ARMY, MARINE CORPS, NAVY, AIR FORCE

TAGS

MULTISERVICE PROCEDURES FOR THE THEATER AIR-GROUND SYSTEM

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MULTISERVICE TACTICS, TECHNIQUES, AND PROCEDURES

FOREWORD

This publication has been prepared under our direction for use by our respective commands and other commands as appropriate.

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PREFACE

1. Scope

This publication provides a generic concept and procedures for Theater Air-Ground System (TAGS) operations. It is a "primer" for all planners to facilitate the integration of air operations and ground combat operations. It offers readers a basic understanding of joint and component air-ground systems and operations, an overview of the joint air tasking order (ATO) cycle, and the command and decision-making process at component and joint force levels. Since an unclassified, generic TAGS is described, practitioners in mature theaters should refer to theater manuals and standard operations instructions for theater-specific procedures. This publication has worldwide application and can serve as a model for any level of conflict. It is intended to supplement Joint Publication 3.56-1, *Command and Control for Joint Air Operations,* by providing detailed information regarding component contributions to the TAGS.

2. Purpose

Each component brings unique capabilities to a joint operation. Successful theater operations require effective synchronization of all forces: ground, air, naval, space, and special operations. Coordinated air operations permit joint forces commanders (JFCs) to rapidly develop the battlespace to meet their operational objectives by dominating the airspace and striking the enemy in depth. The TAGS is a system of systems, a synergy of the various component air-ground systems, orchestrating the planning and execution of air-ground operations. The objective of this publication is to describe how each of the component's systems operate within the TAGS. For the purpose of this publication, the TAGS refers to organizations, personnel, equipment, and procedures that participate in the planning and execution of all air-ground operations. Key to the TAGS is an understanding of the systems and how to maximize each component's capabilities to achieve quick and decisive results in combat.

3. Application

The tactics, techniques, and procedures (TTP) described in this publication apply to all elements of a joint force. This publication uses approved joint and service doctrine and terminology as its foundation. The publication identifies methodologies to use existing service command and control (C2) systems to facilitate air-ground operations. ***Note: Air/naval gunfire liaison companies (ANGLICOs) are scheduled for deactivation in FY 98 and 99. The Marine Corps is establishing a Marine liaison group to provide interface with foreign militaries—an ANGLICO function. This multiservice tactics, techniques, and procedures (MTTP) does not reflect how these changes will affect the TAGS.***

4. Implementation Plan

Participating service command offices of primary responsibility (OPRs) will review this publication, validate the information, and reference and incorporate it in service manuals, regulations, and curricula as follows:

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b. This publication reflects current joint and service doctrine, C2 organizations, facilities, personnel, responsibilities, and procedures. Changes in service protocol, appropriately reflected in joint and service publications, will likewise be incorporated in revisions to this document.

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EXECUTIVE SUMMARY

TAGS

Multiservice Procedures for the Theater Air-Ground System

Overview

The Theater Air-Ground System (TAGS) is not a formal system in itself but rather the sum of the component air-ground systems operating in the theater. It is applicable to all theater operations to include air, ground, maritime, and amphibious operations. This TAGS publication applies to a joint task force (JTF) established on a geographic area basis since functional JTFs are typically associated with unified commands for transportation, space, special operations, and strategic operations.

This publication serves as a primer for all practitioners in the air-ground community by providing a single source of information regarding component operations within the TAGS to include organization, capabilities, planning, and command and control. It is an extension of Joint Publication 3.56.1, *Command and Control of Joint Air Operations*, in that it provides detailed information on interoperability of systems, coordination procedures, and transitions.

The first chapter provides an overview of the joint force and TAGS relationships within the force. Chapters II through VI provide information about component air-ground systems, which together form the TAGS. Chapter VII focuses on the TAGS itself, providing information on the joint air tasking order (ATO) cycle and joint air defense operations.

This revision of TAGS includes a standardization of component chapters and an update of all information to reflect current doctrine and joint terminology. Information that pertained to multiple services, such as transfer of air control ashore for amphibious operations and coordination procedures/measures, were moved to separate appendices. An appendix explaining how to break out ATO, special instructions, and an air control order was added as a reference aid. Two new appendices added are carrier battle group planning and execution of air operations and transition between sea- and land-based joint force air component commanders.

Summary

The key to an effective TAGS is a clear understanding of component air-ground systems relationships to one another, and how they can be synchronized to achieve maximum effectiveness. This publication is intended to aid in this understanding.

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Chapter I

THE JOINT FORCE

1. Background

It is important that personnel assigned to or working with the Theater Air-Ground System (TAGS) understand the decision-making processes and problems associated with the operational level of command. Armed with this knowledge, commanders and staffs will better understand TAGS functions and how to work within the system to receive or give support. Actions at the joint force level establish the "ground rules" for the TAGS, including the theater commander in chief's (CINC's) guidance, perspective, and strategy; the CINC or joint force commander's (JFC's) theater/joint operations area (JOA) strategy, command organization and relationships; the campaign plan; assignment of objectives; and apportionment of forces. This chapter summarizes the joint task force (JTF) level considerations and organizational options that influence theater air-ground operations. It describes the role of the JFC, command relationships, the role and responsibilities of the joint force air component commander (JFACC), and TAGS joint liaison requirements.

2. Establishing the JTF

The Secretary of Defense, a CINC (also referred to as a commander of a combatant command), subordinate unified commander, or an existing JFC establishes JTFs. Joint forces are established on either a geographic or functional basis. Establishing a joint force based on a geographic area is the most common method of assigning responsibility for continuing operations. This publication applies to a JTF established on a geographic area basis since functional JTFs are typically associated with unified commands for transportation, space, special operations (SO), and strategic operations.

3. JFC

If the CINCs decide to delegate authority for an assigned mission, they will designate a JFC to command a subordinate JTF. In this publication, JFC means either a theater combatant commander or a subordinate who is designated a JFC. The JFC has the authority to organize forces to best accomplish the assigned mission based on the concept of operations by establishing subordinate commands, assigning responsibilities, establishing or delegating appropriate command and support relationships, and establishing coordinating instructions for the component commanders. The JFC has full authority to assign missions, redirect efforts, and direct coordination among subordinate commanders and will exercise operational control (OPCON) over assigned and (normally) attached forces. The JFC will assemble a joint staff with appropriate members in key positions of responsibility from each service or functional component having significant forces assigned to the command. The manner in which JFCs organize their forces directly affects the responsiveness and versatility of joint force operations. According to Joint Publication 3-0, *Doctrine for Joint Operations,* the JFC's vision and concept of operations are the basis for organizing forces to accomplish the mission.

4. Components of the Joint Force

All joint forces include service component commands, which provide administrative and logistic support. Normally, the JFC will establish functional component commands to provide centralized direction and control of certain functions and types of operations when it is feasible and necessary to fix responsibility. The need for a functional

component command applies when the scope of operations require that similar capabilities or functions of forces from more than one service be directed toward closely related objectives and where unity of command and effort are primary considerations. Joint force land, air, maritime, and SO components are examples of functional components. Normally, functional component commanders also serve as service component commanders but with staff augmentation (expertise) to make them joint. Most often, joint forces are organized with a combination of service and functional component commands (see Figure I-1).

5. JFACC

Although the concept of a functional component can apply to any joint force capability, when considering theater air operations as a whole and the TAGS specifically, the role of a JFACC requires specific attention. The JFC will normally designate a JFACC to exploit the capabilities of joint air operations. The JFACC directs this exploitation through a cohesive joint air operations plan (centralized control) and a responsive and integrated control system (decentralized execution). The JFC will normally assign JFACC responsibilities to the component commander having the preponderance of

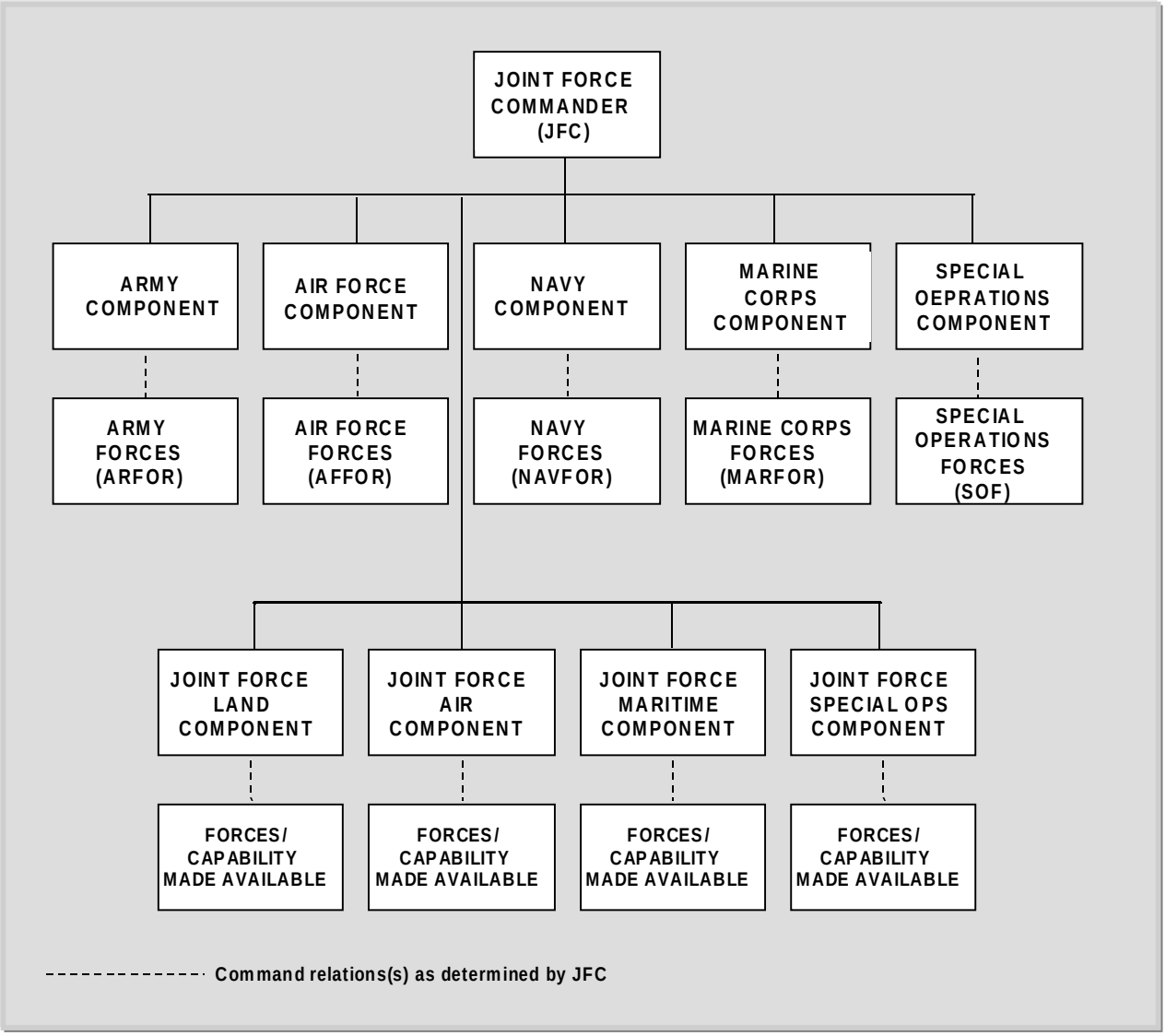


Figure I-1. Theater Organization Overview

air assets and the capability to plan, task, and control joint air operations. In some cases, it may be necessary for a naval officer to function as the JFACC at sea, especially in quick-breaking operations before land-based air contingents are in place or when significant land-based air assets are not required. (See Chapter IV and Appendix E).

The authority, command relationships, and responsibilities of the JFACC are established by the JFC. These typically include exercising OPCON over assigned and attached forces, tactical control (TACON) over forces made available for tasking, or receiving direct support (DS) from other military capabilities/forces. The JFACC is also normally responsible for, but is not limited to, planning, coordinating, allocating, and tasking of joint air operations based on the JFC's guidance and objectives that include the air apportionment decision. Specific JFACC responsibilities normally include—

a. Developing a joint air operations plan to best support joint force objectives as assigned by the JFC or higher authority.

b. Recommending to the JFC apportionment of the joint air effort, after consulting with other component commanders, by percentage and/or by priority that should be devoted to the various air operations and/or geographic areas for a given period of time.

c. Providing centralized direction for the allocation and tasking of capabilities/ forces made available based on the JFC's guidance and objectives, which include an apportionment decision.

d. Controlling execution of joint air operations as specified by the JFC, to include making timely adjustments to targeting and tasking of available joint capabilities/forces.

e. Coordinating joint air operations with operations of other component commanders and forces assigned to or supporting the JFC.

f. Evaluating the results of joint air operations and forwarding combat assessments (CAs) to the JFC to support the overall combat assessment effort.

g. Performing the duties of the airspace control authority (ACA), when assigned that responsibility by the JFC.

h. Performing the duties of the area air defense commander (AADC), when assigned that responsibility by the JFC.

6. Joint Air Operations Center (JAOC)

The JFACC's staff should be organized and manned so that component representation reflects the composition of the joint force. This representation will provide the JFACC with the expertise needed to effectively employ the capabilities/forces made available. The heart of the JFACC's organization is the JAOC, which is structured to operate as a fully integrated facility and staffed to fulfill all of the JFACC's responsibilities. JFACC organizations may differ based on the specific area of responsibility (AOR) or JOA requirements and operations. However, the four organizations or functions that are common to all JAOCs are—strategy, combat plans, combat operations, and air mobility. Planning "future joint air operations" is the responsibility of combat plans, which includes the responsibility of drafting the joint air operations' plan to support the JFC's campaign objectives and building the daily joint air tasking order (ATO). Execution of the daily joint ATO is carried out by combat operations. The role of intelligence is also extremely important and is an integral part of the daily function of combat plans and combat operations.

a. Component Liaisons. The component commanders have ready access to the JFACC and the JAOC staff through their component liaisons. These liaison officers (LNOs) work for their respective component commanders and work with the JFACC and JAOC staff. Senior component liaisons serve as conduits for direct coordination between the JFACC and their

respective component commanders. Senior liaisons possess the credibility and authority to represent their component commander on time sensitive and critical issues.

b. Coordination Elements. Each component normally provides liaison elements (for example, battlefield coordination detachment [BCD], naval and amphibious liaison element [NALE], special operations liaison element [SOLE], Marine liaison officer [MARLO], etc.) that work within the JAOC. These liaison elements consist of experienced warfare specialists who provide component planning and tasking expertise and coordination capabilities. These experts help integrate and coordinate their component's participation in joint air operations. They also coordinate and deconflict component direct support air operations with joint air operations.

7. Joint Liaison Requirements

Effective liaison between forces is essential for coordinated TAGS operations and is a key factor in the success of joint operations. A notional joint force liaison structure is depicted in Figure I-2. LNOs serve as their parent commanders' eyes and ears as well as their representative to the JFACC on matters of service capabilities and limitations. LNOs need to have clearly defined parameters to take action and make decisions on operational matters. Functional component commanders, who are also service component commanders, will use parent service liaison elements. If the JFACC is at sea, space and communications limitations may restrict liaison element size and capability. Service component liaison elements are discussed in detail in succeeding chapters.

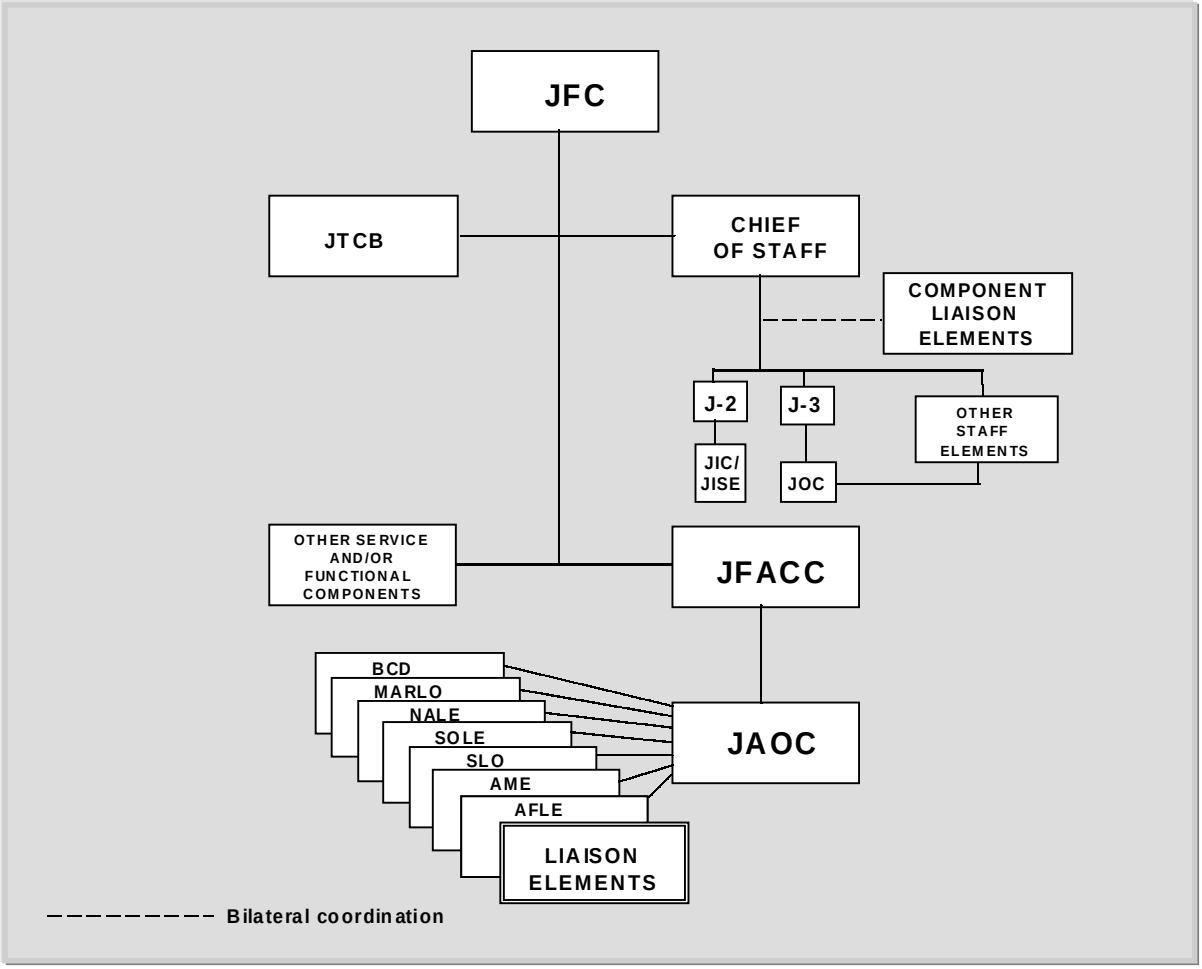


Figure I-2. Notional Joint Force Liaison Structure

8. Targeting

Targeting is the process of selecting targets and matching them with the appropriate response, lethal or nonlethal, destructive or disruptive. From a TAGS perspective, the targeting process directly affects the preparation of the ATO. For the TAGS to work effectively, the joint targeting process and the joint ATO cycle must be synchronized. Targeting is done in accordance with the JFC's campaign plan, taking into account operational requirements and capabilities and assessing the effects of attacks against specified targets. It is performed at all levels within the joint force. Personnel working ATO development must understand the targeting process to fully realize its impact on the TAGS. The CINC/JFC may establish organizations to accomplish broad targeting oversight functions such as the Joint Targeting Coordination Board (JTCB). The JFCs may task an organization and its staff to accomplish broad targeting oversight functions or may delegate the responsibility to a subordinate commander. If the JFC so designates, a JTCB may be established as an integrating center for this effort or a JFC-level review mechanism. In either case, it needs to be a joint activity composed of representatives from the staff, all components, and, if required, their subordinate units. The JTCB typically reviews targeting information, develops targeting guidance and priorities, and may prepare and refine joint target lists. The JTCB should also maintain a complete list of restricted targets and areas where special operations forces (SOF) are operating to avoid endangering current or future operations.

9. AADC and ACA

Because the TAGS integrates activities and communications among all air-ground systems, it is important to define two additional functions that affect the structure and execution of the TAGS—the AADC and ACA.

a. AADC. Within a unified command; subordinate unified command; or JFC, the commander will assign overall responsibility for air defense to a single commander, commonly referred to as the AADC. Normally, this will be the component commander with the preponderance of air defense capability and the command, control, and communications (C3) capability to plan and execute integrated air defense operations. Representation from the other components involved will be provided, as appropriate, to the air defense commander's headquarters.

b. ACA. The JFC will additionally designate an ACA to assume overall responsibility for the operation of the airspace control system. The ACA develops broad policies and procedures for airspace control and coordinates as required among units within the AOR/JOA, subject to the authority and approval of the JFC.

Because of the integrated relationship between airspace control measures and air defense operations, AADC and ACA duties normally should be performed by the same person, who may also be performing the duties of the JFACC. Regardless of who fulfills these functions and responsibilities, the three must be integrated in order to unite overall air operations in support of the JFC's campaign.

10. Conclusion

In the first stages of crisis management or in the establishment of the JTF, it is critical to assign duties and responsibilities to the component commanders and the joint staff. The early assignment of responsibilities such as the JFACC, ACA, and AADC allows maximum time to coordinate and plan operations. Additionally, the early establishment of a JTCB and the JAOC facilitates immediate implementation of the TAGS and ensures adequate information will flow up and down the chain of command as well as laterally between components.

Chapter II

ARMY COMPONENT

1. Background

This chapter provides an understanding of the process of synchronizing and integrating United States Army capabilities within the TAGS. It outlines component capabilities and provides an overview of planning considerations and the command and control (C2) architecture in support of ground operations and the Army Air-Ground System (AAGS). This chapter is designed for sailors, airmen, and marines who work in joint, multinational, and interagency air-ground operations with the Army.

2. Mission

The Army's mission is to protect and defend the Constitution of the United States of America and does so by deterring war and, when deterrence fails, by achieving quick and decisive victory—on and off the battlefield—anywhere in the world and under virtually any conditions as part of a joint team. The Army is the major ground force provider for decisive combat operations. Whether fighting a large conventional force, elusive insurgency, effects of a natural disaster, or preempting open conflict, the Army's constant aim is to seize the initiative, maintain momentum, and exploit success.

3. Component Operations

Army component operations are inherently joint and often multinational. Army forces (ARFOR) must be prepared to conduct operations with various governmental and nongovernmental agencies, other services, and the forces of other nations. Army doctrine and systems, especially C2 and targeting, are designed to expedite the employment of organic fires and supporting forces to enhance the effects of maneuver. FM 100-5, *Operations,* is the Army's keystone warfighting doctrinal manual. Successful joint air-ground operations require a fundamental understanding of force capabilities and some key aspects of the Army.

a. Essential Characteristics of Army Operations. Five operational characteristics (agility, depth, initiative, orchestration, and versatility) provide the foundation for current Army doctrine, tactics, and techniques. The TAGS assists Army commanders in the application of all five characteristics, especially depth and orchestration.

(1) Depth. Depth is the extension of operations in time, space, resources, and purpose. Through the use of depth, the Army component commander obtains the necessary space to maneuver effectively; the time necessary to plan, arrange, and execute operations; and the resources required to win engagements, battles, and major operations and exploit success. The TAGS helps Army commanders attack the enemy simultaneously, throughout the battlespace, by facilitating rapid deconfliction and coordination to effectively employ available fires. Operations in depth degrade enemy freedom of action, reduce their flexibility and endurance, and disrupt their plans and coordination.

(2) Orchestration. Orchestration means to arrange, develop, organize, or combine to achieve a desired or maximum effect. Orchestration describes the means by which commanders apply the complementary and reinforcing effects of all military assets to overwhelm opponents at one or more decisive points. Orchestration requires controlling the tempo of operations as well as weighting

and shifting efforts in a dynamic environment.

Orchestration often implies different activities for different levels of command. In tactical operations, it is routinely seen in the synchronized application of combat power. Operationally it means applying the right mix of forces, using the right degree of control, and operating at the right tempo at the right level of intensity to accomplish assigned missions. Operationally and strategically, it routinely requires the coordination and direction of a great number of disparate, seemingly unrelated, yet complementary activities. Effective orchestration requires anticipation, agility, mastery of time-space relationships, and a complete understanding of how friendly and enemy capabilities interact.

Orchestration includes synchronization and is the arrangement of activity in time, space, and purpose to produce maximum relative military power at a decisive point. It usually requires explicit coordination among the various units participating in an operation. In the TAGS, continuous and aggressive involvement by LNOs, strong command, disciplined operations, and detailed situational awareness are essential to synchronizing operations and limiting fratricide.

b. Battlespace. Commanders do not pursue operations in a vacuum but must take into account the total operational environment. Battlespace is a comprehensive, conceptual view of the operational environment and all factors that influence the success of a military operation. Battlespace extends beyond the traditional notions of width, depth, and height. It includes portions of the electromagnetic spectrum as well as the dimension of time. It also incorporates human considerations, not only soldiers but also civilian populations—indigenous peoples in the area of operations and citizens and families in the United States (US). Commanders shape the dimensions of battlespace in terms of time, space, activity, and simultaneity:

(1) Time. Commanders visualize the time dimension of battlespace with respect to current and future operations. Current operations address ongoing operations and their immediate impact on mission accomplishment. Current operations generate the conditions for the success of future operations that the Army envisions as necessary but not yet feasible. To accomplish the mission, ARFOR adjust timing and tempo to best exploit friendly capabilities. What is important is the timing of the effects achieved rather than the chronological application of force or capabilities. Commanders devise a timing that orchestrates those effects in time, space, and purpose. Tempo is more than speed. Tempo is the rate of operations relative to operational circumstances or an adversary's ability to sense and react. ARFOR seek a tempo superior to that of their opponent; however, they generally pay a price through greater fatigue and resource expenditure.

(2) Space. The commander's conceptual view of space encompasses the entire physical volume where friendly and enemy systems can influence the success of a military operation. The potential for land forces to conduct noncontiguous operations has increased. In noncontiguous operations, land forces may operate in isolated pockets, connected only through the reinforcing and complementary effects of an integrated concept of operations. Noncontiguous operations place a premium on initiative, effective information operations, mobility, and innovative logistics measures.

(3) Activity. Commanders organize military activities in battlespace through campaigns, major operations, battles and engagements, and operational frameworks. JFCs synchronize the actions of air, land, sea, space, and SOF to achieve strategic and operational objectives through integrated campaigns, joint campaigns, and major operations. Military activities are further organized in an operational framework—grouped activities organized for

simultaneous, complementary, and reinforcing effect. These groupings are based on purpose rather than location. Most operational frameworks include elements of close, deep, and rear operations. Reconnaissance is a component of close, deep, and rear operations. It is an all-encompassing component that sees the enemy commander's organization, disposition, capabilities, and intents. These elements appear to the enemy as an overwhelming, seamless operation throughout the depth of their battlespace.

(a) Close operations at any echelon comprise the current activities of the forces and capabilities in contact to defeat an adversary or control a situation. Close operations will normally include security, main and supporting efforts, and reserve operations. Security and reserve operations are components of close operations. Security operations blind enemy attempts to see ARFOR, shielding the other elements of the framework—close, deep, rear, and reserve—from unwanted observation and enemy strikes. Reserve operations are conducted by units withheld from action or uncommitted to a specific course of action so that they are available for commitment at a decisive point. Their primary task is to retain flexibility through offensive action. They are the commander's insurance against the uncertainty and friction of military operations. Therefore, reserves are key to offensive action to seize the initiative, maintain momentum, or exploit success.

(b) Deep operations at any echelon comprise the activities of forces and capabilities to control a future situation or defeat adversaries before they can bring forces into contact. Deep operations may reinforce close operations through actions taken in time and space to complement and make possible the near-term close operation.

(c) Rear operations at any echelon comprise those activities designed to ensure freedom of action and continuity of operations, logistics, and command. Rear operations are not only key to sustaining close operations, they are critical for recovering from reverses or exploiting success in future operations. At the operational level, rear operations focus on preparing for the next phase of the campaign or major operation. At the tactical level, rear activities underwrite the tempo of operations, ensuring the agility to take advantage of any opportunity without hesitation or delay.

(4) Simultaneity. Across the battlespace dimensions of time, space, and activity, the Army seeks to achieve simultaneity—the ideal in the American way of war. Simultaneity in time overwhelms opposing commanders with a wide range of immediate decision requirements. Simultaneity in space presents opposing forces with devastating consequences throughout the depth of the battlespace. Simultaneity in purpose orchestrates the linkage between all activities in the operational framework, ensuring that close, deep, rear, reserve, and reconnaissance and security operations are all directed to the ultimate end state.

c. Command Posts (CPs). To C2 their designated area of operations, brigade through corps commanders normally establish three CPs: tactical (TAC), main tactical operations center (TOC), and rear. The function of each varies; however, Table II-1 reflects the generic functions usually accomplished at each.

d. Capabilities. Land forces can provide lethal and nonlethal fires in support of air operations through suppression of enemy air defenses (SEAD), ground base defense, and attack and interdiction of enemy aviation and missile forces. The Army provides the following capabilities to the TAGS:

(1) Ground Maneuver. Ground maneuver forces provide C2, targeting

Table II-1. Command Post Functions

TAC	MAIN TOC	REAR
PRIMARY • Conducts the close fight	**PRIMARY** • Orchestrates the battle • Conducts the deep fight • Plans future fights	**PRIMARY** • Supports the battle • Conducts rear area operations
SECONDARY • Monitors the deep & rear fights • Plans	**SECONDARY** • Coordinates combat service support • Monitors the battle • Conducts close fight when TAC CP displaces	**SECONDARY** • Serves as the backup to the main CP • Plans

support, and serve as approval authority for the AAGS from task force through corps level. Maneuver is the movement of combat forces to gain positional advantages, usually in order to deliver or to threaten delivery of direct and indirect fires. It is the means of concentrating forces at decisive points to achieve surprise, psychological shock, and physical momentum. Advantages gained by ground forces are unique to maneuver warfare and are the essence of seizing, physically occupying, and holding key terrain. These advantages cannot be replicated by other means.

(2) Fire Support System. Fire support is the collective and coordinated use of indirect-fire weapons and other lethal and nonlethal means in support of a commander's battle plan. The commander employs the fire support system to support the scheme of maneuver; mass fires; and delay, disrupt, or destroy enemy forces in depth.

(3) Army Aviation. Army aviation performs the full spectrum of combat, combat support, and combat service support missions. Aviation units destroy enemy forces by fire and maneuver; perform target acquisition and reconnaissance; enhance C2; and move combat personnel, supplies, and equipment in compliance with the scheme of maneuver. In the area of fire or ground support, Army aviation functions in the following roles:

(a) Attack Helicopter Operations. Normally attack helicopters are employed as maneuver forces in combined arms operations to accomplish the commander's mission. They are ideally suited for rapidly developing situations in which available reaction time is minimal or where terrain restricts ground forces. They can operate effectively in the close, deep, and rear battles. Attack helicopters may also contribute to joint counterair and theater missile defense (TMD) through *offensive* and *defensive* counterair operations and attack operations against theater missile launchers. In addition, attack helicopters are capable of providing close support, if tasked.

(b) Aerial Forward Observation. Army aviation provides aerial observation and transports field artillery forward observers (FOs), aviation LNOs, or Air Force enlisted terminal air controllers (ETACs) to vantage points where FOs can call for/adjust fires and where air liaison officers (ALOs) and ETACs can provide terminal control for attacking aircraft. Army aviation can also provide terminal control for close air support (CAS) as well as target designation (to include lasing) for the attack of targets.

(c) Air Reconnaissance. Air reconnaissance units obtain and report near-real-time and real-time intelligence to support effective targeting and battle damage assessment.

(d) Electronic Warfare (EW). Fixed- and rotary-wing aircraft provide a variety of EW support, including direction finding, electronic combat, communications intercept, and electronic target acquisition.

(e) Airborne and Air Assault Operations. Army aviation, as part of a joint or single-service operation, can provide airlift support to airborne or air assault forces to operations in close, deep, and rear areas during day and night.

(f) Air Movement of Weapons Systems and/or Ammunition. Cargo and utility aircraft offer speed of movement and flexibility for the employment of fire support units. They provide the commander another alternative to rapidly displace field artillery assets in support of deep operations or as a rapid reaction response to threats in the rear area.

(g) C2 for Joint Air Attack Team (JAAT) Operations. JAAT missions enhance the effectiveness of rotary-wing aircraft conducting combined air-to-ground attack operations in close coordination with fixed-wing aircraft from other services. JAAT operations capitalize on the strengths of each platform and minimize friendly aircraft exposure and vulnerability. These operations require detailed coordination among components. Upon receipt of a JAAT mission, the mission commander assumes responsibility for the coordination and execution of JAAT operations. (For more detailed information on JAAT operations see *Multiservice Procedures for Joint Air Attack Team Operations*.)

(4) Army Air Defense. The Army plays a substantial role in overall counterair operations. The unity of effort under the AADC's weapons control and air defense procedures and the horizontal and vertical coordinations among the air defense elements ensure synchronization between the counterair operations of the Army and the other services. Defensive counterair (DCA) operations conducted by ARFOR respond to immediate enemy air threats. The Army's primary DCA force is air defense artillery (ADA), which provides dedicated low-to-high altitude air defense systems to protect the force and selected geopolitical assets from air and missile threats. ADA and other combined arms forces integrate fires to ensure freedom of maneuver for our forces from the enemy's air threat.

4. Planning

a. Operation Plans/Orders (OPLANs/OPORDs). Army combat plans and orders are important to the TAGS because they provide the task organization, mission statement, commander's intent, and concept of the operation of Army units conducting the operation. Key components are—

(1) Task Organization. Information regarding how the command is task organized to accomplish the mission can be found immediately preceding paragraph 1, *Situation*, or as an annex to an order or plan (normally, Annex A).

(2) Mission Statement. The mission statement is the commander's expression of the task the unit must accomplish and for what purpose. A precise, clear mission statement that subordinates understand before and during the operation is vital to mission success. The mission statement explains the essence of the operation: who, what, when, where, and why. At operational levels of command, commanders anticipate change by continually reassessing the stated mission in light of changing strategic and operational conditions.

(3) Commander's Intent. The commander's intent is the commander's clear, concise statement of what the force must do to succeed with respect to the enemy and the terrain and the desired end state. It provides the link between the mission and the concept of operations by stating key tasks that, along with the mission, are the basis for subordinates to exercise initiative when unanticipated opportunities arise or when the original concept of operation no longer applies.

(4) The Concept of the Operation. In the chaos of conflict, order is conceptual rather than physical. The operational or tactical concept of operations describes how Army commanders visualize the major operation, battle, or engagement unfolding. It is a creative act—a design that coordinates all activities in pursuit of the end state. The concept is based on the commander's selected course of action and expresses how each element of the force will cooperate to accomplish the mission. Whereas the focus of the commander's intent is on the end state for the force as a whole, the focus of the commander's concept of operations is on the method by which all elements of the force will cooperate to generate complementary and reinforcing effects. The operational-level Army commander ensures that the concept is consistent with the stated intent (see paragraph 4a[3] above), as well as the JFC's intent and strategic direction. Throughout the echelons of command, the concept of operations are vertically and horizontally integrated to ensure unity of effort and purpose. More detailed information on how the Army commander plans to coordinate the use of air power to support the scheme of maneuver can be found in the air support appendix of the fire support annex (normally, Annex C).

(5) Logistics. Paragraph 4, *Service Support*, outlines key logistical considerations for employment and sustainment of assets.

(6) Communications. Paragraph 5, *Command and Signal*, outlines the command hierarchy and assigns appropriate frequencies, call signs, and codewords for units and attachments in support of planned operations.

b. Targeting Process. Targeting is a significant part of the Army's participation in the TAGS planning process. The Army commander uses the targeting process to shape the battlespace and to synchronize fire support and maneuver. It enables the attack of the right target with the best weapon at the right time. It is the process of selecting targets and matching the appropriate response to them on the basis of operational requirements and capabilities. Emphasis is on identifying resources that the enemy can least afford to lose, degrading the enemy's ability to take the initiative, and forcing the enemy to conform to friendly battle plans. A target may be an enemy function, formation, facility, equipment, or piece of terrain. The selection of targets must support the ground commander's battle plan. The targeting process requires coordination among multidisciplined groups, which include fire support, intelligence, operations, planning cell, and liaison personnel. The process begins with the receipt of a mission and continues through development and execution of an OPLAN. It focuses on developing a high-payoff target list (HPTL) that specifies which targets are to be acquired, attacked, and when; what the desired effects on the targets are; and which ones should be selected for deliberate follow-up attack and/or CA. From this list, the commander decides which attack option or combination of options to use and whether to request support from other components of the joint force. Therefore, the process not only supports the commander's operational intent but also helps select the method of attack and identifies what asset will conduct the attack. The Army and Marine Corps use a proactive methodology to conduct targeting called *decide-detect-deliver-assess (D3A)*, which is applicable to all targeting situations and any echelon of command.

(1) Decide. The decide function provides the focus and priorities for intelligence collection management and attack planning. Decisions include which targets should be acquired and attacked, where and when they will most likely be found, who can locate them, how they should be attacked, and whether CA is required. To assist the commander in deciding what should be attacked, the staff uses a process called intelligence preparation of the battlespace (IPB). IPB is a continuous systematic analysis of the enemy, weather, and terrain in a specific geographic area to evaluate threat capabilities and predict likely enemy courses of action. The IPB process facilitates target value analysis (TVA). TVA links the effects of attacking a target directly to the targeting function and involves detailed analysis of enemy doctrine, tactics, equipment, organization, and expected behavior. TVA listings indicate which targets are important, which are vulnerable, and when and where they are likely to be most vulnerable. Through TVA, the staff identifies those assets that the *enemy commander* requires for the successful completion of the mission. These are identified as high-value targets (HVTs). Because these targets are key to the *enemy commander's* success, they are normally given a higher priority for attack. If a HVT can be successfully acquired, is vulnerable to attack, and if such an attack supports the commander's scheme of maneuver, the target may be nominated as a high-payoff target (HPT). Once HPTs have been identified and nominated, they are grouped into a list that identifies them for a specific point in the battle in order of priority. The completed HPTL is submitted to the commander and, when approved, becomes a formal part of the fire support plan. It is then passed to the units and targeting elements. HPTs, when successfully attacked, contribute substantially to the success of the friendly commander's plans.

(2) Detect. Detect maximizes all available assets, ensuring that appropriate sensors are in position at prescribed times to search for specific HPTs. When detected, the target location is communicated to command elements for confirmation of the attack decision or directly to an attack system, if the target detection is designated as an attack trigger event. The intelligence section (G-2/S2) is the main staff element responsible for the detection efforts against HPTs.

(3) Deliver. The attack of targets must satisfy the guidance developed in the decide function, requiring a number of tactical and technical decisions/actions. The tactical decisions include the time of attack, the desired effects, and the specific attack system to be used. The technical decisions include the precise delivery means, number and type of munitions, unit to conduct the attack, and attacking unit's response time.

(4) Assess. CA is a timely and accurate estimate of damage resulting from the use of military force, either lethal or nonlethal, against a target. As a part of the targeting process, CA specifically pertains to the results of attacks on targets designated by the commander. Although primarily an intelligence function, it requires extensive coordination with operational elements to be effective.

c. Air Operations. Control of the air by friendly forces enables land forces to execute operations without interference from enemy air forces and maintain tactical flexibility. Enemy strengths in terms of forces, supplies, and combat reserves are most vulnerable to air attack when concentrated before dispersing to their battle areas. While the urgency of enemy actions may require direct attack against forces in contact, air power is more efficiently used to interdict in-depth those targets whose destruction, disruption, or delay will deny the enemy the time and space to employ forces effectively. A synchronized, systematic, and persistent plan of attack between air and land commanders is essential. Air component

functions that contribute directly to land operations are strategic attack, counterair, counterland (CAS and air interdiction [AI]), SO, airlift, and surveillance and reconnaissance (see Chapter III for more detailed information). Land forces also contribute to air operations by providing fires, including long-range rocket, missile, and cannon interdiction; attack helicopter missions; and EW. Long-range fires support SEAD, ground base defense, and attacks and interdiction of enemy aviation and theater missile forces.

5. Command and Control

a. AAGS. The Army's control system for synchronizing, coordinating, and integrating air operations with the commander's scheme of maneuver is the AAGS. The AAGS provides the means to initiate, receive, process, and execute requests for air support and to disseminate information and intelligence produced by aerial assets. Although some elements within AAGS belong to different services (for example, air/naval gunfire liaison company [ANGLICO], tactical air control party [TACP], etc.) and sometimes to different nations, they function as a single entity in planning, coordinating, deconflicting, and integrating air support operations with ground operations. The Army elements of the AAGS consist of operations, fire support, air defense, Army airspace command and control (A2C2), and coordination/liaison elements (see Figure II-1). ***Note: The term Army airspace command and control does not denote that any airspace contiguous to the battlefield or any other geographical dimension of airspace is designated "Army" airspace but refers to management, integration, and utilization of the airspace by airspace users over the Army's area of operations. Neither does it imply command of any asset that is not assigned or OPCON to an Army commander.***

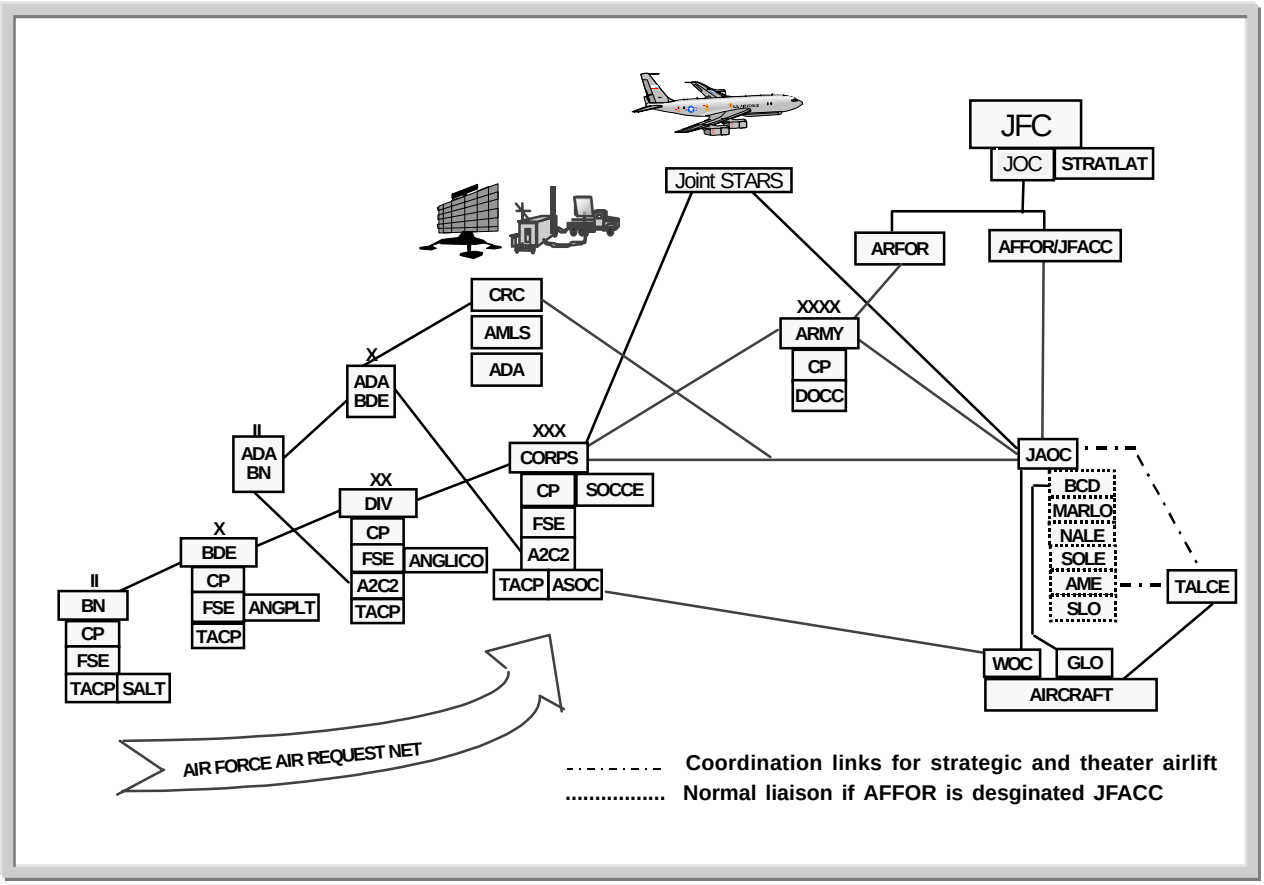


Figure II-1. AAGS Coordination Links

(1) Operations. In joint operations, adjustments are made for service-specific operating procedures. At each echelon down to division level, the commander is responsible for integrating fire support, deconflicting the airspace, and coordinating air support as required. The AAGS is the Army's operational approach to accomplish the functional activity of airspace C2. The operations officer (G-3) is responsible for staff supervision of all Army component air-ground operations except combat service support airlift, which is the responsibility of the logistics officer (G-4), and air reconnaissance and surveillance, which is the responsibility of the G-2.

(2) Fire Support. From brigade to corps-level, the force field artillery commander is the commander's designated fire support coordinator (FSCOORD). As such, the FSCOORD is responsible for overall direction of the fire support system and for ensuring that all available fire support means are fully synchronized with the battle plan. The FSCOORD normally operates through a fire support element (FSE) as part of a fire support cell at each echelon of command (see Figure II-2). A fire support cell may include liaison elements from the Air Force and Navy. The FSCOORD plans and coordinates engagement of surface targets, target acquisition, radar emplacement, counter-fire operations, and deception operations by fire support means. The four basic tasks of fire support are—support the force in contact, support the force commander's battle plan, synchronize fire support, and sustain the fire support system.

(3) Army Air Defense. Overall counterair operations support the strategic objectives of the JFC's campaign plan. These operations support the JFC's intent and concept of the operation by achieving two primary operational objectives: gaining control of the air environment and protecting the force. The JFC's designated AADC executes control of DCA units through positive and procedural controls. The AADC establishes rules of engagement (ROE) and, in conjunction with the ACA (which the AADC may also be), implements procedural airspace controls. Such procedural controls include airspace control measures that facilitate the

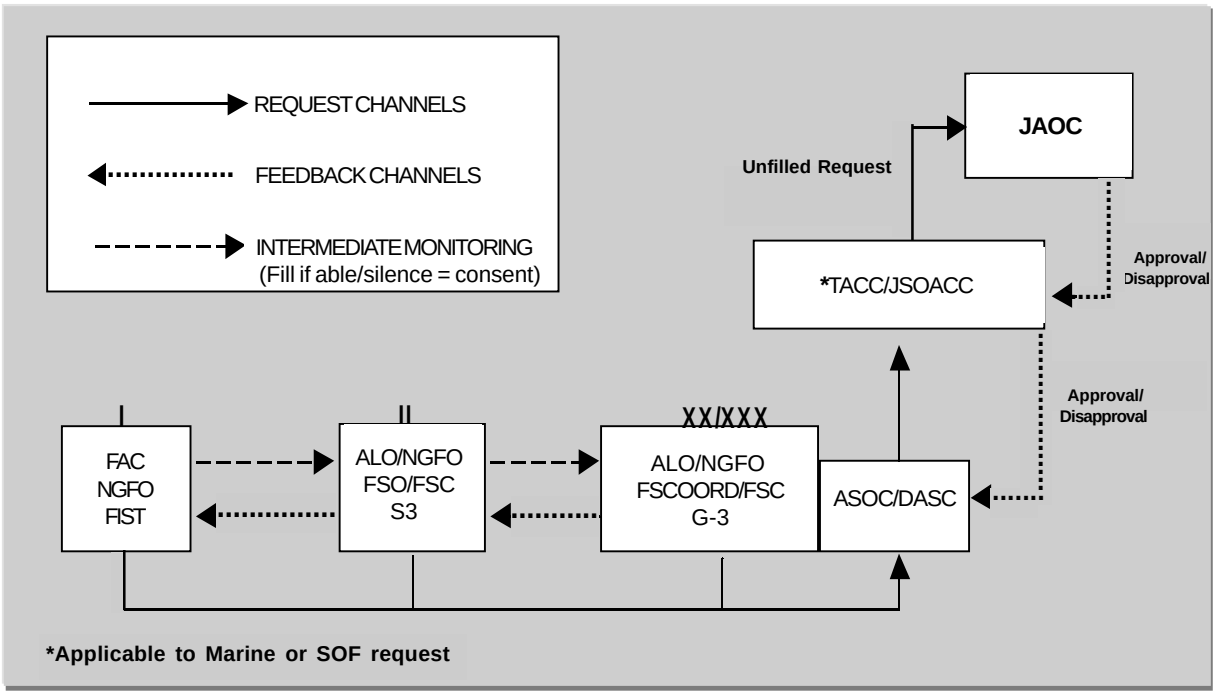


Figure II-2. Immediate CAS Request Channels

integration and synchronization of air defense assets into air operations to optimize airspace use, protect friendly units, and prevent fratricide. These airspace control measures are disseminated and updated via the airspace control order (ACO), which may be published in conjunction with the ATO. Positive control is accomplished by utilizing the electromagnetic spectrum to track and identify friendly, hostile, and unknown air assets. Once the JFC provides guidance and sorties are allocated, the AADC makes combat air patrol (CAP) placement recommendations and works closely with the JFACC staff to coordinate ATO development, integration, and dissemination. Based on the AADC's air defense plan, the land component commander (LCC) finalizes the air defense portions of the land component operations order. The LCC also designates Army assets for offensive counterair (OCA), DCA, TMD attack operations, and joint suppression of enemy air defenses (J-SEAD) tasks. Army air defense operations are planned and coordinated at all echelons within the land component and integrated into the AADC's theater air defense plan. The AADC, through the supporting air operations center (AOC), may delegate execution of DCA operations to a service's principal air defense C2 agency, such as the Air Force's control and reporting center (CRC), which may direct the execution of air defense for the theater. Further, the AADC may decentralize execution of the air defense plan to regional air defense commanders (RADCs). (See Chapter VII for more details on joint air defense operations.)

(a) Army Air and Missile Defense Command (AAMDC). The commander of the AAMDC is the echelon above corps (EAC) ADA commander and serves as the LCC's special staff officer responsible for integrating Army assets into joint counterair operations. The AAMDC commander, as part of the land commander's G-3 planning cell, assists in developing Army OCA and DCA operations plan and incorporating corps air defense requirements into the counterair plan. To plan and execute close, deep, and rear air defense operations, the BCD's air defense officer provides liaison between the AAMDC and the AADC. The AAMDC may augment the BCD ADA section as needed.

(b) EAC ADA Brigade(s). The EAC ADA brigade(s), under command of the AAMDC, normally provides air and missile defense coverage for priority theater assets (that is, ports, airfields, logistic bases, cities, etc.). The corps ADA brigade commander ensures that corps air defense requirements are integrated into the theater defense counterair plan by coordinating air defensive planning with the AAMDC, adjacent corps, and subordinate divisions. The EAC and corps-level ADA brigade(s) and their respective high-medium altitude air defense (HIMAD) units are all data linked and under OPCON for fires to the CRC. If this data link to the CRC is inoperable, units revert to procedural control. Short range air defense (SHORAD) units normally operate under procedural controls for air defense engagements and provide air defense coverage for the division commander's air defense priorities.

(4) A2C2. Under the JFC's ACA, the A2C2 element is the Army's principal organization responsible for airspace control in the Army's area of operations and is normally located in the TOC. Only corps and divisions have dedicated A2C2 elements, although a limited A2C2 capability exists at brigade and battalion levels, primarily through ADA and aviation liaison to the operations/S3 sections. Corps and divisional A2C2 elements coordinate and disseminate airspace control information and requirements under the staff responsibility of the G-3 and are supervised by the G-3 Air. Armor and light units of the Army, from corps through battalion, differ in the structure of their A2C2 elements. Normally, the principal staff sections and liaison elements collocated with or included within an A2C2

element consist of representatives from—ADA, Army aviation, ALO, FSE, EW, airlift staff representative of the G-4 section, and, when required, ANGLICO. A2C2 element tasks include—

(a) Identifying and forwarding Army airspace needs and requests to the ACA to be included in the airspace control plan (ACP) and ACO and to resolve conflicts.

(b) Maintaining A2C2 overlays and developing A2C2 procedures, plans, standing operating procedures, and annexes to orders/plans.

(c) Coordinating and integrating airspace user requirements within the area of operations for deconfliction and approval by the ACP and ACO.

(d) Coordinating Army airspace use with other components of a joint force and with adjacent units.

(e) Advising subordinate and higher headquarters of significant activities affecting airspace use.

(f) Advising subordinate and higher headquarters of the impact of airspace control measures or restrictions on the ground battle.

(g) Staffing and obtaining approval for special use airspace.

(5) Coordination/Liaison.

(a) BCD. The primary ARFOR liaison to the JFACC is the BCD. The Army component commander establishes a BCD to perform liaison between the ARFOR and the JFACC. The BCD is collocated with the JFACC's senior air operations control agency, normally the JAOC. The BCD is responsible to the Army component commander and coordinates with and receives objectives, guidance, and priorities from the G-3. Guidance and priorities must be sufficiently clear to permit the BCD to adjudicate ARFOR needs for air support. The BCD is organized into a headquarters element and six subsections: plans, operations, intelligence, ADA, airspace management, and airlift.

•The *BCD plans section* collocates with the JAOC's combat plans division. Its primary functions are—

••Relaying and coordinating Army requests for air support and JFACC requests for support from ground units.

••Providing the JAOC with the Army commander's intent, guidance, objectives, priorities for air support, fire support coordinating measures, and planned concept of operations.

••Assisting in planning, coordinating, and synchronizing J-SEAD and EW operations.

••Monitoring publication and distributing of the ATO.

•The *BCD operations section* is collocated with the JAOC's combat operations division. Its primary functions are—

••Monitoring execution of the current ATO as it pertains to missions planned against Army component-nominated targets as well as the overall air operations.

••Coordinating all changes that affect the current ATO and changes in the land forces' current operations, objectives, priorities, nominated targets, and fire support coordination measures (FSCMs).

••Keeping abreast of current theater policy regarding the integration of ground and air forces and coordinating target attacks beyond a given fire support coordination line (FSCL).

•The *BCD intelligence section* provides intelligence personnel support to the BCD plans and operations sections and establishes liaison with the JAOC combat

plans and operations divisions' intelligence staff. Its primary functions are—

••Providing information on enemy ground order of battle (OB) and assists in interpreting this information.

••Processing, justifying, and coordinating Army requests for reconnaissance and EW support.

••Obtaining Army intelligence reports and facilitating the exchange of intelligence data. Coordinating intelligence data for unique targeting requirements.

••Forwarding validation of ARFOR-nominated targets before attack.

•• Ensuring timely processing of CA to the ARFOR headquarters and identifying new targets for attack.

•• Processing ARFOR requests for immediate air reconnaissance and EW support.

••Providing the current ARFOR intelligence picture to the JAOC operations division.

•The *BCD ADA section* works with the operations and plans divisions of the JAOC. Its primary functions are—

••Coordinating air defense, TMD, and airspace requirements with the JAOC Army liaison at the CRC and at the land force air defense headquarters. Representing the Army component during development of the ACO, the air defense plan, and ROE.

••Coordinating with the JAOC, Army component headquarters, and Army air defense headquarters on changes in ROE, identification procedures, air defense warning, ADA employment and deployment, and reporting requirements.

•The *BCD airspace management section* works with the operations and plans divisions of the JAOC. Its primary functions are—

••Coordinating special electronics mission aircraft and deconflicts airspace for Army Tactical Missile System (ATACMS) fire missions.

••Informing and advising the ARFOR airspace control element of the impact of any additions or conflicts on airspace activities and control measures.

••Integrating planned Army fixed-wing aircraft into the ATO and coordinating special electronic mission aircraft and the ATACMS firings. Coordinating rotary-wing airspace requirements with ACA.

•The *BCD airlift section* is collocated with the Air Force component airlift control team (ALCT). Its primary functions are—

••Coordinating and monitoring airlift missions in support of Army component operations.

••Advising the director of mobility forces (DIRMOBFOR), and staff on all matters pertaining to ARFOR operations and intelligence.

••Monitoring publication, distribution, and execution of the theater airlift portion of the ATO.

(b) Deep Operations Coordination Cell (DOCC). The DOCC provides the commander at the Army and corps level a cell dedicated to shaping the battlefield. The DOCC's primary functions, with the assistance of the component staff and liaison elements, are—

•Integrating operational fires with the scheme of maneuver.

•Planning targeting objectives and priorities.

•Integrating target lists and FSCMs.

• Coordinating special targets.

• Tracking target execution by other components and subordinate echelons.

• Synchronizing corps, EAC, and joint deep operations.

• Coordinating and synchronizing employment of joint EW assets.

• Monitoring execution of the deep battle, ATO, land force participation in J-SEAD operations, SO missions, and unique targets of special interest to the commander.

(c) Liaisons. In addition to the liaison staffing cited above, other liaison activities that support the TAGS include—

• Ground Liaison Officer (GLO). The Army provides GLOs at each air wing operations center (WOC) supporting ground operations. GLOs provide Army expertise, brief pilots on the ground situation, and participate in the debriefing of pilots upon return from missions. GLOs receive and report operational and intelligence data to the BCD.

• Air Defense LNO. The Army provides air defense LNOs to the CRC to assist in the rapid engagement of airborne targets. Air defense LNOs may also be provided to the Airborne Warning and Control System (AWACS) to further assist in the ground-to-air battle. At the division and corps level, ADA liaison to the G-3 Air is vital to the integration SHORAD and HIMAD fires into joint air operations to protect the force and prevent fratricide.

• Airspace Management Liaison. The Army provides airspace management liaison to the CRC airspace management liaison section (AMLS). This liaison handles real-time Army airspace management issues that may arise during execution of air operations.

b. Levels of Command.

(1) Army Component Level. The Army component commander plans operations to fulfill JFC assigned responsibilities. Operations at the component level involve the deployment, maneuver, and fires of land forces over extended terrain and the integration of all Army and other component support into the overall campaign. The Army component headquarters staff is oriented toward planning and directing combat operations, with emphasis on planning future operations. The details of using maneuver, fires, and allocated support are left to the judgment of subordinate commanders. At EAC, the fire support function is performed by the DOCC (see Table II-2). Given the JFC's guidance and campaign plan, the Army-level commander provides guidance to the DOCC on shaping the future fight. Each subordinate corps provides target nominations and reconnaissance requests to the Army-level DOCC, as well as recommendations for overall targeting objectives for the future battle. The Army-level commander approves resource allocation and distributes CAS sorties and the corresponding requirements to provide SEAD. At this level, the commander takes an active role in the targeting process, primarily in target and reconnaissance nomination and prioritization. Based on the commander's intent, guidance, ground maneuver plan, and the G-2's evaluations and estimates, the DOCC conducts target planning and battle management to shape the battlefield, resulting in AI and reconnaissance nominations to the JFACC. The DOCC uses the Advanced Field Artillery Tactical Data System (AFATDS) to interface with all other fire support organizations. A description of the AFATDS is found under the corps and division FSE paragraph below.

(2) Corps and Division Level. At the corps and division levels, the FSE, A2C2 section, Army aviation LNO, and the Air Force TACP synchronize the TAGS. Close integration and continuous coordination among the FSCOORD, G-3 Air, and ALO are critical to success. The FSEs and TACPs at corps and division are similar in structure.

Table II-2. Fire Support Coordination Facilities

FORCE ECHELON	FIRE SUPPORT ORGANIZATION	FSCOORD	ASSISTED BY
ARMY	DOCC	ARMY DEEP OPERATIONS CHIEF	DEPUTY ARMY DEEP OPERATIONS CHIEF
CORPS	FSE	CORPS ARTILLERY COMMANDER	CORPS DEPUTY FSCOORD AND AFSCOORD
DIVISION	FSE	DIVARTY COMMANDER	DIVARTY AFSCOORD
BRIGADE	FSE	FA BATTALION COMMANDER	BRIGADE FSO
BATTALION/ SQUADRON	FSE	FSO	FIRE SUPPORT NCO
COMPANY/ TROOP	FIST	FSO	FIRE SUPPORT NCO

(a) FSE. Corps and division tactical and main CPs have FSEs under the FSCOORD's supervision. The FSE is the central clearinghouse for planning, coordinating, and synchronizing all categories of fire support on surface targets. The exact organization varies among units and depends on the mission, availability of fire support assets, and command preferences. Generally, it will include planning, targeting, and current operations elements. Field artillery has the dual mission of integrating all available fire support and providing field artillery fires. AFATDS is the multi-service (US Army/US Marine Corps) integrated battlefield management and decision support system used by the FSE. It receives, processes, and disseminates the ATO/ACO, air support requests, FSCMs, and friendly situation reports. AFATDS receives air battle information from the air picture it receives from the Air and Missile Defense Warning System (AMDWS) via tactical digital information link-J (TADIL-J). AFATDS can provide for preplanned fires for inclusion in the ATO and can automatically generate immediate air requests if "air" is selected as the desired attack means available. An AFATDS terminal is also located at the BCD in the JAOC. With the developmental contingency theater automated planning system (CTAPS) interface module, AFATDS is the Army's link to CTAPS and Theater Battle Management Core System (TBMCS) in the future.

(b) G-3 Air and A2C2 Element. The G-3 Air performs a pivotal role in the implementation of the AAGS and integration of the TAGS at corps and division level. The G-3 Air supervises the A2C2 element and receives, coordinates, plans, prioritizes, approves, and integrates preplanned requests for CAS with the FSE and other staff planners. The G-3 Air also coordinates redistribution of CAS resources, has responsibility for the coordination and approval of requests for immediate CAS, and initiates air support operations center (ASOC) execution. The G-3 Air advises the commander on the employment of Army aviation and has staff responsibility to manage airspace use within the command's AOR.

(c) Army Aviation. When Army aviation is employed as a maneuver element, the aviation brigade commander is responsible to coordinate air-ground synchronization with the G-3 Air and the FSE. The aviation brigade normally provides full-time liaison support to the division G-3 Air section to better facilitate AAGS and TAGS functions.

(d) EW Section. The G-3 controls the use of EW; however, the EW section is normally a staff element of the G-2 and usually collocates with the FSE and G-3 Air to facilitate target acquisition and fire support planning and execution.

(e) G-2 Collection Management and Dissemination. This G-2 agency coordinates the airspace requirements for special electronic mission aircraft (SEMA) and unmanned aerial vehicles (UAVs) and provides liaison to support the A2C2 effort. Reconnaissance and surveillance requests that cannot be supported by organic or DS assets are forwarded to higher headquarters.

(3) Brigade and Battalion Levels. The DS artillery battalion commander is the FSCOORD for the supported maneuver brigade. The brigade FSCOORD organizes fire support elements in each maneuver battalion and company. When Army aviation supports another maneuver brigade, the aviation unit commander, normally through an LNO, provides direct coordination with the supported unit. The brigade and battalion ALOs and ETACs coordinate Air Force air support directly with higher level TACPs in conjunction with the S3 Air. Preplanned air and fire support requests are compiled at each level and forwarded via the fire support net. Approved requests that cannot be attacked using organic or DS assets are passed to the next higher echelon for engagement. Immediate air requests can be made directly to the ASOC from any echelon for targets of opportunity. (See Figure II-2, page II-9, for immediate CAS request channels.)

(4) Company Level. The fire support team (FIST) and the battalion ALO (BALO)/ETAC synchronize fire support at the maneuver company level. The battalion fire support officer (FSO) supervises the company FISTs and usually coordinates CAS through the BALO/ETAC. Often, the BALO/ETAC will be collocated with a committed company or the main effort to put them in a position as far forward as possible to provide the best terminal control to CAS aircraft. In some situations, the aviation attack company commander may talk directly to a ground maneuver company commander to coordinate engagement areas, responsibility, threat location, and other force synchronization requirements.

6. Conclusion

The TAGS is critical to Army operations because it provides the commander a system that integrates the different services' air-ground systems. TAGS functions across the full range of military operations and provides ground commanders an enhanced capability to fight the close, deep, and rear battles. The TAGS facilitates success in current operations while allowing ground commanders to shape the battlefield to influence future operations. Army commanders expect the TAGS to provide the framework to synchronize supporting air operations with the ground effort. The ability of the commander's FSCOORD, G-3 Air, and ALO to work closely together in all aspects of planning, synchronizing, and executing operations are critical to the ground battle's success. The tactics, techniques, and procedures discussed in this publication can be modified to meet the needs of the JFC.

Chapter III

AIR FORCE COMPONENT

1. Background

This chapter provides a basic understanding of how the Air Force views the employment of air and space power and the Air Force contribution to the TAGS. It discusses the TAGS related missions and responsibilities in a joint force operation, operational factors that influence the way missions are accomplished, and the Air Force component C2 system. This chapter presents the tenets of airpower and Air Force core competencies from an air and space perspective.

2. Mission

The mission of the United States Air Force (USAF) is to defend the United States through control and exploitation of air and space. Airmen accomplish this mission by applying the principles of war, tenets of airpower, and Air Force core competencies through the functions of airpower.

a. Air and Space Power Functions. The Air Force's basic functions are the broad, fundamental, and continuing activities of air and space power. Air Force forces (AFFOR) employ air and space power globally through these basic functions to achieve strategic, operational, and tactical level objectives in war and military operations other than war (MOOTW). Most air and space forces can perform multiple functions to achieve various strategic, operational, or tactical effects. It is this inherent versatility when combined with the speed, flexibility, and global nature of our reach and perspective that generates the Air Force contribution to joint force capabilities. These functions can be conducted at any level of war and enable the Air Force to shape and control the battlespace. Air and space power functions include—counterair, counterland, counterspace, countersea, strategic attack, counterinformation, C2, airlift, air refueling, spacelift, SO employment, intelligence, surveillance, reconnaissance, combat search and rescue (CSAR), navigation and positioning, and weather service. Those functions most commonly associated with the TAGS are counterair, counterland, countersea, and counterinformation. A brief discussion of these appears below. A more detailed discussion of all Air Force functions can be found in *Air Force Doctrine Document 1 (AFDD1)*.

(1) Counterair. Counterair consists of operations to attain and maintain a desired degree of air superiority by the destruction or neutralization of enemy forces. Counterair's two elements, OCA and DCA, enable friendly use of otherwise contested airspace and disable the enemy's offensive air and missile capabilities, thus reducing the threat posed against friendly forces. Air and space superiority is normally the first priority of air and space forces.

(2) Counterland. Counterland involves those operations conducted to attain and maintain a desired degree of superiority over surface operations by the destruction or neutralization of enemy forces. Although normally associated with support to friendly surface forces, counterland is a flexible term that can encompass the identical function without friendly surface force presence. This independent attack of adversary surface operations by air and space forces is the essence of asymmetric application and can be key during initial phases of a conflict. Specific traditional functions associated with air and space counterland operations are AI and CAS.

(a) AI. Interdiction consists of operations to divert, disrupt, delay, or

destroy the enemy's surface military potential before it can be used effectively against friendly forces. Interdiction attacks enemy C2 systems, personnel, materiel, logistics, and their supporting systems to weaken and disrupt the enemy's efforts and may achieve tactical, operational, or strategic objectives. The JFACC is the supported commander for AI and uses the JFC's priorities to plan and execute the theater-wide interdiction effort. Interdiction and surface force maneuver can be mutually supporting. Surface force operations can support interdiction operations by forcing the enemy to consume supplies at an accelerated rate and to move forces to meet emerging threats. These movements and supply efforts then become targets or objectives for air and space forces. Interdiction can also support surface operations by forcing the enemy to react to friendly attack, and in doing so, expose vulnerabilities to surface maneuver forces. Additionally, attacks on enemy C2 systems contribute to operations that interfere with an adversary's ability to mass, maneuver, withdraw, supply, and reinforce surface forces. For additional discussion of interdiction operations, see Chapter VII of this publication or Joint Publication 3-03, *Doctrine for Joint Interdiction Operations*.

(b) CAS consists of air operations against hostile targets in close proximity to friendly forces that require detailed integration of each air mission with the fire and movement of those forces. CAS provides direct support to help friendly surface forces carry out their assigned tasks. Commanders can build on the tactical effects of CAS by orchestrating it with other surface and air operations to produce operational level effects. In fluid, high intensity warfare, the need for tight control, unpredictability of the tactical situation, proliferation of lethal ground-based air defenses make CAS especially challenging.

CAS should be planned to prepare the conditions for success or reinforce successful attacks of surface forces. It can disrupt attacks, help create breakthroughs, provide cover for withdrawals, or help guard flanks. To be most effective, CAS should normally be used at decisive points in a battle or operation and massed to apply concentrated combat power and saturate defenses.

(3) Countersea. Countersea functions are an extension of Air Force functions into a maritime environment. The identified specialized collateral functions are sea surveillance, antiship warfare, protection of sea lines of communications through antisubmarine and antiair warfare, aerial mine laying, and air refueling in support of naval campaigns.

(4) Counterinformation. Counterinformation seeks to establish information superiority through control of the information realm. Counterinformation creates an environment where friendly forces can conduct operations without suffering substantial losses, while simultaneously denying the enemy the ability to conduct their operations. The focus of the effort is on countering the enemy's ability to attain informational advantage. Counterinformation, like counterair and counterspace, consists of offensive and defensive aspects.

(a) Offensive counterinformation (OCI). OCI operations are actions taken to control the information environment. The purpose is to disable selected enemy information operations. OCI operations are designed to destroy, degrade, or limit enemy information capabilities and depend on having an understanding of an adversary's information capabilities. Examples of OCI include jamming radars and corrupting data acquisition, transformation, storage, or transmissions of an adversary's information.

(b) Defensive counterinformation (DCI). DCI are those actions taken to

protect our information, information systems, and information operations from the adversary. DCI programs, such as operations security (OPSEC), information security (INFOSEC), and counterintelligence assess the threat and reduce friendly vulnerabilities to an acceptable level. Improving security procedures designed to safeguard equipment and information can prohibit unintentional and unwanted release of information.

b. Core Competencies. The core competencies are at the heart of the Air Force's strategic perspective, thereby at the heart of the service's contribution to the nation's military capability. These competencies stem from two sources: *functions* that can only be accomplished by air and space forces and *functions* that confer advantages when performed by air and space forces. These competencies are the basic areas of expertise that the Air Force brings to any activity across the spectrum of military operations whether as a single service or in conjunction with other services in joint operations.

(1) Air and Space Superiority. Air and space superiority rarely is an end in itself but a means to the end of attaining military objectives. Control of air and space enhances, and may even secure, freedom of action for friendly forces in all geographical environments—land and sea as well as air and space. Success in air, land, sea, and space operations depends upon a required degree of air and space superiority; therefore, the JFC must, when necessary, be willing to subordinate all other air and space operations to the goal of achieving air and space superiority. During combat operations, the weight of an enemy attack may tempt the JFC to throw everything into supporting friendly surface forces without first gaining control of air and space. It is the task of the air component commander to ensure the JFC understands the implications of this approach.

(2) Precision Engagement. Precision engagement is the ability to command, control, and employ forces to cause discriminate strategic, operational, or tactical effects. Integral to precision engagement in combat operations is the ability to mass force anywhere and attack any facet of the enemy's power. Mass no longer implies massing many hundreds of aircraft to attack a single target; rather, it is the effects of forces that are the defining factor. In addition to the traditional application of force, precision engagement includes nonlethal as well as lethal force.

(3) Information Superiority. Information superiority is the ability to collect, control, exploit, and defend information while denying an adversary the ability to do the same. Like air and space superiority, information superiority includes gaining control over the information realm and fully exploiting military information functions. Information superiority efforts focus on giving the friendly force commanders the ability to consistently react to a situation and make accurate decisions more rapidly than the enemy. In doing so, it increases the strain and "frictions of war" on enemy leaders and forces, eventually causing shock at unexpected events. Dominating the information spectrum may also offer opportunities to significantly degrade and influence the adversary's decision cycle time and the quality of the information within that cycle, thereby, ultimately shaping the enemy's perception of the situation and available courses of action.

(4) Global Attack. The ability to continuously observe an adversary's actions and then, when ordered, to swiftly deliver a wide variety of credible capabilities is the true essence of deterrence. Although all military services provide strike capabilities, the Air Force can attack rapidly and persistently with a wide range of munitions anywhere around the globe.

(5) Rapid Global Mobility. Rapid global mobility refers to the timely

positioning and sustainment of military forces and capabilities across the range of military operations. In the post-cold war continental United States (CONUS)-based force structure, global mobility is a strategic necessity. With only minimal forces forward deployed, global mobility is essential to successful contingency operations. Air assets provide the National Command Authorities (NCA) the ability to respond quickly to any crisis.

(6) Agile Combat Support. Once a force is deployed, sustaining it becomes paramount. This includes all elements of a forward base structure—maintenance, supply, transportation, communications, services, engineering, security, and medical. Commanders in each of these areas not only assist the JFC in generating air and space power but also ensure their respective systems form a seamless, agile, and responsive combat support system.

In conclusion, it is important to understand that any particular function may be employed to provide more than one competency. For example, the airlift function may apply to global mobility or precision employment, and reconnaissance may apply to both information superiority and precision employment. Additionally, what distinguishes the Air Force's core competencies is the speed and the global nature of their reach.

3. Component Operations

Component commanders are responsible for planning long-range operations to accomplish their assigned missions. While the ARFOR commander may envision operations conducted in deep, close, and rear areas in terms of fires and maneuver, the commander Air Force forces (COMAFFOR) envisions assigned missions in terms of functions (for example, strategic attack, counterland, counterair, etc.). The COMAFFOR accomplishes the JFC-assigned missions by developing and conducting operations, often in phases, that continue until the JFC's desired campaign end state is achieved.

a. Approach. The aerospace environment consists of the entire expanse above the earth's surface and can be exploited best when considered as an indivisible whole. Air and space power grows from the ability to use a platform operating in or passing through the aerospace medium for military purposes. Air and space power can be concentrated quickly on or above any point of the earth's surface providing a relative advantage over surface-based forces.

b. Tenets of Air and Space Power. Air and space power is intrinsically different from either land or sea power, and its employment must be guided by axioms different than those of surface forces. The fundamental guiding truths of air and space power employment are known as tenets. Air Force tenets of airpower:

(1) Centralized control and decentralized execution of air and space forces is critical to force effectiveness. Centralized control allows commanders to give coherence, guidance, and organization to the air and space effort and maintain the ability to focus the air and space power. Decentralized execution allows delegation of execution authority to responsible and capable lower level commanders to achieve an effective span of control and to foster initiative, situational responsiveness, and tactical flexibility.

(2) Air and space power is flexible and versatile. Although often used interchangeably, flexibility and versatility are distinctly different in meaning. *Flexibility* means air and space forces can exploit mass and maneuver simultaneously. At the operational level, flexibility allows air operations to shift from one campaign objective to another quickly and decisively. *Versatility* means air and space power can be employed equally effectively at the strategic, operational, and tactical

levels of warfare. Air and space forces have the versatility to deploy globally and responsively in support of strategic, operational, or tactical objectives and can simultaneously achieve objectives at all three levels of war (in parallel operations).

(3) Air, space, and information forces produce synergistic effects. The proper application of coordinated air, space, and information forces can produce effects greater than the individual contributions of the same forces employed separately. Through the precise, coordinated application of the various elements of air, space, and surface force power, disproportionate pressure can be brought to bear on enemy leaders forcing them to comply with our national will.

(4) Air, space, and information systems are uniquely suited to persistent operations. Operations in the third (air), fourth (space), and fifth (information) dimensions allow air and space forces to visit and revisit targets continually, nearly at will. Because of their exceptional speed and range, air and space forces can operate from outside the JOA and still bring forces to bear against the enemy. Space forces in particular hold the ultimate high ground, and as space systems advance and proliferate, they offer the potential for "permanent presence" over the entire globe.

(5) Air and space operations must achieve concentration of purpose. The versatility of air and space power makes it attractive for almost every combat task. The principles of mass and economy of force deal directly with concentrating overwhelming power at the decisive time and place (or places). The demand for air and space forces will often exceed the available forces and may result in attempts to fragment the integrated air and space effort to fulfill the many demands of the operation. A vital concept of air and space forces is its inherent ability to accomplish simultaneous strategic, operational, and tactical effects—to conduct parallel operations—and attain overwhelming effect (concentration of purpose) through carefully dispersed applications.

(6) Air and space operations must be prioritized. Given their flexibility and versatility, demands for air and space forces will likely exceed availability, therefore, establishing priorities is essential. Theater-level land and naval component commanders must effectively prioritize their individual air component support requirements to the JFC, so that overall priorities for the use of air and space forces can flow from an informed dialogue between the JFC and the air component commander. The air component commander assesses the possible uses of air forces and their strengths and capabilities to support the overall joint campaign, air operations, and the battle at hand. Limited resources require that air and space forces be applied where they can make the greatest contribution to the JFC's most critical current requirements. The principles of mass, offensive, and economy of force and the tenet of concentration, along with the airman's strategic perspective, all apply to prioritizing air and space force operations.

(7) Air and space operations must be balanced. The inherent strategic application of air and space forces must be balanced against their ability to conduct operations at all levels of war, often simultaneously. Much of the skill of an air commander is reflected in the dynamic and correct balancing of the principles of war and the tenets of airpower to bring air and space power together to produce a synergistic effect. The air component commander must balance combat opportunity, necessity, effectiveness, efficiency, and the impact on accomplishing JFC assigned missions against the associated risk to friendly air and space forces.

4. Planning

a. The JFACC, when one is designated, will normally establish the structure to employ air and space forces and is responsible for developing a joint air operations plan to best support joint force objectives as assigned by the JFC or higher authority. Planning for the air portion of the campaign consists of five phases:

(1) Combat Environment Research. This phase consists of gathering information about enemy and friendly capabilities and the environment in which the conflict will take place. This is a continuous process throughout the life of the operation.

(2) Objective Determination. Air objectives are derived from and support higher-level objectives. Conditions for the successful resolution of the conflict define the desired end state. Restraints and constraints shape the resultant objectives and strategies.

(3) Center(s) of Gravity (COG) Determination. This phase focuses on identifying a point or points where the enemy may be most vulnerable and where, if successfully attacked, there exists a high chance for decisive results. COG(s) describe strengths as well as vulnerabilities. This analysis helps identify the point or points against which a certain level of effort may accomplish more than an equivalent level of effort applied elsewhere.

(4) Strategy Determination. Strategy is how the available military force is used to accomplish theater objectives. The air strategy is how the JFACC plans to use air and space power to achieve the JFC's objectives.

(5) Joint Air Operations Plan Development. The product of this phase is a completed air portion of the campaign plan. The plan describes key elements of the employment of air and space forces, integrates and harmonizes air and space power, identifies targets to be attacked, and describes levels of effort.

b. In developing the employment plan, the JFACC must be fully cognizant of the JFC's intent and objectives. In understanding how joint forces are being employed within the conflict, the JFACC can develop strategies for employing air and space power and recommend specific operational approaches for achieving theater objectives. The JFACC's responsibilities include ensuring air forces are available to meet JFC requirements; establishing ROE for air operations; providing for airspace management; developing plans for search and rescue operations; providing for warning of hostile aerial assaults; coordinating the air power employment of joint forces; and preparing the Master Air Attack Plan (MAAP) and ATO. The ATO is a detailed, integrated document specifying details for individual sorties to include targets, mission timing, weapons loads, air refueling data, call signs and special instructions (SPINS). Planning and executing the joint ATO is a continuous six-phase process (see Chapter VII for detailed explanation).

5. Command and Control

The COMAFFOR exercises command authority as defined by the JFC. COMAFFOR may be assigned responsibilities as a JFACC, ACA, and/or AADC (see discussion in Chapter VII). The COMAFFOR will plan, coordinate, and execute AFFOR air operations and other assigned responsibilities through the component Theater Air Control System (TACS), which allows the required centralized planning and control and decentralized execution previously discussed. The JFACC staff (if JFACC is COMAFFOR) or AFFOR staff will normally function within the Air Force component TACS (see Figure III-1). If another component has JFACC responsibility, the COMAFFOR would retain service component responsibilities, which would also be accomplished through the TACS.

The TACS depicted in Figure III-1 is the backbone of the AFFOR's contribution to the TAGS and consists of units specifically trained and equipped to support the C2 process. The TACS is designed to perform centralized planning and control and to facilitate decentralized execution. The elements that form the TACS are the AOC, separate agencies, liaisons, and communications and computers:

a. AOC. The AOC is the air and space operations planning and execution focal point for the AFFOR and is where centralized planning, direction, control, and coordination of air and space operations occur. When the COMAFFOR is designated the JFACC and has OPCON or TACON of additional forces, the AOC becomes the JAOC and is manned accordingly. AOC personnel are responsible for planning, executing, and assessing air and space operations and directing changes as the situation dictates. This section describes a fully functional AOC that can be tailored and scaled to a specific or changing mission and to the associated task force that the USAF presents to the JFC. Thus, the USAF would not necessarily provide all of the elements described in the following sections if the situation does not warrant them.

(1) Primary AOC Functions.

(a) Develop air operations strategy and planning documents that integrate air, space, and information operations to meet JFACC objectives and guidance.

(b) Task and execute day-to-day air operations, provide rapid reaction, positive control, and coordinated and deconflicted weapons employment, as well as integrate the total air effort.

(c) Receive, assemble, analyze, filter, and disseminate all-source intelligence and weather information to support air operations planning, execution, and assessment.

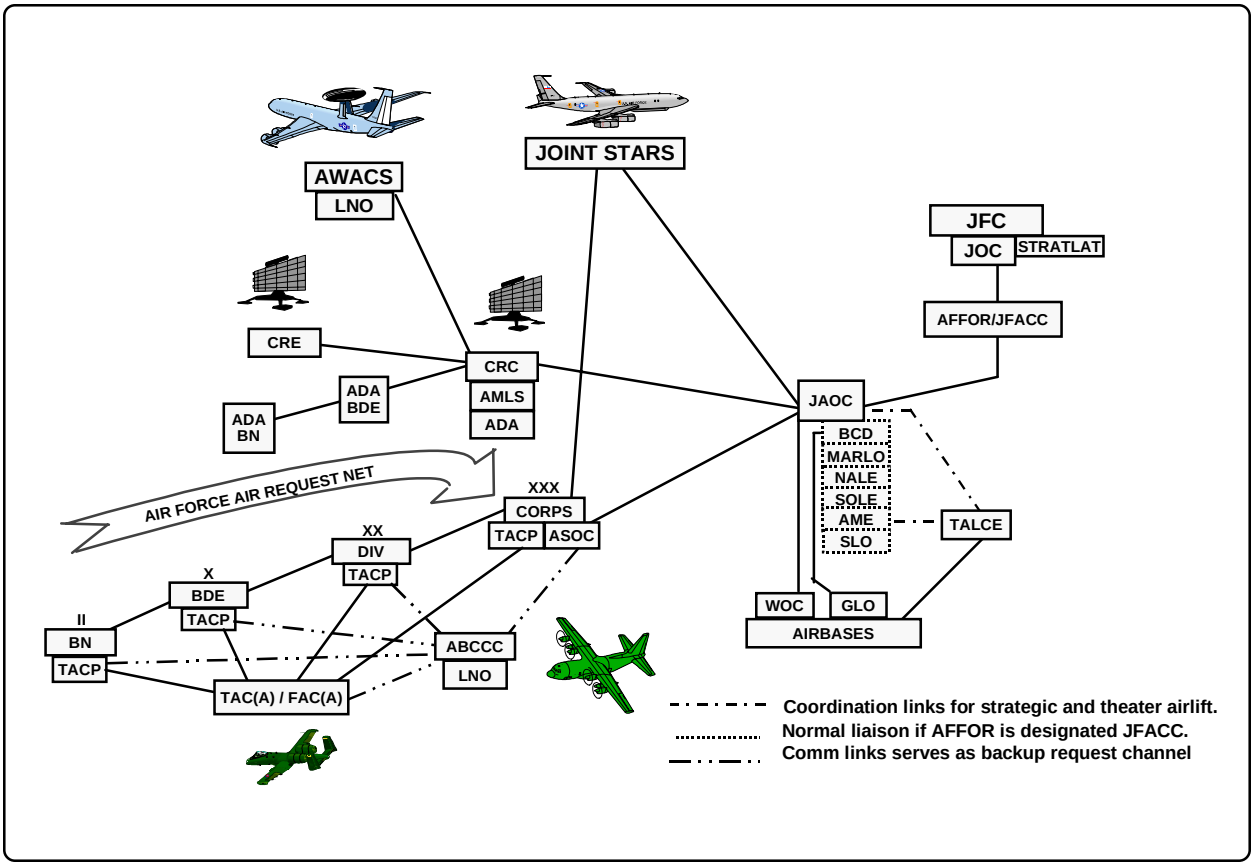


Figure III-1. TACS Coordination Links

(d) Issue ACO and coordinate airspace control activities for the ACA when the JFACC is designated the ACA.

(e) Provide overall direction of air defense, including TMD, for the AADC when the JFACC is designated the AADC.

(f) Plan, task, and execute theater intelligence, surveillance and reconnaissance (ISR) missions.

(g) Conduct operational level assessment to determine mission and overall air operations effectiveness as required by the JFC to support the theater CA effort.

(h) Produce and disseminate an ATO and changes.

(i) Provide for the integration and support of all air mobility missions.

(2) Air and Space Planning and Execution Process. Fundamental to the AOC is the integrated team concept. Individuals from various areas of expertise form these integrated teams. This concept places various experts in integrated teams to accomplish strategy development, operational level assessment, detailed planning, ATO production, and execution functions (see Figure III-2).

(3) AOC Organization. Normally an AOC is led by an AOC director and has 4 divisions with 10 core teams and numerous specialty and support teams. Normally the COMAFFOR/JFACC staff directors, the

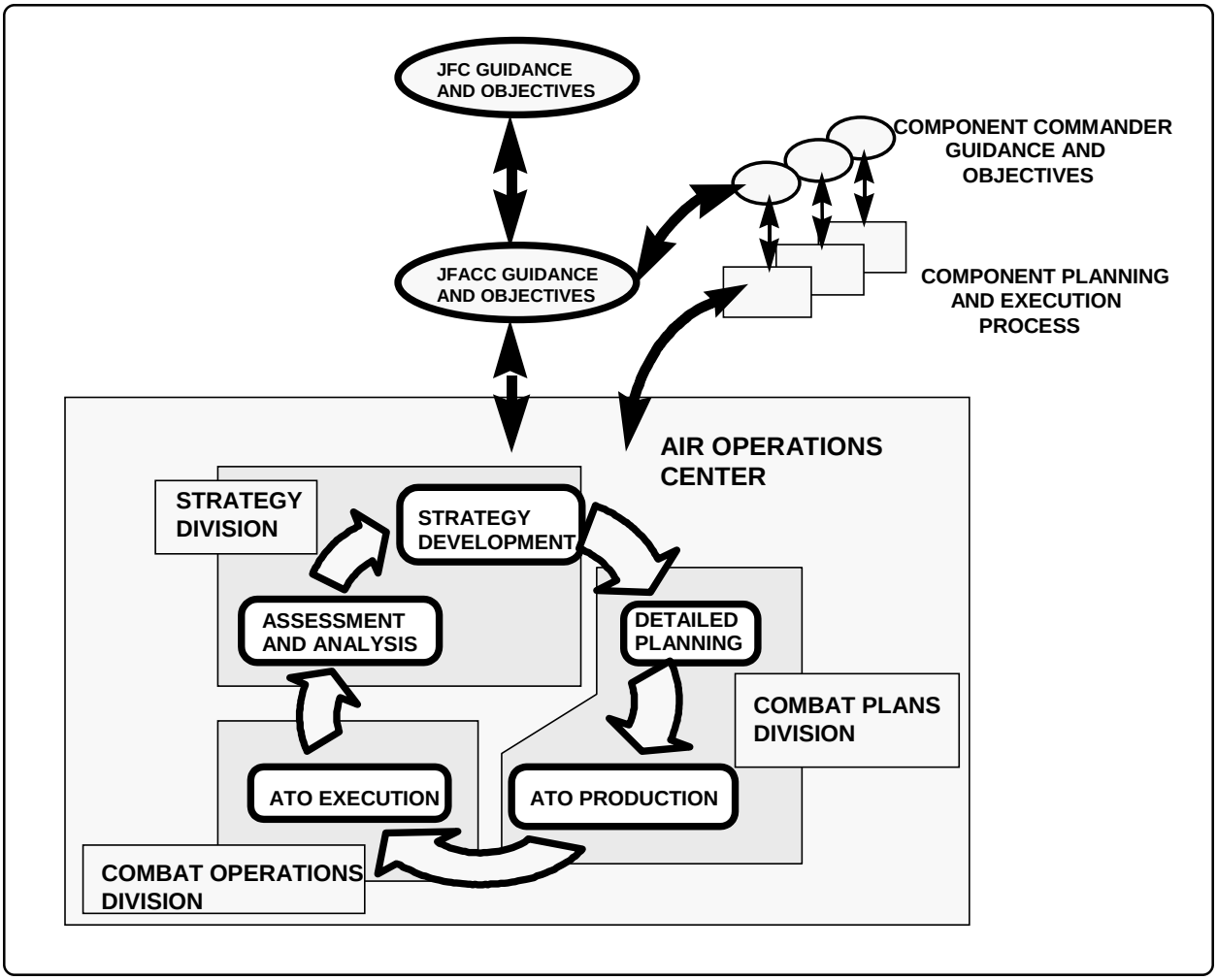


Figure III-2. Air and Space Planning Process

A-1 through A-6, support the AOC director (in planning and execution of the COMAFFOR/JFACC's operational tasks), and fulfill their responsibilities by supervising their personnel on the AOC teams. The AOC team concept represents a wide range of systems and capabilities. These teams are organized and integrated within the AOC to support the COMAFFOR/JFACC. The teams should be flexible, with an emphasis on integration of capabilities and the avoidance of stovepipes. The basic structure of an AOC is illustrated in Figure III-3. Specialty and support team members will move into the core teams as required.

(4) AOC Director. The AOC director is charged with the effectiveness of joint air and space operations and focuses on planning, coordinating, allocating, tasking, executing, and assessing air power operations in the AOR/JOA based on JFACC guidance and DIRMOBFOR coordination. It is the director's responsibility to ensure AOC functions necessary to complete the air and space planning and execution process are executed in a timely, efficient manner.

(5) Core Teams. Core teams from the four divisions (strategy, combat plans, combat operations, and air mobility), form

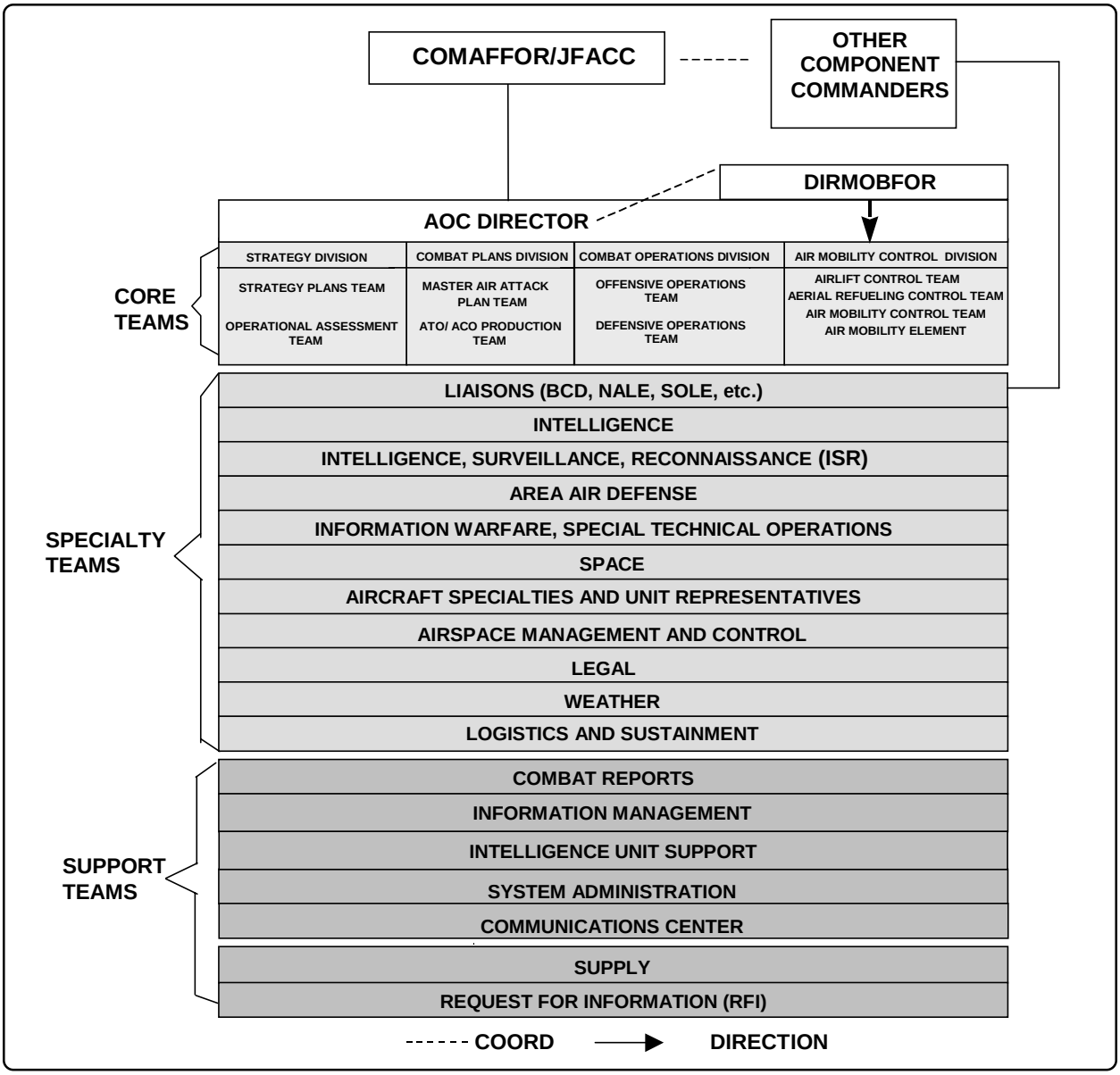


Figure III-3. AOC Organization

the basic infrastructure of the AOC, and drive the planning and execution process.

(a) Strategy Division. Although located in the AOC and reporting to the AOC director in order to maintain continuity with AOC processes, the strategy division has a strong bond and special relationship with the COMAFFOR/ JFACC. This division develops, refines, disseminates, and assesses the progress of the JFACC's air and space strategy, concentrating on long-range planning of air and space operations for theater activities. The strategy division should not become mired in the detailed, day-to-day ATO production or execution. Representatives from a range of functional areas, such as operations, intelligence, communications, logistics, and space are full-time members of the division. The strategy division has the following responsibilities:

•Develops the *JFACC Air and Space Estimate of the Situation*. The division will normally use the JFC's strategic appreciation to develop the estimate.

•Serves as the JFACC's focal point for overall development and coordination of the Joint Air and Space Operations Plan (JASOP) in support of the JFC's theater campaign.

•Develops the joint air and space strategy and assesses its support of the theater campaign.

•Serves as the primary liaison with the JFC planners.

•Monitors and assesses the progress of the air phases and provides overall operational level CA assessment with respect to the air and space objectives.

•Develops alternative contingency plans and courses of action.

•Develops the prioritized air objectives, air tasks, and measures of merit.

•Provides input to the development of an ISR plan for the JTF.

The strategy division is normally comprised of two teams: *strategy plans* and *operational assessment*. Before the start of operations, the strategy plans team develops a proposed air and space strategy, air and space courses of action, and the JASOP. After the start of operations, they modify the JASOP and provide guidance to the combat plans division and other AOC elements as necessary. In some cases there will not be a requirement for daily guidance from the strategy division. Rather, the dissemination of guidance is *event driven* and would probably occur as the end of a planned phase approaches, with a change in JFACC or JFC guidance or with a significant shift in the combat situation. The operational assessment team assesses the progress of air and space operations at the operational or campaign level. They assess the progress of each phase toward accomplishment of the JFACC's objectives and tasks based on the approved measures of merit for each task and objective. The information this team provides allows the JFACC and the strategy plans team to address the air and space strategy. Operational assessment addresses the overall achievement of the desired air and space objectives; it is not limited to battle damage assessment (BDA).

(b) Combat Plans Division. The combat plans division is responsible for the near-term air and space operations planning function of the AOC. This division develops detailed plans for the application of air and space resources based on JFACC approved guidance received from the strategy division. These plans include the near-term guidance, allocation, and tasking instructions for assigned and attached forces. This is accomplished within the air

and space planning and execution process through the preparation of ATOs. Combat plans transmits the ATO to combat operations for execution. Generally, combat plans works the two ATO periods beyond the current ATO. The combat plans division has the following responsibilities:

•Develops CA methods tied to ISR, C2 plans, and ATOs to achieve JFC objectives.

•Determines the optimal combination of target, platform, weapon, and timing for missions included in the ATO.

•Ensures air and space tasking supports the overall JTF campaign.

•Produces and disseminates an operationally and tactically sound ATO.

•Generates SPINS and the daily ACO or ACO updates.

The combat plans division is comprised of two teams: *MAAP* and *ATO/ACO production*. The MAAP team uses the JFC and JFACC's guidance, the authorized target list, optimal weapons selections, and asset availability to produce a timed-phased road map for operations or MAAP. The MAAP team works closely with each component liaison and combat operations division to ensure component concerns are addressed and operational objectives are efficiently achieved. The MAAP team has the following responsibilities:

•Builds and maintain the Joint Integrated Prioritized Target List (JIPTL).

•Constructs the MAAP and briefs the developed MAAP to the JFACC for approval.

•Receives, prioritizes, and deconflicts user requests for airspace pertaining to the ATOs in planning and construct the daily ACO.

•Develops the air defense procedures for C2 of an integrated air defense system.

•Develops the ATO shell for CTAPS or the follow-on to CTAPS, the Theater Battle Management Core System (TBMCS).

The ATO/ACO production team receives the ATO shell (a detailed list of missions, forces, and timing) from the MAAP team and along with air mobility requirement's input from the air mobility division refines the ATO in the TBMCS. In addition, they integrate the ACO developed by the MAAP team with the ATO. The ATO/ACO production team has the following responsibilities:

•Builds mission packages that achieve campaign objectives.

•Integrates other components' direct support sorties into the ATO.

•Transmits the ATO/ACO to all required users once they are completed.

•Transfers responsibilities for the completed ATO/ACO to the combat operations division.

(c) Combat Operations Division (Combat Ops). Combat ops is responsible for executing the current ATO. Combat ops analyzes, prioritizes, and, if necessary, makes recommendations to the JFACC (or designated representative) to redirect assets. ACA and AADC representatives along with component LNO staffs are part of this decision-making process. Combat ops has the following responsibilities:

•Executes the current ATO through constant monitoring of air missions under control of the TACS.

•Evaluates ISR feedback.

•Adjusts the ATO as necessary in response to battlespace dynamics (for example, assigned targets are no longer valid, HPTs are detected, enemy action threatens friendly forces).

•Coordinates emergency/immediate air support requests.

•Monitors and recommends changes to defensive operations.

•Publishes changes to the ACO.

•Provides feedback on status of the current ATO.

The combat ops is normally comprised of two teams: *offensive operations* and *defensive operations*. The offensive operations team is responsible for executing the ATO in accordance with commanders' guidance and in reaction to the current battlespace situation for all offensive missions. The offensive operations team monitors the battlespace and recommends changes to the ATO based on unforeseen opportunities and challenges. The defensive operations team is responsible for execution of the ATO in accordance with commanders' guidance and in reaction to the current battlespace situation for all defensive missions. The defensive operations team monitors the battlespace and recommends changes to the ATO based on unforeseen opportunities and challenges.

(d) Air Mobility Division. The director of mobility forces (DIRMOBFOR) is responsible for integrating the total air mobility effort for the JFACC. The DIRMOBFOR provides direction to the air mobility division to execute the air mobility mission. The air mobility division will plan, coordinate, task, and execute the air mobility mission. The air mobility division is located in the AOC. The AOC director ensures the air mobility division works as an effective division of the AOC in the air and space planning and execution process. The air mobility division coordinates with the JFC's movement requirements and control authority, the theater air mobility operations control center (AMOCC), if established, and the AMC tanker/airlift control center (TACC) as required to derive apportionment guidance, compute allocation, and to collect requirements. As directed by the DIRMOBFOR, the air mobility division will task attached theater air mobility forces through wing and unit CPs when those forces operate from permanent home bases or WOC if forward deployed. Under the direction of the DIRMOBFOR, the air mobility division has the following responsibilities:

•Integrates and directs the execution of theater and United States Transportation Command (USTRANSCOM)-assigned mobility forces operating in the AOR/JOA and in support of the JFC's requirements/objectives.

•Maintains the flow of theater and USTRANSCOM-assigned air mobility assets in support of JFC objectives.

•Coordinates air mobility support for mobility requirements identified and validated by the JFC requirements and movement authority as appropriate.

•Participates in the air and space planning and execution process and coordinates with the AOC director to ensure the air mobility mission is incorporated in the ATO.

•Identifies ISR requirements in support of the air mobility mission.

•Ensures air mobility missions are visible in the Air Mobility Command (AMC) standard C2 system and reflected in the ATO/ACO.

The air mobility division is comprised of four elements: air mobility control team (AMCT); ALCT, aerial refueling control team (ARCT), and the air mobility element (AME). The AMCT serves as the DIRMOBFOR's centralized source of AMC control and communications during

mission execution. The DIRMOBFOR uses the AMCT to direct, or redirect as required, air mobility forces in concert with other air and space forces to respond to requirement changes, higher priorities, or immediate execution limitations. The AMCT deconflicts all air mobility operations into, out of, and within the area of operations. The AMCT maintains execution process and communications connectivity for tasking, coordination, and flight following with the AOC combat operations division, subordinate air mobility units, and mission forces. The ALCT brings theater airlift functional expertise from the theater organizations to plan, coordinate, manage, and execute theater airlift operations in the AOR/JOA for the JFACC. USTRANSCOM/AMC may augment the ALCT with theater airlift expertise. These two sources of airlift expertise integrate into a single ALCT within the air mobility division. The ARCT coordinates aerial refueling planning, tasking, and scheduling to support combat air operations or to support a strategic airbridge within the AOR/JOA. The AME deploys to the theater as an extension of the AMC TACC. The AME is requested when a DIRMOBFOR is established and USTRANSCOM-assigned air mobility aircraft are employed in support of a contingency. The DIRMOBFOR is responsible for integrating the expertise of the theater air mobility planners with the expertise of the AME, to fulfill the JFACC's guidance to meet the JFC's objectives. The AME provides air mobility integration and coordination of USTRANSCOM-assigned air mobility forces. The AME receives direction from the DIRMOBFOR and is the primary team for providing coordination with the TACC. Direct delivery strategic air mobility missions, if required, are coordinated through the air mobility division and tasked by the AMC TACC. The TACC commander maintains OPCON of direct delivery missions during execution. The AME ensures the integration of strategic air mobility missions with theater air and space operations planning.

(6) Specialty Teams. The specialty teams provide an AOC with diverse capabilities to help orchestrate theater air power. Many of these capabilities are provided to the AOC from agencies external to the AOC organization. It is crucial to the success of the AOC that these capabilities be interwoven into the air and space planning and execution process. The AOC incorporates certain functional leaders to help ensure the best use of like assets. An information warfare (IW) support team, for instance, distributes its personnel throughout the AOC under the direction of core team leaders. The specialty team leader ensures team members are used efficiently and effectively throughout the AOC. The following are examples of specialty teams:

(a) Component Liaisons. These liaisons work for their respective component commanders and work with the JFACC and staff. Each component normally provides liaison elements (BCD, SOLE, NALE, MARLO, etc.) that work within the JAOC. These liaison elements consist of experienced warfare specialists who provide component planning and tasking expertise and coordination capabilities. They help integrate and coordinate their component's participation in joint air operations.

(b) Intelligence. Normally the intelligence team will be distributed to the core teams in order to provide insight into the capabilities of intelligence support, assist the core teams in articulating intelligence requirements, and expedite the delivery of intelligence products.

(c) ISR. The ISR team is the JAOC's single point for the integration, planning, tasking, and execution of ISR requirements and assets. The JAOC ISR team is responsible for coordinating, tasking, executing and dynamically retasking the JFC's ISR requirements. The JFACC uses the ISR to integrate the recognized air, ground, and maritime pictures and disseminates this common

operational picture (COP) for theater-wide use.

(d) Area Air Defense (AAD). The JFACC may also be designated as the AADC. The AAD team integrates air defense operation of all defense systems to include all aspects of TMD.

(e) IW. The IW team is charged with coordinating the offensive and defensive aspects of counter-information to include special programs and integrating IW efforts with the JASOP. The IW team will also act as the JFACC's focal point for the integration of JFACC capabilities with the IW portion of the JFC's campaign plan.

(f) Airspace Management. The JFACC may also be designated as the ACA. The airspace management team coordinates and integrates use of the airspace control area. They help develop broad policies and procedures for airspace control and for coordination among units within the JOA. They are key to the development and promulgation of an ACP and the daily ACO. They must also provide the flexibility needed within the airspace control system to meet contingency situations that necessitate rapid employment of forces.

(g) Weather. The weather team provides climatological data for long-term planning and reports significant weather with emphasis on target weather affecting ATO execution.

(7) Support Teams. Support teams provide direct support to the AOC and to operational echelons above and below the AOC (headquarters and tactical units). Team chiefs report to the appropriate level within the AOC lead support teams. They perform their tasks allowing the core and specialty teams to focus on the air and space planning and execution process. Examples of support teams are intelligence unit support, systems administration, combat reports, information management, communications center, and supply.

b. Separate Agencies (Subordinate to the AOC).

(1) WOC. The WOC is a wing commander's C2 element. It can include a CP, command section, battlestaff, and other planning and support personnel. The WOC is subordinate to the JAOC and functions as the operations center for units assigned/attached to the wing for operations. As required, the WOC is capable of connecting with the JAOC, CRC, and ASOC through voice and data communications. The WOC is responsible for translating tasks and missions.

(2) CRC. The CRC is directly subordinate to the JAOC and is the primary radar element charged with decentralized execution of the air defense and airspace control functions. Within its AOR, the CRC directs region or sector air defense and provides aircraft control and monitoring for offensive and defensive missions. The CRC is capable of conducting airspace control, weapons control, surveillance, and aircraft identification. When directed by the JAOC, the CRC establishes liaison with allies and other components to exchange airspace management and air defense data from C2 systems established in the tactical digital information link (TADIL) interface. Through the use of TADILs A/B/J and other links, the CRC is capable of receiving data link information from the various C2 elements in the TADIL interface. If necessary, the CRC can temporarily assume limited duties performed by the JAOC.

(3) CRE. The CRE is a mobile radar unit and is normally subordinate to the CRC. It is capable of extending the CRC's radar coverage and communications range within the CRC's AOR. The CRE is capable of providing early warning, surveillance, weapons control and identification. If necessary, the CRE is capable of assuming some CRC functions and can report directly to the JAOC.

(4) AWACS. The AWACS is an airborne radar control element of the TACS

and is normally one of the first battle management assets to arrive in the theater of operations. It is normally tasked with establishing the initial command, control, communications, and computers (C4) system capability and for providing early warning, surveillance, battle management, weapons control functions and combat identification (ID). It has the ability to detect and control aircraft below and beyond the coverage of ground-based C2. During initial operations, or as a show of force, the AWACS can perform airborne battle management functions for the JAOC and other friendly forces. In support of offensive operations, the AWACS can provide surveillance and warning to friendly forces operating well forward of the main force. Once the theater TACS is mature, the AWACS is normally tasked to support the CRC.

(5) ASOC. The ASOC plans, coordinates, and directs aerospace support for land forces, normally at corps level and below. It is directly subordinate to the JAOC and is responsible for the integration of aerospace operations within its assigned corps sector to include CAS, AI, Joint Surveillance Target Attack Radar System (Joint STARS), theater airlift, ISR/UAVs, SEAD and CSAR. The ASOC can be configured for rapid deployment. The ASOC director, normally the corps ALO, exercises OPCON of all subordinate TACPs. The ASOC also provides some logistical and administrative support to the TACPs under its OPCON. ASOC equipment includes satellite communications (SATCOM), microwave radio sets, radios, and CTAPS/TBMCS terminals.

(6) TACP. The TACP is the principal Air Force liaison element (AFLE) collocated with Army maneuver units from battalion through corps. The primary TACP mission is to advise ground commanders on the capabilities and limitations of aerospace power. The TACP assists the land commander in planning, requesting, and coordinating aerospace support, to include CAS, AI, Joint STARS, ISR/UAVs, theater airlift, SEAD, and CSAR. The TACP provides the primary terminal attack control of CAS in support of ground forces. TACPs and forward air controllers (FACs) coordinate airspace and deconflict the aircraft with Army fire support to prevent fratricide. TACPs are directly subordinate to the ASOC. TACPs may employ ETACs at company/team level.

(a) ALO. An ALO is an aeronautically rated officer aligned with a ground maneuver unit who functions as the primary advisor to the ground commander on the capabilities and limitations of air and space power.

(b) Terminal Attack Controller. The terminal attack controller is a member of the TACP who, from a forward ground or airborne position, controls aircraft in CAS of ground forces. Terminal attack controllers have the authority to direct aircraft delivering ordnance to a specific target cleared by the ground commander. Only specially trained and certified individuals are authorized to perform this duty. The primary Air Force terminal attack controllers are known as ETACs.

(7) Forward Air Controller (Airborne) FAC(A). The FAC(A) is an airborne extension of the TACP and has the authority to direct aircraft delivering ordnance to a specific target cleared by the ground commander. The FAC(A) provides coordination and final control for CAS missions as well as locating, identifying, and marking ground targets. The FAC(A) provides extra flexibility on the battlefield by providing rapid coordination and execution of air operations.

(8) ABCCC. The ABCCC provides threat, intelligence, and target updates to aircrews and radio relay to ground-based and other airborne C2 elements. It can provide battle management of airborne assets operating beyond the normal communications coverage of ground-based command and control elements. The

ABCCC can support the air campaign as an airborne extension of the JAOC or the ASOC and, as a backup, can temporarily assume their functions. The ABCCC is a highly capable C2 platform with extensive communications capabilities.

(9) Joint STARS. Joint STARS is an integrated Army-Air Force command and control battle management (C2BM) surveillance, target detection, and tracking platform. On-board battle managers provide direction based on data collected by the Joint STARS sensors. This data is also used to build a common tactical picture. Joint STARS detects, locates, and tracks slow-moving ground targets and rotating antennas and has a limited capability to detect, locate, and track helicopters. It provides air and ground commanders with situation development, targeting, attack planning, and limited post attack assessment information. Its C3 supports deep attack operations planning. Joint STARS data is also transmitted to airborne and ground elements of the TACS capable of receiving and processing the J-Series messages using Joint Tactical Information Distribution System (JTIDS) Link 16 and to ground stations via the surveillance control data link (SCDL).

(10) Tactical Airlift Control Element (TALCE). The TALCE is a mobile C2 unit deployed to support strategic and theater air mobility operations. When deployed specifically to support air mobility operations, the TALCE may be attached to the command of a geographic combatant commander as an element of the TACS and is subordinate to the JAOC air mobility division. Because the TALCE can be employed by both strategic and theater forces, its command relationships and control authority must be clearly stated and understood.

c. Liaisons.

AFLE. AFLEs provide interface between the COMAFFOR and the JFACC for coordinating and synchronizing Air Force units in support of joint air operations when the COMAFFOR is not the JFACC. Normally, the AFLE is composed of personnel and equipment from a numbered Air Force staff and component organizations. AFLE manning is based on a cadre concept with personnel selected for their battle management expertise and a knowledge of C2 concepts and procedures. Additional personnel augment the cadre who are specialist 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.

d. Communications and Computers.

(1) TBMCS. TBMCS is the primary C2 tool for theater integration of air assets. TBMCS is used to organize intelligence, build and disseminate the ATO/ACO, monitor and control the ATO/ACO execution, track progress of the air war, and to control all air activity under the JFACC. TBMCS incorporates the former CTAPS, Wing Command and Control System (WCCS), and Combat Intelligence System (CIS) functionality and will be interoperable with the Global Command and Control System (GCCS).

(2) Theater Deployable Communications (TDC). TDC provide deployed base communications infrastructure and the connectivity to the Defense Information Infrastructure (DII) for the combat air forces. The system consists of Lightweight Multiband Satellite Terminals (LMST) and modular communication packages. TDC augments and enhances services provided by legacy ground mobile forces (GMF) and Tri-Service Tactical Communications Program (TRI-TAC) systems.

(3) Global Broadcast System (GBS). GBS provides high speed, high volume one-way information flow to units in garrison, deployed, in the field, or on the move. The

GBS will be incorporated into, but will not replace, existing military satellite communications (MILSATCOM). It provides the capability to quickly distribute large information products such as imagery, weather, intelligence, and ATOs.

(4) Initial Communications Packages. The major commands (MAJCOMs) use various initial communications packages such as the Wing Initial Communications Packages (WICP) in Air Combat Command, the Mobility Initial Communications Kit (MICK) in Air Mobility Command, and the Pacific Air Forces (PACAF) Initial Communications Package (PICP). These packages include SATCOM, high frequency (HF), ultra high frequency (UHF), very high frequency (VHF), switchboard, message distribution terminal, and land mobile radio systems to support individual wing operations in theater.

(5) Air Force Air Request Net (AFARN). AFARN is an HF network used by TACPs and the ASOC for requesting and coordinating CAS operations.

(6) Air Operations Center Communication Package. Air operations center communication package consists of three packages to support three separate phases of operations: a quick response package designed to support a 300 sorties per day during Phase-I; a limited response package is designed to support up to 1000 sorties per day in Phase-II; and a theater response package designed to support operations in excess of 1000 sorties per day for Phase-III. These communication packages support message switching, telephone, data communications, SATCOM, troposcatter, and HF radio systems for theater communications.

(7) Data Links. Data Links supported in theater include TADIL-A, TADIL-B, TADIL-C, TADIL-J, Army Tactical Data Link-1 (ATDL-1), and Ground Based Data Link (GBDL).

(8) Tactical Air Direction (TAD) Net. TAD is a (UHF or VHF) net used by TACPs and ASOCs for directing and controlling aircraft in air support missions.

6. Conclusion

Air Force contributions to the TAGS are threefold: first, gains control of the air and space environment and conducts other missions and support activities throughout the theater for the JTF as a whole; second, plans, coordinates, and controls air missions to achieve JFC assigned air operations objectives; and third, produces C4 systems that enable the control of assets. By exchanging liaison elements with other components, the COMAFFOR can provide a comprehensive and unified air operation. Effective liaison is the key to planning and coordinating TAGS activities.

Chapter IV

NAVAL COMPONENT

"Naval forces are a key component of our armed forces' forward presence operations and make a critical contribution during the transition from crisis to conflict. Forward-deployed naval forces are often the critical operational linkage between peacetime operations and the initial requirements of a developing crisis or major regional contingency."

Forward...from the Sea

1. Background

This chapter provides a general understanding of the roles that naval forces can accomplish in the JFC's campaign, the doctrinal tools currently in use, and the C2 systems used to apply naval air power to the JFC's mission.

As a provider of resources to the TAGS, naval forces provide strike aircraft to attack targets as directed by the JFC. Carrier- and land-based aircraft are equipped and trained to perform all types of air-to-ground missions, including CAS and AI. Naval forces can also fire cruise missiles from surface and subsurface platforms in support of the JFC's mission objectives.

2. Mission

The primary mission of the US Navy is to conduct prompt and sustained combat operations from the sea in support of national policy. The basic function of naval forces is to promote and defend our national interests by maintaining maritime superiority, contributing to regional stability, conducting operations on and from the sea, seizing or defending advanced naval bases, and conducting such land operations as may be essential to the prosecution of naval campaigns. Naval forces accomplish these functions by conducting deterrence operations, maintaining a forward deployed presence, and exercising a robust sealift capability.

Although naval presence includes a wide range of forward-deployed Navy and Marine Corps units afloat and ashore, the basic "building blocks" remain the carrier battle group (CVBG), comprising the carrier (CV) and its embarked carrier air wing (CVW) and the amphibious ready groups (ARGs) with embarked Marine expeditionary units–special operations capable (MEU SOC). Using the building-block approach, US naval forces can be "tailored" with specific capabilities. The resulting naval expeditionary force, conceptually built around fleet operational forces and forward-deployed Marine air-ground task forces (MAGTFs), can provide a highly flexible force for a wide range of missions, including long-range strike operations and early forcible entry to facilitate or enable the arrival of follow-on forces. The unique capabilities of naval expeditionary forces operating from a highly mobile "sea base" provides the NCA freedom from political encumbrances that may inhibit or otherwise limit the scope of land-based operations.

3. Component Operations

Naval forces can provide the theater commander a "tailored" expeditionary force package from among the following: aircraft carriers and their associated air wings, submarines, amphibious ships with embarked Marines, maritime patrol aircraft, surface combatants, mine warfare forces, and Navy special warfare forces (NSWF). Naval forces, including both carrier-based air and associated

amphibious land combat elements, maneuver from the sea to dominate littoral areas. They possess the mobility and flexibility to mass strength against an enemy that cannot defend adequately everywhere. Naval forces provide an economy-of-force tool by forcing the enemy to be prepared to defend long coastal areas, thus weakening the enemy at the intended focus of effort. Carrier and cruise missile firepower can also operate independently or in conjunction with other services' air assets to provide quick interdiction or retaliatory strike capability. Naval expeditionary forces provide the JFC C3; battlespace dominance; power projection; and force sustainment.

a. Battlespace Dominance. Battlespace dominance consists of zones of superiority surrounding one or more units or even the entire force. Zones of superiority are used as a base of operations from which the force protects itself and projects power. The force maintains superiority by detecting, identifying, targeting, and neutralizing anything hostile that enters or passes through the zones. Naval forces establish multiple zones of superiority as necessary for specific task forces separated from the main force. Based on the capabilities of sensor and weapon systems, these zones can reach out for hundreds of nautical miles. The protective zones of superiority around the naval force move with the force and can be extended to cover entities such as convoys, amphibious groups and land masses, forces moving ashore, and protection of those forces ashore as they establish their own defensive zones. Theater commanders may direct naval forces to conduct an independent mission if that force is capable of dominating the battlespace of the region concerned. Battlespace dominance applies to both war and MOOTW.

b. Power Projection. Power projection is the use of supporting arms to apply high intensity, concentrated offensive power at the time and location of the nation's choosing. Supporting arms include, but are not limited to, varieties of firepower; the synergy of sea, ground, and air operations; EW operations; deception and ruses; psychological operations (PSYOP); and special warfare operations. Taking the fight to the enemy has always been one of our nation's primary objectives in war. Even if no offensive action is planned, naval forces can be used as a credible show of force. This can influence a potential adversary's actions by providing unequivocal evidence that a combat-ready force stands poised to inflict significant damage to the nation's infrastructure and armed forces.

c. Force Sustainment. Successful global response to contingencies depends upon the ability to project and sustain US forces in a theater of operations. Integrated support resources in the form of fleet-based sustainment and strategic assets provide naval expeditionary, joint, and multinational forces the ability to operate wherever and whenever our national interests demand. Logistic support provides assured delivery of the materiel required for US forces to remain on station, combat ready, for as long as necessary.

4. Planning

a. Naval operation planning focuses on delivering the maximum impact from naval force capabilities to achieve operational and strategic objectives. When a JTF is established, the JFC normally assigns the senior Navy commander as the maritime or naval component commander. The JFC may chose to appoint a joint force maritime component commander (JFMCC) as a functional component commander responsible for preparing naval OPLANs and directing the actions of subordinate commanders. Subordinate naval commanders, down to the lowest unit commander, would then develop plans based on their own situational awareness and their superior's objectives. Familiarity with operational plans is essential to unit readiness, enabling deployed naval forces to adapt quickly from a ready force to a combatant force.

b. Plans supporting the combatant commander are the basic tool for coordination of naval actions at the operational or tactical level. Like the governing OPORD, the naval plan tests for adequacy, feasibility, and acceptability. These attributes are measured in the context of the Navy and Marine tactics and procedures. Naval staffs can best determine whether subordinate plans can accomplish the mission and be executed with available resources. Naval component commanders may also advise the supported unified commander by evaluating the selected course of action. They may advise on the acceptability of the course of action in terms of estimated costs in human and equipment resources.

c. At the component and numbered fleet/Marine expeditionary force (MEF) levels, Navy and Marine Corps directives are similar to the directives issued by a unified commander, Chairman of the Joint Chiefs of Staff, or the NCA. These directives take the following forms: warning/alert/planning/execute orders, OPLANs, concept plans, functional plans, campaign plans, outline plans, and letters of instruction. Naval forces worldwide use Maritime Tactical Messages, a standardization of the General Operating Instructions known as Operational General (OPGEN) message, Operational Tasking (OPTASK) message, and Operational Status (OPSTAT) message. These message formats are compatible with the Joint Operation Planning and Execution System (JOPES). Navy officers in tactical commands (OTCs) have the ability to rapidly integrate naval units into a synchronized battle force/battle group. The OTC concept requires that assigned units and subordinate commanders understand and use the same concept of operations and C2 practices. The delegation of warfare commander responsibilities has been simplified through the use of standard OPTASKs. The OTC may delegate responsibility within specific warfare disciplines to allow subordinate commanders to operate based on stated intent. The OTC retains the ability to modify directives by using supplemental directives or orders. The OPTASK message provides the same elements as the operation plan: situation/mission/execution/administration/C2 necessary for centralized planning and decentralized execution in the strategic and operational planning systems. If the commander's estimate of the situation requires changes to the OPORD, an OPGEN, an OPTASK, a fragmentary order (FRAGORDER), or supplements to the OPGEN is used.

5. Command and Control

The naval component commander exercises OPCON as designated by the JFC through the Numbered Fleet commanders and/or subordinate task forces. These forces are task-organized as battle forces, task forces, task groups, task units, and task elements composed of individual units necessary to accomplish specific operational missions. The officer in command of any of the task organizations is designated as the OTC and has primary responsibility for executing that force's mission. The naval component commander may create as many task groupings as necessary, assigning OTC responsibilities as deemed appropriate. In doing this, the naval component commander retains a critical theater-level perspective on naval operations. To facilitate execution and combat responsibilities, the Navy uses a C2 arrangement referred to as the composite warfare commander (CWC) concept integrating ships, submarines, aircraft and land based forces.

a. CWC Concept. The Navy employs the CWC concept as the doctrinal cornerstone of its task force operational and tactical C2 system (see Figure IV-1). The CWC concept enables the OTC of a naval force to aggressively wage combat operations against air, surface, and subsurface threats while contributing to the overall campaign plan of the JFC. The concept is designed to prevent an enemy from saturating a single command node

with a large number of rapidly closing air, surface, and submarine threats. Subordinate warfare commanders are responsible to the CWC for the conduct of the tactical battle. Subordinate warfare commanders may include—

(1) Air warfare commander (AWC).

(2) Surface warfare commander (SUWC).

(3) Under sea warfare commander (USWC).

(4) Strike warfare commander (STWC).

(5) Command and control warfare commander (C2WC).

Warfare commanders normally operate from the combat direction centers (CDCs) of the ships they actually command or in spaces specially equipped to accomplish their respective missions. All warfare commanders are responsible for collecting, evaluating, and disseminating tactical information; planning and coordinating with other warfare commanders; and, when authorized by the CWC, tactically controlling assigned resources and autonomously initiating action.

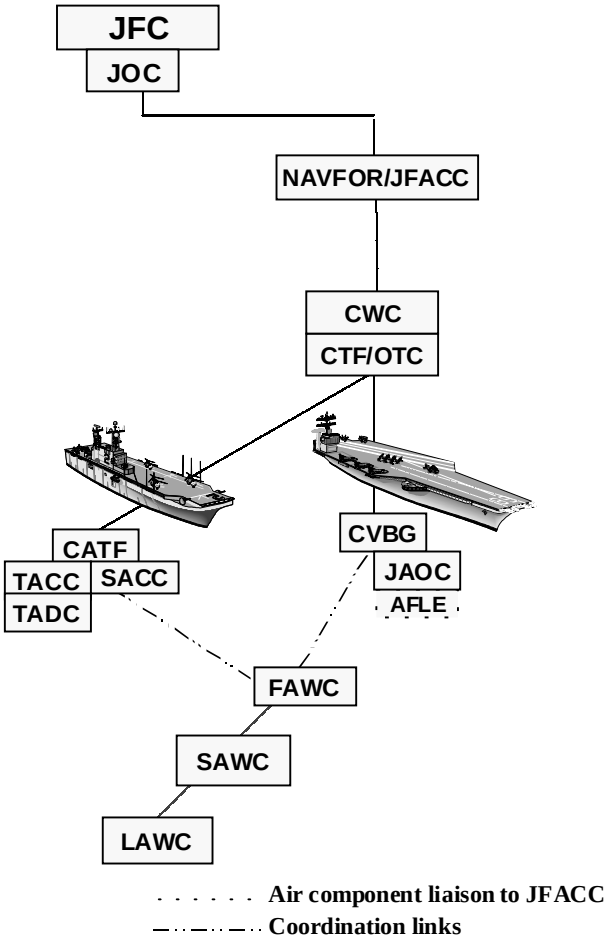


Figure IV-1. Naval Coordination Links

b. OTC. The OTC is responsible for successfully accomplishing missions assigned to the naval force. Offensive mission objectives are of overriding importance. The OTC may delegate planning and execution of offensive missions to a subordinate warfare commander. In most cases, the OTC and the CWC are the same individual; however, in large forces where overall mission direction and control demand the total attention of the OTC, tactical command may be delegated to a separate CWC who will wage combat operations to counter threats against the force. The OTC/CWC—

(1) Promulgates plans and policies, orders degrees of readiness, and directs and monitors task force operations in order to accomplish the objectives.

(2) Promulgates force disposition, position, and movement and establishes a force surveillance area.

(3) Designates warfare commanders and coordinators, alternates, and sector authorities as appropriate and maintains the force command and coordination structure. When assigning warfare commanders and coordinators, the CWC takes into consideration the nature, severity, and relative priorities for dealing with the expected threat; the size, composition, and distribution of the force; and the suitability of C2 equipment and living and working space available in the various platforms in the force. Under certain circumstances, the OTC/CWC may find it convenient to assign special commanders and coordinators, such as a sector warfare commander, functional group commander, screen commander, maneuvering coordinator, and helicopter element coordinator. The specific duties and authority of those commanders and coordinators will be defined in the force OPGENs-formatted messages by which the OTC/CWC promulgates the duties and responsibilities of subordinate commanders and coordinators.

(4) Specifies chain of command among OTC/CWC, the forces under their tactical control, the principal warfare commanders, and the supporting coordinators.

(5) Provides air, surface, and subsurface units as available to the appropriate warfare commanders; coordinates their respective efforts; and, when necessary, prioritizes their requirements in light of limited assets, force mission, and current threat.

(6) Arranges for coordination of air, surface, and subsurface operations with other friendly forces operating within or adjacent to the CWC's force.

c. Supporting Coordinators. Assisting the CWC and the subordinate warfare commanders are supporting coordinators. Supporting coordinators differ from warfare commanders in that coordinators execute policy but do not control forces and do not initiate autonomous actions. The primary supporting coordinators are the air resource element coordinator (AREC), who is responsible for managing and coordinating the allocation and distribution of carrier aircraft, and the submarine operating control authority (SOCA), who is responsible for coordinating the actions of direct support submarines.

d. Implementation. The CWC may use a part or all of the concept as required by the situation. Actual at-sea C2 arrangements are promulgated by the CWC in OPGENs. A force's OPGEN will include instructions on dispositions, maneuvering, ROE, emissions control policy, readiness conditions, threat assessment, designation of warfare commanders and coordinators, and assignment of particular responsibilities. Periodically, the OTC/CWC will issue updates. Regardless of the amount of authority delegated, the CWC retains the option of control by command override.

e. Responsibilities of Subordinate Warfare Commanders. Although all

warfare commanders have some interface with the TAGS, the primary operators are the STWC, AWC, and the AREC. Subordinate warfare commanders issue OPTASK and daily intentions messages to promulgate their intentions to the forces under their control. These messages are addressed to all concerned forces, both the naval forces and other service component forces performing missions for the OTC/CWC. Coordination with other service or functional component commanders outside the naval force by the OTC/CWC and warfare commanders is accomplished through the Navy component commander's staff.

(1) STWC. The STWC coordinates the strike capabilities of the force with respect to air and naval cruise missile assets and, as such, has the greatest interface with the TAGS. Normally, the commander of the CVW is appointed the STWC; in multicarrier battle groups, one of the battle group commanders will normally be designated a STWC.

(a) The STWC appoints a strike planning team, headed by the mission commander, for each strike mission assigned to the air wing or force. The strike planning team does the detailed mission planning required to accomplish the strike and accomplishes all coordination required within the CVW. The strike operations section of the AREC's (carrier commander's) staff accomplishes coordination outside of the wing.

(b) The STWC also coordinates with the SUWC, the SOCA, and the force over-the-horizon coordinator (FOTC), who maintains the locations of enemy forces for long-range strikes. The SOCA will also be involved in submarine-launched cruise missile strikes against land targets. Other service components tasked to participate in these operations will coordinate through the STWC.

(2) AWC. The AWC is responsible to the CWC for air defense and airspace control of the prescribed area around the force. Specifically, the AWC establishes and maintains air superiority in an assigned area of operations to facilitate naval, joint, and/or multinational offensive and/or defensive operations. Additionally, the AWC normally has control of fighter (for air warfare) aircraft, E-2C (AWACS), carrier-based tankers, and long-range surface-to-air missile-capable ships.

(3) AREC. Normally the carrier commanding officer, the AREC is a resource manager and an air warfare planner and coordinator who serves as the air advisor to the OTC/CWC. The AREC is responsible for airspace planning and also aids the AWC in the airspace control function. The AREC must be aware of the aircraft needs of the battle group or force; must ensure that the aircraft are used effectively; and must stay apprised of aircraft availability, maintenance readiness, configuration, and weapons load-out. The AREC must also ensure that the OTC/CWC, warfare commanders, and supporting coordinators are kept fully informed of carrier air operations and aircraft availability and assignment.

(a) The AREC assembles all air support requests from the other warfare commanders and, with the strike operations officer, produces the daily air plan that allocates aircraft to the various warfare commanders. In a multicarrier battle force, each carrier generates its own daily air plan. The OTC/CWC normally issues a coordinated air tasking message to provide overall guidance for the preparation of each carrier's daily air plan. Under certain circumstances, the AREC may exercise tactical control of particular aircraft outside of the carrier; for example, tanker aircraft.

(b) The AREC's primary duties involve allocating carrier aircraft assets, executing the daily air plan, transferring control to the warfare commander or requester of air services, informing the warfare commanders of the status of these

assets, and reporting results achieved by them and the information gained from their sensors. The AREC is responsible for ensuring that all aircrews are properly briefed and debriefed before and after all missions. The OTC/CWC provides the AREC with priorities when requisitions for air assets exceed available resources.

f. Other Warfare Commanders.

(1) SUWC. The SUWC is responsible to the CWC for the protection of the force against hostile surface units, specifically to deny hostile surface units the ability to use or contest maritime battlespace in which friendly forces are operating or will be tasked to operate. When ordered, the SUWC destroys or otherwise neutralizes all hostile surface forces within a specified area. Additionally, the SUWC assumes control of assets provided by the AREC or other outside air power providers to accomplish war-at-sea missions.

(2) C2WC. The C2WC is normally a member of the OTC/CWC staff who is responsible to the OTC/CWC for the use of the electromagnetic spectrum in support of C2W. The C2WC conducts defensive and offensive operations, including EW, electronic attack, electronic protection, operational security, signal warfare, cryptologic operations, satellite vulnerability, signal intelligence, and signal security. The C2WC uses naval assets to perform these missions or coordinates their performance by other components' air assets in support of naval operations.

(3) USWC. The USWC is responsible to the CWC for the protection of the force against hostile submarines. The USWC denies hostile subsurface units the ability to use or contest maritime battlespace in which friendly forces are operating or may be tasked to operate. When ordered, the USCW destroys or otherwise neutralizes all hostile submarines within a specified area.

(4) Sea Combat Commander (SCC). When deployed as a naval expeditionary force, the duties of the SUWC and USWC may be combined as a SCC. The SCC is then responsible for protecting the force from surface and undersea threats.

g. Sea-Based JFACC. Whenever a US joint force is activated, the Navy forces (NAVFOR) will contribute substantially to the joint air operation. If a JFC designates a JFACC, the AREC and AREC staff will normally serve as the NAVFOR primary points of contact with the JFACC and JAOC on matters pertaining to air operations and planning. The naval component commander must also be prepared to assume the functions of the JFACC and JAOC if designated as such by the JFC.

(1) LCCs ships and aircraft carriers (CV/CVNs) are now configured with expanded communications suites—improved computer assets including the CTAPS and other enhancements that give the JFC a sea-based JFACC option. The staff of a sea-based JFACC will normally be much smaller than a land-based JFACC because of limited living and working spaces available on Navy ships (see Figure IV-2). The difference in staff size has a significant effect on the joint air planning capacity that a sea-based JFACC can handle. Based on exercise and training experience, the anticipated capability for Navy planning and tasking is one of the following:

(a) CV Sea-Based JFACC (Unaugmented Staff). CV sea-based JFACC (unaugmented staff) can control 1 CVBG, 1 ARG and portions of 1 USAF composite wing and generate 180-200 sorties daily.

(b) CV Sea-Based JFACC (Augmented Staff): CV sea-based JFACC (augmented staff) can control 2 CVBGs, 1 ARG and 1 USAF composite wing and generate 400-plus sorties daily.

(c) LCC (Flagship) Sea-Based JFACC. LCC (Flagship) sea-based JFACC can control 3 CVBGs, 2 ARGs, 1 Marine aircraft wing (MAW), and 1 USAF composite wing and generate 800-plus sorties daily.

(2) The organization and processes associated with a sea-based JFACC do not differ significantly from a land-based JFACC. The functions accomplished by the sea-based JAOC are the same as a land-based JAOC; however, they are normally conducted on a reduced scale because of a lack of space for staff.

(3) In a likely scenario, a sea-based JFACC could be designated at the outbreak of a crisis, when the CVBG represents the preponderance of the air assets, with a small contingent of land-based aviation assets in theater. As the situation develops and more land-based air assets arrive in theater, a decision by the JFC to transition the JFACC ashore could be executed. This transition should be accomplished so as to minimize disruption to air operations and as transparent as possible to the joint aviation assets being tasked on the ATOs. As the crisis is resolved and land-based assets leave the theater, the JFACC duties can again be transferred to the naval component until the need for a JFACC no longer exists. (See Appendix E for more information on procedures for transferring JFACC responsibilities.)

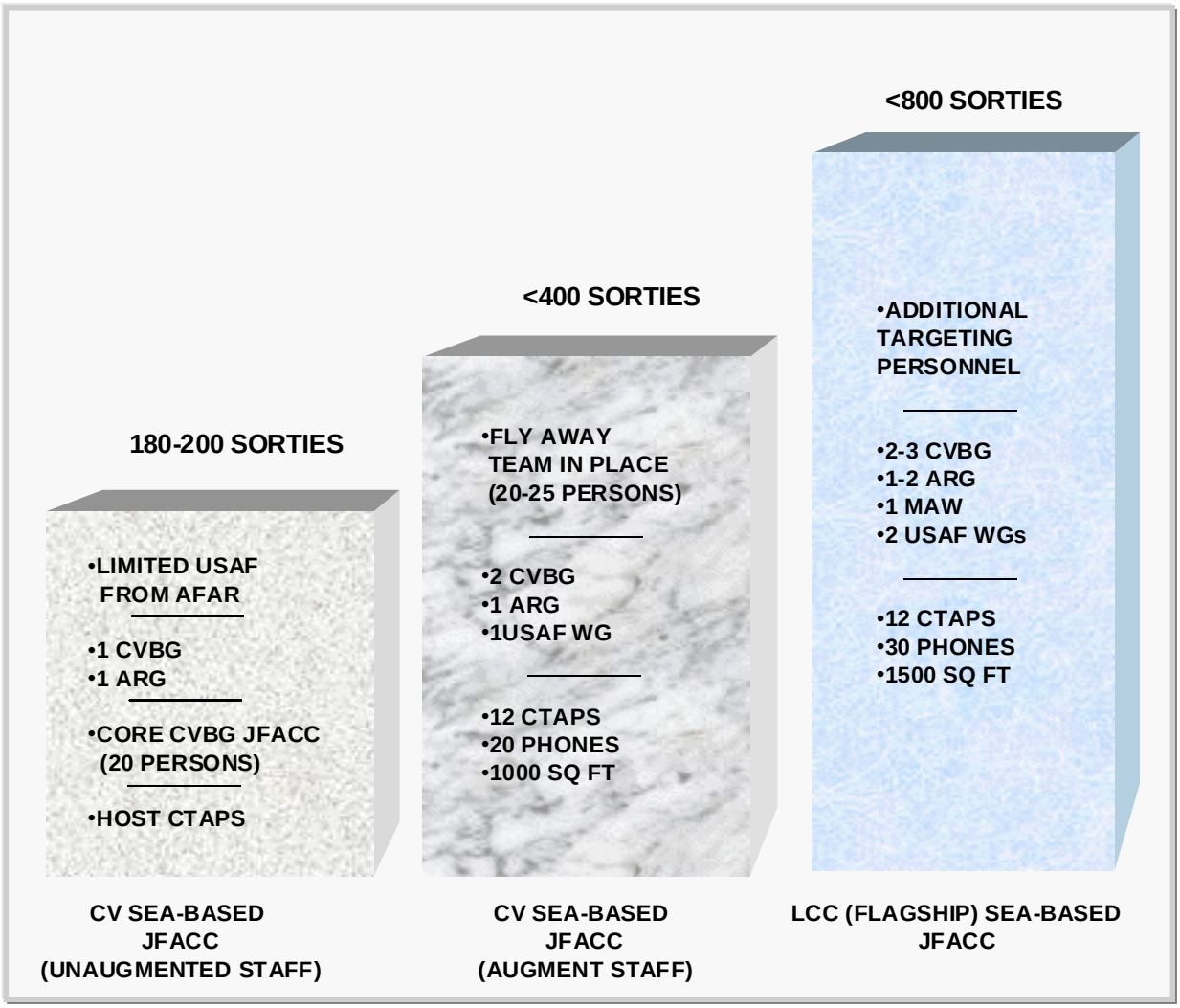


Figure IV-2. Sea-Based JFACC Capabilities

h. Liaisons. The NALE represents the maritime component commander (MCC) and is responsive to the JAOC on matters pertaining to Navy and Marine amphibious operations. The NALE processes NAVFOR and Marine landing force requests for air support and monitors and interprets the maritime battle situation for the JAOC. The NALE provides the necessary interface for the exchange of current operational and intelligence data between components and the JAOC. The NALE also coordinates maritime requirements for air defense, long-range interdiction, and long-range requirements. It also monitors Navy and Marine airspace and air traffic control requirements and changes. The NALE provides feedback to the JAOC and components on current and future joint air operations concerning integration of force requirements.

i. Amphibious Operations. For organization and control of Navy and Marine forces during amphibious operations see Appendix D.

6. Conclusion

Naval forces play a vital role in accomplishing the JFC's campaign plan. From naval doctrine to C2 systems, naval air power provides vital resources to the TAGS. Carrier- and land-based strike aircraft are equipped and trained to perform all types of air-to-ground missions, including AI and CAS as directed by the JFC. Naval forces also provide important capabilities outside that of naval aviation, such as firing cruise missiles from surface and subsurface platforms in support of the JFC's mission objectives and other component commanders. Naval command authority trains to perform joint C2 functions such as JFACC afloat. Naval air and sea power is an important part of the TAGS.

Chapter V

MARINE CORPS COMPONENT

1. Background

As the "landward" extension of naval expeditionary forces, Marine Corps forces (MARFOR) are capable of projecting significant combat power ashore and are central to the overall accomplishment of the littoral strategy. In light of their readiness, flexibility, and broad utility in times of crisis, MARFOR provide globally responsive assets for contingency missions in support of NCA requirements. As a combined arms force (with integrated ground, aviation, and logistics capabilities) with an expeditionary focus, the Marine Corps offers a unique organization that provides the CINC or JFC a "Total Force Package" ready for action.

2. Mission

The MARFOR' mission is to support the JFC's campaign. Assigned tasks may include—

(1) Land operations contributing to a naval operation, including the seizure and defense of advanced naval bases, attack of enemy support facilities, seizure of areas blocking passage of naval forces, and land-based air operations in support of the fleet. (This is normally amphibious warfare landing force matters.)

(2) Naval political reinforcement operations up to and including intervention.

(3) Naval support, amphibious or otherwise, of continental campaigns.

(4) Joint and multinational operations where the MARFOR operate as part of a joint/multinational task force, either as an inclusive element or as the principal framework.

(5) Security support for certain naval bases and stations or areas.

3. Component Operations

The Marine Corps concept for conducting operations is maneuver warfare, a way of thinking about war that shapes every action. It is a state of mind born of bold will, intellect, initiative, and ruthless opportunism. The Marine Corps' organization for combat is the Marine air-ground task force (MAGTF). Maneuver warfare is a warfighting philosophy used by the MAGTF to shatter the enemy's cohesion through a series of rapid, violent, and unexpected actions. These actions create for the enemy a turbulent, rapidly deteriorating and impossible situation. The MAGTF concentrates strength against enemy vulnerabilities, striking quickly and boldly where, when, and how it will cause the greatest harm to the enemy's warfighting ability. Because critical vulnerabilities are rarely obvious, the MAGTF seeks to exploit every opportunity to deal a decisive blow to the enemy. When the decisive opportunity arrives, the MAGTF exploits it fully and aggressively, committing all its combat power. The ability and willingness to exploit opportunities generates decisive results. Inherent in maneuver warfare is the need for relative speed, to seize the initiative; dictate terms of combat; and keep the enemy off balance. The key to relative speed is mobility. When combined with firepower, relative speed shocks the enemy, disrupts morale, and expedites success.

a. Firepower and Mobility. Firepower and mobility are fundamental to the employment of military forces. They are complementary and mutually dependent. Firepower aids mobility, causing sufficient destruction or confusion so that the enemy

cannot block or oppose friendly movement. Mobility is used to position forces, including its firepower assets, to gain positional advantage against the enemy.

(1) Firepower. Besides the ground combat element's (GCE's) organic weapons systems, aviation is the MAGTF's greatest source of firepower. Aviation increases and complements the MAGTF's firepower and mobility. Aviation-delivered firepower damages or threatens to damage enemy personnel, facilities, and equipment, relieving some of the burden on ground combat units to move and carry large amounts of ordnance. With its ability to cover distances rapidly, aviation provides the MAGTF commander with overwhelming amounts of firepower on short notice. The goal of firepower is not simply to attrite the enemy's strength but also to create a situation where shock, confusion, and shattered morale erode the ability to resist. Maneuver warfare discounts this attritionist approach to warfighting. The focused use of firepower must fit a larger purpose. Its selective application contributes to the enemy's shock and disruption.

(2) Mobility. Mobility allows the MAGTF commander to focus firepower where it can best be used to achieve a decision. Mobility is tied to the use or threatened use of firepower. Aviation provides the MAGTF tactical and operational mobility, "the ability to move *within* an engagement or battle and to move *between* engagements or battles." Aviation allows the MAGTF to rapidly reposition forces to any location in the battlespace. With this ability, the MAGTF can conduct tactical and operational actions at a tempo higher than that of the enemy. This relative tempo advantage allows the MAGTF to shift quickly from one action to another. Aviation can also provide a tempo advantage to the MAGTF by stopping or slowing enemy movement.

b. Combined Arms. The Marine Corps organization is predicated on the combined arms concept. Combined arms is the integration of "arms" in such a manner that, to counteract one, the enemy must become more vulnerable to another. Whatever action the enemy takes to avoid one "arm" makes it vulnerable to another. Combined arms actions are designed so that any enemy reaction is equally disastrous.

(1) The "arms" that can be used to create a dilemma are not limited to firepower means: aviation, artillery, and infantry. Marines can create combined arms effects using maneuver of forces, sustainment capability, deception, EW, PSYOP, C2 warfare, and SO. The MAGTF takes advantage of the asymmetrical and complementary characteristics of different types of "arms'' to gain the leverage to destroy the enemy.

(2) The Marine Corps uses combined arms at the tactical and operational levels of war. Tactically, a commander can pin down (fix) an enemy force with direct fire weapons, making that force vulnerable to CAS. If the enemy forces choose to move to escape the air attack, they risk coming under direct fire. Marines link the combined arms effects of smaller units to produce a larger combined arms effect. For example, operationally the commander can use aviation to isolate an enemy force from reinforcements or supplies. The commander can then strike the isolated enemy force, forcing the enemy to either fight and face irreplaceable losses or abandon the field and come under additional aviation and artillery attack.

c. Task Organization. The Marine Corps task organizes for combat by forming integrated, combined arms MAGTFs to include aviation. MAGTFs are specifically tailored for rapid deployment by air and/or sea. The MAGTF is self-sufficient and can be tailored based on the theater or JFC's operational requirement or task. MAGTF's are designed on a building block concept, drawing appropriate units into an air-ground-logistics team under one commander. The size of the MAGTF and its components will vary depending on the

mission. Notional task organizations include the Marine expeditionary force (MEF), Marine expeditionary unit special operations capable (MEU SOC), and the special purpose MAGTF (SPMAGTF) that are described in Table V-1.

(1) All MAGTFs, regardless of size, have the same elements: a command element (CE), a GCE, an aviation combat element (ACE), and a combat service support element (CSSE). The CE is the MAGTF headquarters and is task organized to provide C2 capabilities (including intelligence and communications) necessary for effective planning, direction, and execution of all operations. The GCE is task organized to conduct ground operations in support of the MAGTF mission and is formed around an infantry organization reinforced with requisite artillery, reconnaissance, armor, and engineer forces. The ACE is task organized to perform aviation functions, with Marine Corps aviation, as required to support the mission. The ACE is formed around an aviation headquarters with appropriate air control agencies, combat, combat support, and combat service support units. The CSSE is task organized to provide the full range of combat service support functions and capabilities necessary to support the

Table V-1. Types of MAGTFs

Marine Expeditionary Force (MEF) The MEF is the principal Marine Corps warfighting organization, particularly for a larger crisis or contingency. The MEF can range in size from less than one to multiple divisions and aircraft wings, together with one or more force service support groups. With 60 days of accompanying supplies, MEFs are capable of amphibious operations and sustained operations ashore in any geographic environment. With appropriate augmentation, the MEF command element is capable of performing the mission of a JTF headquarters. MEFs are the primary "standing MAGTFs" (that is, they exist in peacetime as well as wartime). Marine component headquarters may form smaller MAGTFs from these MEFs. The Marine Corps reservoir of combat capabilities—the divisions, wings, and force service support groups—are assigned to standing MEFs. A MEF will normally deploy in echelon and will designate its lead element as the MEF (forward).
Marine Expeditionary Unit (MEU) Forward deployed MEU(SOC)s embarked aboard amphibious ready group (ARG) ships operate continuously in the areas of responsibility of numerous unified commanders. These units provide the NCA and unified commanders an effective means of dealing with the uncertainties of future threats, by providing forward deployed units that offer unique opportunities for a variety of quick reaction, sea-based, crisis response options in either a conventional amphibious/expeditionary role or in the execution of maritime special operations. The MEU(SOC) consists of a reinforced infantry battalion and a reinforced squadron. It is normally prepared to operate with 15 days of supplies. The MEU(SOC) is typically embarked aboard three to five US Navy amphibious ships. Before deployment, a MEU undergoes an intensive 6-month training program focusing on its conventional and selected maritime special operations missions. The training culminates with an evaluation and subsequent certification as "special operations capable."
Special Purpose Marine Air-Ground Task Force (SPMAGTF) The SPMAGTF is task organized to accomplish a specific mission, operation, or regionally focused exercise. As such, SPMAGTFs can be organized, trained, and equipped to conduct a wide variety of expeditionary operations in response to a crisis or peacetime mission. They are designated as SPMAGTF with a location. Their duties cover the spectrum from noncombatant evacuation to disaster relief and humanitarian missions.

continued readiness and sustainability of the MAGTF as a whole.

(2) The MAGTF can provide a cohesive combined arms team capable of fulfilling assigned missions with little or no outside support. MAGTFs present unique military capabilities, limitations, and organizational requirements. Using maneuver warfare, the MAGTF produces decisive results with forces of moderate size. When employed in joint operations, the MAGTF commander advises the JFC on MAGTF employment to ensure that its considerable and unique capabilities are maximized.

d. Marine Corps Aviation. Marine Corps aviation's primary mission is to participate as the MARFOR' supporting air component. Marine aviation supports the seizure and defense of advanced naval bases as well as conducts essential air operations in support of Marine, naval, and joint land operations. As a collateral mission, Marine Corps aviation participates as an integral component of naval aviation in the execution of other naval functions as the fleet commander may direct.

(1) The MAGTF commander delegates air operations authority to the ACE commander, who exercises authority through the Marine Air Command Control System (MACCS) to effectively command, coordinate, and control MAGTF air operations. The MACCS provides the ACE commander with the means to exercise centralized command and coordination and decentralized control, allowing for operational flexibility and rapid response to changing tactical situations.

(2) The MAGTF ACE, which fulfills expeditionary aviation requirements, is sized to the mission and may range from a small aircraft detachment to multiple Marine Corps aircraft wings. The ACE adds a dimension of flexibility, firepower, and mobility to the MAGTF that it would not have otherwise. Normally one ACE supports a MAGTF, but this is not a permanent organization. The ACE is tailored to provide air support for the MAGTF's mission. The MAGTF commander, who receives advice from the ACE commander concerning effective ACE employment, makes the final decision concerning ACE missions, tasks, and priority of effort. Execution of the MAGTF operation relies on successful tactical air operations. The ACE that organizes around an aviation headquarters—

(a) Supports the MAGTF commander in any or all of the functional areas of Marine Corps aviation.

(b) Plans and employs aviation to locate and destroy enemy forces and supporting installations.

(c) Provides direct air support to the MAGTF.

(d) Provides assault support to the MAGTF.

(e) Searches for, locates, identifies, and intercepts radiated electromagnetic energy.

(f) Conducts antiair warfare operations, including coordination and control of fighter aircraft and surface-to-air weapons.

(g) Gains and maintains air superiority.

(h) Prevents movement of enemy forces into and within the area of operations.

(i) Provides its own organic aerial refueling capability.

(3) Marine Corps aviation performs the following doctrinal functions: antiair warfare, offensive air support (OAS), assault support, air reconnaissance, EW, and control of aircraft and missiles.

(a) Antiair Warfare. The MAGTF uses antiair warfare to destroy or reduce enemy air and missile threats. The purpose of antiair warfare is to gain and maintain the necessary air superiority for the MAGTF to conduct ground and air

operations without prohibitive interference from enemy air action. Antiair warfare includes *offensive antiair warfare*, operations conducted against enemy air resources before they can be employed or assume an attacking role and *air defense*, active and passive measures designed to reduce or nullify the effects of hostile air action.

(b) OAS. OAS isolates the battlefield, projects firepower to shape events in time and space, and delivers firepower against enemy installations, facilities, and personnel. OAS destroys enemy resources and isolates the enemy's military force, allowing the MAGTF commander to influence future battle. The MAGTF commander uses OAS to create a dilemma for the enemy. If the enemy moves to confront friendly forces, enemy forces are exposed to aviation assets. If the enemy cannot move or employ forces or is unable or unwilling to sustain losses, initiative and tempo are lost. OAS, which does not include air operations to reduce an enemy's air capability, is categorized as either CAS or deep air support (DAS).

•CAS, which is used against hostile targets located close to friendly forces, requires detailed integration with a friendly ground force's fire and maneuver. The supported ground unit commander requests or approves all CAS missions in the area of operations. CAS allows the MAGTF commander to concentrate aviation at the decisive place and time to achieve local combat superiority and take advantage of fleeting battlefield opportunities.

•Although DAS may require considerable coordination, it does not require detailed integration with a friendly ground force's fire and maneuver. It does require a complete understanding of the MAGTF commander's intent and scheme of maneuver in order to properly shape the battlefield. DAS also allows the MAGTF commander to destroy, neutralize, or delay enemy reinforcements, critical enemy functions or capabilities, and other enemy potential before it can be brought to bear effectively against friendly forces. DAS can attack enemy centers of gravity, enemy formations, lines of communication, and C2 centers. DAS missions are conducted on both sides of the FSCL. The two categories of DAS are AI and armed reconnaissance.

••AI can deny the enemy use of a particular area, route, or facility; increase their consumption of supplies; increase the movement of troops and equipment; and apply heavy pressure on their lines of communications. All of this activity increases the enemy's vulnerability to air attack and provides friendly forces with lucrative targets.

••Armed reconnaissance provides the MAGTF commander with an economy-of-force measure to cover and defend terrain not suited to other forces. Armed reconnaissance identifies enemy forces and engages them before they can threaten MAGTF forces.

(c) Assault Support. Assault support operations provide air movement of personnel, supplies, and equipment into or within the area of operations and ensure the rapid buildup of combat power. Assault support allows forces to bypass certain obstacles, avoid hostile areas, maneuver over the entire battlefield, and rapidly resupply combat forces. It requires detailed, coordinated, and concurrent planning at all levels. Categories of assault support include combat assault transport, air delivery, aerial refueling, air evacuation, and tactical recovery of aircraft and personnel (that is, combat rescue, air logistical support, and battlefield illumination).

(d) Air Reconnaissance. Air reconnaissance provides the MAGTF commander with information that can be used to influence operations. Air reconnaissance collects multisensor imagery of areas of interest; provides and maintains surveillance of areas of interest; provides rapid and current information on enemy

composition, disposition, activity, installations, and terrain; and supports the direction and adjustment of artillery and naval surface fire support (NSFS).

(e) EW. EW provides timely information on the enemy, disrupts the enemy's use of the electromagnetic spectrum, and provides for the MAGTF's use of the electromagnetic spectrum despite enemy EW. EW also neutralizes enemy radars and provides the MAGTF commander with information to update the enemy's order of battle.

(f) Control of Aircraft and Missiles. Control of aircraft (fixed-wing, rotary-wing, and UAVs) and missiles provides the MAGTF commander with the ability to employ ACE assets to influence combat operations. It includes the facilities, equipment, communications, procedures, and personnel to plan, direct, and control the ACE's effort. Collectively, these compromise the MACCS.

4. Planning

To effectively conduct MAGTF air operations, detailed planning must take place. The MAGTF commander and the MAGTF commander's staff must understand the planning required for integration of MARFOR as part of a joint or multinational force. The GCE and CSSE commanders and staffs must fully comprehend their planning roles relative to MAGTF air operations. The ACE commander, the ACE staff, subordinate units, and personnel manning the MACCS must firmly grasp planning factors relative to C2 of MAGTF air operations.

a. Amphibious Operations. Amphibious operations combine ships, aircraft, and landing forces into a united military effort against a hostile or potentially hostile shore. It is one of the most complex military operations to conduct. The MACCS must plan to provide the ACE commander with the ability to C2 MAGTF air operations during all phases of the amphibious operation. Integration of landing force aviation with the amphibious task force and host nation airspace and air defense networks must be considered. Appendix C contains additional details concerning the MACCS during amphibious operations.

b. Joint/Multinational Operations. During joint/multinational operations, the MAGTF must successfully integrate with the force as a whole and the other components. The MACCS must conduct planning to integrate and coordinate with other service and joint airspace control and air defense agencies and staffs to allow the ACE commander to effectively employ Marine aviation in support of the MAGTF. An integral function of the MACCS is to provide liaison to air C2 agencies external to the MAGTF. As with amphibious operations, considerations must be given to host nation airspace and air defense networks.

c. MAGTF Employment. The MAGTF is a task organized fighting force. The task organization of the MAGTF is driven by the assigned or implied mission(s) for the MAGTF. As such, its organization will vary from operation to operation. When considering the organization of the MAGTF's ACE, the MAGTF commander must weigh the MAGTF's air C2 needs against available joint force assets and joint force interface requirements.

d. MACCS. The MACCS provides the MAGTF commander with the ability to plan and direct air operations within the MARFOR area of operations. The MACCS must plan to support MAGTF operations through the execution of the six functions of Marine aviation. Categories of MACCS planning include but are not limited to—airspace control; airspace and air defense control measures; air control procedures; air direction; and communications connectivity with higher, adjacent, and subordinate air C2 agencies.

5. Command and Control

a. MACCS. The MACCS provides the ACE commander with the means to command, coordinate, and control air

operations (see Figure V-1). The Marine air control group (MACG) provides the personnel and equipment to staff, operate, and maintain principal MACCS agencies. The MACCS provides a robust air C2 capability that is fully capable of conducting air support, air defense, and airspace management functions within the framework of joint and multinational operations. The MACCS task organizes its organization and capabilities to meet the MAGTF's air C2 needs. It varies in size from small air support elements and air traffic control teams typically deployed with a Marine expeditionary unit (MEU) to a fully functional air C2 system used in MEF-level operations. The principal C2 agencies of the MACCS are—tactical air command center (TACC), tactical air direction center (TADC), sector antiair warfare coordinator (SAAWC), and tactical air operations center (TAOC), direct air support center (DASC), Marine air traffic control detachment (MATCD), terminal control agencies (for direct air support).

(1) TACC. The TACC is the senior MACCS agency and the one MACCS agency that exercises command. It serves as the ACE commander's operational CP. The TACC provides the facility from which the ACE commander and the battle staff plan, supervise, coordinate, and execute all current and future MAGTF air operations. The battle staff is divided into two sections: a *future operations* section and a *current operations* section. The future operations section is responsible for drafting, revising, and disseminating the MAGTF ATO. In the case of a joint ATO, future operations section provides the JFC with information concerning MAGTF direct support sorties, sorties in excess of MAGTF direct support needs, or request for air support beyond the ACE's ability to provide for inclusion into the joint air tasking cycle/order. The current operations section is responsible for the execution of the ATO, including both MAGTF and joint aviation assets in support of the MAGTF. Using the principle of centralized command and decentralized control, the TACC's current operations section supervises and monitors the activities of the subordinate MACCS agencies in execution of the ATO. The

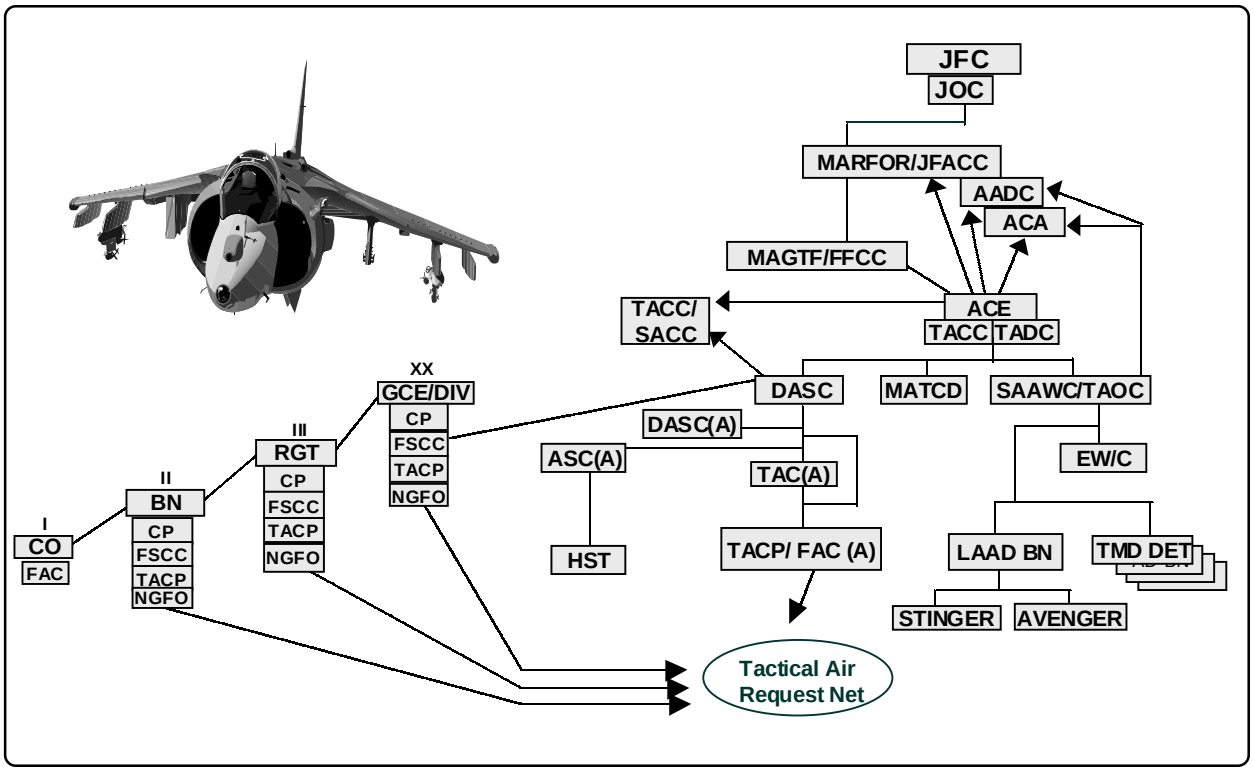


Figure V-1. MACCS Coordination Links

TACC provides the MAGTF's aviation arm with critical guidance, direction, and supervision regarding the employment and execution of the six functions of Marine aviation. In turn, the TACC integrates the Marine aviation's six functions into the MAGTF scheme of maneuver through its linkage with the MEF's force fires coordination center (FFCC) or the MAGTF's combat operations center (COC). The TACC also provides the functional interface and coordination for employment of MAGTF aviation in joint/multinational and naval expeditionary operations. In joint/multinational operations, the TACC is often referred to as the Marine TACC to avoid confusion with the Navy tactical air control center (Navy TACC). The TACC can interface with other air C2 agencies via TADILs A and B, and North Atlantic Treaty Organization (NATO) Link 1.

(2) TADC. The TADC will be task organized to perform all or most of the TACC's tasks. It will be employed in a subordinate role to a senior air C2 agency, most notably during expeditionary operations where the Marine TADC is subordinate to the Navy TACC before the transfer of control ashore. Once the MAGTF assumes control of all air operations within an amphibious objective area (AOA), the TADC becomes the TACC. A TADC site that is subordinate to a Marine TACC may also be established within a MAGTF's area of operations to provide the ACE commander with an additional capability to coordinate support for a specific area or a specified time.

(3) SAAWC and TAOC. The SAAWC and TAOC are the MAGTF's principal agents for the conduct of air defense operations. The SAAWC is the MAGTF's air defense battle manager and is directly responsible to the ACE commander for the supervision, management, and coordination of air defense operations within the SAAWC's assigned sector. The SAAWC is not an air C2 agency, rather an activity that serves as an extension of the TACC that focuses on air defense planning and management of air defense resources within the SAAWC's sector. The SAAWC will manage one or more TAOCs within the SAAWC's sector.

(a) The SAAWC operates from the sector antiair warfare facility (SAAWF), a system of workstations with various software applications. The SAAWF is usually collocated with the TAOC, as the majority of capabilities provided by the SAAWF are driven by the TAOC's database. Air situation information and communications capabilities are provided to the SAAWF by the TAOC via interfaces with the TAOC's digital data and communications busses.

(b) The TAOC is the MACCS's principal air defense agency that conducts airspace control and management. It provides real-time surveillance of assigned airspace, positive control, and navigational assistance for friendly aircraft. It performs real-time direction and control of air defense operations involving aircraft and surface-to-air weapons. By collecting and displaying information from its own sensors, other MAGTF sources, and external sources (other services and nations), the TAOC controls assigned airspace and directs and controls the fires of assigned air defense assets. The TAOC's primary air surveillance radar, the AN/TPS-59 can provide theater ballistic missile cueing directly to theater ballistic missile units. The TAOC can perform limited functions as an alternate TADC/TACC current operations section for limited periods should the need arise.

(c) The TAOC typically deploys an early warning/control (EW/C) site forward from its main site to improve early warning, fills gaps in surveillance coverage, and enhances weapons control and coordination. The TAOC and early warning and control sites can provide data link interfaces via TADILs A, B, C, and J (one- or two-way); ATDL-1, and NATO Link 1.

(4) DASC. The DASC is the principal MACCS agency responsible for the control

and direction of air operations directly supporting ground forces. It functions in a decentralized mode of operations but is directly supervised by the TACC. Normally the first major air control agency ashore, it lands with the GCE's senior FSCC. The DASC, which is normally collocated with the GCE's senior FSCC, processes and coordinates requests for immediate air support and procedurally controls aircraft transiting its area of responsibility. It coordinates air missions requiring integration with ground forces, including CAS, assault support, and designated air reconnaissance missions. The DASC uses procedural control to route direct air support and assault support aircraft through its designated area of responsibility.

The DASC may use air support liaison teams (ASLTs) to maintain liaison between the DASC and the GCE's senior FSCC, especially in cases where the DASC cannot be physically collocated with the FSCC. In a MEU-level operation, the MACG detachment provides an air support element (ASE) that operates primarily with the FSCC and TACPs to assist in the control of direct air support aircraft. An airborne DASC may be employed to extend communication capabilities or to provide DASC functions when the ground DASC is not operable because of the need to displace or as a result of battle damage or equipment degradation.

(5) MATCD. MATCDs provide all-weather air traffic control services to forward operating bases. They are task organized based on volume and type of air traffic, expected duration of deployment, and external support availability. They have a control tower, surveillance and precision radars, and navigational aid capabilities. Surveillance radars allow MATCD personnel to provide aircraft navigational and separation services and early warning and detection information to other MACCS agencies. Each MATCD is capable of providing all-weather air traffic control services at one forward operating base and also fields a MATCD mobile team (MMT) capable of providing air traffic control services from temporary landing zones or fields using non-radar, procedural control. The MATCD ties its air surveillance picture into the MAGTF's integrated air defense system through a TADIL-B data link.

(6) Terminal Control Agencies (for direct air support). Terminal control agencies perform air control functions in that they manage the final delivery of ordnance, cargo, or personnel and accomplish other specialized tasks not performed by other air controllers. Some terminal control agencies are not organic to the ACE but are integrated into the MACCS through communications, doctrine, and procedures.

(a) TACP. A TACP plays an integral role in the MACCS but is responsible to the supported commander for employment and coordination of assigned supporting aircraft. TACPs are organic to the GCE and establish and maintain liaison and communications between parent units, airspace control agencies, and supporting aircraft. A TACP participates in fire support coordination and advises the ground unit commander concerning the employment of supporting aircraft.

(b) FAC. The FAC is a naval aviator or naval flight officer who is a member of the TACP. The FAC controls aircraft providing CAS to ground forces and operates from forward ground positions.

(c) FAC(A). A FAC(A) conducts air reconnaissance/surveillance and provides terminal control of OAS missions and artillery and NSFS spotting. FAC(A)s are an airborne extension of the TACP and can provide radio relay for ground FACs as well as BDA. Navy FAC(A) aircrews train routinely with Army and Marine Corps attack helicopters in JAAT operations. A FAC(A) is the functional equivalent of the USAF airborne forward air controller.

(d) Tactical Air Coordinator (Airborne) (TAC[A]). The TAC(A) is an experienced naval aviator operating from an aircraft, who coordinates the action of combat aircraft engaged in close support of ground or sea forces. The TAC(A) is an airborne extension of the DASC and/or TACC. TAC(A) assignment depends on mission requirements and aircraft availability. All TAC(A)s provide airspace coordination and coordinate the employment of aircraft with other supporting arms. To fulfill these responsibilities, the TAC(A) coordinates with the assault support coordinator (airborne) (ASC[A]), TACPs, FSCC/supporting arms coordination center (SACC), subordinate FAC(A)s, and artillery and NSFS units. The TAC(A) requires in-depth knowledge of the MACCS airspace management, fire support coordination, and fixed- and rotary-wing operations and capabilities.

(e) ASC(A). The ACE commander provides an ASC(A) to provide air coordination and control during helicopter operations. The ASC(A) serves as an extension of the DASC in support of the air mission commander. An ASC(A) provides information concerning enemy operations and weather along approach and retirement routes and in landing zones (LZs), route alterations, and supporting arms employment. The ASC(A) coordinates with TAC(A)s and FAC(A)s for employment of CAS. The DASC establishes support relationships between the ASC(A) and the TAC(A). ASC(A)s and TAC(A)s require the same type of in-depth knowledge and experience.

(f) ANGLICO. An ANGLICO can be attached to US Army or allied forces to provide shore control of NSFS and CAS. In the absence of an ANGLICO unit or in conjunction with the ANGLICO unit, control and coordination of NSFS and CAS may be delegated to a Navy FAC(A) aircrew when airborne. Control, coordination, and employment will then be performed by the FAC(A) as tasked by the ANGLICO or appropriate FSE of the maneuver commander responsible.

(g) HST. The HST task organizes and equips to establish and operate helicopter pickup zones (PZs) and/or LZs. The supported helicopterborne force and supporting helicopter unit provide personnel and equipment to establish a HST. Normally employed in each PZ/LZ, the HST assists in the pickup, movement, and landing of helicopterborne forces, equipment, and supplies and in evacuation of casualties and enemy prisoners of war.

b. Fire Support Coordination System. The fire support coordination system is the means by which the MAGTF commander focuses all fire support elements, including air, to accomplish the mission.

(1) Roles. Each MAGTF element plays a part in fire support coordination.

(a) CE. The role of the MAGTF CE in fire support coordination is to implement the MAGTF commander's intent, which will be focused on the deep operation. The MAGTF's FSCC accomplishes this by planning and coordinating fire support for deep operations, tasking elements to attack targets of MAGTF interest, establishing the FSCL, coordinating with joint/allied forces, and disseminating information. At the MEF level, these functions are carried out within the COC and the force fires coordination center (FFCC) under the supervision of the G-3. Within other MAGTF CEs (SPMAGTF, MEU, etc.), these functions are carried out in the COC under the supervision of the operations officer.

(b) GCE. The role of the GCE in fire support coordination is largely determined by the size of the MAGTF involved. Higher echelons of command have greater capacity to conduct planning due to their larger staffs. Regardless of its size, the GCE has critical fire support functions. The GCE provides pertinent information, such as the location of friendly artillery units, fire support coordination measures, and enemy antiaircraft weapons

to other elements of the MAGTF directly or to the MAGTF CE for further dissemination as required.

(c) ACE. The ACE provides the MAGTF air support. In addition to the Marine Corps aviation functions described above, the ACE—

•Disseminates target data, status of requested air support, and locations of friendly surface-to-air weapons to other elements of the MAGTF or to the MAGTF CE for further dissemination. The ACE receives targeting information, target guidance, and the fire support plan from the MAGTF.

•Conducts detailed aviation planning to support the MAGTF commander's concept of operations.

•Recommends objectives and target priorities to the MAGTF commander.

•Develops requirements for SEAD.

•CSSE. The CSSE commander is normally assigned responsibility for the conduct of rear operations. Since no formal supporting arms coordination agency exists within the CSSE's rear area operations center (RAOC), the CSSE may be augmented with fire support representatives. These ad hoc FSCCs perform their tasks through coordination with the MAGTF FSCC and the GCE FSCC for fulfillment of fire support requests. As the battlefield extends, the RAOC may have to interface with the TACC.

(2) Control. FSCCs provide cohesion to the fire support process. A FSCC is a single location where communication facilities and personnel incident to the coordination of all forms of fire support are centralized. FSCCs are established at MAGTF level and at each GCE echelon down to battalion level. Under the staff supervision of the G-3/S3, the fire support coordinator (FSC) organizes and supervises the FSCC, which is collocated with the COC. Normally, each FSCC will have an artillery liaison element, a TACP, an NSFS element, and other liaison/operating fire support teams as required. Higher level FSCCs generally have a target intelligence element. The headquarters to which the FSCC belongs provides facilities, equipment, and materiel. Supporting arms units provide representatives and equipment necessary for conducting coordination, targeting, and communications functions for their respective arms.

(3) MAGTF Fire Support.

(a) The MAGTF FSCC—

•Conducts targeting functions to meet the MAGTF commander's intent and may form a targeting committee. In joint operations, targeting is conducted in conjunction with the JFC's targeting effort.

• Represents MAGTF at the JTF fire support meetings/conferences or JTCB and arranges for fire support liaison to other services as required.

•Disseminates pertinent information to other elements of the MAGTF and to forces outside the MAGTF.

•Performs those functions required to coordinate/integrate supporting arms.

•Establishes reporting requirements, fire support coordination measures (FSCM) and procedures. (This includes establishing the FSCL.)

•Resolves fire support conflicts between other MAGTF elements when they cannot be resolved at lower levels.

•Provides inputs on the allocation of aviation and NSFS efforts.

•Requests and coordinates external fire support or target acquisition support with higher, adjacent, and joint/allied forces.

•Coordinates with the GCE's senior FSCC, MACCS, and the RAOC to achieve air-ground integration. In amphibious operations involving naval (that is, MAGTF and Navy) forces, the MAGTF FSCC is the landing force FSCC and provides the landing force representation to the commander, amphibious task forces's (CATF's) SACC.

(b) MAGTF Air Officer. Although not a part of the MAGTF FSCC, the MAGTF action officer (AO) has several fire support duties. These include providing expertise and advice on aviation matters to the MAGTF commander and the FSCC; establishing liaison with the ACE, GCE air officer, and the air officers of higher and adjacent headquarters on aviation support and airspace management matters; determining MAGTF air support capabilities; preparing an aviation estimate of supportability; consolidating air support requirements; and preparing the air fire plan in the MAGTF operations order. In amphibious operations the MAGTF air officer operates landing force stations in the SACC, works closely with the supporting arms coordinator, and maintains liaison with the ASC in the Navy TACC.

(c) MAGTF Target Information Officer (TIO). A member of the MAGTF FSCC normally performs the functions of TIO, which is needed on the MAGTF CE staff. When designated, the TIO heads the target information section (TIS) of the FSCC and, in amphibious operations, serves as the landing force TIO. The TIO uses information provided by the target intelligence officer (TGTINTELO), a member of the G-2 section, to perform targeting functions. During operations ashore, the MAGTF CE supports the GCE targeting effort and ACE mission planning by rapidly responding to their requests for target data.

(4) GCE Fire Support.

(a) The GCE FSCC. The GCE's FSCC plans and integrates fire support within the GCE's area of influence. The FSCC conducts targeting; plans and coordinates the delivery of its organic fire support and the delivery of fire support provided by other means, such as NSFS, air, or EW; and integrates fires with maneuver in close operations. The FSCC coordinates with the other elements of the MAGTF and with adjacent external forces on fire support matters.

(b) The Targeting Committee. Because numerous and complex factors must be considered in the targeting process, the GCE commander needs advice from experts in several areas. The establishment and use of a targeting committee brings these specialists together as a matter of standard procedure.

(c) The Target Information System (TIS). The TIS serves as the primary source of target information in the FSCC. It is oriented to the tactical support requirements of the command and the target information requirements of the FSCC for planning fires. Specific functions of the TIS include maintaining target data and target/situation maps; maintaining current target lists, including counter-mortar, counterbattery, and SEAD information; publishing target bulletins; consolidating, evaluating, and displaying target information, along with recommending target classification and attack priorities to the FSC; collecting information pertaining to the results of attack on targets; and coordinating with the MAGTF TGTINTELO and artillery unit S2.

(d) The FSCC/DASC. The DASC collocates with the GCE's senior FSCC. In cases where the DASC cannot physically collocate with the FSCC, an air support liaison team from the DASC is typically used in the FSCC to facilitate information exchange and coordination between the DASC and FSCC. The FSCC/DASC organization is capable of planning and integrating supporting arms within the GCE's area of influence. The FSCC and the

DASC require extensive information exchange.

•The FSCC provides the DASC with the commander's objectives and intent, friendly unit locations, positions of indirect fire weapons, scheme of maneuver, boundaries, fire support coordination measures, maneuver checkpoints, and the schedule of fires. Pertinent intelligence data-particularly antiair threats, air targets that require terminal control that exceeds the GCE's organic TACP capability, and status of terminal controllers within the GCE are also passed to the DASC.

•The DASC provides the FSCC with aircraft to perform missions, aircraft routing plans, status of outstanding requests, changes to the ATO, UAV operations, MACCS operational status, and forward arming and refueling point status. The DASC also provides intelligence data, including BDA and air defense warning conditions, to the FSCC. Finally, the DASC also makes recommendations on air allocations and fire support control measures.

(5) Division Fire Support.

(a) Division FSCC. The Marine Corps division may, in large-scale operations, be used as an operational headquarters and perform the role of the GCE or it may be used as a subelement of the GCE. When used as such, the division FSCC has a key role in targeting due to its much greater capability to collect and analyze target information. Division FSCC supporting arms representatives identify requirements, make estimates, and recommend the allocation of fire support means within the division. The commanding officer of the artillery regiment (division artillery officer is the division FSC) and is supported by—

•The fire support coordination section, which provides liaison to division forces for artillery control and coordination. Through its experience, this section coordinates all supporting arms to support the scheme of maneuver or defensive plan.

•The TIS, which is normally formed upon activation of the FSCC during the initial planning phase. Its duties include target acquisition, dissemination of data, and attack recommendation and evaluation. The TIS is supervised by the TIO under the staff supervision of the FSC and works closely with the TGTINTELO from the division G-2 section.

(b) Division TACP. In the division TACP, one of the officers is a FAC-qualified naval aviator/flight officer and the commander of the air and naval gunfire platoon. Additionally there is an air support control officer. The division TACP is primarily concerned with executing air support and—

•Establishing and maintaining liaison and communications with appropriate control agencies.

•Informing and advising the ground unit commander on employment of aviation support, including antiair warfare and low-altitude air defense (LAAD).

•Preparing, forwarding, and coordinating air requests.

•Providing air support estimates.

•Prioritizing and resolving duplication and conflicting air support requests.

•Disseminating target information received through air support channels.

•Recommending fire support coordination measures as they relate to air support.

•Maintaining an air situation map.

(c) Naval Gunfire Section. The naval gunfire section establishes and

maintains facilities for liaison and communications between supported units and appropriate control agencies. The section informs and advises the ground commander on the employment of NSFS, requests and controls NSFS, and controls radar beacon teams.

(d) Division Air Section. The division air section in the G-3 consists of the division air officer, assistant air officer, and two air controllers. The air section is not a part of the division TACP or the FSCC but works closely with both. The division air section—

•Advises the division commander and commanders of elements not having TACPs on matters concerning air support.

•Participates in development of operation plans and orders on matters pertaining to air employment.

•Participates with the FSCOORD in targeting and determining type of support.

•Prioritizes and resolves conflicts in air support requests.

•Prepares, forwards, and coordinates air support requests.

•Relays pertinent information to other tactical air control agencies.

•Maintains close liaison with the DASC to assist in coordination of air support.

(6) Regimental Fires Support. The regimental FSCC plays a key role in planning and using fire support. They assist the battalions in coordinating and granting clearances for fires delivered in the regiment's zone of action beyond the battalion's zone. They also coordinate ingress and egress routes for CAS missions when aircraft routes are through the zone of action of units adjacent to the unit requesting the mission. Fire support planning at the regiment attempts to influence future operations, normally 24 to 48 hours in advance of the current battle and is significantly larger in scope than at battalion level. The regiment is normally the lowest level where commanders are allotted means to influence the battle significantly with fire support. The regimental commander selects as the FSC an officer having the requisite knowledge of fire support, usually the direct support artillery battalion liaison officer. Organization of the FSCC is similar to battalions, except that no FOs or FACs are assigned.

(7) Battalion Fire Support. Most fire support coordination in operations is done at battalion level. In battalion FSCCs, calls for fire and air requests from the companies are monitored/received and acted upon by appropriate supporting arms representatives. Requests are checked to ensure that supporting arms are integrated with the scheme of maneuver and that friendly forces are not needlessly endangered. The battalion FSC is the weapons company commander. Assistance is provided by a liaison section from a supporting artillery battery, an organic battalion TACP, a shore fire control party from the headquarters battery of the supporting artillery battalion, and a mortar liaison party from the battalion mortar platoon. The senior air officer of the TACP acts in several capacities: as a special staff officer to the battalion commander in regard to all aviation matters; as the officer in charge of the battalion TACP; and as the air representative in the battalion FSCC. The other air officers serve as leaders of the forward air control parties and do a majority of preplanned and immediate requests for CAS to infantry companies to which they are assigned. Separate battalions operating as maneuver elements establish an FSCC that functions in the same manner as an equivalent-level infantry unit FSCC.

(8) Company Fire Support. A company does not have an FSCC, as such. The company commander, assisted by the artillery forward observer, mortar forward

observer, and, if assigned, a FAC and NSFS spotter performs the fire support coordination necessary at company level. Coordination between companies is essential for effective battalion-level fire support coordination. Such coordination reduces the frequency with which FSCC personnel must intervene to cancel or modify requests for supporting arms and frees them for tasks the companies cannot accomplish.

c. Liaisons. The MAGTF must ensure proper coordination and integration of Marine forces with joint and multinational forces. Representation on joint staffs and within joint agencies, to include liaison personnel, is essential to ensure proper employment of forces. The ACE commander, in exercising authority to command, control, and coordinate MAGTF air operations through the Marine TACC, should ensure joint staff/agency and liaison representation to the joint force; JFACC, AADC, and ACA staffs; and the JAOC. One example is sending the MARLO to the JAOC.

Joint and multinational liaisons are extremely useful in enhancing MAGTF support to other services and nations. It is normally desirable to exchange air C2 liaison personnel with multinational users of the ACE and/or the MACCS. The exchange of liaisons greatly facilitates coordination and control of aircraft and missiles within the MARFOR area of operations. Marine air traffic control (ATC) liaisons and the ANGLICO are examples of liaisons typically used in joint and multinational operations.

d. Joint Force Functional Capabilities. The Marine TACC, equipped with CTAPS equipment and having access to the communications systems necessary to coordinate and distribute the joint ATO, is capable of hosting JAOC functions. The TACC's ability to perform this function can be described as an enabling or transitional capability. The TACC could host JAOC functions as the joint force's first principal air C2 system in theater with the intention of passing JAOC functions to another air C2 agency as the tempo of air operations increases. The TACC could also serve as a pass-through agency in situations where JAOC functions are being passed from afloat to ashore or vice versa. As is the case with all JAOCs, service liaisons and subject matter expert representatives that reflect the makeup of the joint force are necessary to staff a TACC-hosted JAOC. Similar considerations should be applied to the TACC when performing ACA or AADC functions.

(1) A typical theater air defense organization includes an AADC whose duties include—coordinating the employment of theater air defense systems to optimize joint force air defense capabilities; building a seamless air defense architecture; recommending ROE to the JFC on air defense matters; and developing the joint force's air defense plan. The geography of the JOA (including size and terrain); number of air defense resources and those resources' capabilities; and tempo of joint air operations are some factors that are often used to determine the need to subdivide the joint force's air defense area into regions. If air defense regions are established, the AADC typically designates regional air defense commanders (RADCs) to oversee the implementation and supervise execution of the air defense plan. In turn, the regions may be further subdivided into sectors, with each sector under the supervision of a sector air defense commander (SADC) responsible to RADC. Like the AADC, RADC and SADC functions are supervisory in nature. These individuals exercise oversight and direction of all air defense operations within their assigned region/sector and coordinate air defense operations between regions and sectors to ensure seamless air defense operations throughout the joint operations area.

(2) Within the MACCS, the SAAWC and TAOC provide the JFC with the capabilities to exercise RADC or SADC

functions. The TAOC provides the SAAWC with the voice and data communications connectivity required to effect the necessary interfaces to coordinate and supervise regional and sector air defense activities effectively. The considerations for joint/allied representatives and liaisons addressed for a Marine JAOC apply equally to RADC and SADC functions.

6. Conclusion

a. MAGTF Aviation in Joint Operations. In 1986, the Joint Chiefs of Staff endorsed the Omnibus Agreement for the use of MAGTF aviation during sustained operations ashore. The agreement stipulated that the MAGTF commander retains OPCON of organic air assets and for MAGTF aviation normally to support the MAGTF mission. The intent is to meet the needs of the JFC while maintaining the tactical and operational integrity of the service organization. Since the original agreement, the Omnibus Agreement has been translated into Joint Publication 0-2, *Unified Action Armed Forces (UNAAF)*, February 1995. Portions of this policy, as they relate to TAGS operations, follow:

The Marine air-ground task force (MAGTF) commander will retain operational control of organic air assets. The primary mission of the MAGTF air combat element is the support of the MAGTF ground element. During joint operations, the MAGTF air assets will normally be in support of the MAGTF mission. The MAGTF commander will make sorties available to the joint force commander (JFC), for tasking through the joint force air component commander (JFACC), for air defense, long-range interdiction, and long-range reconnaissance. Sorties in excess of MAGTF direct-support requirements will be provided to the JFC for tasking through the JFACC for the support of other components of the joint force or the joint force as a whole. Nothing herein shall infringe on the authority of the geographic combatant or JFC in the exercise of operational control, to assign missions, redirect efforts (e.g., the reapportionment and/or reallocation of any MAGTF TACAIR sorties when it has been determined by the JFC that they are required for higher priority missions), and direct coordination among the subordinate commanders to ensure unity of effort in accomplishment of the overall mission, or to maintain integrity of the force. NOTE: Sorties provided for air defense, long-range interdiction, and long-range reconnaissance are not "excess" sorties and will be covered in the air tasking order. These sorties provide a distinct contribution to the overall joint force effort. The JFC must exercise integrated control of air defense, long-range reconnaissance, and interdiction aspects of the joint operation or theater campaign. Excess sorties are in addition to these sorties.

b. Air C2 in Amphibious Operations. In situations where an AOA is established, a phased passage of air C2 functions from afloat to ashore may occur. The phasing of control ashore process, where Navy Tactical Air Control System (NTACS) functions are incrementally phased to MACCS agencies as they establish ashore, is discussed in detail in Appendix D.

c. Warfighting Doctrine. The Marine Corps' warfighting doctrine is based on rapid, flexible, and opportunistic maneuvers. Maneuver forces seek to shatter the enemy's cohesion through a series of rapid, violent, and unexpected actions. Marine Corps aviation operations support MAGTF operations. The combined arms concept integrates various combat arms to maximize combat power. This power presents the enemy with a no-win situation. To reduce vulnerability to one arm of the combined power, the enemy must become vulnerable to another. The organization employed to accomplish this is the MAGTF, with C2 of air-ground tasks supplied by the MACCS and the fire support coordination system. The Marine Corps' unique organization allows forces to operate as a TAGS within a TAGS.

Chapter VI

SPECIAL OPERATIONS COMPONENT

1. Background

Special operations (SO) are conducted by specially organized, trained, and equipped military and paramilitary forces to achieve military, political, economic, or psychological objectives by unconventional military means in hostile, denied, or politically sensitive areas. These operations are conducted during war and during MOOTW, independently or in coordination with the operations of conventional, non-SO forces. Political-military considerations frequently shape SO requiring clandestine, covert, or low visibility techniques and oversight at the national level. SO differ from conventional operations in degree of physical and political risk, operational techniques, mode of employment, independence from friendly support, and dependence on detailed operational intelligence and indigenous assets. The integration of SO into the TAGS is a cohesive process that includes specially equipped aircraft, uniquely trained ground forces, increased operational security measures, and extensive liaison among components. Special operations forces (SOF) forces may provide their own air support, utilize air support of any service component, or provide air support for use by conventional forces.

2. Mission

SO consist of nine principal missions: unconventional warfare (UW), direct action (DA), special reconnaissance (SR), foreign internal defense (FID), combating terrorism (CBT), counterproliferation, civil affairs, PSYOP, and IW. (SO missions may also include collateral activities and multinational support.) While SOF are unique; versatile; flexible; and designed primarily to meet these missions, conventional forces, including air power, may be tasked for support depending on mission circumstances.

a. UW. UW is a broad spectrum of military and paramilitary operations, normally of long duration, predominantly conducted by indigenous or surrogate forces who are organized, trained, equipped, supported, and directed in varying degrees by an external source. It includes guerrilla warfare and other direct offensive low-visibility, covert, or clandestine operations, as well as the indirect activities such as subversion, sabotage, intelligence activities, and escape and evasion (E&E). It delays and disrupts hostile military activities, interdicts lines of communications, denies unrestricted use of key areas, diverts attention and resources from the main battle area, and interdicts warfighting capabilities.

b. DA. DA missions are short-duration strikes and other small-scale offensive actions by SOF to seize, destroy, capture, recover, or inflict damage on designated personnel or materiel. SOF may employ raid, ambush, or direct-assault tactics; emplace mines and other munitions; conduct standoff attacks by fire from air, ground, or maritime platforms; provide terminal guidance for precision-guided munitions; conduct independent sabotage; and conduct antiship operations.

c. SR. SR and surveillance are actions taken by SOF to obtain or verify, by visual observation or other collection methods, information concerning the capabilities, methods, intentions, and activities of an actual or potential enemy or to secure data concerning the meteorological, hydrographic, or geographic characteristics of a particular area. It includes target acquisition, area assessment, and post-strike reconnaissance.

d. FID. FID includes the activities by civilian and military agencies in any of the action programs taken to free and protect another government from subversion, lawlessness, and insurgency. They are joint, interagency, and multinational by nature. The language, cultural, and regional expertise required make synchronization difficult but absolutely critical.

e. CBT. CBT are the actions, including antiterrorism (defensive measures taken to reduce vulnerability) and counterterrorism (offensive measure taken to prevent, deter, and respond to terrorism), taken to oppose terrorism throughout the entire threat spectrum.

f. Counterproliferation. Counter-proliferation refers to actions taken to seize, destroy, render safe, capture, or recover weapons of mass destruction.

g. Civil Affairs. Civil affairs are the activities of a commander that establish, maintain, influence, or exploit relations between military forces and civil authorities, both governmental and nongovernmental, and the civilian population in a friendly, neutral, or hostile area of operations in order to facilitate military operations and consolidate operational objectives. These activities may occur before or subsequent to other military actions.

h. PSYOP. PSYOP are 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. The purpose of PSYOP is to induce or reinforce foreign attitudes and behaviors favorable to the originator's objectives.

i. IW. IW are those actions taken to achieve information superiority by affecting adversary information, information-based processes, information systems, and computer-based networks while defending one's own information, information-based processes, information systems, and computer-based networks.

j. Collateral Activities. Collateral activities in which SOF, by virtue of their inherent capabilities, may selectively be tasked to participate include coalition support, CSAR, counterdrug activities, countermine activities, security assistance, and humanitarian assistance. SOF can conduct these activities only at the expense of their primary missions.

3. Component Operations

a. SO are marked by certain characteristics that cumulatively distinguish them from conventional operations. They—

(1) Are principally offensive; usually of high physical and political risk, and directed at high-value, critical, and often time-sensitive targets. They are frequently clandestine in nature and offer the potential for high returns but rarely a second chance should a first attempt fail. SOF are employed when the use of conventional forces is inappropriate or infeasible for either military or political reasons.

(2) Rely on surprise, security, audacity, and frequently employ deception to achieve success. They often require responsive, joint C2 organization with detailed intelligence preparation, as well as thorough planning, decentralized execution, and rigorous detailed rehearsal.

(3) Are often conducted at great distances from operational bases employing sophisticated communication systems and means of insertion, support, and extraction to penetrate and return from hostile, denied, or politically sensitive areas. SO frequently require discriminate and precise use of force.

(4) May require patient, long-term commitment in a given operational area to achieve national goals through security assistance/nation-building activities or extended UW operations.

(5) Are inherently joint and frequently require integration with other US agencies or combined forces. Although SO may be conducted as single-service operations, they routinely require detailed coordination along functional rather than service lines. Even single-service SO require joint support and coordination. SOF, even at team and unit levels, are routinely involved in planning for and conducting joint operations.

b. Organization.

(1) Army Special Operations Forces (ARSOF). ARSOF includes special forces (SF), ranger, special operations aviation (SOA), PSYOP, and civil affairs. SOA rotary-wing assets include A/MH-6 (CAS/airlift), MH-60 (CAS/airlift), and MH-47 (airlift) aircraft.

(2) Naval Special Warfare Forces (NAVSOF). NAVSOF includes sea air land (SEAL) teams, SEAL delivery vehicle teams, special boat units, and patrol coastal ships.

(3) Air Force Special Operations Forces (AFSOF). AFSOF includes fixed- and rotary-wing assets, special tactics teams (STT), PSYOP, and FID units. AFSOF fixed-wing assets include AC-130H/U Spectre/Spooky Gunships (CAS/ interdiction/reconnaissance), EC-130H Commando Solo (PSYOP/EW), MC-130E/H Combat Talon (airlift/tanker), and MC-130P Combat Shadow (tanker/CSAR) aircraft. Rotary-wing assets include MH-53J Pave Low (airlift) and MH-60G Pave Hawk (airlift/CSAR) aircraft.

c. SOF Capabilities.

(1) SOF fixed-wing and vertical-lift aircraft are equipped for long-range, adverse weather, deep penetration of hostile areas and capable of air landing and air dropping personnel, equipment, and psychological warfare materials, or extracting personnel by airborne pickup devices or air landing. Vertical-lift aircraft are equipped for suppressive fire support, personnel recovery, and medical evacuation. They are also able to operate in confined areas, employing hoist, rope ladder, fast rope, or repelling procedures to infiltrate or exfiltrate SOF ground and maritime personnel. SOF gunships are capable of providing precision night CAS as well as limited interdiction and armed reconnaissance missions in a permissive threat environment.

(2) Terminal Guidance Operations (TGO) are electronic, mechanical, visual, or other assistance given to aircraft, missiles, ships, and artillery elements to facilitate target destruction by ground elements. They may be conducted independently or in conjunction with conventional forces. They make joint AI and SOF ground operations complementary. Enemy mobile high-payoff targets that are difficult to locate from the air are often visible to ground SOF. Small ground SOF elements can search for, verify the presence of, and precisely report the location of high-payoff targets. Global positioning systems, laser designation systems, various beacon systems, or combinations of the above provide target locations. When small SOF ground teams do not have the organic combat power to engage enemy targets without compromising their positions, strike aircraft or other long-range systems are designated to attack them. Ground SOF may provide precise battle damage assessment of high-payoff targets that otherwise may be obscured or hidden. These operations require extensive coordination between the joint force special operations component commander (JFSOCC) and JFACC staffs. Planning for and conducting terminal guidance operations involve two distinct phases (see Figures VI-1 and VI-2).

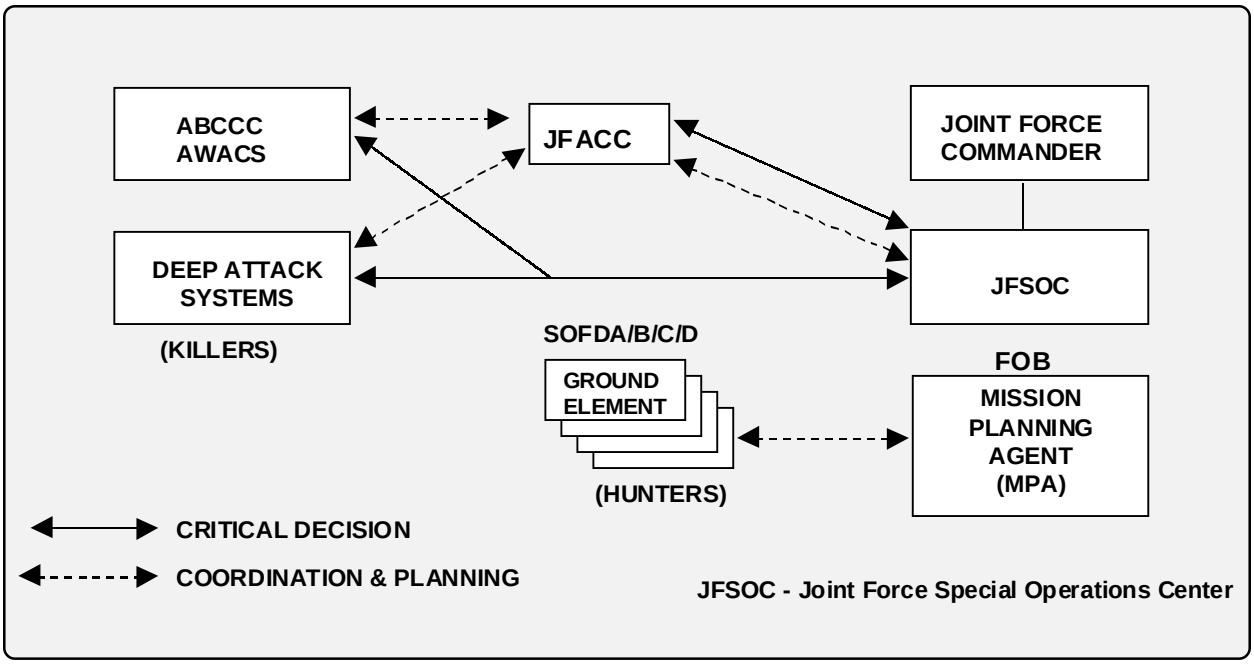


Figure VI-1. TGO Planning Loop

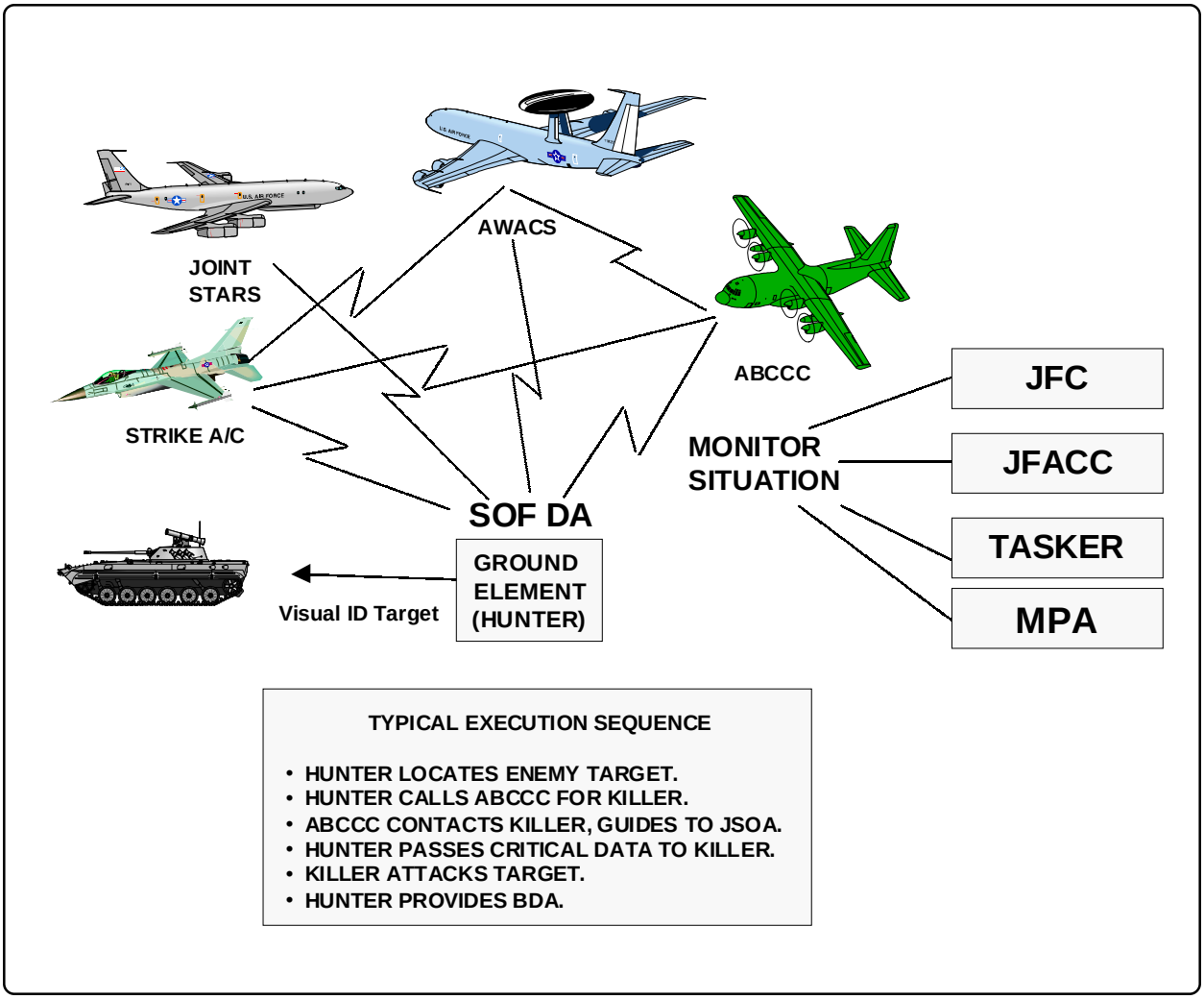


Figure VI-2. TGO Execution Loop

4. Planning

Based on guidance from the JFC, the JFSOCC allocates forces against strategic or operational tasks and in support of other component commanders. The JFC may task the JFSOCC to conduct SO missions or other activities, which can include coordination of PSYOP, civil affairs, and coalition support-related activities. The JFSOCC anticipates theater requirements that SOF could address and recommends to the JFC proactive operations to satisfy those requirements. SO must be coordinated and integrated with conventional operations to enhance mission accomplishment and prevent fratricide. Comprehensive coordination and integration of SO through interface with the TAGS are essential. During war, SOF will normally require support from conventional air assets and may provide support to conventional air operations. Support from conventional assets may include extra refueling during deployments or long-range missions, SEAD, diversion of enemy forces, increased airlift capability, or ensuring air and ground defenses for security of LZs or forward arming and refueling points. EW or SEAD, along with CAS, may be required for SO infiltration or exfiltration missions. CAS is normally preplanned for operations in the deep battle area. Detailed planning is required to have strike aircraft accompany a SOF infiltration, to conduct preplanned CAS missions, or to be on-call during actions at an objective area. Missions of this type are carefully coordinated during the deploying SOF unit's mission planning procedures. Regardless of command relationships, integrating conventional aviation assets into SO profiles requires advance planning and extensive coordination. SOF normally operate on extended planning time lines, normally 96 hours before execution, which should be fully considered during coordination. Long planning times are based on the increased intelligence-gathering activities, detailed planning, and rehearsals that surround many SO missions. Because of the longer lead times, planning for and receiving support from other components is relatively easy. It is far more difficult, however, for other components that operate on shorter planning schedules to receive support from SOF.

To provide clear guidance for planning and executing SO, the following set of operational mission criteria has evolved. All commanders should be familiar with these criteria and apply them to operational planning.

(1) Appropriate Mission. SOF should be used against those key strategic or operational targets that require SOF's unique skills and capabilities. If the targets are not of operational or strategic importance, then SOF should not be assigned. SOF should not be used as a substitute for other forces.

(2) Support Campaign Plan. If the mission does not support the JFC's campaign plan, then there are probably more appropriate missions available for SOF.

(3) Operationally Feasible. SOF are not structured for attrition or force-on-force warfare and should not be assigned missions that are beyond their capabilities. Planners must take into consideration the vulnerability of SOF units to larger, more heavily armed or mobile forces, particularly in hostile territory.

(4) Required Resources Available. Some SOF missions require support from other forces for success. Support involves aiding, protecting, complementing, and sustaining employed SOF. Support can include airlift, intelligence, communications, and logistic support. Even though a target may be vulnerable to SOF, deficiencies in supportability may affect the likelihood for success or may entirely invalidate the feasibility of employing SOF.

(5) Outcome Justifies Risk. Commanders should recognize the high value

and limited resources of SOF and ensure that the benefits of successful mission execution are measurable and in balance with the risks inherent in the mission. Assessment of risk should take into account not only the potential for loss of SOF units and equipment but also the risk of adverse effects on US diplomatic and political interest should the mission fail.

5. Command and Control

The CINC, United States Special Operations Command (USSOCOM), maintains combatant command (COCOM) authority over SOF based in the continental United States. USSOCOM trains assigned forces in SO-unique subjects, develops and acquires SO-unique equipment and materiel, and provides these forces to the theater CINCs or JFCs as required. In certain situations, the NCA may direct USSOCOM to plan and conduct SO autonomously or as the supported commander. To provide the necessary unity of command, each geographic combatant commander has established a subunified command to serve as the functional SO component for the theater. The theater SOC performs broad continuous missions uniquely suited to SOF capabilities that are of strategic and operational importance to the geographic combatant commander. The theater SOC normally exercises OPCON of all assigned SOF in theater. When the geographic combatant commander designates a JFC, the theater SOC may be designated as the JFSOCC. The JFSOCC will control assigned SOF as well as any conventional assets provided by the JFC in support of specific missions. Tactical control of SOF air assets is normally exercised by the Air Force special operations component (AFSOC) commander, the Army SOA commander, or the joint special operations air component commander (JSOACC), when designated. The JFSOCC normally designates the SOF component commander with the preponderance of aviation assets and the means to control those assets as the JSOACC. Principal functions that support coordination of CAS in the SOF command system are the SOLE, the special operations command and control element (SOCCE), and special operations terminal attack controller (SOTAC).

a. The function of the SOLE is to coordinate, deconflict, and integrate SOF air and surface activities with the JFACC. Additionally, it is responsible for including all SOF air activity on the ATO. The SOLE reconciles duplicative targeting, resolves airspace conflicts, and prevents fratricide. The SOLE works directly for the JFSOCC but is collocated with the JFACC. LNOs are placed throughout the JAOC. Under the direction of the SOLE chief, these liaison officers provide SOF air and surface expertise throughout the JAOC. Because the JFSOCC and the JFACC share a common environment (the deep battlefield), SOF aviation and surface assets must be integrated into joint air planning and operations.

b. The SOCCE is normally employed when SOF conduct operations in support of a conventional force, such as an Army Corps or a MAGTF. It collocates with the CP of the supported commander and performs C2 or liaison functions. The SOCCE normally remains under the OPCON of the JFSOCC. The SOCCE can receive operational intelligence and target acquisition reports directly from deployed SOF elements and provide them to the supported headquarters.

c. SO combat controllers assigned to STTs are trained and certified to perform terminal control responsibilities. SOTAC CAS training emphasizes night infrared, laser, and beacon equipment. Additionally, SOF surface teams can perform the terminal guidance function. For remotely deployed SOF units, requests for CAS will be passed through the most expedient, direct, and available means of communications. Requests will normally be to an airborne platform such as an

ABCCC or AWACS. To satisfy these requests, the ABCCC or AWACS will coordinate with the appropriate agencies.

d. SOF combat advisors coordinate coalition support with US activities. SOF, which routinely work with multinational forces, can be instrumental in ensuring that US air support is efficiently and appropriately provided in support of allied forces. AFSOC maintains regionally focused liaison teams, specially trained to integrate allies and coalition partners into the TACS. They can assist their host nation counterparts with planning, ATO coordination, mission execution, as well as provide training on US C3 systems/ methods if needed.

6. Conclusion

SOF provide the JFC with unique capabilities to conduct operations in the deep battle area. Because SOF share a common environment with the joint air forces, their efforts must be closely coordinated and integrated and liaison efforts must be conducted to fully leverage SO capabilities and avoid fratricide.

Chapter VII

THEATER AIR-GROUND SYSTEM OPERATIONS

1. Background

The preceding chapters describe how the JFC may organize and control the joint force and how the various components contribute to the TAGS. This chapter describes how the TAGS supports air-ground planning, targeting, tasking, execution, and CA. It concludes with a discussion of TAGS air defense related operations.

2. JFC Influence

The JFC influences the structure and the direction of TAGS in several ways, including designating a JFACC, ACA, and AADC; assigning missions; and apportioning forces.

a. The duties and responsibilities of the JFACC, ACA, and AADC remain the same regardless of whether the MARFOR, NAVFOR, or AFFOR perform the function. However as explained in previous chapters, the MARFOR's or NAVFOR's JAOC capacity is limited. This has a direct bearing on the size of liaison elements, although all of the elements depicted in Figure VII-1 will be represented. Table VII-1 indicates functional equivalency (equivalent capacity not implied) of TAGS agencies across the services. This, along with information in Chapters II through VI, can be helpful in understanding where and how assets interfaces with various JFACC options.

b. The JFC directs the weight of the joint air effort, by providing guidance and objectives that identify targeting priorities; joint target list (JTL)/JIPTL planning guidance and procedures; appropriate command and movement control; joint fire support coordinating measures; ROE; and what defines component direct support sorties. This guidance will also include the JFC's apportionment decision. Apportionment is the determination and assignment of all air sorties in support of the joint air effort by priority and/or percentage that should be devoted to the various air operations (for example, strategic attack, AI, counterair, maritime support, and CAS) and/or geographic areas for a given period of time. Apportionment impacts all aspects of TAGS operations. The JFACC, in consultation with other component commanders, is responsible for the apportionment recommendation to the JFC. Each component commander may be tasked to support other components and or to provide support to the joint force as a whole. The JFC's guidance and objectives, with accompanying apportionment decision, is disseminated to all components.

3. Planning

Component C2 elements are combined to form the TAGS, as depicted in Figure VII-1. Joint force components must work together in planning and executing joint air operations that accomplish JFC-assigned objectives, comply with JFC guidance, and satisfy various component commanders' requirements. The challenge to personnel working within TAGS is to operate a system responsive to all components and supported echelons to accomplish the JFC's campaign objectives. The JFACC structures the TAGS based on capabilities provided by the various components.

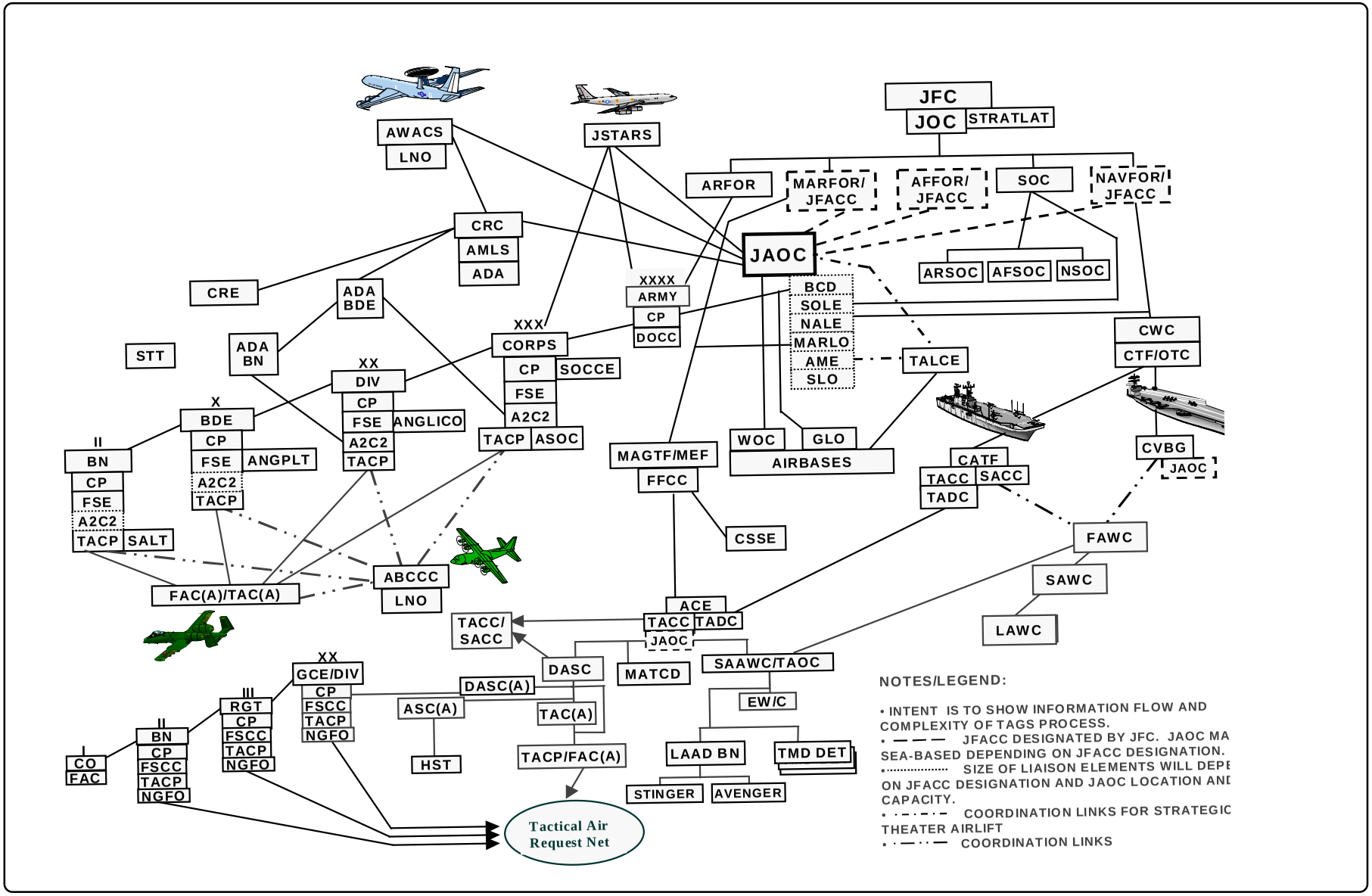


Figure VII-1. TAGS Coordination Links

Table VII-1. Functional Equivalents

NAVY	MARINE	AIR FORCE	ARMY
TACC	TACC	AOC	DOCC
FAWC	TAOC	CRC	ADA TOC
SAWC	EW/C	CRE	ADA TAC
CG/DDG	TMD DET		ADA
SACC	FSCC		FSE
ASCS	DASC	ASOC	G-3 AIR
	DASC(A)	ABCCC	
	TACP	TACP	FIST
	TAC(A)	TAC(A)	FO
	FAC(A)	FAC(A)	FO
HAWKEYE		AWACS	

This chart depicts functional equivalent agencies/elements/centers in terms of similarity of tasks accomplished. It does not imply that equivalency in terms of size, manpower, or capabilities.

a. Planning. Figure VII-2 overlays varying targeting methodologies affecting the TAGS and the conduct of joint air operations. To be effective, the joint targeting process and the joint ATO cycles must be synchronized.

(1) Targeting is the process of selecting targets and matching the appropriate response to them. The objective of the joint targeting process is to ensure an effective and efficient joint attack against the enemy with all available assets maximized to achieve the overall objective. Targeting is complicated by the requirement to deconflict duplicative targeting by different forces or different echelons within the same force and to synchronize the attack of those targets with other components of the joint force. The six steps of the joint targeting process are depicted in Figure VII-2.

(2) D3A is the targeting methodology used by the Army and Marine Corps. D3A follows the same logic as the joint targeting process but in four steps instead of six. The arrows surround the joint targeting process in Figure VII-2 represent D3A. (Chapter II gave a more detailed discussion of this methodology.)

(3) The joint ATO cycle and joint targeting process are not synonymous. The joint ATO cycle is used to provide efficient and effective employment of all joint air assets for all air missions to include AI and CAS. Because AI and CAS are inextricably tied to the joint targeting process, the ATO cycle and targeting processes must correlate. The six steps of the joint ATO cycle are also shown in Figure VII-2. (Chapter III and Joint Publication 3-56.1 discuss the ATO development cycle.)

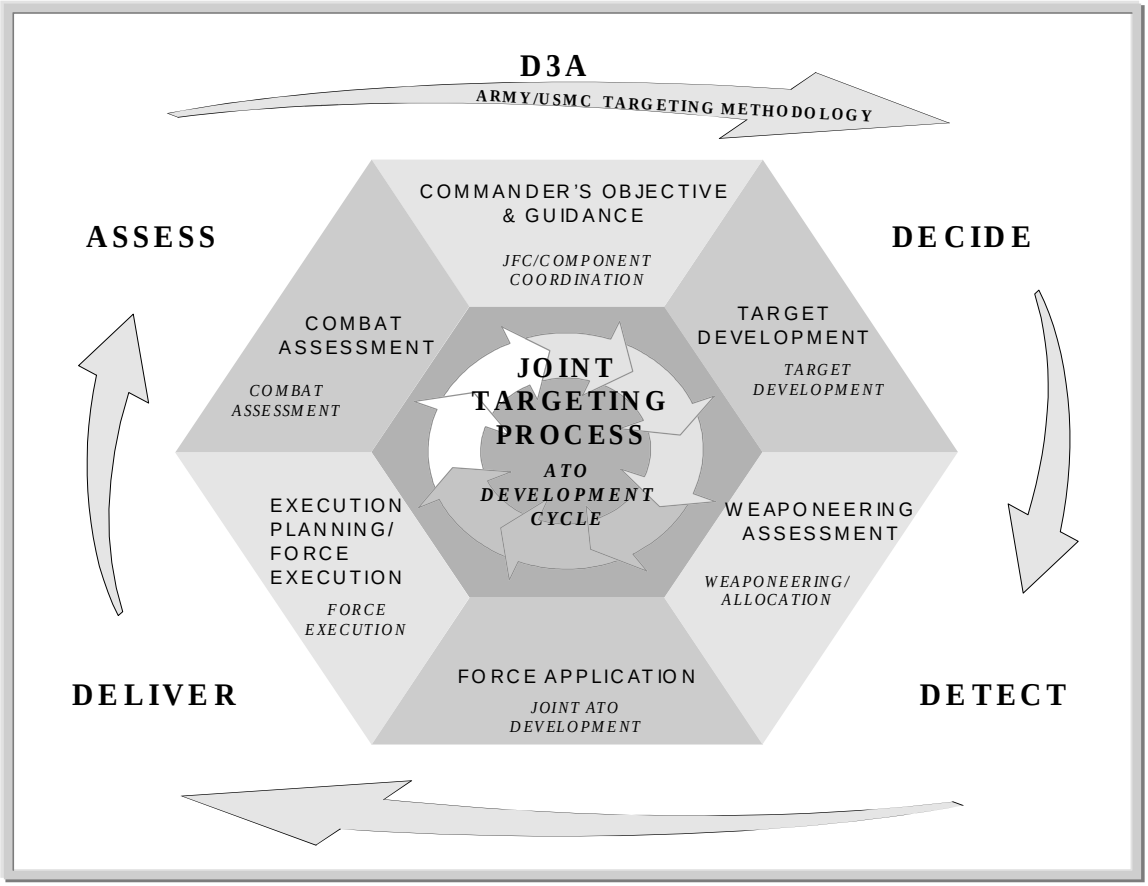


Figure VII-2. ATO Cycle Overlaid on Targeting Cycles

b. Each component is involved in targeting. Components determine support requirements and make sorties not needed by the service component available to the JFC for tasking by the JFACC. In addition to generating air support requirements, all components participate in operational planning and mission execution. The JFACC performs a key role in this process as the functional component commander responsible for planning, coordinating, deconflicting, and directing joint air operations.

4. Component Considerations

The following considerations pertain to the JFC's determination of sorties available for joint tasking:

(1) Army Considerations. Rotary-wing aircraft have unique characteristics that often make it difficult to integrate them into an ATO. They can conduct multiple takeoffs and landings in a single fuel load and often shut down on the ground for a period of time before resuming their mission. They are critical to the execution and success of the land commander's operations and often provide the decisive edge during fluid, volatile, and changing situations. It is vital to integrate all Army aviation missions into the TAGS and ATO processes in a way that promotes their effectiveness without restricting or hindering the multifaceted contribution they can make.

(2) Maritime Component Considerations for CVBG Air Support. As described in Chapter IV and Appendix D, when an AOA is established, the CATF maintains overall authority for operations within the AOA and exercises command authority over the entire assault task force (ATF). The CATF will consolidate Marine Corps air requests within ATF resources and will internally obtain Navy air support from the supporting CVBG. The CVBG will

inform the CATF if there is a problem in supporting the requirements. The CATF will then submit the unfulfilled air support requirements to the joint ATO planning process. Once control is passed ashore, the MAGTF/commander will request air support in excess of the MAGTF's direct air support capabilities from the CVBG or JFACC, as required.

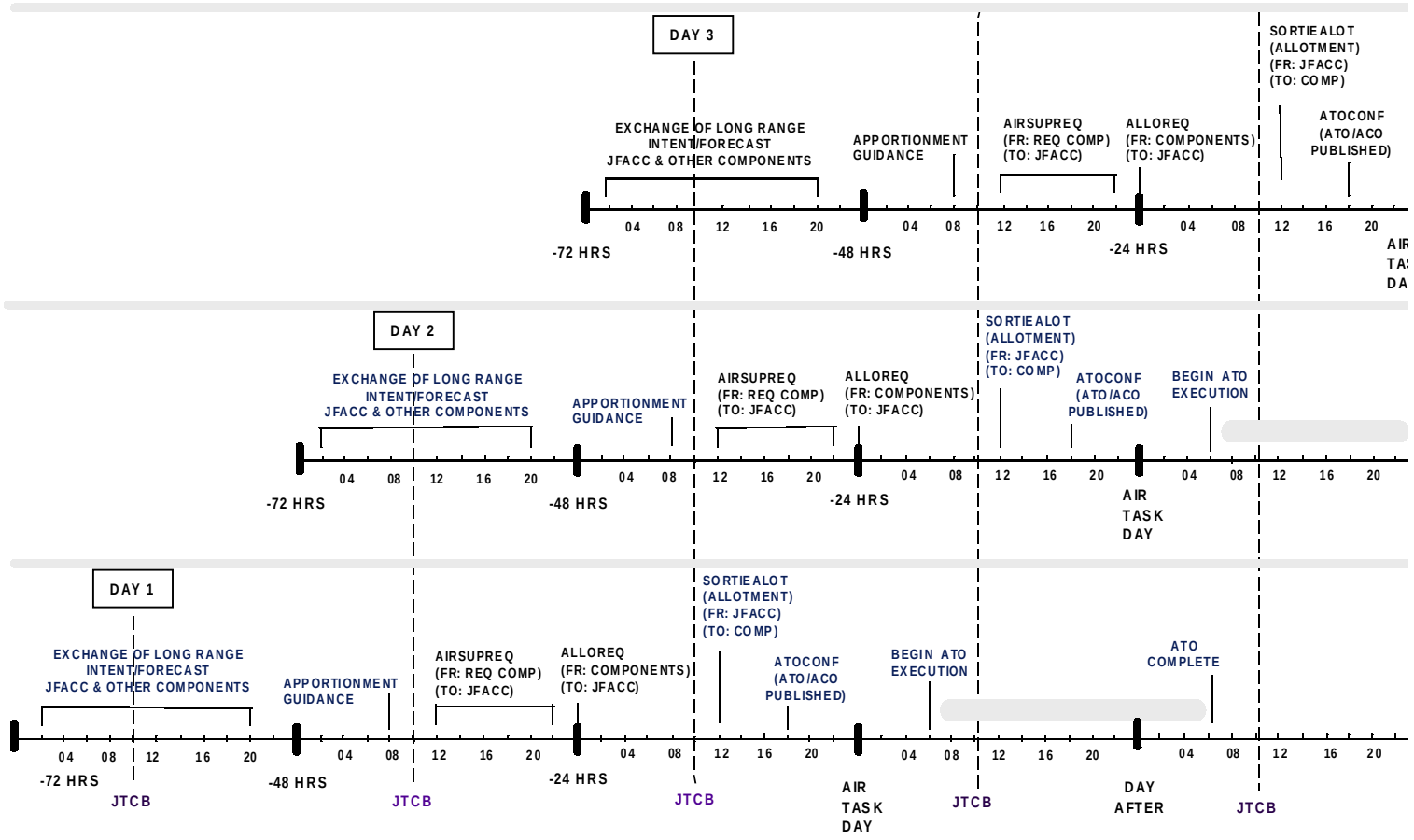
(3) Air Force Component Considerations. All Air Force component assets will normally be available for JFC/JFACC tasking. Coordination of strategic airlift missions involving forces not assigned/attached to the joint force (such as those aircraft remaining under OPCON/TACON of United States Transportation Command [USTRANSCOM]) remains an Air Force component responsibility and is accomplished through the AME, normally located with the COMAFFOR's AOC. The Air Force AOC and AME will coordinate planned airlift operations with the JFACC/ACA/AADC. Initial CSAR is currently a service responsibility. The JFACC will coordinate with the joint search and rescue center (JSRC) and component rescue coordination centers as appropriate for the conduct of CSAR air operations. Appropriate assets may be diverted from JFACC tasking for rescue missions as coordinated with the JSRC.

(4) SOF Considerations. Normally, all SOF operations are planned, controlled, and executed by the JFSOCC. SOF will not normally be tasked to conduct joint air operations. However, because SOF operate deep, planners must consider the ongoing and future operations of all components to take advantage of operational synergies. All sorties flown by SOF should appear on the ATO for deconfliction and coordination purposes.

5. ATO Cycle

A joint ATO cycle is used to provide the effective and efficient employment of the joint air capabilities/forces made available. The cycle provides a repetitive process for the planning, coordination, allocation, and tasking of joint air missions/sorties within the guidance of the JFC (see Figure VII-3). The cycle accommodates changing tactical situations or JFC guidance, as well as requests for support from other component commanders. The joint ATO cycle is an analytical, systematic process that matches available capabilities/forces with targets to achieve operational objectives. The joint ATO cycle begins with the JFC's guidance and objectives and culminates with the CA of previous missions/sorties. While an ATO itself covers a specific period, the ATO planning process is continuous. At any given time, an AOC and liaison elements will be working with three or more ATOs: executing the current days operation; planning for tomorrow's operation; and forecasting, coordinating, and planning the follow-on day's operations. The long-range planners, working on the third day and beyond, develop apportionment and AI targeting recommendations to the JFC. Figure VII-3 depicts how the ATO cycles overlap. The fact that three or more ATOs may be in different stages of development at any given time means communications pertaining to the ATO must be precise. The timing of the JFC's apportionment decision and ATO cycle allows the supported component commander to inform subordinates of their respective priorities for the air effort. The six phases of the joint ATO cycle include—JFC/component coordination, target development, weaponeering/allocation, joint ATO development, force execution, and CA.

a. JFC/Component Coordination. The JFC/component coordination phase starts with receipt of the JFC's guidance and objectives that is normally received 36-48 hours before the beginning of the air tasking day. The JFC normally informs the components of apportionment decision through a guidance and intentions message. Based on this message, the units will respond with allocation request (ALLOREQs) messages to tell the JFACC what they can support.



THIS FIGURE ILLUSTRATES ATO CYCLE OVERLAP BASE ON A NOTIONAL 0600 ATO START TIME.

Figure VII-3. Notional ATO Timeline

b. Target Development. Target Development produces a prioritized list of targets—the JIPTL—that supports the objectives and conforms to guidance. The culmination of this phase occurs when specific targets are approved and included in the joint ATO and assigned to forces made available for joint air operations. Components use the Target Information Report (TGTINFOREP) to nominate targets, submit post strike assessment information, and report data changes to existing targets. Components also use this message to recommend no-strike targets and to cancel or renew targets. Normally, components submit target nominations to the JFACC no later than 26 hours before the start of the joint air tasking day.

c. Weaponeering/Allocation. Weaponeering/allocation involves quantifying the expected results of lethal and nonlethal weapons employment against targets on the JIPTL. This means detailing on "weaponeering" worksheets recommended aim points or desired mean point of impact (DMPI), recommended number/type aircraft and weapons, fusing, target identification and description, target attack objectives, target area threats, and probability of destruction. The final prioritized targets are then included into the MAAP. The resulting MAAP is the plan of employment that forms the foundation of the joint ATO. Supported components of the joint force prepare preplanned target requests for the next air tasking day with the air support request (AIRSUPREQ) message. These are transmitted to the AOC not later than 24 hours before the air tasking day (0600 local [L]) or earlier, as prescribed by theater OPLAN or as directed by the JFC. As additional information regarding the requested target becomes available, the requesting component will forward the information to the tasked component using a AIRSUPREQ message.

(1) Requesters must be able to differentiate between the terms "preplanned and immediate" and "scheduled and on-call."

(a) Preplanned and immediate refer to the requests themselves. Preplanned requests are those submitted in time to be included in the published joint ATO. Immediate requests fulfill operational requirements that are too late to be published in the daily joint ATO.

(b) Scheduled missions refer to those missions in the ATO with specific set targets, time-on-target (TOT), or mission times, target descriptions, target coordinates, and weapons standard conventional load (SCL) identifiers. On-call missions are those that require the exact time and place to be coordinated as the battle develops. On-call CAS allows the requesting commander to indicate a time frame, probable target type, and place where the need for CAS is most likely. They involve aircraft placed on an appropriate alert status (on the ground or airborne) and then employed when requested by the supported unit. Aircraft used to fill immediate requests normally come from on-call missions established for this purpose. Supported commanders are advised to submit preplanned requests for on-call missions to ensure availability of sufficient sorties with appropriate ordnance to respond to subordinate units' immediate requests.

(2) The allocation portion occurs following the JFC's air apportionment decision. The JFACC translates that decision into total numbers of sorties by aircraft or weapon type available for each operation/task they support. The allocation process is accomplished through exchange of ALLOREQ messages between components. These messages address three areas:

(a) On the basis of the JFC's air apportionment decision; internal requirements; and AIRSUPREQ messages, each air capable component prepares an allocation request (ALLOREQ) message for transmission to the JFACC/JFC staff (normally not less than 24 hours before the air tasking day). ALLOREQ messages report the number of sorties to be flown

during the air tasking day and is reported by assigned mission and type of aircraft.

(b) Sorties not needed by the service component and available to the JFC for tasking by the JFACC.

(c) Requests for additional air support beyond the capability of the air capable components.

(3) The JFACC reviews each service component's ALLOREQ message and transmits a sortie allotment (SORTIEALOT) message for transmission 12-18 hours before the air tasking day (1200L) or as prescribed by theater plans. This message informs all commands which mission requests will be fulfilled and which will be delayed during this cycle. The SORTIEALOT message addresses three issues:

(a) Revisions to a service component's planned allocation of sorties due to unforeseen joint force requirements.

(b) Approval/disapproval of component requests and allotment of other component's excess sorties to fill the approved air support requests or other requirements for the joint force. ***Note: The sorties provided to the JFACC for tasking are considered returned to the parent service component if the JFACC does not allot them in a SORTIEALOT message.***

(c) Revisions to mission data for component requests, such as a changed mission priority or TOT, usually the result from coordination between the components and the JAOC staff.

(4) CAS Sortie Distribution. The JFACC allocates total numbers of sorties to a given mission based on the JFC's apportionment decision. Sorties assigned as CAS missions are then provided to the LCC who makes the distribution decision. This is a further subdivision of the allocation process in which sorties allocated to CAS are distributed among the various ground combat units. Distribution should be determined by the needs of various operations not necessarily a uniform distribution among units.

d. Joint ATO Development. Joint ATO development is a complex process in which JFC and JFACC guidance, target worksheets, MAAP, and component requirements are used to finalize the ATO, SPINS, and the ACO provided by the ACA (see Appendix B for how to "breakout" an ATO and Joint Publication 3-56.1 for more information on ATO development). Twelve hours before the air tasking day begins (1800L) the JFACC transmits the entire plan for the tasked day's operation. This may be accomplished using either an ATO/confirmation (ATOCONF) message or the request confirmation message (REQCONF). The ACO, discussed later in this chapter, is often transmitted with an ATO. The joint ATO conveys C2 instructions, coordination guidance, deconfliction instructions, and specific mission information. Mission information includes primary and backup targets, TOT or alert windows, refueling data, radio frequencies, and weapons load guidelines. Operations personnel in the AOC, CRCs, AWACS, Joint STARS, ABCCC, ASOC, DASC, and other C2 facilities use the joint ATO to monitor and assist in the execution of missions, monitor supporting missions and activities, manage unforeseen problems caused by the fog of war, and respond to approved immediate support requests. The joint ATO helps to focus the intelligence collection management process for national, theater, and component intelligence assets. It is valid for a specified effective period—normally a 24-hour period, (for example, 0600L hours to 0600L hours).

e. Force Execution. The JFACC directs the execution and/or deconflicts all capabilities/forces made available for a given joint ATO. The JAOC must be responsive to required changes during the execution of the joint ATO. In-flight reports and initial BDA may cause a redirecting of joint air capabilities/forces before launch or a redirection once

airborne. During execution, the JAOC is the central agency for revising the tasking of joint air capabilities/forces and coordinating and deconflicting those changes with the appropriate control agencies or components. When a need arises that cannot be met with assigned on-call missions, supported commanders may make an immediate request. The JFACC will evaluate the request against the JFC's campaign plan and overall concept of operations. If the request is of sufficient priority, the mission is filled by retasking scheduled or alert assets. The JFACC will notify the affected component commanders, as appropriate, in the event changes are made to the planned joint air operations during execution.

f. CA. CA is accomplished at all levels. The JFACC or JFC staff continuously evaluates the results of joint air operations and provides these to the JFC for consolidation and overall evaluation of the campaign. Normally, the JTF's J-2 directs the actual dissemination guidelines for all reports. Whenever feasible, reports should be provided directly to the JFACC, JFC, and the initial requester to assist in air operations planning. CA collection requirements must be determined during target prioritization. Component commanders should recommend priorities for the CA efforts and/or areas for which they have responsibility. The CA effort should be a joint program designed to determine if the required target effects are being achieved consistent with the JFCs overall concept. Mission results obtained through the multitude of CA sources are analyzed and provide the JFC, JFACC, and other senior commanders feedback on the success of the JFC's campaign. These results provide the inputs for CA reinitiation through updated guidance from the JFC and JFACC, subsequent target development, weaponeering/allocation, force execution, and CA until the desired end state is achieved. ***Note: The introduction of reconnaissance pod systems into the service component inventories and the retirement of dedicated reconnaissance aircraft will produce competition for the same airframes for CA missions or for the delivery of ordnance. Changes to the joint ATO must be closely coordinated with intelligence data collection to ensure changes to targets and TOTs are incorporated into the CA plan.***

6. Interdiction

Interdiction is an action to divert, disrupt, delay, or destroy the enemy's potential before it can be used effectively against friendly forces. Appropriate interdiction targets may include but are not limited to surface forces; C4I systems; installations and facilities; transportation and supply systems; lines of communications (LOC); and other vital resources and infrastructure. The desired objectives of interdiction are diversion, disruption, delay, and destruction of enemy surface military potential by either lethal or nonlethal means.

AI operations are defined as air operations conducted to destroy, neutralize, or delay the enemy's military potential before it can be brought to bear effectively against friendly forces. AI generally occurs at such a distance from friendly forces that detailed integration of each air mission with the fire and movement of those forces is not required.

The JFC ultimately approves the integration of joint interdiction operations with execution of other joint force operations. To ensure unity of command and effort throughout a theater and/or JOA, the JFC normally delegates the planning and execution of theater- and/or JOA-wide interdiction operations to the component commander with the preponderance of interdiction assets within range and with the ability to control them. In most cases, this is the JFACC who then becomes the supported commander for the JFC's overall AI effort. For a more detailed discussion on interdiction operations see Joint Publication 3-03, *Doctrine for Joint Interdiction Operations*.

7. Defensive Counterair

a. Air defense includes all defensive measures designed to destroy attacking enemy aircraft or missiles in the earth's envelope of atmosphere or to nullify or reduce the effects of such attack. The desired end state of an effective air defense effort is to allow friendly forces freedom of action by gaining air superiority at the desired time and place of the commander's choosing. An effective theater air defense system includes those resources and procedures necessary to provide the JFC with the ability to detect, identify, and destroy enemy air threats, whether by manned or unmanned aircraft or by theater missiles. Unity of effort and the tenet of centralized control and decentralized execution are necessary to meeting this end. Air defense can be either passive or active in nature.

(1) Passive. Passive air defense provides individual and collective protection for friendly forces and critical assets. Passive air defense is the responsibility of every commander in the joint force. Elements of passive air defense include—early warning; camouflage, concealment, and deception; hardening; reconstitution; and redundancy. Passive air defense measures do not involve the employment of lethal weapons but do improve survivability.

(2) Active. Active air defense is direct defensive action taken to destroy, nullify, or reduce the effectiveness of hostile air and missile threats against friendly forces and assets. Integrated employment of air-to-air and surface-to-air weapon systems through coordinated detection, identification, assessment, interception, and engagement of air and missile threats is necessary to counter enemy attacks. A rapid, reliable, and secure means of identification within the airspace control area is necessary to the survival of friendly forces.

b. Command Relationships. The JFC uses air defense operations to protect friendly forces from attack by manned/unmanned aircraft and missiles. The JFC will provide guidance and objectives, including apportionment decisions, establish ROE, and designate air defense priorities for the joint force.

(1) JFC Staff. Within the function of AAD, (in coordination with the AADC, if designated) the joint force staff will assist the JFC by conducting command, control, communications, computers and intelligence (C4I) systems; planning for the acquisition and dissemination of defense warning information; deconflicting AAD with other operations; providing logistical support for AAD; and preparing long range plans for AAD.

(2) AADC. The JFC normally assigns overall responsibility for joint air defense to a single commander designated the AADC. Normally, the AADC is the component commander with the preponderance of air defense capability and the C4I capability to plan, coordinate, and execute integrated air defense operations. Because of the integrated relationship between airspace control measures and air defense operations, ACA and AADC duties normally should be performed by the same person, who may also be the JFACC. The JFC will define the support relationship between the AADC and supporting commanders. Components will provide representatives, as appropriate, to the AADC's headquarters to provide specific weapons system expertise as well as broader mission expertise.

(3) Component Commanders. Component commanders provide the AADC with surface, air, and sea-based active air defense capabilities and forces to implement the air defense plan. Component commanders generally retain OPCON of their forces and capabilities and will employ them in accordance with the air defense plan and the weapons control procedures and measures established by the AADC.

c. Air Defense Plan. The AADC, with the support and coordination of the service

and functional commanders, develops; integrates; and distributes a JFC approved joint air defense plan. The air defense plan integrates the active air defense capabilities of the joint force's components to provide a responsive air defense system that will achieve operational and tactical objectives. The air defense plan reflects the priorities established by the JFC. Because air defense and airspace control and management are inherently related areas, the air defense plan, ACP, and air operations plan should be developed in concert to avoid conflicts. The air defense plan addresses (this list is not exhaustive)—

(1) Sensor employment.

(2) Identification procedures.

(3) Engagement procedures.

(4) Airspace control measures.

(5) Weapons control procedures.

(6) Weapons system employment.

(7) Tactical interface (for example, TADIL) design.

(8) Dissemination of early warning.

d. Area Air Defense Operations. The depth and breadth of AAD and the inherent ability for air defense targets to cross component areas of operations make air defense operations a joint endeavor. The AADC, in coordination with component commanders, recommends establishment of air defense regions to the JFC. The number of regions and RADCs may vary depending upon geographical, political, and operational factors such as—friendly forces, geography, threat, and the concept of operations. For example, the AADC may recommend that an Aegis crusier perform RADC duties for the maritime region of the JOA. Air defense regions may be further subdivided into sectors, with sector air defense commanders (SADCs) coordinating activities within their sector (see Figure VII-4 for an example of region and sector air defense assignments).

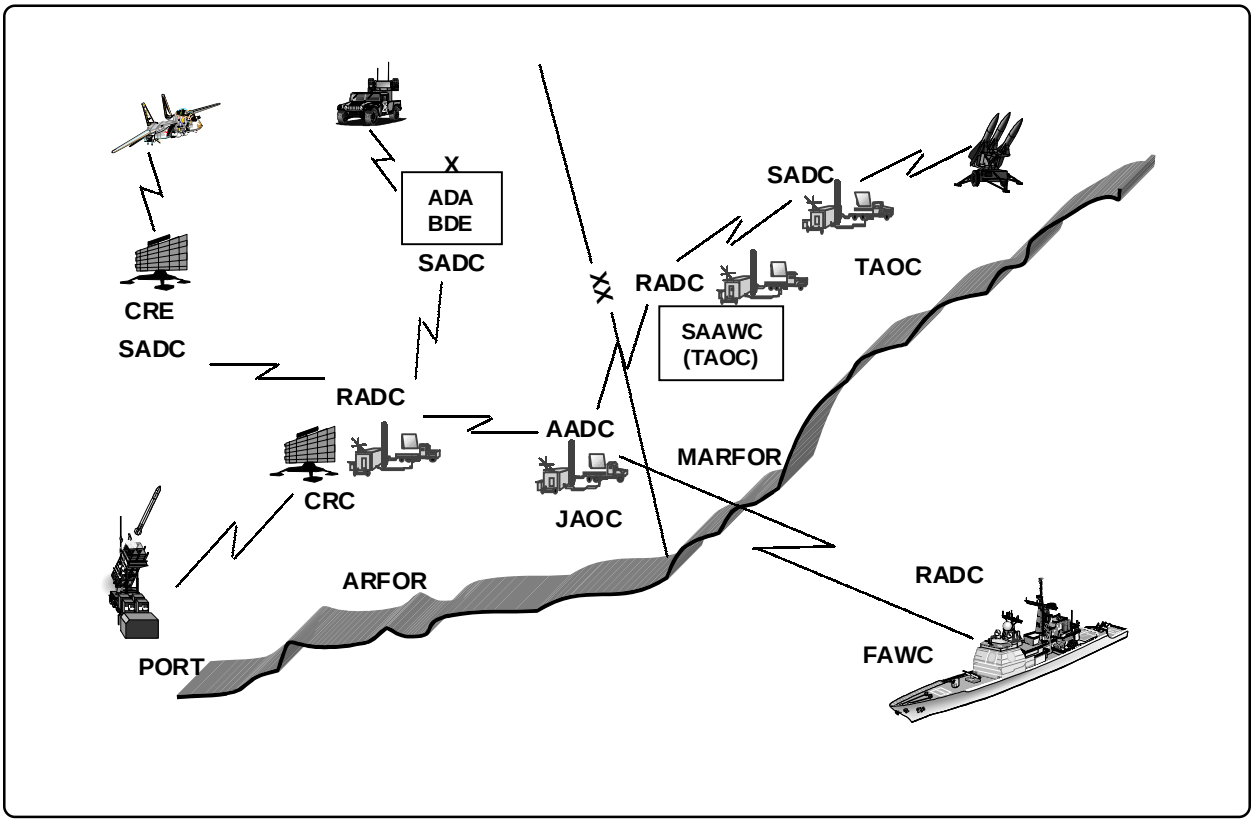


Figure VII-4. Notional AAD Organization

(1) Tactical Operational Data. In conjunction with the air defense plan, the AADC periodically publishes a tactical operational data (TACOPDAT) message to establish air defense responsibilities in a tactical area or to provide supplementary air defense orders to an area of responsibility, to include air defense procedures. Among the information included in the TACOPDAT are unit designations for RADCs and SADCs; methods of control; identification procedures and the identification authority; and updates to fighter, missile, and/or joint engagement zones. The latter procedures should be coordinated with the ACA and included in the ACO and SPINS portions of the ATO.

(2) Execution.

(a) The AADC, RADC, and SADC have the ability to coordinate active air defense operations at the lowest level necessary. This concept of centralized control (AADC) and decentralized execution (RADC/SADC) promotes coordinated operations and economy of force while allowing decisions to be made at the lowest level possible, thereby reducing the reaction time to threats and the likelihood of friendly losses.

(b) Based on the JFC's air defense priorities and other factors including available resources, the AADC builds an air defense plan designed to optimize the joint force's air defense capabilities against enemy air attack. When employing the various resources, the AADC considers factors such as mutual support—support units provide each other against the threat—and destruction in depth (that is, that ability to engage the enemy as far from its target as possible and to continue to engage the enemy threat with various weapons until the target is destroyed).

(c) The JFACC allocates a percentage of aircraft to perform DCA missions based on the JFC's apportionment decision. The AADC typically allocates missions to each RADC to perform DCA functions. RADCs in turn distributes missions to subordinate SADCs, depending on expected threat actions within their sector. SADCs may further distribute DCA missions to air defense control agencies within their sector. It is the responsibility of the controlling agency to execute the air defense mission through the coordination, control, and integration of aircraft and surface-to-air weapon systems under their direction.

(d) RADCs and SADCs coordinate air defense actions between regions and sectors, by evaluating the results of engagements within their sector or region and forward observations and results of engagements to the AADC; requesting from the AADC or direct (when authorized) changes to air defense alert and weapons release conditions commensurate to the threat; and when required, requesting additional air defense assets from the AADC. In turn, the AADC provides RADCs with guidance and direction for air defense warning conditions and weapons release conditions; changes to the ROE; allocates additional resources (as necessary). The AADC also requests additional airborne air defense coverage from the JFACC as needed.

(3) COP. Air defense actions, although designed to prevent attack of friendly forces by enemy air attacks, should also prevent fratricide. Many positive and procedural methods exist to minimize the chances of friend on friend engagements including: airspace control measures; identification, friend or foe (IFF); and positive hostile identification devices. A common frame of reference is an absolute necessity for air defense units to integrate actions and minimize the chances of fratricide. The common frame of reference is provided through two media: the ATO and the COP. The ATO provides all users with a plan for air operations, delineating IFF modes and codes, routes of flight, and mission/target areas. The COP combines information from various sensors and

reporting devices to build a comprehensive air, ground, and sea picture of the battlespace. Air defense units contribute to the COP through the theater's data link architecture.

A coordinated, comprehensive data link picture is a necessity to minimize chances of fratricide while enhancing early warning and engagement control and coordination. The AADC periodically publishes the Operational Tasking Data Links (OPTASKLINK) message to establish relationships, configurations, coordination procedures, and other information necessary to conduct data link operations.

8. Conclusion

The preceding chapters and paragraphs have described the joint force, service component, and functional component procedures and systems for air-ground operations. The TAGS is not a formal system in itself but the actual sum of various component air-ground systems. The TAGS enables the delivery of the maximum amount of combat power to the desired place at the right time. To accomplish this, everyone working within the TAGS must understand each component's capabilities, limitations, and contributions to the overall system as well as competing and overlapping mission requirements. Everyone must strive to make the TAGS work by knowing system and coordination requirements, what is required to make the system work, and who to contact when coordination is required. This document should assist TAGS practitioners in this process.

Appendix A

PROCEDURAL CONTROL MEASURES

1. Airspace Control Measures

a. Coordinating Altitude. A procedural method to separate fixed- and rotary-wing aircraft by determining an altitude *below* which fixed-wing aircraft normally will not fly and *above* which rotary-wing aircraft normally will not fly. It may include a buffer zone for small altitude deviations and extends from the forward edge of the communications zone to the forward line of own troops (FLOT). Fixed- or rotary-wing aircraft planning extended penetration of this altitude will notify the appropriate airspace control facility. However, approval acknowledgment is not required before fixed-wing aircraft may operate below the coordinating altitude or rotary-wing aircraft may operate above the coordinating altitude (see Figure A-1).

b. High Density Airspace Control Zone (HIDACZ). HIDACZ is defined area of airspace in which there is a concentrated employment of weapons and airspace users. The zone has defined dimensions that usually coincide with geographical features/ navigational aids. Access to an air defense weapon control status within a HIDACZ is normally controlled by the requesting authority (see Figure A-2).

c. Restricted Operations Area (ROA)/ Restricted Operations Zone (ROZ). ROAs and ROZs are synonymous terms for defining a volume of airspace set aside for a specific operational mission or requirement. This procedure restricts some or all airspace users from this area until termination of the mission. It is normally used for drop or landing zone activity, search and rescue operations, SEMA, etc. Controlling authority requirements for the ROA/ROZ are similar to those required for a HIDACZ (see Figure A-1).

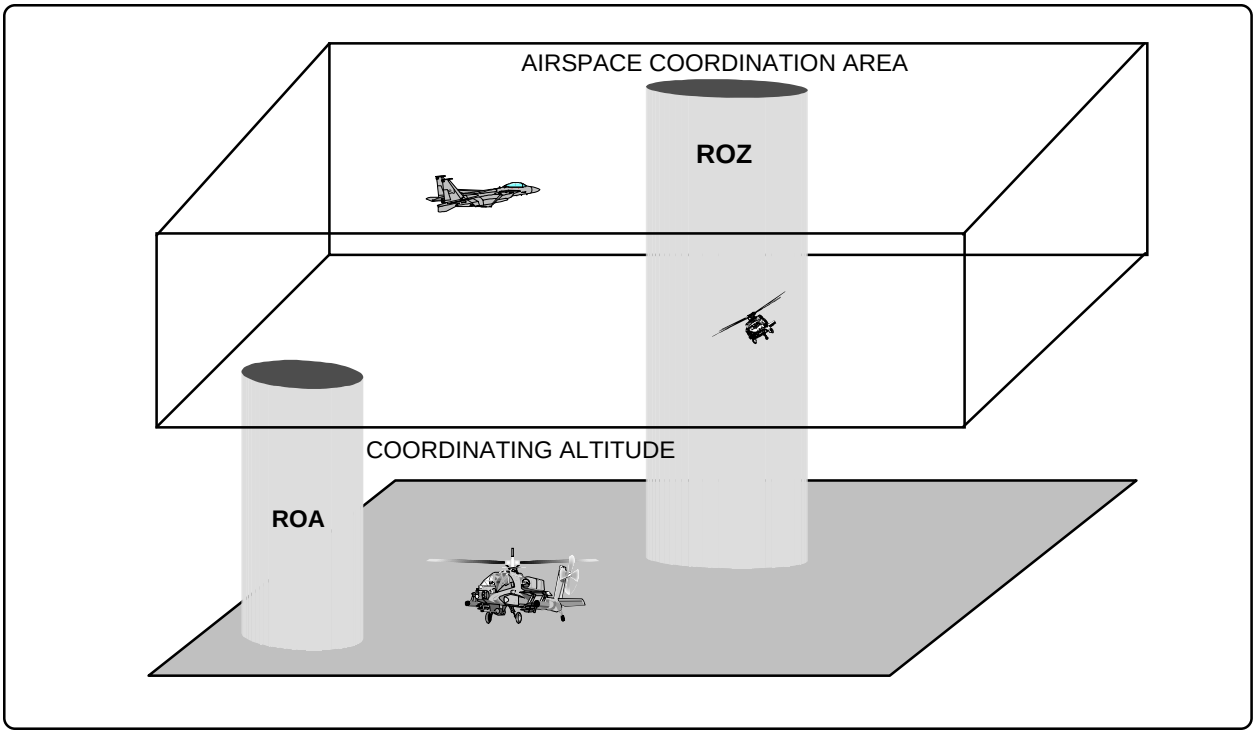


Figure A-1. Coordinating Altitude, ROA, and ROZ

d. Standard Use Army Aircraft Flight Routes (SAAFRs). SAAFRs are routes established below the coordinating altitude to allow the Army commanders to safely route movement of their aviation assets performing combat support and combat service support missions. Although jointly recognized, these routes do not need airspace control authority approval. SAAFRs normally are located in the corps through brigade rear areas but may be extended to support logistics missions (see Figure A-2).

e. Minimum Risk Routes (MRRs). MRRs are temporary corridors of defined dimensions recommended for use by high-speed, fixed-wing aircraft that presents the minimum known hazards to low flying aircraft transiting the theater airspace. MRRs normally extend from the corps rear boundary to the FSCL. Low level transit routes (LLTRs) are employed in a similar fashion in NATO (see Figure A-3).

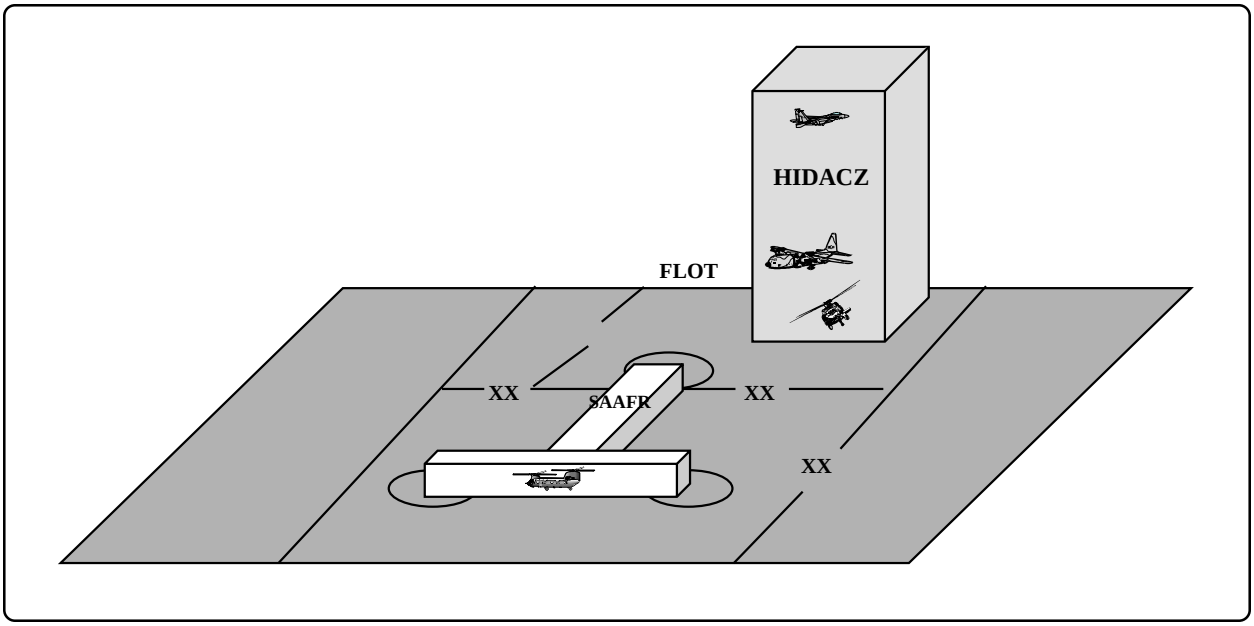


Figure A-2. SAAFR and HIDACZ

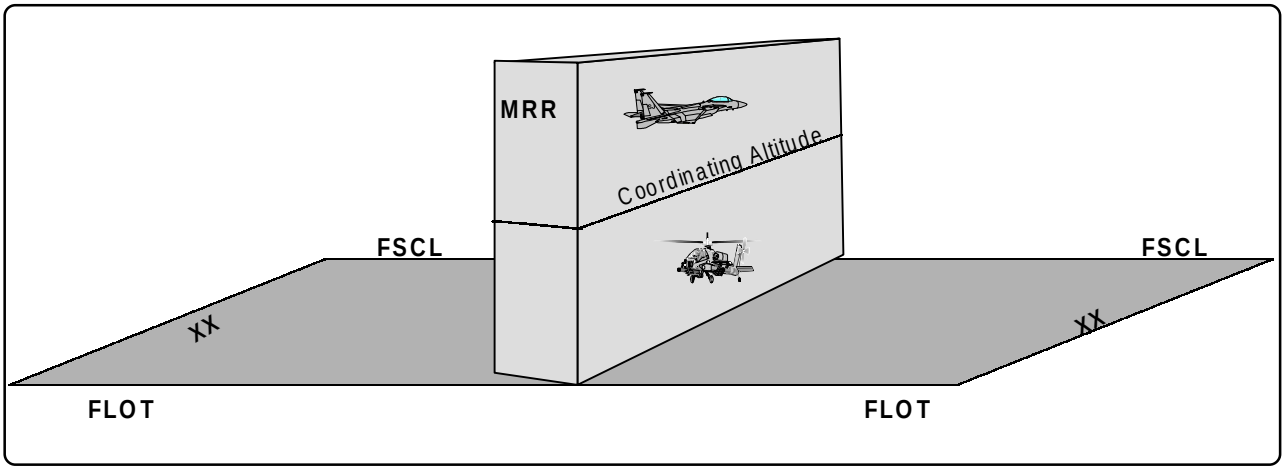


Figure A-3. Minimum Risk Routes

2. Army Standard Operational Procedures

a. Air Corridor (AC). AC is restricted air route of travel specified for use by friendly Army aircraft and established to prevent friendly forces from firing on friendly aircraft.

b. Air Axis. Air axis is similar to a ground axis of advance, assigned for purposes of control, which graphically depicts a commander's intentions.

c. Air Control Point/Aerial Check Point. Air control point/aerial check point is a predetermined point on the ground used as a means of coordinating or controlling friendly Army aircraft movement.

d. Initial Point (IP)/Release Point (RP). IP/RP are predetermined points on the ground used to initiate a control procedure (IP) or terminate the conduct of a control procedure (RP).

e. Battle Position (BP). BP is a defensive location oriented on the most likely enemy avenue of approach from which a unit may defend or attack. A unit assigned a BP is located within the general outline of the BP.

f. Engagement Area (EA). EA is an area in which the commander intends to trap and destroy an enemy force with massed fires of all available weapons. EAs and sectors of fire are not intended to restrict fires but are used as a tool to concentrate fires and to optimize their efforts.

3. Navy Procedural Measures

a. Positive Identification and Radar Advisory Zone (PIRAZ). PIRAZ is the capability to positively identify and track friendly aircraft in defended airspace before they pose a threat to the vital area. PIRAZ control is normally assigned to a Navy Tactical Data System (NTDS) cruiser in the surveillance area.

b. Return-to-Force (RTF) Profile. RTF profile is specific maneuvers/tracks friendly aircraft will fly returning to the fleet in order to reduce the possibility of being engaged by friendly surface-to-air missiles (SAMs) or fighters in the fleet air defense network. Instructions (altitudes, course, speed, ingress points, safety corridors, and approach sectors) are defined in operations messages generated by the AWC.

c. Joining Procedures. Similar to RTF procedures, these instructions are followed by friendly, nonorganic aircraft in order to ensure safe passage through the fleet surveillance area en route to support fleet operations.

d. Amphibious Objective Area (AOA). An AOA is a geographical area delineated in the initiating directive for purposes of C2. The objectives of the amphibious task force (ATF) are located within this area. The AOA must be of sufficient size to ensure accomplishment of the ATF's mission and must provide sufficient area for conducting sea, land, and air operations. The airspace above is an integral part of the AOA. When disestablished, airspace control reverts to the ACA.

4. Special Purpose Airspace

a. Base Defense Zone. This air defense zone is established around an air base and limited to the engagement envelope of SHORAD weapon systems defending that base. Base defense zones have established entry, exit, and IFF procedures. Similar to a ROZ in purpose.

b. CAP/Orbit Areas/Tracks. These areas are basically ROZs designated for use by specialized aircraft (DCA CAP, AWACS, and other special asset orbits, etc.). Limits are defined vertically and horizontally along with times for initiation and completion.

5. Fire Support/Airspace Coordination Measures

a. Formal Fire Support/Airspace Coordination. Fire support/airspace coordination is established by the FSCOORD with inputs from the ALO at the appropriate level of command and control. Formal measures are included in the fire support plan and passed to the BCD who then coordinates with the AOC for inclusion in the ACO. Coordination is achieved using boundaries and permissive or restrictive measures.

(1) Boundary. Boundary is a line by which areas of responsibility between adjacent units/formations are defined.

(2) Permissive Measures.

(a) Coordinated Fire Line (CFL). CFL is a line beyond which conventional or improved conventional indirect fire means (that is, mortars, field artillery, and naval gunfire) may fire at any time within the zone of the establishing headquarters without additional coordination.

(b) FSCL. FSCLs are permissive fire support coordinating measures. They are established and adjusted by appropriate land or amphibious force commanders within their boundaries in consultation with superior, subordinate, supporting, and affected commanders. Forces attacking targets beyond an FSCL must inform all affected commanders in sufficient time to allow necessary reaction to avoid fratricide, in the air and on the ground. FSCLs facilitate the expeditious attack of targets of opportunity beyond the coordinating measure. Supporting elements may attack targets beyond the FSCL provided the attack will not produce adverse effects on, or to the rear of, the line. The FSCL is not a boundary—the synchronization of operations on either side of the FSCL is the responsibility of the establishing commander out to the limits of the land or amphibious force boundary. Placement of the FSCL is based on the type of mission, threat, terrain, and concept of the operation, as well as organic weapons capabilities, location of friendly and enemy forces, anticipated rates of movement, and tempo of operations. Careful consideration and judicious placement should be exercised in determining its placement.

(c) Free Fire Area (FFA). FFA is a designated area in which any weapon system can fire conventional or improved munitions without additional coordination and is normally established on identifiable terrain.

(3) Restrictive Measures.

(a) No-Fire Area (NFA). NFA is an area where no fires or the effects of fires are allowed without prior clearance from the establishing headquarters, except if the force must defend itself against an enemy force within the NFA.

(b) Restrictive Fire Area (RFA). RFA is an area where specific restrictions are imposed and into which fires that exceed those restrictions are prohibited without prior coordination from the establishing headquarters.

(c) Restrictive Fire Line (RFL). RFL is a line established between converging forces that prohibits fires or the effects of fires across the line without coordination from the establishing headquarters.

(d) Airspace Coordination Area. Airspace coordination area is a three-dimensional block of airspace where friendly aircraft are reasonably safe from friendly surface fires.

b. Informal Fire Support/Airspace Coordination. Informal fire support/ airspace coordination consists of procedures to deconflict aircraft from other fire support assets, primarily artillery. Informal

measures are established by the terminal attack controller (FAC, ALO, ETAC) in response to the FSCOORD's fire support plan and are implemented for a short period of time to permit CAS operations. Informal measures are heavily dependent upon good FSCOORD-ALO interface.

(1) Heading Offset. Terminal attack controller selects an IP and specifies the lateral offset from the IP to the target "run-in" to deconflict fighters from other supporting aircraft.

(2) Heading Direct. Terminal attack controller selects an IP so that the IP to the target "run-in" is deconflicted from other supporting fires by at least two nautical miles either side of the centerline. The use of the word "direct" after giving the magnetic heading denotes the heading is a restriction.

(3) Informal Airspace Coordination Area. Terminal attack controller establishes a three-dimensional area for a specific time period where fighters can operate reasonably safe from friendly surface fires. While it should be established along easily identifiable terrain features, it can be established using grid lines.

(4) Maximum or Minimum Ordinate (MAX or MIN ORD). Terminal attack controller obtains the MAX or MIN ORD of supporting fires. MAX ORD will be used to fly above low angle artillery and MIN ORD will be used to fly under high angle artillery. Summit is used instead of ORD when operating with NSFS.

(5) Target-to-Gun Line (TGL). Terminal attack controllers provide the fighters with the artillery impact area and the TGL for the fighter to avoid.

(6) Gun-to-Target Line (GTL). Terminal attack controllers provide the fighters with the artillery location and the GTL for the fighter to avoid.

(7) Shift/Check Fire. Terminal attack controllers work with the FSCOORD to shift supporting fires to another area for a short time or "hold," so CAS operations can occur reasonably safe from friendly fires. While uncommon, supporting fires can also be checked in order to permit cyclical operations between artillery and CAS assets.

6. Air Defense Measures

a. Air Defense Action Area. Air defense action area is airspace where friendly aircraft or surface-to-air weapons are normally given preference in operations except under specific conditions.

b. Air Defense Area. Air defense area is a specifically defined airspace that air defense is planned for and provided.

c. Air Defense Identification Zone (ADIZ). ADIZ is airspace of defined dimensions where the ready identification, location, and control of airborne vehicles and aircraft is required. This zone is normally the transition between procedural control (outside) and positive control (inside) in an area of operations.

d. Air Defense Operations Area. Air defense operations area is airspace where procedures are established to minimize mutual interference between air defense and other operations. It may include designation of one or more of the following: air defense action area, ADIZ, and/or firepower umbrella.

e. Weapons Engagement Zone (WEZ). WEZ is airspace of defined dimensions where the responsibility for engagement normally rests with a particular weapon system. Some examples of WEZs are—

(1) Fighter Engagement Zone (FEZ). FEZ is airspace of defined dimensions where the responsibility for engagement normally rests with fighter aircraft.

(2) HIMEZ. HIMEZ is airspace of defined dimensions where responsibility for engagement normally rests with high altitude air defense SAMs.

(3) Joint Engagement Zone (JEZ). JEZ is airspace of specific dimensions where friendly SAMs and fighters are simultaneously employed.

(4) Low Altitude Missile Engagement Zone (LOMEZ). LOMEZ is that airspace of defined dimensions where the responsibility for engagement normally rests with low to medium SAMs.

(5) Short Range Air Defense Engagement Zone (SHORADEZ). SHORADEZ is that airspace of defined dimensions where the responsibility for engagement normally rests with short range air defense weapons. It may be established within a LOMEZ or a HIMEZ.

f. Weapons Free Zone (WFZ). WFZ is an air defense zone established for the protection of key assets where weapons systems may be fired at any target not positively identified as friendly.

Appendix B

ATO, SPINS, AND ACO BREAKOUT

1. Breaking the ATO

ATOs vary in length from a few pages to DESSERT STORM-type ATO that exceeded 900 pages. The sample ATO/ UNCLASSIFIED message and exerts displayed in Figures B-1 through B-3 contain examples of completed ATOs.

As a universal document applicable to a wide variety of mission types, the ATO contains information that is not used by all units. For instance, a C2 unit responsible for OCA missions would not require ATO information addressing airlift operations. Therefore the process of "breaking" the ATO, refers to actions involving the extraction of pertinent information applicable to specific unit tasking.

2. Message Content

Figure B-1 shows a sample ATO/ UNCLASSIFIED message containing information sets and fields. Table B-1 shows common headers and initial sets used to designate blocks of information that are inserted at various locations within the ATO. Each ATO contains mandatory, optional, and conditional entries that are used as required by the rules of message construction contained in the *Joint Users Handbook for Message Text Formats (JUH-MTF)*. Overall, the ATO is divided into three sections: (I) Mission—normally support tactical air operations, (II) Execution—assigns specific missions to individual units, and (III) SPINS—amplifies, explains, modifies and changes everything in (I) and (II).

a. ATO Remarks (RMKS) and Narratives. The ATO remarks section is used to explain or clarify existing data sets/ fields. Message remarks are particularly beneficial because of the provision to allow the use of plain text entries. The remarks field begins with the designator RMKS and uses slashes (/) to separate other data fields.

(1) Amplification Fields (AMPN). AMPN field designator is normally inserted after the air tasking (AIRTASK) message set. In terms of ATO interpretation, the AMPN field is an important part of the message. Each AMPN denotes additional information pertaining to specific message fields. Among the more important fields are the "Unit Remarks" free text section that denotes actions or comments applicable to higher headquarters tasking. Operators who are not completely familiar with the ATO format normally search the document for each AIRTASK field to locate the free text entries.

(2) Narrative (NARR) Fields. Narrative fields are free text entries designated by the NARR field descriptor. One of the more common uses of the NARR field is to denote a "combined or general unit remarks" section at the end of the ATO. Unlike the "unit remarks" section that applies to specific units, the "combined units remarks" section contains information applicable to all units (see Figure B-2). "Combined unit remarks" pertain to subjects that are applicable to many of the tasked units and are used to streamline ATO content. "Combined unit remarks" include such items as—

(a) Air refueling data/procedures —initial point data.

(b) Strike package data/procedures—contact point data.

(c) MMR data.

(d) LLTR data.

(e) Drop/landing/extraction zone data.

(f) CAP data.

(g) SPINS.

FM 414 CTS NELLIS AFB NV//DO//

1. **TO ZEN/31FW (DEP)NELLIS AFB NV**
   ZEN/388FW (DEP)NELLIS AFB NV
   ZEN/354FW (DEP)NELLIS NV
   ZEN/150FG (DEP)NELLIS NV
   ZEN/35FW (DEP)NELLIS NV
   ZEN/117RW (DEP)NELLIS NV
   ZEN/33FW (DEP)NELLIS NV
   ZEN/463 AW (DEP)NELLIS NV
   ZEN/552ACW (DEP)NELLIS NV
   ZEN/74ACCS (DEP)NELLIS NV
   ZEN/41ECS (DEP)NELLIS NV
   ZEN/366FW (DEP)NELLIS NV
2. **RHWUDDA/9RW BEALE AFB CA/DOJ/DOTTU//**
   RBUXABB/474FW HILL AFB UT/DOO/DO//
   RUWUSRO/27FW CANNON AFB NM/DO//
   RBWTEAA/384BW GRAND FORKS AFB ND/DO//
   RBWXXYV/7BW CARSWELL AFB TX/DO//
   RHFIAAA/22ARW MARCH AFB CA/RFTTF/
   BT
   UNCLAS
3. **EXER/RED FLAG/93-X//**
4 **MSGID/ATOCONF/414 CTS DO/1429001/OCT//**
5. **PERID/291400Z/TO:292300Z//ASOF:280100Z**
6. **AIRTASK/UNITTASKING/RF 93-X AFFOR ATO, 29 OCT**
7. **TASKUNIT/552ACW/KLSV (DEP)//**
   AMPN/UNIT REMARK(S): NONE//
8. **MSNDAT/A29111/F2B/DECK 10/1E-3/AEW/-/-/-35410//**
9. **MSNLOC/291510Z/291730Z/AS COORDINATED//**

   TASKUNIT/27FW/KCVS(DEP)//
   MSNDAT/A299331/F2B/BLEED 44/4FB-111/INT/-/T4106/
   /35444/35445/35446/35447//
   AMPN/UNIT REMARK(S): NOTE(S) E//
10. **TGTLOC/291640Z/291645Z/76-1/INCPX/NM0920839012/-/VEHICLE PRODUCTION//**
11. **AMPN/CENTER OF MASS 37.24.324N 116.54.126W//**

    TASKUNIT/67RW/KLVS(DEP)//
    MSNDAT/29181/F2B/KODAC 05/1RF-4C/REC/-/-/-/36407//
    AMPN/UNIT REMARK(S): NOTE(S) K//
12. **RECDAT/18AA001/PRY:1/291510Z/-/PHOTO/ROUTE/-/-/-/TGTCOD:R-8407//**
13. **REFUEL/ANKER 36/A29121/3743N 11445W/245/291530Z/5/295.4/319.5//**

Figure B-1. ATO

Table B-1. Message Headers and Initial Sets

LINE	DESIGNATOR	TITLE	CONTENTS
1 and 2	ZEN/31FW OR RHWUDDA/9RW	ADDRESSEE	NORMALLY ADDRESSED TO ALL PARTICIPATING UNITS
3	EXER OR OPER	EXERCISE OR OPERATION NAME	IDs SPECIFIC CODE NAME OF THE OPERAITON
4	MSGID/ATOCONF	MESSAGE IDENTIFICATION	NORMALLY IDs THE DATE/TIME GROUP (DTG)
5	PERID/291400Z/TO:292300Z// ASOF:280100Z	EFFECTIVE PERIOD	IDs THE VALID TIME OR EFFECTIVE DATES
6	AIRTASK/UNITASKING/RF 93-X AFFOR ATO, 29OCT	ADDRESSEE MESSAGE IDENTIFIER	COMMENTS ABOUT OPS TITLE AND ATO DATE
7	TASKUNIT/552ACW/KLSV (DEP)	EXERCISE OR OPERATION NAME	SPECIFIC CODE NAME OF OPERATION
8	MSNDAT	MISSION DATA	CALL SIGNS/AIRCRAFT TYPE/MSN/ETC…
9	MSNLOC	MISSION LOCATION	ORBIT AREAS/STATION TIMES/ETC…
10	TGTLOC	TARGET LOCATION	LISTING OF TARGET LOCATION(S)
11	AMPN	AMPLIFICATION	AMPLIFIES EXISTING FIELDS
12	RECDAT	RECONNAISSANCE DATA	RECONNAISSANCE DATA
13	REFUEL/ANCHOR	REFUELING ANCHOR	MSN A/C REFUELING INFO– OPTIONAL FIELD

b. SPINS. SPINS are free text formats normally included as part of the "combined/ general unit remarks." The SPINS section is often several pages in length and is considered essential reading for all action addressees. SPINS highlight, modify, or supplement mission data contained in other portions of the ATO. SPINS include many types of information that do not fit into other mission formats. As a general rule, SPINS are valid until they are rescinded or superseded. Sometimes, SPINS include specific date-time groups (DTGs) that are no longer valid. SPINS also contain data that modify, change, or replace information contained in local OPORDs. In some theaters, SPINS are published as an entirely separate message due to their excessive length.

(1) Figure B-3 shows a typical abbreviated version of an ATO SPINS section. It is formatted using basic United States Message Text Format (USMTF) procedures and organized using alphanumeric section designators. Although SPINS are formatted using standardized procedures, their appearance varies according to the theater requirements and command directives. The SPINS depicted in Figure B-3 begin with an index of the contents. Each section is numbered similar to paragraphs in a regulation. Entries are presented in both columnar and sentence formats. In the example, the SPINS cover a wide variety of mission planning considerations to include—

(a) Airspace.

(b) Range times.

(c) Frequencies.

(d) Control agencies.

(e) IFF/SIF assignments.

(f) Mission event numbers.

9. NARR/COMBINED UNIT REMARKS: ALL UNITS

A. NONE
B. NONE
C. NONE
D. COORDINATES WITH MISSION/PACKAGE COMMANDER FOR REFINED TOT'S.
E. COORDINATES LISTED ARE FOR CENTER OF MASS. MENSURATE OWN COORDINATES FOR DMPI LISTED.
F. WILD WEASEL NOTES: ALL SIMULATED WEASEL LOADS INCLUDE 2 AIM-7
G. MISSION/PACKAGE COMMANDER INFORMATION:
(1) ALL PACKAGE COMMANDERS SHOULD REFER TO THE RED FLAG SPINSTO ASSIST AND GUIDE MISSION PLANNING.
(2) GAP TIMES:

	IN(NET)	OUT(NLT)
AM:	-	-
PM:	1515	1745

H. AMC NOTES:RESUPPLY US SPECIAL FORCES AT KENO AND POKER DZ.
I. BOMBER NOTES: OFF STATION MISSIONS: ON EGRESS EXIT EC SOUTH ABOVE 16K
J. OCA KILL REMOVAL "SHOWTIME" FREQUENCIES:
312.8 (PRI)
347.4 (SEC)
"DEADMAN" MODE 1 PROCEDURES: IF "SHOWTIME" CALLS KILL ON YOUR AIRCRAFT, ROTATE MODE 1 TO "00" UNTIL REGENERATION, THEN, RETURN TO CORRECT MODE 1 READING FOR THE CURRENT TIME ...
K. RECC NOTES:

AM MISSION: NONE	PM MISSION:	MISSION	TARGET
	A29181	76-10	Bunker
	A29381	74-9	SSM

L. INTERDICTION NOTES:

MISSION:	BACKUP TARGETS:
A29334	76-3
A29335	75-20

Figure B-2. ATO Narrative - Combined and General Remarks

SPINS INDEX:

1. RANGE TIMES/MODE 3.
2. PACKAGE COMMANDERS.
3. LIVE ORDNANCE.
4. IFF/SIF.
5. COMMUNICATIONS PLAN.
6. GENERAL.
7. OPERATIONAL RESTRICTIONS.
8. AIRSPACE CONTROL ORDER.

1. RANGE TIMES/MODE 3:
   RANGE RESTRICTIONS: ALL TIMES ARE ZULU MODE 3:
   CHARACTERS THREE AND FOUR (XX) ARE YOUR CALL SIGN NUMBER.
   A. CAL: 1445-1800
   B. RNG 71 OPEN: 1500-1800
   C. RNG 76 OPEN: 1510-1800
   ETC...
2. MISSION COMMANDERS:

MISSION	MSNUNIT	RM	PHONE
A29131	INT 31FW	56	22104
A29242	CAS 354FW	51	22103
A29151	OCA 33FW	45	27094

   ETC...
3. LIVE ORDNANCE/AIRLIFT SCHEDULE:

MSN	A/C	TARGET	TOT	ORD	BACKUP	TOT
A29391	C-130	POKER DZ	1645-1730	T-BUNDLES		TBD
A29341	A-10	75-8	1642-1647	L8817		TBD

4. IFF/SIF: ALL AIRCRAFT WILL SQUAWK ROTATING MODE 1 FOR FRIENDLY ID. CODES
   WILL BE CHANGED EVERY TWO HOURS PLUS/MINUS ONE MINUTE. ALL AIRCRAFT WILL SQUAWK THE SAME MODE 2 AS THE ASSIGNED MODE 3 IF CAPABLE.
   1500 32
   1700
5. COMMUNICATION PLAN:
   REFER TO AIRCREW AID: DAY 03
   BLACKJACK: 377.8
   SHOWTIME: 312.8
   AAR RENDEZVOUS: 276.4
   GCI SAFETY: 308.6
   JRCC: 288.0

Figure B-3. ATO SPINS

Appendix C

CARRIER BATTLE GROUP PLANNING AND EXECUTION FOR AIR OPERATIONS

1. Background

A US Navy Carrier Battle Group (CVBG) can serve as an independent, self-contained task force or as a contributing member of a larger joint or combined task force. The CVBG could also be assigned as a transitional JFACC. Additionally, a carrier (CV) or nuclear carrier (CVN) could host a JFACC for the conduct of air operations. The command organization, relationships, and procedures outlined in the command warfare organization section below are designed to clarify and streamline the planning, coordinating, and execution of operations in all CVBG warfare areas. They do not remove the responsibilities of each battle group warfare commander nor replace established procedures of the composite warfare commander (CWC) concept. The end goal is eliminating duplication of effort and promoting standardization of operational planning and execution with in the task force.

2. Command Warfare Organization

a. The CVBG command warfare organization will be comprised of representatives from the CVBG warfare commanders SUWC, USWC, STWC, air war sector (AWC), and C2WC with AREC, helicopter employment coordinator (HEC), SOF, commander, amphibious task force/ commander, landing force (CATF/CLF), CVBG logistic coordinator (CVBGLC), and from the CVBG staff. Their functions are to report to the CVBG commander in all areas pertaining to planning, allocation, and tasking of assigned forces; the execution and support of all warfare missions; and coordination/integration of CVBG forces into joint/combined operations, when directed. The organization will perform the following functions:

(1) During independent operations using guidance from the CVBG commander, develop operational plans; schedule of events (SOE); ATOs; SPINS; and ROE to best support and execute CVBG training/ warfighting objectives. These plans will include—

(a) Operational plans that embody a series of related operations aimed at accomplishing an assigned objective. These plans represent the commander's vision for conducting operations, define the objectives, and serve as the basis for all other planning.

(b) ATO shells for 24 and 48 hours—allocation and tasking of all sorties that fly in the CVBG area of operations in all warfare mission areas. ATO shells are a means of providing an initial look at plans for air operations and forms the basis for ATO development.

(c) ATO for next day's operations to be transmitted and disseminated throughout the CVBG at 1500 local each day. Execution time (T) of the ATO shall be normally 0600 local and end at 0559 local the following day unless otherwise specified for SO.

(d) ACP for current theater of operations—listing instructions/guidance from higher authority and/or CVBG commander, to be promulgated as monthly and weekly ACO and daily as part of the ATO SPINS.

(2) During joint operations, when directed by CVBG commander, provide centralized direction for the allocation and tasking of CVBG forces that are assigned TACON to theater commands in support of joint/combined operations to include—

(a) Liaison with theater commands to coordinate allocation/ incorporation (common use) of CVBG forces into joint/combined ATOs and warfighting plans.

(b) Coordinate allocation/ deconfliction of available joint/combined and CVBG forces (other than those TACON for joint/combined operations) for execution (direct support) of all CVBG warfare mission areas.

(c) Continue development/ dissemination of plans, 60-day SOE, SPINS, ROE, ATO shells, and current ATO as outlined above.

(3) When directed, perform the functions of a sea-based JFACC, during transition to embarkation of a "flyaway" JFACC staff or as permanent members if assigned.

(4) In all cases, continually evaluate and brief CVBG commander on all operations to include plans, ATO/SPINS, ROE, CA, and mission results.

(5) In all cases, direct execution of all CVBG operations and make recommendations/adjustments based on CA, to include changes in targeting, tasking, allocation, and apportionment of CVBG forces.

b. The command warfare organization composition will consist of the following organizations, whose primary functions include planning, scheduling, and execution of CVBG commander and/or higher headquarters warfighting directives.

(1) Warfare Commanders Board (WCB). WCB serves as the governing and approval authority/organization for CVBG operational planning and execution. It establishes the operational tempo and direction for conducting military operations, utilizing envisioned/directed warfighting objectives and guidance from CVBG commander. Key tenants (while not all inclusive) are—

(a) Provides guidance for development of maritime concept/ operations plans and serves as final approving authority for same.

(b) Provides warfighting guidance and apportionment (prioritization of effort) that will direct combat plans in the allocation of resources.

(c) Conveys the commander's vision and intent (philosophy). Clearly defines mission objectives and what constitutes mission success.

(d) Provides an orderly (systematic) scheme of military operations.

(e) Orients forces on the enemy's centers of gravity (for example, leadership, infrastructure, military).

(f) Phases/sequences/prioritizes operations encompassing all warfare areas, independently or simultaneously with joint/combined forces, economy, preservation, and survivability of forces in mind.

(g) Synchronizes air, land, and sea efforts into a cohesive and synergistic whole.

(h) Provides guidance for development of peacetime exercise and training plans and serves as final approving authority for same.

(i) Makes any revisions to combat campaign and contingency plans based on CA of the situation.

(j) Serves as approving authority for CVBG prioritized target list during independent operations and approves target nominations for incorporation into the JIPTL during JFACC air operations.

(k) Serves as approving authority for CVBG commander initiated SPINS and ROE.

(l) Serves as approving authority for the apportionment—CVBG ATO shells and current CVBG ATO.

(m) ATO shells for 24 and 48 hours are briefed and approved at the daily CVBG commander morning meeting, during which all WCB members will be present or represented.

(2) Combat Plans. Combat Plans is divided into three cells (air defense plans; long range plans [LRP]; and guidance, apportionment, targeting [GAT]/ATO production). Combat plans is responsible for current and long range detailed planning in accordance with CVBG commander objectives, guidance, and apportionment of forces.

(a) Air Defense Plans Cell. The ACA and AADC (Chapter I) are responsible for coordinating and integrating use of the airspace control area and coordinating and integrating all air defense operations, respectively. As these responsibilities are interrelated with air warfare, the AWC in the CWC concept will be delegated ACA and AADC when the CVBG commander is designated as JFC or JFACC.

(b) LRP. LRP is the oversight and operational decision-making body of combat plans. Functions include—

•Developing operational and contingency combat plans.

•Functioning as CVBG commander's primary point of contact and LNO for joint/combined operational planning.

•Developing ACOs when required.

•Developing ROE and SPINS for approval by the CVBG commander and reviews existing ROE and SPINS for current theater of operations.

•Consolidating and submitting independent CVBG and JIPTL (as applicable) target nominations to WCB for approval.

•Deconflicting apportionment/ assignment of CVBG air/sea/land forces in development of the MAAP that is the basis for conducting offensive/defensive air operations. Provides air forces sourcing, allocation, and sequencing necessary for producing the ATO utilizing the AIRSUPREQ and ALLOREQ processes and CVBG commander guidance.

(c) GAT/ATO Production Cell. GAT/ATO Production Cell uses the MAAP for production of the ATO and reports to LRP for ATO development, production and transmission. Its functions include—

•Consolidating, allocating, and scheduling CVBG assigned air forces in execution of the MAAP.

•Developing ATO shells and current ATO.

•Publishing ATOs within the directed timelines (Table C-2 or Chapter VII).

•Publishing monthly/weekly/ daily SPINS and ROE.

•Developing and publishing ordnance load plans.

•Scheduling peacetime exercise/training areas (warning/restricted areas).

(3) Combat (Current) Operations. Combat operations is maintained in CV/ CVN CDC and reports directly to tactical flag command center (TFCC). It serves as direct representatives for and report directly to the CVBG commander in the monitoring, coordinating, controlling and executing CVBG flight operations. The TFCC director, the battle watch captain (BWC), serves as final approving authority for all combat operations functions. Combat operations functions include—

(a) Serving as CVBG commander primary point of contact and coordinating authority for conducting current day joint air operations in support of higher headquarters' (CJTF/JFACC) taskings.

(b) Providing immediate reaction to changes in the enemy situation to ensure warfare mission objectives are met.

(c) Executing the ATO.

(d) Providing centralized control for all CVBG operations.

(e) Coordinating management of CVBG air forces—to include real-time decision making involving aircraft launch, change in mission/targeting, and mission abort.

(f) Monitoring aircraft mission alert status and making adjustments as required.

(g) Serving as approving authority for making changes to the current ATO.

(h) Allocating/coordinating emergent aircraft requirements. Negating a requested launch of designated alert aircraft by a warfare commander if deemed appropriate.

Combat operations performs its assigned functions in accordance with established CWC TFCC and CVBG AREC/HEC OPTASKs and standard procedures. The AREC provides centralized control that allows CVBG warfare commanders to coordinate and execute their respective scheduled missions (decentralized execution). The AREC and HEC provide aircraft sourcing in execution of the ATO. In cases of emergent aircraft requirements or changes to the current ATO, the AREC and HEC work in conjunction with CVW (as an asset provider), to reach resolution. Emergent (unscheduled) requirements from higher authority (CJTF/JFACC) are processed by AREC, in coordination with the CVW and appropriate ship agencies. All changes to the ATO, once resolved by AREC, must be approved by the TFCC BWC before execution. If the BWC is unable to execute the change, the CVBG commander provides guidance.

(4) Carrier Battle Group Intelligence Center (BGIC). The BGIC reports to WCB and is responsible for coordinating the overall intelligence effort that supports planning, execution, and assessment of CVBG operations and provides for centralized coordination of intelligence support in response to CVBG commander and/or higher headquarters mission objectives/directives. The BGICs functions include—

(a) Collecting/assessing and providing intelligence support for operations in all warfare mission areas.

(b) Providing intelligence support for and playing a key role in the review/development of the prioritized target list.

(c) Collecting and reporting BDA and CA.

(d) Requesting and managing all reconnaissance data gathered from national sources.

(e) Managing the rapid application of airpower (RAAP) database in CTAPS.

3. Command Operating Procedures

a. If necessary, the CVBG commander can serve as the sea-based JFACC until a flyaway JFACC team arrives to establish a Level-II sea-based JFACC: The commander, carrier air wing (COMCVW) will serve as deputy JFACC.

b. Table C-1 depicts the Navy's "targeting cycle" phases, commencing with the initial CVBG commander guidance phase through the final ATO production and execution phases, by which campaign, training, and warfighting plans will be developed and executed.

c. Table C-2 depicts a NAVFOR ATO 72-hour timeline process, commencing with initial guidance phase through the final phase of ATO production and execution. The timeline may be adjusted to coincide with scheduled CVBG meetings, LRP meetings, etc., to reduce number of meetings and duplicity of effort.

Table C-1. Navy's Targeting Cycle

Phase	Organization	Action
Guidance	WCB	Develops guidance/direction predicated on OTC/CWC and/or higher headquarters.
Plans	LRP	Develops plans predicated on WCB guidance/direction, to include target nomination/prioritization lists, SPINS/ROE development, mission specific plans, and apportionment/allocation of forces.
ATO	GAT	Develops, produces, and transmits the ATO, using development guidance, apportionment, and mission specific plans. Production provided by the LRP and WCB transmission.
ATO Execution	TFCC/AREC/HEC	Executes the ATO and makes real-time decisions/ adjustments, based on combat assessment/situation awareness.
Assessment	BGIC/WCB	Predicated on BDA and other intelligence; assesses the situation; and develops/recommends/directs additional or revised guidance and plans for restrikes and/or retargeting.

Table C-2. NAVFOR ATO 72-Hour Timeline Process

Time	Organization	Action
As scheduled	LRP	Develop maritime concept/operations for review by WCB.
T-72	WCB	Approve and promulgate guidance/intentions for accomplishment of mission objectives as submitted by LRP.
T-63 (1900L) (When Required)	LRP	Develop SOE/plans, target nomination/prioritized lists, strike/mission plans, and apportion/allocate forces for direct support and common use.
T-48-42 (1000L-1600L)	GAT	Build 24-hour (current) ATO and 48/72-hour ATO shells predicated on LRP (MAAP) guidance.
T-39 (1900L) (When Required)	GAT Director	Brief LRP on 24-hour (current) ATO and 48/72-hour shells.
T-36 (2200L)	Subordinate Commands	AIRSUPREQS due to CVBG GAT/ATO production cell.
T-21 (0900L)	GAT Director	Brief WCB and receive approval for current ATO and 48-hour ATO shell.
T-20 (1000L)	GAT	Produce the ATO
T-17 (1500L)	GAT	Transmit ATO. Ensure ATO is received by subordinate commands.
T (0600L)	CVBG/Task Force	Execute current ATO, AREC/TFCC assumes ATO execution responsibility.

d. ATO dissemination plan. Timely transmission and receipt of the ATO, ALLOREQs and AIRSUPREQs are essential to battlespace management. CTAPS provides an excellent source for production of the ATO and subsequent transmission of the document to CTAPS-equipped commands. However the carrier or ARG flagship is often the only CVBG platform with CTAPS. Acknowledgment of ATO receipt is required to verify that the primary method of dissemination is successful. CVBG commander employs the following methods to ensure timely receipt of the ATO:

(1) Secure computer bulletin board system (BBS).

(2) Advance narrow digital voice terminal (ANDVT) data transfer.

(3) Joint meteorological and oceanographic (METOC) data system bulletin board.

(4) Personal computer (PC)-to-PC transfer.

(5) Carrier battle group orestes (BGO).

e. CTAPS Data Base Management. CV/CVN strike operations (strike ops) and designated personnel are responsible for maintaining the CTAPS system administration and database management. The CVW provides personnel to CV/CVN strike operations to assist in CTAPS data entry and maintenance, and it trains sufficient officers proficient in CTAPS and the automated planning system function. The assistant strike officer functions as the CTAPS communications officer responsible for ensuing timely transmission and receipt of the ATO to CVBG commands and other designated units.

f. Emergent tasking/ATO Changes. All efforts are made to prepare alert contingencies for anticipated OPTASK. However changes to the ATO after transmission at 1500L but before execution at 0600L are resolved by CV/CVN strike operations and approved by TFCC. Approval of any requested changes takes place following coordination between CVN operations, CVW operations and CVBG N32. Changes to the ATO are indicated as ATO “A” Change 1 and transmitted via the methods described above. CVN CDC issues Mode 3 IFF squawks to approved emergent tasking. TFCC also contacts all CVBG units to pass approved changes and squawks.

Appendix D

AMPHIBIOUS OPERATIONS AND PASSAGE OF CONTROL ASHORE

1. Background

The CATF has overall responsibility for control and coordination of supporting arms in an amphibious operation. Because of the nature of amphibious operations, supporting arms control and coordination may be passed from command to command within the ATF. A specific command must always be responsible for these functions and the passage of responsibility from one command to the next must occur smoothly and expeditiously. Planners must provide for this passage of responsibility to designated commands—

(1) During advanced force operations.

(2) When the landing force (LF) is withdrawn.

(3) For the passage of control and coordination to the LF for subsequent operations ashore.

(4) In the event the flagship or other coordination center becomes disabled.

(5) In the event the FSCC ashore becomes disabled.

2. Organization for Amphibious Operations

When an amphibious operation is planned, the air-ground system changes to accommodate the transition of the Marine component ashore. The JFC will establish an AOA and the NAVFOR or JFMCC will designate a CATF. The two key systems supporting the CATF are the Navy Tactical Air Control System (NTACS) for control of air operations and the SACC for control of supporting arms. For amphibious operations, the MAGTF commander is designated the CLF. The MACCS and the FSCCs are the CLF's NTACS and SACC equivalents, respectively. Through these systems, the CATF and CLF are able to control air operations and supporting arms support, and pass control of theses functions ashore once the CLF is established. When the NTACS is used in conjunction with the MACCS, it forms the Amphibious Tactical Air Control System (ATACS). (See Figure D-1 for graphical depiction.) Once the Marine component is fully established ashore, the AOA can be dissolved and NTACS stood down.

a. NTACS is the organizational structure by which the CATF executes air operations. A Navy TACRON makes NTACS functional by filling specified spaces/billets aboard the various amphibious control ships where centralized communications and display equipment permit control and coordination of aircraft. The various elements of this system are activated based upon—forces assigned, the CATF's needs for C2 of the force, and physical space limitations. Two key components of NTACS manned by the TACRON are the TACC/TADC.

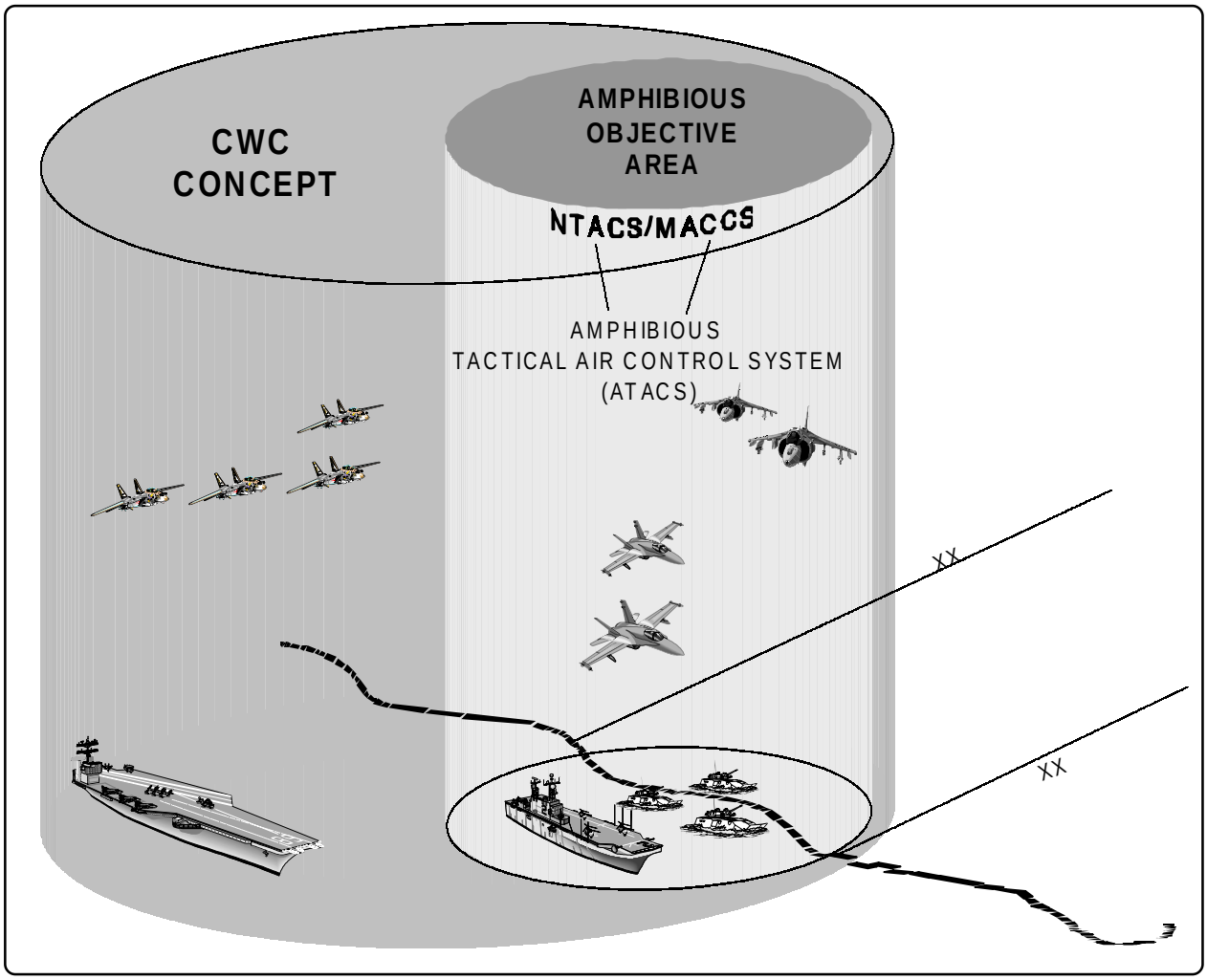


Figure D-1. Naval Littoral Operations

(1) TACC/TADC. The Navy TACC (afloat) is the primary air control agency for controlling air operations in support of the amphibious operation. It is generally established aboard the CATF's flagship and may be collocated with the CDC or located in a separate facility. The Navy TACC controls air support and air warfare forces in the AOA until control of these operations pass to the CLF. If the need arises for another air control agency in the battle area, a TADC is created as a backup to the TACC and is assigned specific areas of operation in the battle area. The tactical air officer is responsible for overall operation of the TACC. The TACC is divided into five sections: air traffic control, air support control, helicopter coordination, air warfare, and plans and support.

(a) Air Traffic Control Section (ATCS). The ATCS exercises control and coordination of all air traffic entering, operating within, or traversing the AOA, and it coordinates search and rescue operations.

(b) Air Support Control Section (ASCS). The ASCS exercises OPCON and coordination of all rotary- and fixed-wing aircraft (offensive air) assigned to strike warfare or troop support missions. The air support coordinator advises the SACC of weapons loads, fuel status, and other data that will aid in mission assignment or coordination. During amphibious operations the ASCS serves as a DASC until the DASC is established ashore.

(c) Helicopter Coordination Section. Transport helicopter operations are controlled by the helicopter direction centers located aboard aviation-capable amphibious ships. The helicopter coordination section provides oversight of all helicopter direction centers in the amphibious force, coordinates all transport helicopter operations, ensures requests for helicopter support are met, and controls specific helicopter missions as required.

(d) AWS. The AWS coordinates all air warfare (AW) operations including assigned aircraft, antiaircraft artillery (AAA), SAM, and air warning systems in the designated area of responsibility. The AWS acts as an interface between the CATF and the AWC. Actual control of AW assets usually remains with the AWC.

(e) Plans and Support Section (PSS). The PSS conducts current and future planning, assembles and distributes the daily air plan or ATO, assembles reports, and provides all communications support. Since the CATF is not the JFACC, the PSS passes request for support up the chain of command for inclusion in the JFACC's ATO.

(2) Terminal Control Agencies. NTACS also includes several terminal control agencies that perform air control functions by managing final delivery of ordnance, cargo, or personnel, and accomplish other specialized tasks not performed by other air controllers. Besides TACPs, TAC(A)s, and FAC(A)s discussed in Chapter V, an additional terminal control agency is the Naval Aviation Observer (NAO). The NAO is an aircrew member trained in collecting intelligence information and calling for, adjusting, coordinating, and reporting the results of artillery, naval surface fire support (NSFS), and CAS. NAOs are also trained to select helicopter landing zones, deliver sensors, and conduct aerial reconnaissance.

b. SACC. A SACC is located aboard an amphibious command ship in which all communications facilities centrally exist for coordinating of artillery, air, and NSFS. The SACC is the naval counterpart to the landing force's FSCC. The Navy TACC and the SACC function as separate organizations but work closely in planning, controlling, and coordinating offensive air and assault support. The TACC supports the SACC by providing information on air operations, while the SACC supports the TACC by exercising overall responsibility for coordination of supporting fires. The air support controller (ASC) provides the interface between the TACC and the SACC. ATF personnel in the SACC include the supporting arms coordinator (SAC), ASC, landing force personnel, and other ATF personnel.

(1) SAC. The SAC is a naval officer who, as the CATF's representative in the SACC, is responsible for supervising or planning and exercising overall coordination of the delivery of supporting fires.

(2) ASC. The ASC is a naval aviator provided by the tactical air control group or tactical air control squadron to the CATF. The air support controller supervises the ASCS. The ASCS and DASC may be considered the functional equivalents of an Air Force ASOC in the TAGS.

(3) Landing Force Personnel. Landing force personnel in the SACC representing the CLF include a landing force fire support coordinator (LFFSC), a landing force air officer, an artillery officer, a landing force naval gunfire officer, a low-altitude air defense representative, an electronic warfare officer, and an ACE LNO.

(4) Other ATF Personnel. Other key ATF personnel include the naval gunfire control officer, the gunfire support officer, and the target intelligence officer.

c. MACCS and FSCCs were discussed in detail in Chapter V.

3. Fire Support Coordination in Amphibious Operations

Amphibious operations are complex military operations that require a common understanding of standard fire support coordination procedures between Navy and Marine Corps forces. The amphibious assault is an offensive operation; therefore, the principles of offensive fire support apply. As the buildup of combat power ashore begins from a base of zero, the FSC must plan to increase supporting arms support ashore gradually throughout the assault. The difficulty of placing artillery ashore in the first hours of the assault places an even heavier than usual burden on mortars, NSFS, and OAS. The CLF controls artillery ashore through the commander of the GCE.

During amphibious operations, the CATF will initially retain control and coordination of NSFS and air operations. Once control of air operations has been passed to the CLF, the ACE will assume control of coordinating air operations in the objective area, including air warfare, but excluding antisubmarine warfare, sea mining, and mine countermeasures operations. The ACE and FSCC provide representation to the SACC throughout the assault.

a. Fire Support Planning. Fire support planning in amphibious operations involves making detailed, simple, and executable fire plans that provide the assault battalions flexibility. Planning should facilitate speed in execution while maintaining uninterrupted support. Fire support coordination measures allow the CATF to attack deep targets while providing close support to the landing force.

b. Fire Support Tasks. Preassault fire support tasks include assisting in gaining air superiority, destroying or neutralizing those targets that can prevent the execution of the landing, and providing fire support as part of the deception effort. D-day fire support focuses on providing immediately responsive close fires to the assault elements, suppressing hostile shore defenses, and isolating the landing area. Post H-hour support encompasses protecting friendly units during initial advance inland and consolidation, breaking counterattacks, and conducting aggressive counterfire.

c. Control and Coordination. Generally, the most critical task in amphibious operations is the early establishment of FSCCs ashore. The necessary facility for control of NSFS from ashore is the LF/MAGTF FSCC. Once the LF and subordinate FSCCs are ashore and operating effectively, control and coordination of supporting arms can be passed from the CATF to the CLF and from the SACC to the LF's FSCC.

4. Passage of Control Ashore

The nature of amphibious operations requires a formal system of passage of control to ensure that continuous fire support is provided to the landing force. When the GCE commander is confident that the necessary facilities, communications, and information are available to coordinate fires effectively within the GCE area of influence, the GCE informs the CLF by message. The ACE commander does likewise for air operations. Because various aviation functions may be phased ashore incrementally, the ACE specifies those aviation functions that can be performed as those capabilities become available.

a. Air control is normally phased ashore as MACCS facilities become functional. The DASC is normally the first major MACCS agency established ashore. Frequently, the CATF will initially transfer control of OAS and retain control of other aviation functions. When this occurs, the CATF will apportion and allocate between the various mission requirements, just as the CLF/MAGTF commander will do once

he controls all air support. The CLF will distribute sorties allocated for OAS to subordinate commanders. This process is usually repeated every 24 hours. The LFFSC in the SACC must ensure that the CATF's staff is aware of the landing force's projected requirements for the next 24 hours before the CATF makes the apportionment decision.

b. Once the GCE and the ACE C2 elements are semiestablished ashore and as the tactical situation permits, the LF/MAGTF CE begins establishing the LF/MAGTF command operations center ashore. Some LF/MAGTF FSCC personnel move ashore and establish the LF/MAGTF FSCC. Remaining LF/MAGTF personnel continue to man spaces in the SACC to assist the SAC in fire support coordination. When the LF/MAGTF CE, GCE, and ACE C2 facilities are ashore and functional, the CLF submits a request to the CATF to assume responsibility for air operations and supporting arms coordination. The CATF will indicate approval of the transfer of control and coordination by formal message. Upon approval of the passage of control and overall responsibility of supporting arms, the CLF will complete the sequence by notifying the GCE and ACE of the date and time specified for the passage to occur. At the specified time, the ACE TACC and LF/MAGTF FSCC assume tactical control and the Navy TACC (now a TADC) and SACC become backups to the MACCS and FSCC, respectively. Once the transfer of control ashore is complete the JFMCC will dissolve the AOA and its associated ATACS.

Appendix E

TRANSITION SEA- AND LAND-BASED JFACC

1. Background

In the course of conducting exercise or contingency air operations, it may become necessary to transfer JFACC responsibility for planning and executing the ATO. This document details the basic requirements for conducting that transfer. Specifically, it identifies the different scenarios under which a transfer would occur, the data required to ensure the new JFACC can immediately assume planning activities, the methods and timeline in which to conduct the transfer, and special considerations affecting the transfer. The theater CINCs and their respective CONOPS should specify theater specific JFACC transfer procedures. The procedures described in this appendix are possible methods for conducting JFACC transition and assumes reader familiarity with CTAPS terminology.

2. Scenarios

Since we cannot dictate the conditions for all contingency operations, it is impossible to predict which service may initially assume JFACC responsibility in a given situation. Once the operation is underway, conditions/objectives may require a transfer of JFACC responsibility from the initial unit/service. A transfer of JFACC responsibilities from one service or command center to another may be required in any theater of operations at any time. Operationally, seven transfer scenarios are possible: (1) USAF to USN, (2) USN to USAF, (3) USAF to USMC, (4) USMC to USAF, (5) USN to USMC, (6) USMC to USN, and (7) Same service transfer. From a technical standpoint, these scenarios reduce to four, dependent on the intelligence system used by the units/services (USAF: Combat Intelligence System [CIS], USN: Naval Intelligence Processing System [NIPS]/Joint Maritime Command Information Strategy [JMCIS]) involved in the transfer: (1) CIS to NIPS, (2) NIPS to CIS, (3) CIS to CIS, and (4) NIPS to NIPS.

3. Data Requirements

All JAOCs should use this information to plan for such transfer operations and tailor the procedures as the environment changes. This will ensure the gaining JFACC will be able to assume responsibility for ATO production and execution with minimum disruption to air operations. Timing of file transfers is situation dependent but where possible should follow the ATO planning cycle. These procedures assume that the gaining JFACC will already have a mature intelligence database for the theater and that the JFACC will manually synchronize the database with the intelligence data transferred from the relinquishing JFACC. The general data elements required to transfer JFACC responsibility are as follows:

a. Planning data (Advanced Planning System [APS]).

b. Airspace data (Airspace Deconfliction System [ADS]).

c. Operations data (Computer-Assisted Force Management System-X Windows [CAFMS-X]).

d. Targeting data (RAAP).

e. Order of battle (OB) data (CIS; NIPS/JMCIS).

f. Configuration/security data.

4. Method of Transfer

Transfer of the nonintelligence databases (APS, ADS, CAFMS-X, configuration/security) occur primarily through a simple backup and recovery file procedure, although a master system backup and recovery procedure can also be used. Both functions are compatible among all systems/scenarios. This is not true, however, for the transfer of intelligence data. Due to the incompatibility of the intelligence systems used, special procedures are required to transfer the necessary intelligence tables between systems.

5. Notional JFACC Transfer Timeline

Transfer of data occurs along the ATO timeline. This process can be summarized as follows:

a. General.

(1) CJTF guidance.

(2) Reconnaissance inputs.

(3) Component target nominations (JIPTL).

(4) Target nomination list (TNL).

(5) Airspace deconfliction (ACO).

(6) Planning Stage (air battle plan—[ABP]).

(a) JFACC Guidance.

(b) MAAP.

(c) Support sortie development (AETACS, alert).

(d) ATO production/component direct sorties (APS).

(e) Airspace adjustments to support MAAP.

(f) Transmit ATO/ACO (assumes JFACC approval).

(g) Transfer ATO to operations.

(7) Execute ATO (CAFMS-X).

b. Procedures. Procedures are based on the notional JFACC data transfer plan using a 24-hour planning cycle. There are numerous variations to this plan (Table E-1 is one example). In an emergency JFACC transfer, all data could be sent simultaneously. To facilitate unplanned JFACC transfers, it may be necessary to perform daily backup, storage, and/or transfer of data to possible gaining JFACC locations. Table E-2 reflects a graduated data transfer schedule for ATO's I, J, K, and L over a 5-day period until complete. New JFACC in control by Day 3, ATO K.

6. Remote Transfer

To transfer remotes from relinquishing JFACC to gaining JFACC use the following procedures:

a. Gaining JFACC loads addresses of remote sites. Use “vi” to view network configuration data in the transferred “layout.cfg” file.

b. Relinquishing JFACC changes passwords on remotes to generic.

c. Relinquishing JFACC cuts communication lines to remotes.

d. Gaining JFACC establishes communication to remotes.

e. Remote sites configured into gaining JFACC by contingency theater automated planning system officer of primary responsibility (CTAPSOPR) or gaining JFACC completes configuration from host site.

Table E-1. Sample JFACC Transfer Plan

DAY 0	Gaining JFACC receives JFC guidance. Relinquishing JFACC transfers intelligence collection management (Nonautomated) and current intelligence and planning data to new JFACC.
DAY 1	Gaining JFACC builds the CTL and TNL for ATO K (Table 2)
DAY 2	Gaining JFACC combat plans uses the TNL and transferred planning data to build the ABP and produce ATO K (Table 2))
DAY 2-3	Between Day 2 and 3, execution authority is transferred from the relinquishing JFACC to the gaining JFACC.
DAY 3	Gaining JFACC executes ATO K.

Table E-2. Sample JFACC Data Transfer Schedule

	DAY 0	**DAY 1**	**DAY 2**	**DAY 3**	**DAY 4**
CJTF Guidance	**K**	L			
RECCE	J	**K**	L		
JIPTL	J	**K**	L		
TNL	J	**K**	L		
ACO	I	J	**K**	L	
ABP	I	J	**K**	L	
Execute	H	I	J	**K**	L
Data required (para 3, pg E-1)	(E),(D),(B), (A),(F)	(C),(B)	(C),(B)		

7. Transfer of intelligence database

If the gaining JFACC does not already have an extensive intelligence database for the AOR, it may choose to overwrite the theater database with the data transferred from the relinquishing JFACC. Otherwise, targeting personnel will use the data transferred to the database to manually update the data in the theater database. Another source of transferred order of battle (OB) data can come from the JPITL transferred with the ATO. The JPITL added to the APS backup can be used as an initial TNL to aid in planning while intelligence targeting personnel manually synchronize the data between the theater and exercise intelligence databases. The incompatibility of intelligence systems requires special procedures to transfer intelligence data. This situation can be illustrated by focusing on a JFACC transfer between USN and USAF. The USN JMCIS only requires 34 RAAP and enemy OB tables to be transferred from USAF CIS. These tables are merged into the NIPS database and data differences are highlighted so an analyst can inspect/verify the new information and incorporate it into the theater intelligence database. This process works successfully (from USAF to USN). Problems arise, however, in transferring these tables from USN to USAF. The USAF CIS does not merge the tables back into the database; it overwrites these tables, resulting in a loss of existing data. The following is a workaround procedure which can be used until software capability problems are resolved:

a. Transfer the intelligence data tables into an empty/available intelligence database (for example, the exercise or coalition database).

b. Dump the entire JPITL into a TNL; transfer the TNL files into the CIS database; or import the TNL into APS.

c. Produce future ATOs from the TNL import or the transferred data tables.

d. Manually compare the transferred tables with those in the CIS theater database; identify and update new information into the theater database.

8. Authorship

These procedures were developed by the air operations staffs of the 12th Air Force and Second Fleet. Contact the Second Fleet Air Ops staff at (DSN 564-3430 or commercial 1-(757)-444-3430) for detailed CTAPS instructions for conducting the transfer.

Appendix F

TAGS ADDITIONAL INFORMATION

1. Intelligence

The targeting process places great demands on intelligence capabilities. A particular command will rarely possess the capability to collect all necessary targeting intelligence and must compete for intelligence collection assets. Components nominate intelligence requirements to the JFC and priorities are established for intelligence collection tasking, data fusion, and CA collection and analysis. The massive amount of data produced creates intelligence fusion problems. The targeting effort may be supported more effectively by accepting less-than-desired certainty. For example, if 75 percent certainty of a target location from two sources rather than 98 percent certainty from all-source analysis is acceptable, less burden is placed on the system. Components should be aware of the following intelligence collection agencies:

a. National. National-level intelligence collection agencies include the Defense Intelligence Agency (DIA), National Security Agency (NSA), Central Intelligence Agency (CIA), the National Imagery and Mapping Agency (combined Central Imagery Office and Defense Mapping Agency), the Central Measurement and Signature Intelligence (MASINT) Office, the National Reconnaissance Office (NRO), and Department of State. Each has a responsibility to support military requests for intelligence gathering. These national agencies task technical intelligence collection systems, which can significantly contribute to joint operational needs.

b. Joint. JFCs normally possess limited intelligence collection assets. Therefore, the JFC must request support from national intelligence agencies and direct support from component assets. The JFC requirements for national intelligence are sent to DIA by the J-2. The CINC's Joint Intelligence Center (JIC) or the JFC's Joint Intelligence Support Element (JISE) is responsible for all intelligence production related to the theater and JOA, respectively. Augmented by the national intelligence organizations, the JIC/JISE supports indications and warning (I&W), targeting through all-source intelligence analysis of enemy target sets, and collection to aid the JFC staff in determining enemy centers of gravity.

c. Space Support Team (SST) Concept. Previously called the forward space support in theater (FSST), the SST concept provides support to the air component commander (ACC) in both peacetime and wartime. In peacetime, the SST, in conjunction with the space operations officer (SOO)/space liaison officer (SLO), works to ensure theater commands understand of how to use space systems by participating in planning, exercises, and wargaming. In wartime, the SST deploys to the theater at the ACC's request and works in the AOC to provide direct support to the commander's staff. The SST serves as a problem/solution facilitator within the AOC and will serve as the interface between the JFACC/ACC, 14th Air Force (14 AF) Commander, Air Force Space Command (COMAFSPACE) and COMAFSPACE's Crisis Action Team, and the Space Warfare Center (SWC). The SST will provide the 14 AF Commander with on-site representation and a firsthand look at the combat situation from the supported commander's perspective. SST members will ensure proper coordination and

execution of space operations, related support between the theater JFACC/AOC and 14 AF, as well as other space support entities. This will likely involve the theater CINC/JFC (joint space support team [JSST] at the joint operations center [JOC]) and the US Commander in Chief Space (USCINCSPACE). Working closely with intelligence, communications, air defense, and all other AOC elements, the SST provides the AOC and JFACC with timely and accurate assessment of the friendly and enemy space reliance/space superiority situation and ways to ensure optimum use of space assets for air operations planning and execution.

d. SLO. SLOs are already embedded in the Numbered Air Force infrastructure. These personnel are permanent party and work daily Numbered Air Force issues related to space support and IW.

2. ROE

ROE. The Chairman, Joint Chiefs of Staff, has issued CJCSI 3121.01, *Standing Rules of Engagement for US Forces*, that applies to and may be supplemented for a particular mission. The ROE will never limit the inherent right and obligation of individual and unit to self-defense. Even if there are no forces declared hostile, commanders will defend their units against a hostile act or hostile intent. The two elements of self-defense are necessity and proportionality. For necessity, a hostile act must occur or there must be a demonstrated intent to commit a hostile act. The threat posed by the hostile act or intent must be imminent. Proportionality infers that the use of force must be reasonable in intensity, duration, and magnitude and must be consistent with the threat to ensure safety of the force. Individuals must always be prepared to act in self-defense and nothing in the ROE limits that right.

3. Communications

The entire ATO process is communications intensive and dependent. The service component with JFACC responsibility is responsible for establishing communications links to support the JFACC mission. The services have recently adopted the CTAPS for ATO production and dissemination software as the joint standard software for tasking air missions. Approved USMTF format allows interface with processing communications systems. Communications are complicated when agencies use nonstandard formats to process requests or to transmit information. TBMCS is the follow-on system to CTAPS.

REFERENCES

Joint

CJCSI 3121.01, *Standing Rules of Engagement for US Forces*, 1 Oct 94

JFACC Primer, Feb 94

Joint Pub 0-2, *Unified Action Armed Forces (UNAAF)*, 24 Feb 95

Joint Pub 1-02, *DOD Dictionary of Military and Associated Terms*, 23 Mar 94

Joint Pub 3-03, *Doctrine for Joint Interdiction Operations*, 10 Apr 97

Joint Pub 3-05, *Doctrine for Joint Special Operations*, 28 Oct 92

Joint Pub 3-09.3, *Joint Tactics, Techniques, and Procedures for Close Air Support (CAS)*, 1 Dec 95

Joint Pub 3-13.1, *Joint Doctrine for C2 Warfare*, 7 Feb 96

Joint Pub 3-52, *Joint Airspace Control in the Combat Zone*, 3 Dec 93

Joint Pub 3-56.1, *Command and Control for Joint Air Operations*, 14 Nov 94

Joint Pub 5-00.2, *JTF Planning*, 3 Sep 91 (Revision Pending)

Multiservice

FM 100-103-1/*FMFRP5-61/NWP 3-52.1/AFTTP(I) 3-2.16, Multiservice Procedures for Integrated Combat Airspace Command and Control (ICAC2)*, 3 Oct 94

FM 90-38/MCRP 3-25B/NWP 6-02.1/AFTTP(I) 3-2.5, *Multiservice Air-Air, Air-Surface, Surface-Air Brevity Codes*, 25 Apr 97

FM 90-21/MCRP 3-23A/NWP 3-01.03/AFTTP(I) 3-2.10, Multiservice Procedures for Joint Air Attack Team (JAAT) Operations, 3 Jun 98

Army

FM 100-13, *Battlefield Coordination Detachment (BCD)*, 5 Sep 96

FM 100-103, *Army Airspace Command and Control in a Combat Zone*, Oct 87

Marine

FMFM 5-50, *Antiair Warfare*, 22 Jun 94

FMFM 5-60, *Control of Aircraft and Missiles*, 22 Jun 93

MCWP 3-25.3, *MACCS Handbook* (Draft)

MCWP 3-25.4, *TACC Handbook* (Draft)

MCWP 3-25.5, *DASC Handbook*, 16 Sep 96

MCWP 3-25.6, *SAAWC Handbook*, 1 Aug 97

MCWP 3-25.7, *TAOC Handbook*, 13 Sep 96

MWCP 3-25.8, *MATCD Handbook*, 1 Aug 97

Navy

NWP 3-56, *Composite Warfare Commander's Manual*, (Revision Pending)

NWP 3-09.11M, *Supporting Arms in Amphibious Operations*, 1 Mar 95

Forward... from the Sea, Mar 93

Air Force

ACCI 13, *AOC Vol 3 Air Operations Center*, Feb 95

AFI 13-106, *Air Support Operations Centers and Tactical Air Control Parties*, 16 Jan 95

AFDD1, *Air Force Basic Doctrine*, Sep 97

AFPD 13-1, *Theater Air Control System*, 11 May 95

Other

USSOCOM Pub 1, *Special Operations in Peace and War*, 25 Jan 96

Glossary

A

A2C2	Army airspace command and control
A/A	air to air
AAA	antiaircraft artillery
AAD	area air defense
AADC	area air defense commander
AAGS	Army Air-Ground System
AAMDC	Army Air and Missile Defense Command
ABCCC	airborne battlefield command and control center
ABP	air battle plan
AC	air corridor
A/C	aircraft
ACA	airspace control authority
ACC	Air Combat Command
ACE	aviation combat element (MAGTF)
ACO	airspace control order
ACP	airspace control plan
ADA	air defense artillery
ADIZ	air defense identification zone
ADS	Airspace Deconfliction System
AF	Air Force
AFAC	airborne forward air controller
AFARN	Air Force air request net
AFATDS	Advanced Field Artillery Tactical Data System
AFDC	Air Force Doctrine Center
AFDD1	Air Force Doctrine Document 1
AFFOR	Air Force forces
AFI	Air Force Instruction
AFLE	Air Force liaison element
AFSCOORD	assistant fire support coordinator
AFSOC	Air Force special operations component
AFSOF	Air Force special operations forces
AI	air interdiction
AIRSUPREQ	air support request
AIRTASK	air tasking
ALLOREQ	air allocation request
ALCT	airlift control team
ALO	air liaison officer
ALSA Center	Air Land Sea Application Center
alt	altitude
AMC	Air Mobility Command
AMCT	air mobility control team
AMDWS	Air and Missile Defense Warning System
AME	air mobility element
AMLS	airspace management liaison section
AMPN	amplification
AMOCC	air mobility operations control center
ANGLICO	air/naval gunfire liaison company
ANDVT	advance narrow digital voice terminal
ANGPLT	air/naval gunfire platoon

APB	air battle plan
APS	Advance Planning System
AO	area of operations
AOA	amphibious objective area
AOC	air operations center (USAF)
AOR	area of responsibility
ARCT	aerial refueling control team
AREC	air resource element coordinator
ARFOR	Army forces
ARG	amphibious ready group
ARSOC	Army special operations component
ARSOF	Army special operations forces
ASC	air support controller
ASE	air support element
ASC(A)	assault support coordinator (airborne)
ASCS	air support control section
ASLT	air support liaison team
ASOC	air support operations center
ATACS	amphibious tactical air control system (USMC)
ATACMS	Army Tactical Missile System
ATC	air traffic control
ATCS	air traffic control section
ATDL-1	Army Tactical Data Link-1
ATF	amphibious task force
ATO	air tasking order
ATOCONF	air tasking order confirmation
AW	air warfare
AWACS	Airborne Warning and Control System
AWC	air warfare commander
AWS	air warfare section

B

BALO	battalion air liaison officer
BBS	Bulletin Board System
BCD	battlefield coordination detachment
BDA	bomb or battle damage assessment
BDE	brigade
BGIC	battle group intelligence center (USN)
BGO	battle group orestes
BN	battalion
BOS	battlefield operating systems
BP	battle position (USA)
BWC	battle watch captain

C

C2	command and control
C2BM	command and control battle management
C2W	command and control warfare
C2WC	command and control warfare commander
C3	command, control, and communications
C4	command, control, communications, and computers

C4CM	command, control, communications, and computers countermeasures
C4I	command, control, communications, computers, and intelligence
CA	combat assessment
CAFMS-X	Computer-Assisted Force Management System-X Windows
CAP	combat air patrol
CAS	close air support
CATF	commander, amphibious task force
CBT	combating terrorism
CCT	combat control team
CDC	combat direction center
CE	command element (MAGTF)
CFL	coordinated fire line
CG	guided missile cruiser
CIA	Central Intelligence Agency
CINC	commander in chief; commander of a combatant command
CIS	Combat Intelligence System
CJCSI	Chairman, Joint Chiefs of Staff Instruction
CLF	commander, landing force
CMO	central masint office
CO	company
COC	combat operations center
COG	center of gravity
COCOM	combatant command (command authority)
COMAFFOR	Commander, Air Force Forces
COMAFSPACE	Commander, Air Force Space Command
COMCARGRU	Commander, Carrier Group
COMCVW	Commander, Carrier Air Wing
comm	communications
comp	component
CONUS	continental United States
coord	coordination
COP	common operational picture
CP	command post; contact point; counter proliferation (special operations)
CRC	control and reporting center
CRE	control and reporting element
CSAR	combat search and rescue
CSSE	combat service support element (MAGTF)
CTAPS	contingency theater automated planning system
CTAPSOPR	contingency theater automated planning system officer of primary responsibility
CTL	consolidated target list
CTF	commander, task force; combined task force
CV	carrier
CVBG	carrier battle group
CVBGLC	CVBG logistics coordinator (USN)
CVN	nuclear carrier
CVW	carrier air wing
CWC	composite warfare commander

D

D-day	day of execution
D3A	decide, detect, deliver, assess
DA	direct action; Department of the Army
DAS	direct air support
DASC	direct air support center
DASC(A)	direct air support center (airborne)
DCA	defensive counterair
DCI	defensive counterinformation
DDG	destroyer guided missile cruiser
DETS	detachments
DIA	Defense Intelligence Agency
DII	Defense Information Infrastructure
DIRMOBFOR	Director of Mobility Forces
DIV	division
DIVARTY	division artillery
DMPI	desired mean point of impact
DOCC	deep operations coordination cell
DS	direct support
DTG	date-time group

E

E2C AWCS	E2C Airborne Warning and Control System (USN)
EA	engagement area
EAC	echelon above corps
EFF	effective
EST	establishing
ETAC	enlisted terminal attack controller
EW	electronic warfare
EW	early warning
EW/C	early warning/control
E&E	evasion and escape
exer	exercise

F

FA	field artillery
FAAD C3I	forward area air defense command, control, communications and intelligence
FAC	forward air controller
FAC(A)	forward air controller (airborne)
FAWC	fleet air warfare coordinator
FEZ	fighter engagement zone
FFA	free-fire area
FFCC	force fires coordination center
FID	foreign internal defense
FIST	fire support team
FLOT	forward line of own troops
FMFRP	Fleet Marine Force Reference Publication
FO	forward observer
FOB	forward operational base

FOTC	force over-the-horizon track coordinator (USN)
fr	from
FRAGORDER	fragmentary order
FSC	fire support coordinator
FSCC	fire support coordination center
FSCL	fire support coordination line
FSCM	fire support coordinating measure
FSCOORD	fire support coordinator
FSE	fire support element
FSO	fire support officer
FSST	forward space support in theater

G

G-2	Army or Marine Corps component intelligence staff officer (Army division or higher staff, Marine Corps brigade or higher staff)
G-3	Army or Marine Corps component operations staff officer (Army division or higher staff, Marine Corps brigade or higher staff)
G-4	Army or Marine Corps component logistics staff officer (Army division or higher staff, Marine Corps brigade or higher staff)
GAT	guidance, apportionment, targeting
GBDL	ground based data link
GBS	Global Broadcast System
GCE	ground combat element (MAGTF)
GCCS	Global Command Control System
GLO	ground liaison officer
GMF	ground mobile forces
GS	general support
GSM	ground station module
GTL	gun target line

H

H-hour	hour of execution
HCS	helicopter coordination section
HEC	helicopter employment coordinator
HELO	helicopter
HF	high frequency
HIDACZ	high density airspace control zone
HIMAD	high-medium altitude air defense
HIMEZ	high altitude missile engagement zone
HPT	high-payoff target
HPTL	high-payoff target list
HST	helicopter support team
HVT	high-value target
HQ	headquarters

I

I&W	indication and warning
ID	identification
IFF	identification, friend or foe
INFOSEC	information security

IP	initial point
IPB	intelligence preparation of the battlespace
ISR	intelligence, surveillance and reconnaissance
ITG	initial terminal guidance
IW	information warfare

J

J-2	Intelligence Directorate of a joint staff; Intelligence Directorate, Joint Staff, Defense Intelligence Agency
J-3	Operations Directorate of a joint staff
J-5	Plans Directorate of a joint staff
J-6	Command, Control, Communications, and Computer Systems Directorate of a join staff
JAAT	joint air attack team
JAOC	joint air operations center
JASOP	joint air and space operation plan
JEZ	joint engagement zone
JFACC	joint force air component commander
JFC	joint force commander
JFMCC	joint force maritime component commander
JFSOC	joint force special operations command
JFSOCC	joint force special operations component commander
JIC	joint intelligence center
JISE	joint intelligence support element
JIPTL	joint integrated prioritized target list
JMCIS	joint maritime command information strategy
JOA	joint operations area
JOC	joint operations center
JOPES	Joint Operation Planning and Execution System
JRC	joint reconnaissance center
J-SEAD	joint suppression of enemy air defenses
JSOA	joint special operations areas
JSOACC	joint special operations air component commander
JSOTF	joint special operations task force
JSRC	joint search and rescue center
JSST	joint space support team
Joint STARS	Joint Surveillance, Target Attack Radar System
JTCB	Joint Targeting Coordination Board
JTF	joint task force
JTIDS	Joint Tactical Information Distribution System
JTL	joint target list
JTO	joint tasking order
JUH-MTF	Joint Users Handbook - Message Text Formats

L

L	local
LAAD	low-altitude air defense (USMC)
LAI	light armored infantry (USMC)
LANTIRN	low-altitude navigation and targeting infrared for night
LAWC	local air warfare coordinator

LCC	land component commander
LF	landing force
LFFSC	landing force fire support coordinator
LLTR	low-level transit route
LMST	light weight multiband satellite terminals
LNO	liaison officer
LOC	line of communications
LOMEZ	low-altitude missile engagement zone
LRP	long range plans
LZ	landing zone

M

MAAP	Master Air Attack Plan
MACCS	Marine Air Command Control System
MACG	Marine Air Control Group
MAGTF	Marine air-ground task force
MAJCOM	major command
MARFOR	Marine Corps forces
MARLO	Marine liaison officer
MASINT	measurement and signature intelligence
MATC	Marine air traffic control
MATCD	Marine air traffic control detachment
MAX	Maximum
MAW	Marine aircraft wing
MCC	maritime component commander
MCCDC	Marine Corps Combat Development Command
MCPDS	Marine Corps Publication Distribution System
MCWP	Marine Corps Warfighting Publication
MEF	Marine expeditionary force
MEF (FWD)	Marine expeditionary force (forward)
METOC	meteorological and oceanographic
MEU-SOC	Marine expeditionary unit-special operations capable
MICK	Mobility Initial Communications Kit
MILSATCOM	military satellite communications
MILSTRIP	Military Standard Requisitioning and Issue Procedure
MMT	Marine air traffic control detachment mobile team
MOOTW	military operations other than war
MPA	mission planning agent
MSN	mission
MRR	minimum-risk route
MTTP	multiservice tactics, techniques, and procedures

N

NALE	naval and amphibious liaison element
NAO	naval aviation observer
NARR	narrative
NATO	North Atlantic Treaty Organization
NAVFOR	Navy forces
NAVSOC	naval special warfare special operations component
NAVSOF	naval special warfare forces
NAVSOP	Navy Standing Operating Procedures

NCA	National Command Authorities
NCO	noncommissioned officer
NDC	Naval Doctrine Command
NFA	no-fire area
NGFO	naval gunfire officer
NGFS	naval gunfire support
NGFS REP	naval gunfire support representative
NIPS	Naval Intelligence Processing System
NRO	National Reconnaissance Office
NSA	National Security Agency
NSFS	naval surface fire support
NTACS	Navy Tactical Air Control System
NTDS	Navy Tactical Data System
NSWF	Navy special warfare forces

O

OAS	offensive air support (USMC)
OB	order of battle
OCA	offensive counterair
OCI	offensive counterinformation
ODA	operational detachment–Alpha
OOTW	operations other than war
OPCON	operational control
OPGEN	operational general
OPLAN	operation plan
OPORD	operation order
OPR	office of primary responsibility
OPSEC	operations security
OPS	operations
OPSTAT	operational status
OPTASK	operational tasking
OPTASKLINK	operational tasking data link
ord	ordinate
OTC	officer in tactical command (USN)

P

PACAF	Pacific Air Forces
PC	personal computer
PICP	PACAF Initial Communications Package
PIRAZ	positive identification radar advisory zone
POL	petroleum, oils, and lubricants
PSS	plans and support section
PSYOP	psychological operations
pub	publication
PZ	pickup zone

R

RADC	regional air defense commander
RAOC	rear area operations center

RAAP	rapid application of airpower
REAR	rear
RECCE	reconnaissance
REGT	regiment
REQCONF	request conformation
RFA	restricted fire area
RFI	request for information
RFL	restricted fire line
RGT	regiment
RMKS	remarks
ROA	restricted operations area
ROE	rules of engagement
ROZ	restricted operations zone
RP	release point
RTF	return to force

S

S2	battle or brigade intelligence staff officer (Army; Marine Corps battalion or regiment)
S3	battle or brigade operations staff officer (Army; Marine Corps battalion or regiment)
S4	battle or brigade logistics staff officer (Army; Marine Corps battalion or regiment)
SAAFR	standard use army aircraft flight route
SAAWC	sector antiair warfare coordinator (USMC)
SAAWF	sector antiair warfare facility
SAC	supporting arms coordinator
SACC	supporting arms coordination center
SADC	sector air defense commander
SALT	supporting arms liaison team (USMC)
SAM	surface-to-air missiles
SAR	search and rescue
SATCOM	satellite communications
SAWC	sector air warfare coordinator
SCC	surface component commander; sea combat commander
SCDL	surveillance control data link
SCL	standard conventional load
SEAD	suppression of enemy air defenses
SEAL	sea-air-land team
SEMA	special electronic mission aircraft
SF	special forces
SFOD A/B/C	special forces operational detachment-A/B/C
SHORAD	short-range air defense
SHORADEZ	short-range air defense engagement zone
SIF	selective identification feature
SLO	space liaison officer
SO	special operations
SOA	special operations aviation
SOC	special operations command
SOCA	submarine operations coordinating authority
SOCCE	special operations command and control element
SOE	schedule of events (USN)
SOF	special operations forces

SOLE	special operations liaison element
SOO	space operations officer
SORTIEALOT	sortie allotment
SOTAC	special operations terminal attack controller
SPINS	special instructions
SPMAGTF	special purpose marine air-ground task force
SQDNS	squadrons
SQ FT	square foot
SR	special reconnaissance
STRATLAT	strategic liaison team
SST	space support team
STT	special tactics team
STWC	strike warfare commander
SUWC	surface warfare commander
SWC	space warfare center

T

T	time
TAADCOM	theater army air defense command
TAC	tactical
TAC(A)	tactical air coordinator (airborne) (USMC); terminal attack controller (airborne) (USAF)
TACAIR	tactical air
TACC	tactical air command center (USMC); tanker/airlift control center (USAF); tactical air control center (USN)
TAC CP	tactical command post
TACON	tactical control
TACOPDAT	tactical operations data
TACP	tactical air control party
TACRON	tactical air control squadron (USN)
TACS	theater air control system
TAD	tactical air direction
TADC	tactical air direction center
TADIL (A,B,C,J)	tactical digital information link
TAGS	theater air-ground system
TALCE	tactical airlift control element
TAOC	tactical air operations center (USMC)
TARBUL	target bulletin
TBMCS	Theater Battle Management Core System
TDC	theater deployable communications
TFCC	tactical flag command center
TGL	target-to-gun line
TGO	terminal guidance operations
TGTINFOREP	target information report
TGTINTELO	target intelligence officer
TIO	target information officer
TIS	target information section
TMD	theater missile defense
TNL	target nomination list
TOC	tactical operations center
TOT	time on target
TRADOC	United States Army Training and Doctrine Command

TRI-TAC	Tri-Service Tactical Communications Program
TTP	tactics, techniques, and procedures
TVA	target value analysis

U

UAV	unmanned aerial vehicle
UHF	ultra high frequency
UNAAF	unified action armed forces
US	United States
USA	United States Army
USAF	United States Air Force
USAFAGOS	United States Air Force Air-Ground Operations School
USTRANSCOM	United States Transportation Command
USCINCSPACE	Commander in Chief, United States Space Command
USMTF	US message text format
USMC	United States Marine Corps
USN	United States Navy
USSOCOM	United States Special Operations Command
USTRANSCOM	United States Transportation Command
USWC	undersea warfare command
UW	unconventional warfare

V

VHF	very high frequency

W

WCB	warfare commander board
WCCS	Wing Command and Control System
WEZ	weapons engagement zone
WFZ	weapons free zone
WG	wing
WICP	wing initial communications package
WMD	weapons of mass destruction
WOC	wing operations center

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RONALD E. KEYS
Major General, USAF
Commander
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