tomahawk land-attack missile
TNL	target nomination list

TPFDD	time-phased force and deployment data
TSC	TLAM strike coordinator
TST	time-sensitive target
TWCS	Tomahawk Weapon Control System
TWS	Tomahawk Weapon System
UAV	unmanned aerial vehicle
UNAAF	Unified Action Armed Forces
URG	underway replenishment group
USA	United States Army
USAF	United States Air Force
USMC	United States Marine Corps
USN	United States Navy
USSOCOM	United States Special Operations Command
USTRANSCOM	United States Transportation Command
USWC	undersea warfare commander
UW	unconventional warfare
VLS	verical launching system
WCS	Weapon Control System
WMD	weapons of mass destruction
ZF	zone of fire

INTENTIONALLY BLANK

LIST OF EFFECTIVE PAGES

Effective Pages	Page Numbers
JUL 2005	1 thru 14
JUL 2005	EX-1, EX-2
JUL 2005	1-1, 1-2
JUL 2005	2-1 thru 2-12
JUL 2005	3-1 thru 3-12
JUL 2005	4-1 thru 4-40
JUL 2005	5-1 thru 5-20
JUL 2005	References-1, References-2
JUL 2005	Glossary-1 thru Glossary-4
JUL 2005	LOAA-1 thru LOAA-12
JUL 2005	LEP-1, LEP-2

INTENTIONALLY BLANK

NWP 3-09.1
JULY 2005