ARMY, MARINE CORPS, NAVY, AIR FORCE, SPACE FORCE

TAGS

MULTI-SERVICE TACTICS, TECHNIQUES, AND PROCEDURES FOR THE THEATER AIR-GROUND SYSTEM

ATP 3-52.2
MCRP 3-20.1
NTTP 3-56.2
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MULTI-SERVICE TACTICS, TECHNIQUES, AND PROCEDURES

FOREWORD

This multi-Service tactics, techniques, and procedures (MTTP) publication is a product of the Air Land Sea Space Application (ALSSA) Center in accordance with the memorandum of agreement between the Headquarters of the United States (US) Army, Marine Corps, Navy, and Air Force doctrine commanders directing ALSSA to develop MTTP publications to meet the immediate needs of the warfighter.

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

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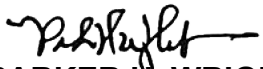

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PREFACE

1. Purpose

The theater air-ground system (TAGS) is a conglomeration of systems. For the purpose of this publication, TAGS refers to organizations, personnel, equipment, and procedures that participate in planning and executing all air-ground operations. Understanding the chain of command and systems comprising TAGS allows it to be maximized, providing the ability to create quick and decisive combat results. The objective of this publication is to describe how each of the Service components' systems operate within the TAGS.

2. Scope

This publication provides a generic concept and procedures for TAGS operations. It is a framework for all planners to facilitate the integration of air and ground operations.

3. Applicability

This MTTP publication applies to all commanders and their staffs. This publication is approved for public release with Distribution Statement A, in accordance with Department of Defense Instruction 5230.24, *Distribution Statements on Technical Documents*.

4. Implementation Plan

Participating Service command offices of primary responsibility will review this publication; validate the information; and, where appropriate, use it as a reference and incorporate it in Service manuals, regulations, and curricula as follows.

Army. Upon approval and authentication, this publication incorporates the tactics, techniques, and procedures (TTP) contained herein into the United States (US) Army Doctrinal and Training Publishing Program as directed by the Commander, US Army Training and Doctrine Command. Distribution is in accordance with applicable directives listed on the authentication page.

Marine Corps.[1] The Marine Corps will incorporate the procedures in this publication in United States Marine Corps (USMC) doctrine and training publications as directed by Commanding General, Training and Education Command (TECOM). Distribution is in accordance with the Marine Corps Order 5600.31, *Marine Corps Printing, Publishing, and Reprographics Equipment Regulations*.

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5. User Information

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a. US Army Combined Arms Center; USMC, TECOM; NWDC; Curtis E. LeMay Center for Doctrine Development and Education; and Air Land Sea Space Application (ALSSA) Center developed this publication with the joint participation of the approving Service commands. ALSSA will review and update this publication as necessary.

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

c. We encourage recommended changes for improving this publication. Key your comments to the specific page and paragraph and provide a rationale for each recommendation. Send comments and recommendations directly to:

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SUMMARY OF CHANGES

ATP 3-52.2/MCRP 3-20.1/NTTP 3-56.2/AFTTP 3-2.17, *Multi-Service Tactics, Techniques, and Procedures for the Theater Air-Ground System (TAGS)*.

This revision:

Updates:

- Every chapter and diagram have been updated with minor corrections, clarifications, and deletions of outdated information.
- Appendix A “Theater Air-Ground System” has been updated and modified to serve as a stand-alone diagram displaying the complete TAGS network and touchpoints between Services.

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22 AUG 2024

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EXECUTIVE SUMMARY

TAGS

Multi-Service Tactics, Techniques, and Procedures (MTTP) for the Theater Air-Ground System (TAGS) establishes tactics, techniques, and procedures for TAGS operations and addresses integrating air and ground operations.

Chapter I Theater Air-Ground System Overview

Chapter I provides an overview of the planning considerations for establishing the TAGS in an evolving theater. It discusses establishing the positions of the joint force commander, joint force air component commander, joint force land component commander, joint force maritime component commander, joint force special operations component commander, and describes joint liaison requirements.

Chapter II Army Air-Ground System

Chapter II provides an overview of Army operations and planning and the Army air-ground system.

Chapter III Air Force Theater Air Control System

Chapter III provides an overview of Air Force operations and planning and the theater air control system.

Chapter IV Navy Tactical Air Control System and Composite Warfare Commander

Chapter IV provides an overview of Navy operations and planning, command and control (C2), and the Navy tactical air control system.

Chapter V Marine Air Command and Control System

Chapter V provides an overview of Marine Corps operations and planning and the Marine air command and control system.

Chapter VI Special Operations Air-Ground System

Chapter VI provides an overview of special operations forces operations and planning and the special operations air-ground system.

Appendix A Theater Air-Ground System

Appendix A depicts a complete TAGS under a joint task force commander.

Appendix B Component Inputs to the Joint Air Tasking Cycle

Appendix B describes the integrated relationship among the TAGS C2 nodes and liaison elements.

Appendix C Battle Management Area Construction

Appendix C describes constructing battle management areas and shows notional illustrations.

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Chapter I
THEATER AIR-GROUND SYSTEM OVERVIEW

1. Background

a. The Theater Air-Ground System (TAGS) combines each Service's and special operations command and control (C2) and airspace control system into a joint framework, allowing each Service to operate as part of a unified effort in support of the joint force commander (JFC).

b. TAGS incorporates the Army air-ground system (AAGS), Marine air command and control system (MACCS), Navy tactical air control system (NTACS), special operations air-ground system (SOAGS), and the Air Force theater air control system (TACS) into one joint system. The roles, responsibilities, and authorities of each TAGS element are spelled out in theaterwide documents, such as the area air defense plan (AADP), airspace control plan (ACP), and the operations task link (OPTASKLINK). When delegated tasks and authorities exceed the component commander's scope of operations, the responsibilities and authorities are included in the special instructions (SPINS). The decentralized execution authorities of components' TAGS elements are documented in operation plans (OPLAN), operation orders (commonly referred to as an OPORD), and SPINS. The airspace control authority (ACA) and area air defense commander (AADC) must define responsibilities, authorities, and tasks for supporting agencies in the ACP, AADP, and OPTASKLINK.

(1) This publication describes the structure of TAGS under a single JFC in a joint operations area (JOA) or area of responsibility (AOR). Regardless of how the TAGS architecture and organization are structured, the responsibilities of each TAGS element do not change.

(2) The JFC, through the staff or a designated component, establishes requirements for the TAGS including the combatant commander's (CCDR) guidance, perspective, and strategy for the AOR. The TAGS implementation directly affects the JFC's ability to integrate, synchronize, and direct joint operations. See Joint Publication (JP) 3-0, *Joint Campaigns and Operations*, for more information.

(3) A Service component commander also can be a functional component commander (e.g., the commander, Air Force forces (COMAFFOR) may be the joint force air component commander, (JFACC). Functional component commanders execute tactical control (TACON) of component forces made available to them by the JFC through a control system designed for that purpose, which may be separate from the Service component staff. See figure 1 for an example of a joint force structure.

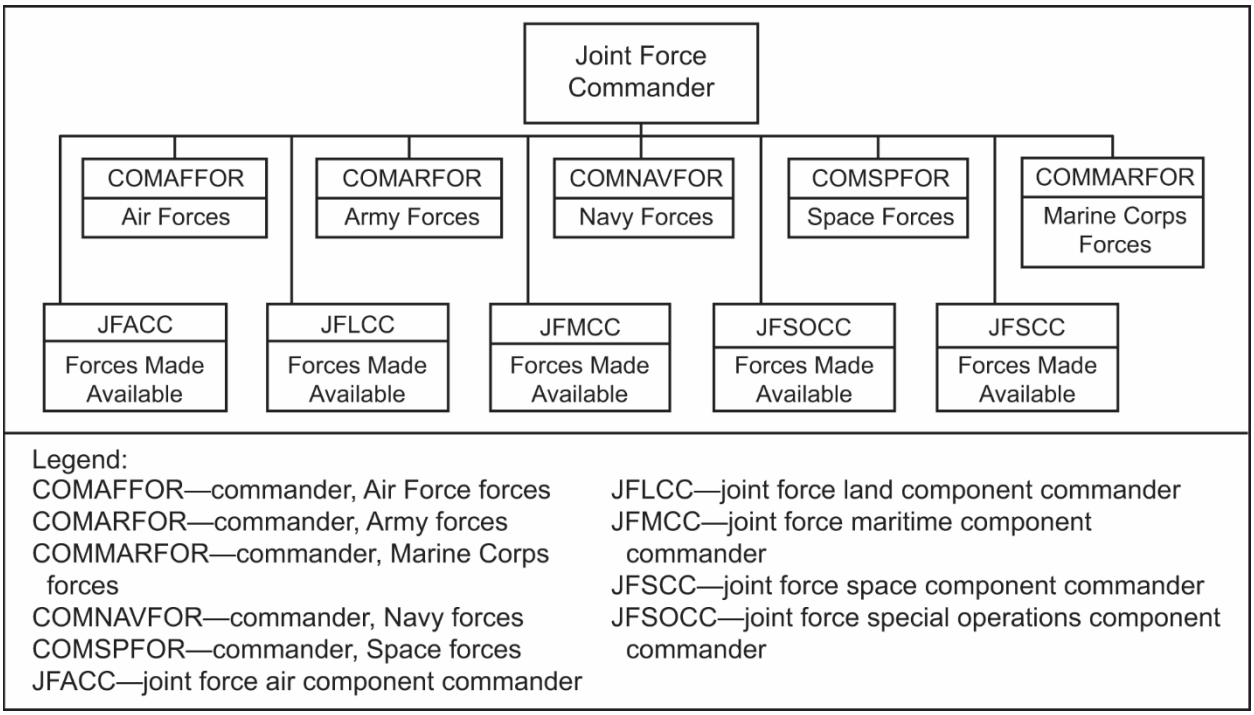

Figure 1. Joint Force Structure

(4) For the purpose of this publication, the Service component commanders are designated as the joint component level operational commanders unless stated otherwise. While joint doctrine states one individual can be a Service component commander and a joint functional component commander, the two responsibilities are different and should be executed through different staffs.

2. Joint Force Commander

a. In this publication, the term JFC refers to a CCDR, subunified commander, or joint task force (JTF) commander authorized to exercise combatant command (command authority) (COCOM) or operational control (OPCON) over a joint force. The JFC has the authority to organize assigned or attached forces to accomplish the assigned mission. See JP 1, Vol 2, *The Joint Force*, for more information. The JFC:

(1) Designates joint force functional component commanders.

(2) Assigns authorities, responsibilities, and missions. Establishes command relationships and delegates authorities to include: ACA, AADC, joint personnel recovery coordinator (JPRC), etc.

(3) Allocates resources and apportions assets.

b. The JFC directs the weight of the joint air effort by providing guidance, objectives, targeting priorities, air apportionment, C2, logistics, joint fire support coordination measures (FSCM), and rules of engagement. The purpose is to attain desired effects during each phase of the campaign plan. Additionally, the

JFC establishes supported and supporting relationships between the joint force component commanders.

Note: Air apportionment is the JFC's determination and assignment of the total expected air effort (by percentage or priority) devoted to the air operations for a given period. Apportionment affects all aspects of joint air operations. See JP 3-30, *Joint Air Operations* for more information.

c. The TAGS is comprised of the combined component C2 elements. Joint force components must work together in planning and executing joint air operations accomplishing JFC-assigned objectives, complying with JFC guidance, and satisfying component commanders' requirements. The challenge to personnel working within the TAGS is to operate a system that is responsive to all components and supported echelons while accomplishing the JFC's objectives.

3. Joint Force Air Component Commander

a. The JFC designates the JFACC to establish unity of command and unity of effort for joint air operations. The JFC designates the COMAFFOR, commander, Navy forces (commonly referred to as COMNAVFOR) or commander, Marine forces (COMMARFOR) as the JFACC, predicated upon the ownership of the preponderance of air assets and the ability to C2 them. The JFC establishes the JFACC's authority, command relationships, and responsibilities, which include TACON over forces made available for tasking. All supporting commands must ensure liaison elements of the TAGS are in place before beginning operations. The JFACC plans and tasks joint air operations through the joint air operations plan (JAOP), air operations directive (AOD), air tasking order (ATO), and other guidance within a responsive and integrated control system.

b. The joint air operations center (JAOC) is the C2 organization through which the JFACC plans, coordinates, allocates, controls, and tasks joint air operations. JFACC responsibilities include the following:

(1) Develop a JAOP to support the JFC's concept of operations (CONOPS) or OPLAN. The JAOP contains the commander's intent for each phase of the operation.

(2) Recommend air apportionment priorities to the JFC, after considering objective, priority, or other criteria and consulting with other component commanders.

(3) Allocate and task air capabilities and forces made available through the JFC's air apportionment decision.

(4) Develop daily anticipatory guidance for constructing the AOD. The AOD contains the JFACC's intent for specific ATO periods.

(5) Provide oversight and guidance during execution of joint air operations and make timely adjustments to taskings. The JFACC coordinates with the JFC and affected component commanders, as appropriate, when the situation requires changes to planned joint air operations.

(6) Assess the results of joint air operations and forward the assessments to the JFC in support of the overall assessment effort.

(7) Perform space coordination duties, if designated by the JFC. The JFACC may be responsible for coordinating and integrating space capabilities in the operational area and have primary responsibility for joint space operations, planning, and requirements within the joint force. See JP 3-14, *Space Operations*, for more information.

(8) Coordinate cyberspace operations through the combatant command (CCMD) joint cyberspace center (JCC) and with the applicable cyberspace coordination authority. The cyberspace coordination authority requests and prioritizes cyberspace capabilities and cyberspace planning for the JFACC mission, in support of the CCDR mission.

Note: Cyberspace effects do not follow the typical air operations center (AOC) air tasking cycle given differences in authorities, planning, targeting and weaponeering. Coordination requirements shared among the authorities for cyberspace effects and AOC lethal/nonlethal effects must be resolved due to deconfliction and synchronization of joint operations responsibilities. In most cases, the JCC uses portions of the AOC air tasking cycle to solve the deconfliction and synchronization problem. See JP 3-30 for additional information on the air tasking cycle.

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(9) Perform JPRC duties. See JP 3-50, *Personnel Recovery*, for a detailed discussion of personnel recovery (PR).

(10) Collection authority (Ch III 2.c).

(11) Perform tasks within the following mission areas:

(a) Counterair (defensive counterair (DCA) and offensive counterair (OCA)).

(b) Close air support (CAS).

(c) Airborne intelligence, surveillance, and reconnaissance (ISR) and incident awareness and assessment.

(d) Air mobility operations.

(e) Strategic attack.

(f) Air interdiction (AI).

- The JFACC is the supported commander for the JFC's overall AI effort.

- The JFACC is the supporting commander to the joint force land component commander (JFLCC) and joint force maritime component commander (JFMCC) for AI within their area of operations (AO).

c. The JFC normally designates the JFACC as the ACA. The ACA must integrate and coordinate the airspace requirements with host nation countries, all components, and multinational forces on behalf of the JFC. The ACA normally delegates airspace control to elements of the airspace control system (ACS). The

ACS requires timely exchange of information through reliable, secure, and interoperable communications networks. In addition to ACA/airspace management, these airspace control elements are often delegated additional authorities. To enable ATO execution, the airspace control elements perform roles that include air battle management (e.g., C2 joint air operations), air defense (combat identification, early warning, weapons control status, target tracking, DCA), and/or surveillance and reconnaissance. Reference JP 3-52, *Joint Airspace Control*, for more information. ACA responsibilities include:

(1) Developing broad policies and procedures for airspace control and coordination required of all users of airspace within the airspace control area.

(2) Establishing an ACS that integrates host and other affected nations' constraints and requirements.

(3) Coordinating and deconflicting airspace requests based on operational usage requirements. Publishing and disseminating the airspace control order (ACO) that implements specific control procedures for established time periods.

(4) Promulgating ACS policies and procedures via the JFC-approved ACP. Centralized direction by the ACA does not imply assumption of OPCON or TACON over any air assets.

d. The JFC normally designates the JFACC as the AADC. The AADC is responsible for DCA operations, which include the integrated air defense system for the JOA. DCA and OCA operations combine as the counterair mission, which is designed to attain and maintain the degree of control of the air and protection desired by the JFC. In coordination with the component commanders, the AADC develops, integrates, and distributes a JFC-approved AADP. Typically, for forces made available for DCA, the AADC retains TACON of air sorties, while surface-based air and missile defense forces (e.g., phased array tracking radar to intercept of target (PATRIOT) missile systems) may be provided in support from another component commander. As such, the Army air and missile defense command (AAMDC) should be collocated with the JAOC, if established, and conduct collaborative intelligence preparation of the battlefield, planning, and execution control. In distributed operations, the AAMDC may not be in the JAOC but is still functionally tied to it. The Navy component commander (NCC) or JFMCC, if designated exercises OPCON of maritime multimission and missile defense ships. When designated, these air and missile defense capabilities are in direct support of the AADC for C2 and execution of air defense.

(1) Area Air Defense Considerations. DCA operations are integrated with other air operations within the operational area through the AADP and ATO. The AADC normally develops an integrated air defense system by integrating the capabilities of different components with a robust C2 architecture. Because of their time-sensitive nature, DCA operations require streamlined coordination and decision-making processes, facilitated by the AADP. The AADP is the integration of active air defense design, passive defense measures, and the C2 system to provide a comprehensive approach to

defending against the threat. It should address command relationships, the enemy, adversary, and friendly situations, the AADC's intent, CONOPS, and logistics and C2 requirements, as well as detailed weapons control and engagement procedures. Weapons control procedures and airspace control procedures for all air defense weapon systems and forces must be established. These procedures facilitate DCA operations while minimizing the risk of friendly fire incidents. Planners are routinely required to modify the AADP due to the dynamic nature of joint counterair operations. The AADP should also be integrated with the ACP to ensure airspace control areas/sectors are synchronized with air defense regions/sectors. Ideally, as the JFC's operation/campaign progresses and the AADP is refined, the combination of DCA and OCA operations should diminish the enemy's ability to conduct air and missile attacks, reducing the requirement for DCA operations and the threat to the JFC's freedom of action.

(2) AADC responsibilities include the planning, integration, synchronization, and coordination of DCA operations with other tactical operations throughout the JOA. This may be facilitated by the JFC's designation of regional air defense commanders (RADC) and/or sector air defense commanders (SADC) to enhance decentralized execution of DCA. Additional AADC responsibilities include:

(a) Develop, integrate, and distribute a JFC-approved AADP in coordination with Service and functional components.

(b) Appoint a deputy AADC, as required, to advise on how to integrate and synchronize Service component DCA capabilities and assets.

(c) Develop and execute a detailed plan to disseminate timely air and missile warning and cueing information to components, forces, multinational partners, and civil authorities, as appropriate, in coordination with the intelligence directorate of a joint staff (J-2), the operations directorate of a joint staff (J-3), and the communications system directorate of a joint staff (commonly referred to as J-6).

(d) Develop and implement identification and engagement procedures that are appropriate to the air and missile threats.

(e) Establish timely and accurate track reporting procedures among participating units to provide a consistent common tactical picture.

(f) Make DCA recommendations after consultation with DCA representatives from the joint force components.

(g) Make OCA attack operations recommendations to help counter the air and missile threat.

(h) See JP 3-01, *Countering Air and Missile Threats* and JP 3-30 for more information on AADC responsibilities.

4. Joint Force Land Component Commander

The JFLCC's responsibilities are to plan, coordinate, and employ forces and capabilities as made available for tasking in support of the JFC. See JP 3-31, *Joint Land Operations*, for more detailed information. The responsibilities of the JFLCC include:

a. Provide options to the JFC for employing assigned and attached forces.

b. Develop the joint land operations plan, and operational orders to support the JFC and maximize land combat power throughout the JOA.

c. Provide mutual support to other components by conducting land-based operations such as suppression of enemy air defenses (SEAD), threats to maritime operations, and the physical locations of cyberspace and space threats.

d. Provide an assistant or deputy to the AADC for land-based joint theater integrated air and missile defense (IAMD) operations and coordination.

5. Joint Force Maritime Component Commander

a. The JFMCC's responsibilities are to plan, coordinate, and employ forces and capabilities made available for tasking in support of the JFC. See JP 3-32, *Joint Maritime Operations* for more detailed information.

b. The Navy forces (NAVFOR) component of a JFMCC has an organic, robust IAMD system. The NAVFOR provides:

(1) IAMD along the littorals and seaward across the maritime AO.

(2) Aircraft sorties for DCA and OCA tasking under TACON of the JFACC or AADC.

(3) SADCs or RADCs.

c. The Fleet Marine Forces (FMF) may be part of the JFMCC for certain maritime- centric operations such as an amphibious operation. Once established as a land force, the FMF may remain under the JFMCC, serve as a Service component force, or become subordinate to the JFLCC.

6. Joint Force Special Operations Component Commander

The Joint Force Special Operations Component Commander (JFSOCC) exercises C2 of assigned or attached special operations forces (SOF) and is responsible for making recommendations on the employment of assigned, attached, or made-available- for-tasking SOF assets; planning, coordinating, and synchronizing special operations (SO) with other components; or accomplishing operational missions as assigned. The CCDR, in conjunction with United States Special Operations Command (USSOCOM) and the theater special operations component commander, designates the special operations joint task force (SOJTF) commander as the JFSOCC when a JFSOCC is required. The Commander, United States Special Operations Command (CDRUSSOCOM) exercises COCOM of all SOF. The CCDR exercises OPCON of assigned or attached SOF through the commander, theater special operations command (CDRTSOC) or JFSOCC. See JP 3-05, *Joint Doctrine for Special Operations*, for more detailed information.

7. Operational Liaisons

a. Liaison between forces is essential for coordinated and effective joint air operations. Component commanders exchange liaison elements to assist and coordinate the planning and execution of their component's operations with joint air operations. Liaison elements provide senior-level interface for air, land, maritime, space, cyberspace, and SOF. These elements consist of personnel who provide component planning and tasking expertise, coordination capabilities, and the ability to deconflict component operations and joint air operations. A brief summary follows of typical liaison elements. Reference JP 3-30 for more information.

b. Liaisons to the JTF. A joint air component coordination element (JACCE) may be assigned to the JTF by the theater JFACC. The JACCE provides direct communication and facilitates coordination between the JTF and the theater JFACC. The JACCE possesses the authority to represent the theater JFACC on critical issues and assists the JTF in air support planning functions. Additionally, a JACCE may also be assigned to a component commander as needed (e.g., JFLCC, JFMCC, etc.). The joint force liaison structure to the JFACC is shown in figure 2.

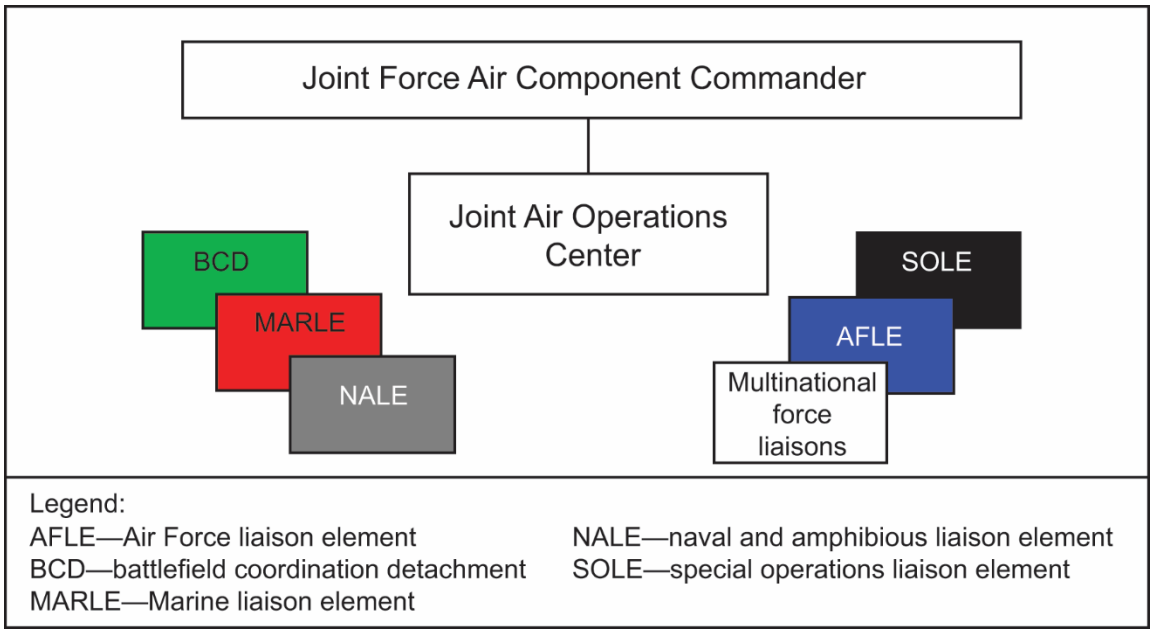

Figure 2. Liaisons to the JFACC

c. Battlefield Coordination Detachment (BCD). The BCD is the primary liaison from the commander, Army forces (COMARFOR) to the JAOC. It is a standing organization, assigned to an Army Service component command (ASCC) and located with the Air Force AOC supporting a CCDR. The BCD coordinates the ground maneuver commander's plan with supporting air operations. The BCD integrates with the JAOC and participates in joint C2 processes (i.e., the joint air tasking cycle). See Field Manual (FM) 3-94, *Armies, Corps, and Division*

Operations and Air Force Tactics, Techniques, and Procedures (AFTTP) 3-3.AOC for more information.

d. Marine Liaison Element (MARLE). The MARLE is provided as the Marine Corps' contribution to the liaison staff within the AOC. The MARLE consists of trained personnel who provide component planning and tasking expertise and coordination capabilities on behalf of the Marine air-ground task force (MAGTF) commander. They help integrate and coordinate MAGTF operations with joint air operations.

e. Special Operations Liaison Element (SOLE). The SOLE is the JFSOCC's liaison to the JFACC in the JAOC. The SOLE deconflicts all SOF air, surface, and subsurface activities with operations involving JFACC assets.

f. Naval and Amphibious Liaison Element (NALE). The NALE is the primary liaison from the NAVFOR commander to the JAOC. The NALE processes NAVFOR requests for air support and monitors and interprets the maritime battle situation for the JAOC. The NALE serves as the interface for exchanging operational and intelligence data, coordinates maritime requirements for air defense support, provides interdiction, and monitors Navy-controlled airspace and air traffic control (ATC) requirements.

g. Air Force Liaison Element (AFLE). When the JFACC is not the COMAFFOR, the COMAFFOR provides an AFLE from the Air Force forces (AFFOR) staff as an interface to the JFACC for coordinating and synchronizing Air Force units in support of joint air operations. The AFLE is not a standing AFFOR element and is established only when required.

h. Liaisons to the JFLCC. The JFACC has access to the JFLCC and the joint operations center (JOC) staff through the JACCE. The JACCE works for the JFACC and works with the JFLCC and JOC staff. The JACCE provides direct communication and facilitates coordination between the JFLCC and the JFACC. The JACCE possesses the authority to represent the JFACC on time sensitive and critical issues and assists the JFLCC in air support planning functions. A special operations command and control element (SOCCE) is the focal point for the synchronization of SOF activities with conventional forces activities.

i. Liaisons to the JFMCC and JFSOCC. Other component commanders may require access to the JFMCC and the JFSOCC. The JFACC may establish one or more JACCE with other components (e.g., JFMCC or JFSOCC) or supported JTF headquarters (HQ) to integrate air component operations with their operations. Other components may provide the JFMCC and JFSOCC liaisons. Figure 3 shows an example of the interface between the JFACC and the JFMCC.

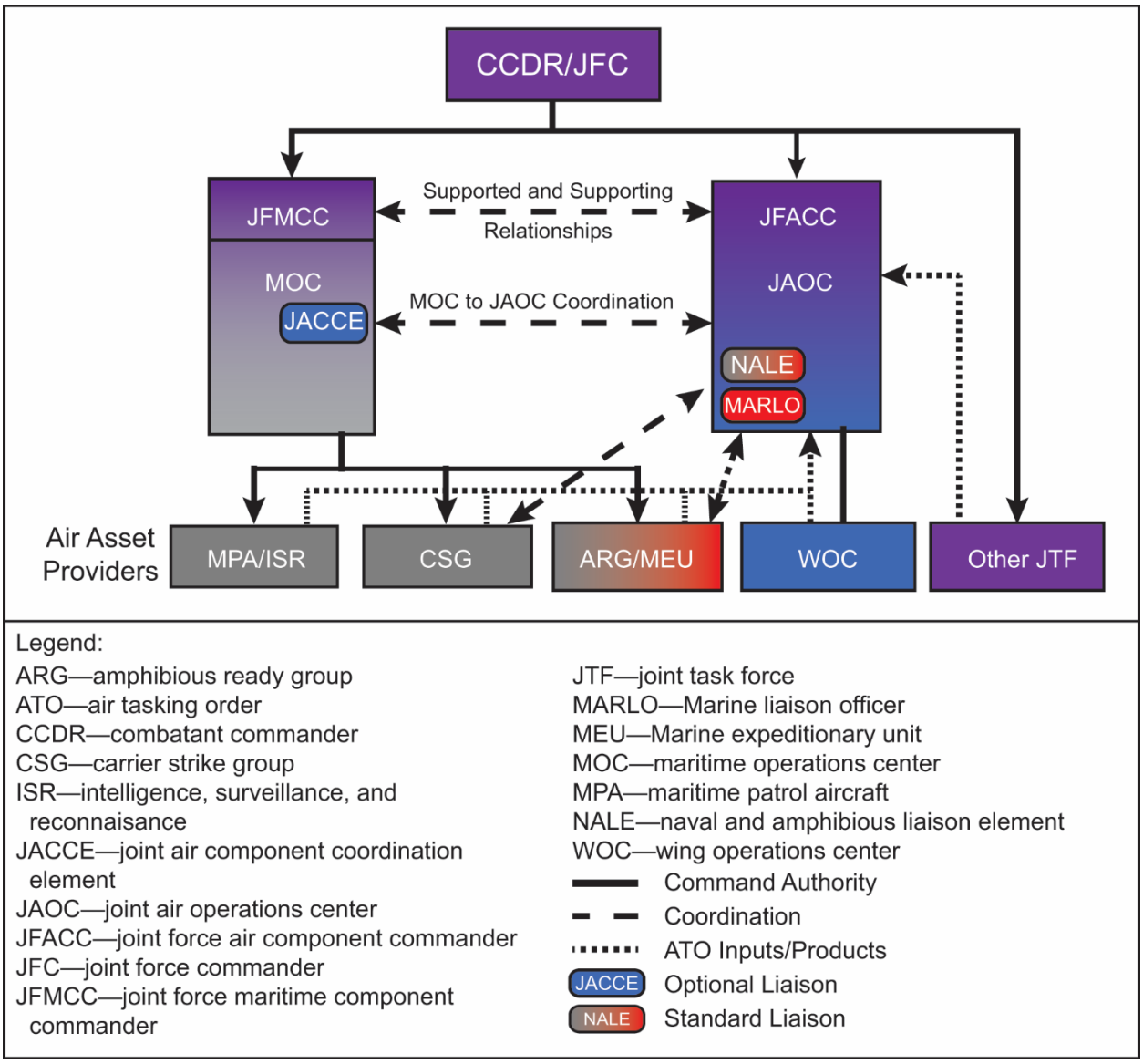

Figure 3. Example JFACC to JFMCC Interface

8. Theater Air-Ground System Planning Considerations

When conducting operations in contested or degraded operational environments, commanders must plan for potentially reduced effectiveness of TAGS elements. It is important to develop alternate C2 architectures to maintain the TAGS' effectiveness.

Commanders can tailor the TAGS for a wide range of military operations across the competition continuum to include operations below the level of armed conflict and operations in denied or degraded environments, as in the following list:

a. Large-Scale Combat Operations (LSCO). The competition for airspace, communications, and the timing and priority of missions present challenges. The TAGS enables all components to participate in the decision-making process, synchronizing efforts to meet the JFC's guidance.

b. Limited Contingency Operations. These operations present a unique challenge as they often involve a combination of military forces operating in close proximity with host nation an interorganizational participants. Although limited contingency operations are typically narrow in scope, scale, and focus, they present a challenge for commanders and may require CCDRs and JFCs to tailor the TAGS to meet requirements. This may include providing additional liaisons to host nation or interagency organizations.

c. Sustainment operations create airspace management and fires integration challenges as host nation stability conditions are established. The static and repetitive nature of stability operations allow the commander to tailor the TAGS to become more efficient.

d. Humanitarian Assistance. Integrating TAGS with civil, military, foreign governments, or nongovernmental organizations during humanitarian assistance or disaster relief missions may be necessary. In these instances, some TAGS elements may not be available for tasking and planners should identify measures to address shortfalls.

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Chapter II
Army Air-Ground System

1. Background

a. The AAGS is a vital part of the Army C2 system that connects to the TACS to enable air-ground operations. AAGS is the Army's control system for synchronizing, coordinating, and integrating air operations with the ground commanders' operational objectives.

b. The AAGS provides the framework for initiating and processing component air support requests, collection requirements, airspace integration, joint fires, air and missile defense (AMD), and liaison exchanges. The AAGS and TACS enhance air-ground operations for their components by conducting critical functions and creating effects for joint operations.

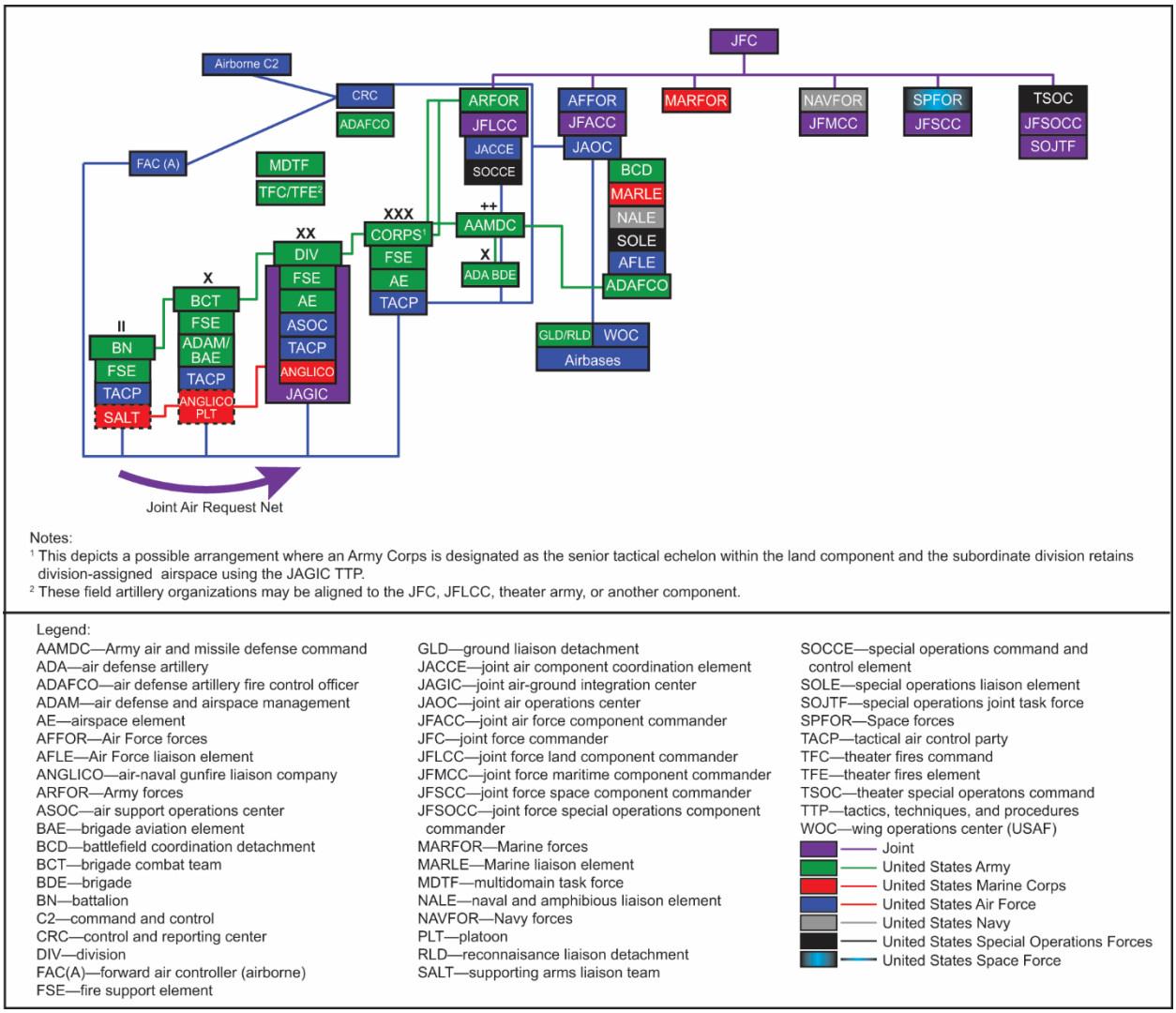
c. The Army forces (ARFOR) is the Army component of any joint force and the senior Army HQ of all Army forces assigned or attached to a CCMD, subordinate joint force command, joint functional command, or multinational command. The theater Army initially maintains control of all Army units assigned to an AOR until control is passed to the senior Army forces commander in a JOA.

d. Airspace. Commanders at all echelons have the responsibility to plan, coordinate, integrate, and regulate assigned and supporting airspace users within their AO. Airspace management is an inherent responsibility of commanders to manage their forces/assets in the air domain per the prescribed directives and guidance.

2. Echelons of Command

Understanding the roles and functions of the various echelons of command is essential to understanding the functionality of the AAGS. Armies, corps, and divisions (DIV) provide the joint force with flexible and tailorable formations and HQ. Armies, corps, and DIVs conduct operations across the competition continuum as part of a joint and multinational force. Figure 4 displays elements of the TACS/AAGS.

a. Theater Army. The theater Army is the ASCC for a CCMD and recommends the allocation and employment of ARFOR and on other matters for which the Army is responsible. With augmentation, the theater Army may serve as the JTF HQ, JFLCC for limited contingency operations, or be the theater JFLCC when designated by the CCDR. See FM 3-94 for more information.



Notes:
[1] This depicts a possible arrangement where an Army Corps is designated as the senior tactical echelon within the land component and the subordinate division retains division-assigned airspace using the JAGIC TTP.
[2] These field artillery organizations may be aligned to the JFC, JFLCC, theater army, or another component.

Legend:
AAMDC—Army air and missile defense command
ADA—air defense artillery
ADAFCO—air defense artillery fire control officer
ADAM—air defense and airspace management
AE—airspace element
AFFOR—Air Force forces
AFLE—Air Force liaison element
ANGLICO—air-naval gunfire liaison company
ARFOR—Army forces
ASOC—air support operations center
BAE—brigade aviation element
BCD—battlefield coordination detachment
BCT—brigade combat team
BDE—brigade
BN—battalion
C2—command and control
CRC—control and reporting center
DIV—division
FAC(A)—forward air controller (airborne)
FSE—fire support element
GLD—ground liaison detachment
JACCE—joint air component coordination element
JAGIC—joint air-ground integration center
JAOC—joint air operations center
JFACC—joint air force component commander
JFC—joint force commander
JFLCC—joint force land component commander
JFMCC—joint force maritime component commander
JFSCC—joint force space component commander
JFSOCC—joint force special operations component commander
MARFOR—Marine forces
MARLE—Marine liaison element
MDTF—multidomain task force
NALE—naval and amphibious liaison element
NAVFOR—Navy forces
PLT—platoon
RLD—reconnaisance liaison detachment
SALT—supporting arms liaison team
SOCCE—special operations command and control element
SOLE—special operations liaison element
SOJTF—special operations joint task force
SPFOR—Space forces
TACP—tactical air control party
TFC—theater fires command
TFE—theater fires element
TSOC—theater special operatons command
TTP—tactics, techniques, and procedures
WOC—wing operations center (USAF)
Joint
United States Army
United States Marine Corps
United States Air Force
United States Navy
United States Special Operations Forces
United States Space Force

Figure 4. TACS/AAGS

b. Field Army. When constituted by a JFC or theater Army commander, the field Army is established, manned, and equipped to perform roles as an ARFOR in a joint force for LSCO or serve as a JFLCC commanding multiple Army corps and Marine forces. The field Army performs ARFOR and joint roles during competition that exceed a corps' capability and enables the theater ASCC to maintain its AOR-wide orientation.

c. Corps. In LSCO, corps HQ normally function as an operational land HQ under the joint land component. The corps HQ is organized, trained, and equipped to control the operation of two to five DIVs with supporting organizations. Joint capabilities are the primary means available to the corps commander for setting conditions and shaping the environment for DIV operations. When operating independently during large-scale combat, the corps may serve as the ARFOR, or as the nucleus for a JFLCC or JTF HQ, but it requires significant joint force augmentation.

d. DIV. The DIV's primary role in LSCO is as a tactical formation commanding two to five Army brigade (BDE) combat teams (BCT) with two to four functional and multifunctional brigades. The DIV may fulfill the ARFOR role for operations of limited scope and duration. Under such conditions, it may form the nucleus for a very small-scale JTF or JFLCC.

e. BCT. The BCT is the Army's primary combined arms close combat force whose versatility and modularity are effective across the land domain. There are three types of BCTs: armored, infantry, and Stryker. BCTs:

(1) Have organic capabilities across the warfighting functions, C2, movement and maneuver, intelligence, fires, sustainment, and protection.

(2) Can be task organized by higher echelon commanders for specific missions.

(3) Typically have two to three maneuver battalions (BN), a cavalry squadron, a field artillery BN, a sustainment BN, and an engineer BN.

f. BN. BN organizations are tactical units assigned or attached to brigades. The BN is the smallest Army echelon with a command post (CP) and staff to execute the operations process that results in published formal orders.

3. Army Air-Ground System Integration

a. Joint air-ground integration is achieved by nesting the Army's operations and processes with the joint air tasking cycle. The Army processes preplanned support requests through the Army chain of command. The COMARFOR provides guidance on timing for the following requests:

(1) Immediate joint tactical air strike requests (JTAR) (Department of Defense form, DD Form 1972, *Joint Tactical Air Strike Request*).

(2) Preplanned Air support requests (AIRSUPREQ) (D670).

(3) Airspace coordinating measures requests (ACMREQ) (F658).

(4) Allocation requests (ALLOREQ) (A655).

(5) Air mission request status/tasking (A661).

(6) Collections requirements in support of component planning and preparation.

b. The Air Support Operations Center (ASOC) is responsible for direction and control of joint air operations in direct support of ground forces. The ASOC is aligned at the Army echelon above brigade (EAB) most capable of integrating fires and effects and procedural control. Normally the ASOC will operate at the DIV level to serve as part of the joint air-ground integration center (JAGIC) that controls division-assigned airspace. ASOCs will be aligned with associated DIVs to develop teamwork and maintain combat readiness. The tactical air control party (TACP) consists of air liaison officers (ALO) and joint terminal attack controllers (JTAC) integrating joint capabilities to create desired effects to

support the ground scheme of maneuver. TACPs support maneuver elements at the corps, DIV, BDE, and BN levels, but may be employed at any echelon in support of specific missions of limited duration.

4. Army Air-Ground System Elements

a. The senior Army echelon is responsible for the operation of the AAGS, especially the BCD, AAMDC, and ground liaison detachments (GLD).

Note: Collective and individual tasks to develop unit training plans are available for download at the Army Training Network (https://atn.army.mil) and the Central Army Registry (https://rdl.army.mil/catalog/dashboard).

b. The supported commander accomplishes the following tasks to leverage joint assets:

(1) Exchange liaisons with the supporting commands, ensuring integration into the supported and supporting elements. Elements must incorporate liaisons into battle rhythms with a clear understanding of the supported commander's intent, CONOPS, plans, and current operations.

(2) Identify external support requirements for the supporting command to plan, prepare, and execute per the JFC's approved battle rhythm.

(3) Define support requirements to include the CAS distribution decision.

(4) Coordinate operations with other affected components and the JFC.

(5) Make air apportionment recommendation to the JFC.

c. When requirements exceed organic capabilities, the senior Army HQ consolidates, approves, and sends preplanned AIRSUPREQs to the BCD at the JAOC. All Army units' airspace requirements are identified by sending ACMREQs through the AAGS to the ARFOR; the ARFOR sends a consolidated unit airspace plan (UAP) and ACMREQs to the BCD for inclusion in the ACO.

d. A BCD is an Army unit assigned to an ASCC functioning as the primary interface between the JFLCC and JFACC. The BCD coordinates the ground maneuver commander's plan and supporting air operations. The BCD integrates with the JAOC and participates in joint C2 processes (i.e., the joint targeting cycle and the joint air tasking cycle). The BCD:

(1) Articulates the COMARFOR's or JFLCC's requests and requirements for air operations in support of the ground CONOPS.

(2) Coordinates with, and receives, objectives, guidance, and priorities from the COMARFOR and staff. The COMARFOR staff must continuously advise the BCD on matters pertaining to current and future operations and air support requirements.

(3) Processes preplanned AIRSUPREQs and ACMREQs.

(4) Monitors and interprets the land battle situation for JAOC personnel and provides the interface for exchanging current intelligence and operational data between the ARFOR and JAOC. See Army techniques publication (ATP) 3-

09.13, *The Battlefield Coordination Detachment*, for more information on the BCD.

e. The GLD is an Army liaison element assigned to the ASCC, OPCON to each BCD, and co-located at operational Air Force flying squadrons or wings.

(1) GLDs advise Air Force commanders on Army organizations, ground force operations, tactics, capabilities, doctrine, and air support requirements. A GLD consists of one combat arms officer, called the ground liaison officer, and one fire support noncommissioned officer equipped with organic Army communication systems.

(2) GLDs serve as information conduits between the supporting air components and supported Army units. GLDs brief aircrews on the supported Army unit commander's intent and CONOPS. They also provide updates on the ground tactical situation, targets, and JTARs.

(3) GLDs debrief aircrews after missions and provide operational and intelligence data to the BCD. GLDs may be afloat with a carrier strike group (CSG) or expeditionary strike group (ESG) when Navy air assets are supporting ARFOR.

f. The reconnaissance liaison detachments (RLD) provide liaison and coordination with Air Force reconnaissance squadrons. RLDs ensure supporting assets satisfy requests for aerial collection and meet the supported commander's current collection priorities.

g. The commander, AAMDC, is designated the theater Army air and missile defense coordinator by the theater Army commander or the JFLCC (if established).

h. The AAMDC:

(1) May be designated as a deputy AADC.

(2) Participates in developing the AADP.

(3) Coordinates with joint partners to develop procedures for AMD operations and interoperability.

(4) Plans, coordinates, integrates, and executes AMD for the CCDR/JFC, COMARFOR, or JFLCC.

(5) Provides BCD with AMD analysis for intelligence preparation of the battlefield development and refinement.

(6) Provides AMD target nominations for high payoff targets. See Army doctrine publication (ADP) 3-19, *Fires*, and JP 3-01 for more information.

i. The air defense artillery fire control officer (ADAFCO) is the single point of contact between Army land-based AMD fire direction centers and the joint or Army controlling authority.

(1) The AAMDC ADAFCO and a Navy liaison for the advanced electronic guided interceptor system (better known by the acronym AEGIS) are located

with the AADC or JFACC and the senior air defense officer (SADO) at the JAOC. They are responsible for coordinating and deconflicting upper-tier ballistic missile engagements. The AAMDC ADAFCO maintains communications with the air defense artillery (ADA) BDE ADAFCOs at the RADC's or SADC's location to share situational awareness with the mission crew commanders or senior weapons directors.

(2) ADA BDE ADAFCOs are located with a control and reporting center (CRC), on an aircraft carrier, amphibious assault ship, cruiser, destroyer, at a tactical air operations center (TAOC), or an Airborne Warning and Control System (AWACS).

(3) The ADA BDE ADAFCO is responsible for lower-tier engagements within a particular region or sector. Lower-tier engagements include terminal phase engagements of ballistic missiles, air-surface missiles, and air breathing threats (aircraft and cruise missiles). The ADAFCO is the Army's link between PATRIOT missile units and the joint controlling agency and issues all fire control orders to their subordinate units.

j. ADA BDEs support theater-level operations using Terminal High Altitude Area Defense (THAAD) and PATRIOT assets and can provide additional forces, which include counter-rocket, artillery, mortar system of systems, and short-range air defense capabilities. ADA forces at the BDE level are employed to protect operational forces and assets from air and missile attack. The ADA BDE commander advises the AAMDC commander on overall counter-air and AMD integration, synchronization, and employment. ARFOR ADA BNs are task organized under ADA BDEs to defend designated assets. ADA short-range BNs are also organic to DIVs and support DIV and BCT operations.

k. CPs are where commanders and staff perform the operations process to synchronize the warfighting functions, targeting, and integrating air-ground operations. Army forces field a variety of CPs, to include: a main CP, tactical CP or its equivalent, rear CP, and mobile command group. At the corps level and below, every echelon of command has a main CP and a tactical CP. Corps and DIVs are also equipped with a rear CP and mobile command group, giving them the flexibility to control deep, close, and rear areas. Unit standard operating procedures (SOP) provide detailed procedures for the CPs. See ATP 6-0.5, *Command Post Organization and Operations* for CP operations and FM 3-0, *Operations* for CP varieties.

(1) Main CP. This is an operations center containing the majority of the staff and is designed to control current operations, conduct detailed analysis, and plan future operations.

(2) Tactical CP. This facility contains a tailored portion of a unit HQ and is designed to control portions of operations for a limited time.

(3) Rear CP. The rear CP typically has responsibility for rear operations that include sustainment operations, defeating threats, support area security, risk

mitigation of areas not assigned to subordinate units, terrain management, movement control, consolidating gains, and conducting stability operations.

l. Fires Support Element (FSE) and Fires Cell (FC). The corps FSE and theater FC plan, coordinate, integrate, and synchronize the employment and assessment of organic and supporting fires with JFLCC operations. The DIV FSE or DIV JAGIC (if formed), BDE FSE, and BN FSE plan, prepare, execute, and assess fires in support of current and future operations. These FSEs back-brief targeting guidance to the commander in accordance with the commander's intent for fires and maneuver. FSEs:

(1) Develop high priority targets.

(2) Prioritize targets for attack.

(3) Match targets to a wide range of targeting and delivery systems.

(4) For more information about the FSE reference JP 3-09, *Joint Fire Support*.

m. Air defense cells are organic to corps, DIVs, and BDEs. Air defense airspace management (ADAM) cells in BCTs and AMD sections in DIVs and corps. Each air defense cell contributes to the commander's situational awareness by providing a unit level tactical air picture. These elements are responsible for synchronizing AMD operations with the commander's scheme of maneuver, resolving immediate airspace conflicts, and coordinating with other Army and joint AMD units for early warning and complementary defense coverage from enemy air and missile threats.

n. The ADAM cell is organic to a BCT. It provides the BDE commander situational understanding of the airspace and early warning via connectivity with airspace users and mission partners' sensors and command networks. The ADAM cell continuously plans for, controls, and monitors the operations of all airspace users supporting BCT operations and those transiting through the airspace over their ground commander's AO. The ADAM cell is integrated with the BDE aviation element (BAE).

o. The BAE supports the BCT as a dedicated planning and coordination cell which integrates and synchronizes Army aviation operations with the ground commander's scheme of maneuver, fires plan, and UAP. The BAE coordinates with the supporting aviation BDE or task force for Army aviation mission requirements. The BAE is also responsible for integrating airspace requirements in the BCT UAP and submits airspace requirements to its higher HQ. The BAE is integrated with the ADAM cell.

p. The airspace element (AE) is a G-3 staff element at the DIV, corps, and higher Army echelon. Airspace management is also performed by BDE ADAM elements. The AE and/or ADAM personnel are the commanders' experts to coordinate the use of airspace. Together, with the staff and supporting liaisons, the AE identifies all airspace requirements to integrate other warfighting functions (fires, intelligence, movement and maneuver, etc.) into the airspace plan. See FM 3-52, *Airspace Control*, and JP 3-52 for more detailed information.

(1) Planning and managing the use of airspace is a continuous activity of the Army's operations process and focuses on setting conditions for near-real-time airspace coordination during mission execution.

(2) AE's provide airspace control subject matter expertise throughout the military decision-making process, targeting, and current operations.

(3) The AE's primary requirement is to develop a daily UAP, via the Tactical Airspace Integration System (TAIS), that supports future operations. BDEs identify their airspace users' requirements and send their UAP to their DIV AE. This continues through the AAGS to the senior Army echelon AE who provides a consolidated UAP to the BCD per the joint force battle rhythm.

q. The fire support team (FIST). The FIST provides maneuver companies and reconnaissance troops with fire support coordination, targeting, input for terminal attack control, and assessment capabilities.

r. Joint fires observers are trained Service members who can request, adjust, and control surface-to-surface fires. They provide targeting information in support of Types 2 and 3 CAS terminal attack control and perform autonomous terminal guidance operations.

s. A field artillery BDE's primary task is conducting corps-level strike operations. It is capable of employing Army fires and incorporating electromagnetic warfare. In addition, a BDE can request joint fires and coordinate with airspace control elements. The field artillery BDE can detect and attack targets using a mix of its organic target acquisition, fires capabilities, and supporting information collection capabilities.

(1) When a field artillery BDE is attached to a corps, the BDE commander becomes that corps' fire support coordinator (FSCOORD) and is the primary advisor to the corps commander for integration of Army and joint fires. The field artillery BDE commander may designate the corps chief of fires as the deputy fire support coordinator (DFSCOORD).

(2) For more information on the field artillery BDE reference ATP 3-09.24, *The Field Artillery Brigade* and FM 3-0.

t. The senior field artillery commander at each echelon serves as the maneuver commander's FSCOORD to orchestrate fires. The DIV artillery commander is normally the DIV commander's FSCOORD. The DIV chief of fires may be designated the DFSCOORD. The DFSCOORD is responsible for targeting and integrating effects, overseeing assigned fire support personnel, and has coordinating responsibility for the ALO, cyberspace electromagnetic warfare officer (CEWO), the DIV space support element, and the JAGIC (when formed).

u. The JAGIC is optimally located in the Army DIV current operations integration cell. The JAGIC provides the commander a technique to coordinate, integrate, and control operations in DIV-assigned airspace and coordinate requirements with external airspace elements outside of the DIV area. The JAGIC consists of existing systems and personnel in the DIV and supporting air support operations squadron that makes up the ASOC and TACP. The JAGIC is a team of teams

when the JAGIC chief and the Air Force senior air director are co-located to make timely decisions as delegated by the DIV commander, the JFACC, and ACA. For more information, reference ATP 3-91.1, *The Joint Ground Integration Center*.

v. The combat aviation BDE (CAB) synchronizes the operations of multiple aviation BNs conducting simultaneous operations from single or multiple locations in the AO. The CAB must prepare to fight as a maneuver BDE, provide support to BCTs, or conduct multiple, independent missions. Aviation forces operate as part of the combined arms team integrated at the BCT level and higher. Each CAB has an organic air traffic service company that establishes and operates airfields in support of DIV operations.

w. Theater Fires Command (TFC) and Theater Fires Element (TFE). An Army TFC or TFE provides C2 of assigned fires capabilities, serves as the senior organization assigned to a theater army to integrate allocated or assigned fires capabilities, and executes critical fire support functions in all phases of unified land operations. The organizational difference between these organizations is minimal. The TFC or TFE ensures the Army's contribution to the joint targeting process is effectively planned and executed during competition and crisis and can quickly transition to LSCO in accordance with the ground commander's priorities. See FM 3-09 for additional information on the TFC and TFE.

x. Multidomain Task Force (MDTF). The MDTF provides the joint force with a formation capable of employing long-range precision fires and other effects from multiple domains in support of the commander's objectives. When required, it can be task-organized to provide capabilities to the JFC or a component commander.

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Chapter III
Air Force Theater Air Control System

1. Background

This chapter focuses on the Air Force's contribution to the TAGS and includes all the C2-related capabilities and activities associated with air, space, cyberspace, and related support operations.

a. Battle management (BM) is visualizing where forces are in time and space, when they will be at specific locations, and applying capabilities against specific threats. BM:

(1) Allows direct (real-time) monitoring and executing of operations.

(2) Synchronizes and integrates efforts with other joint air operations.

(3) Facilitates unity of effort.

(4) Reduces the expenditure of resources and risk of friendly fire.

(5) Requires building and maintaining situational awareness, managing available resources, and directing and controlling execution.

b. The JFACC establishes battle management areas (BMA) to support effective, decentralized execution and distributed control of air operations and delegated ACA and AADC responsibilities. See Appendix C, Battle Management Areas, for more information.

c. The AFFOR staff is the mechanism through which the COMAFFOR exercises OPCON and administrative control (ADCON) responsibilities across all assigned air forces. These responsibilities include:

(1) Deploying, basing, sustaining, and redeploying AFFOR.

(2) During steady-state operations, the AFFOR staff supports the COMAFFOR in operational and administrative responsibilities.

(a) The operational responsibilities include planning, executing, and assessing steady-state operations in support of the CCDR's theater campaign plan.

(b) The administrative responsibilities include activities for organizing, training, and equipping AFFORs. The AFFOR staff is responsible for the operational planning that occurs outside the air tasking cycle (e.g., deliberate planning).

(3) An AFFOR staff should be ready to fill one or more roles: that of a theaterwide Air Force Service component, an Air Force warfighting component within a JTF, or the core within a JTF HQ. While joint and Air Force doctrine state that an individual serves as both COMAFFOR and JFACC, the two responsibilities are different, and may be executed through different staffs.

2. Theater Air-Ground System and Theater Air Control System Relationship

a. The COMAFFOR uses the TACS to conduct C2 of forces and create effects throughout the operational environment. The AOC provides operational-level C2 of air component forces as the focal point for designing, planning, executing, and assessing air component operations. Subordinate elements of the TACS plan, coordinate, monitor, and execute air operations. In most operations, the COMAFFOR holds multiple positions, which can include JFACC, ACA, and AADC. In joint operations, where separate commanders are designated, close coordination is essential for unity of effort, friendly fire prevention, and joint air operations deconfliction. See JP 3-01, JP 3-30, and JP 3-52 for integration of ACA and AADC authorities under the JFACC.

b. This chapter assumes the JFC has assigned the COMAFFOR as the JFACC and AADC, with ACA and collection authority. When the COMAFFOR is also the JFACC, the AOC, with joint augmentation, becomes the JAOC.

3. Elements of the Theater Air Control System

a. JAOC. The JAOC is the senior element of the TACS and provides C2 of joint air operations. It develops a JAOP that meets the JFC's guidance. It allocates resources and tasks apportioned forces through the joint air tasking cycle and produces the ATO. The elements of the TACS are shown in figure 5. For further information on a JAOC, see DAFMAN 13-1 AOCV3, *Operational Procedures–Air Operations Center (AOC)/Operations Center (OC).* Primary JAOC functions include:

(1) Developing air operations strategy and planning documents integrating air and cyberspace operations which meet objectives and guidance.

(2) Tasking and executing day-to-day air operations; providing rapid reaction, positive control, weapons employment coordination and deconfliction; and integrating the total air effort of the air assets made available to the JFACC.

(3) Receiving, assembling, analyzing, filtering, and disseminating all-source intelligence and weather information to support air operations planning, executing, and assessment.

(4) Issuing the ACO and coordinating airspace activities for the ACA.

(5) Providing overall direction of AMD for the AADC.

(6) Planning, tasking, and executing theater airborne ISR missions.

(7) Conducting operational and tactical-level assessments, which determine mission and overall effectiveness, as required by the JFC; and supporting the theater assessment process.

(8) Producing and disseminating ATO, ACO, SPINS, OPTASKLINK messages, common operational picture guidance, and associated changes.

(9) Providing integration and support of all air mobility, including air refueling missions.

(10) Issuing space control procedures and coordinating space control activities.

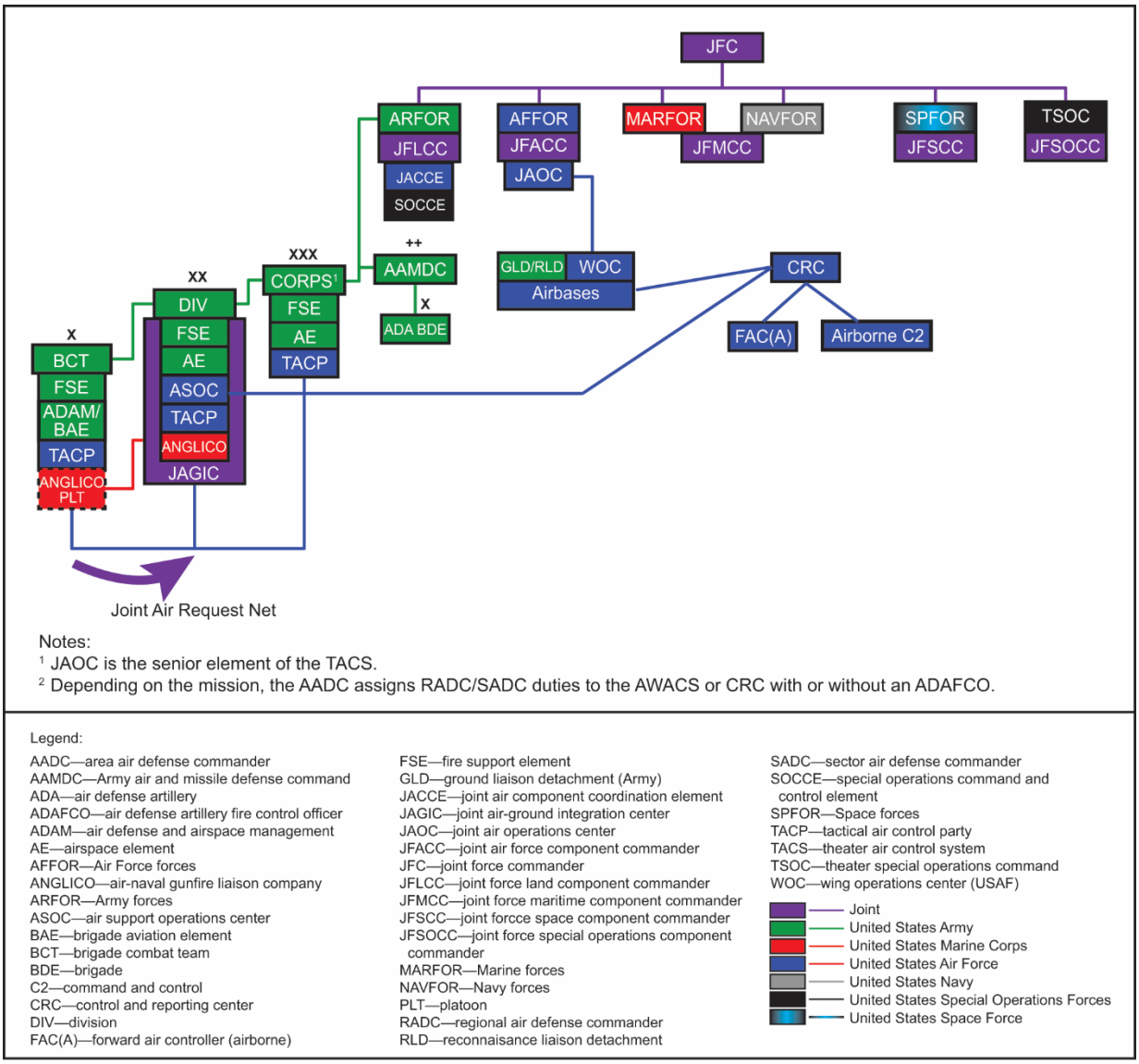

Figure 5. The TACS

b. CRC. A CRC is a ground-based mobile element of the TACS, with long-range wide-area, air target indicator radars. Radars can be collocated with the CRC or in a forward deployed radar configuration. In addition, the CRC can import and display nonorganic radar data via direct communication feeds. It is an integrated Air Force battle management C2 (BMC2) platform capable of persistent operations while providing 360 degree, wide-area surveillance; early warning; BM; target detection and tracking; and weapons control functions. The CRC is tailorable, by mission requirements, and provides support and enables tasks that facilitate the full spectrum of air power. This includes ATO execution, airspace management and integration, surveillance and combat identification, and tactical data link management. The CRC can find, fix, track, and target airborne threats

and exchange air picture data with other joint and multinational C2 systems and aircraft via various tactical data link systems. The CRC can obtain tactical data link information from other surface and airborne participants expanding or augmenting surveillance coverage. Responsibility for executing decentralized planned, dynamic, functional, geographic missions, and authorities for theater offensive/defensive air operations can be delegated to the CRC. The CRC mission commander may be delegated RADC or SADC responsibilities and is a key BMC2 element for DCA operations. It is under the TACON of the AADC and vertically integrated with the JAOC. It may be employed alone or horizontally integrated with other BMC2 and surveillance and reconnaissance elements of the TAGS. Depending on the type and phase of military operations, the JFACC may delegate all or portions of identification, commit, engagement, airspace control, and tactical data link control authorities to the CRC.

Note: ADA BDE ADAFCO elements are employed with appropriate RADC or SADC units and are responsible for integrating Army, lower-tier AMD engagement operations into the joint integrated air defense system. They may be deployed to supplement CRC and AWACS mission crews in the TACS, a TAOC, or appropriate naval systems. (Refer to chapter II for further details.)

c. Battle Control Center (BCC). The Air Force employs four BCCs in support of the commander, North American Aerospace Defense Command, and the United States (US) Northern Command, and US Indo-Pacific Command CCDRs as the primary tactical C2 nodes for homeland defense and defense support of civil authorities. The BCC is a ground based, fixed element of the TACS.

(1) It is comprised of four major systems: a BMC2 processing and display system called the Battle Control System-Fixed; primary and secondary radar capability; flight-plan processing and other contributing identification systems; and communication and data link connectivity.

(2) The BCC manages the largest operational, netted-sensor tracking architecture in the Department of Defense. It operates continuously to provide wide-area air surveillance, early warning, BM, target detection and tracking, and nonlethal warning and weapons control functions.

(3) BCC fuses all-source sensor and intelligence data into a common tactical picture and disseminates tactical warning and attack assessment information to users and decision-makers. It can perform all tasks to facilitate the full spectrum of air power, including ATO execution, airspace management and integration, surveillance and combat identification, and tactical data link management.

(4) The BCC can find, fix, track, and target airborne threats and exchange air picture data with other joint and allied C2 systems and fighter aircraft through tactical data link systems. The BCC receives tactical data link information from other surface and airborne participants, which augments the surveillance and tactical air picture. The BCC can distribute the tactical air picture (including plot level data) directly to the AOC and CCDR. It can operate autonomously if connectivity is denied with the AOC. In addition, each BCC

can provide immediate, mutual support and redundancy if one of the adjacent sectors becomes inoperative.

(5) The BCC is typically under the TACON of the JFACC and vertically integrated with the JAOC. It may be employed alone or horizontally integrated with other BMC2 surveillance and reconnaissance elements. Depending on the type and phase of military operations, the JFACC may delegate all, or portions of identification, commit, engagement, airspace control, and data link control authorities to the BCC.

Note: For US-only air operations within the continental US, the Commander, Air Force North/1st AF is designated COMAFFOR, JFACC, AADC, and is delegated space coordination authority.

d. E-3B/C/G Airborne Warning and Control System (AWACS).

(1) The AWACS is an airborne tactical air control element capable of wide-area surveillance and an air and maritime moving target indicator radar. It is an integrated platform capable of persistent operations providing 360-degree, wide-area surveillance; early warning; BM; target detection and tracking; and weapons control functions.

(2) The AWACS is tailorable to mission requirements and provides support to the full span of warfighting functions by performing ATO execution, airspace management and integration, surveillance, combat identification, and tactical data link management.

(3) The AWACS' elevated radar system can find, fix, track, and target airborne threats at lower altitudes and extended ranges compared to ground-based radars.

(4) The AWACS can exchange radar sensor data with other joint and multinational C2 systems and fighter aircraft via various tactical data link systems. The AWACS can obtain tactical data link information from other surface and airborne participants, expanding or augmenting surveillance coverage. It can identify and locate airborne and ground-based emitters with an integrated radio frequency passive detection system.

(5) The AWACS mission commander may be delegated RADC or SADC responsibilities and is a key BMC2 element for DCA operations.

(6) The AWACS is under the OPCON of the COMMAFOR but can be made available to the JFACC to employ using TACON authority and vertically integrated with the JAOC. It may be employed alone or horizontally integrated with other BMC2 and surveillance and reconnaissance elements of the TAGS. Depending on the type and phase of military operations, the JFACC may delegate all or portions of identification, commit, engagement, airspace control, and tactical data link control authorities to the AWACS.

e. Air Support Operations Group (ASOG). The Air Force provides an ASOG to support a corps when the corps operates as the senior tactical echelon. The ASOG includes a corps TACP and the appropriate C2 architecture. The corps TACP provides air-ground integration, planning, and execution capabilities in direct support of the corps. When deployed, the ASOG becomes the expeditionary air support operations group.

f. Air Support Operations Squadron (ASOS). In garrison, the Air Force aligns an ASOS to support a DIV and maneuver echelons. The ASOS includes DIV, BDE, and BN TACPs and an ASOC. The ASOS provides air-ground integration, planning, and execution capabilities in support of ground maneuver commanders. The ASOC is an essential part of the JAGIC tactics, techniques, and procedures (TTP) when a DIV is assigned a volume of airspace to control.

g. ASOC. The ASOC is the primary control agency of the TACS for execution of airpower in direct support of land operations. As a direct subordinate element of the JAOC, the ASOC is responsible for directing and controlling air operations in its assigned area. The ASOC is aligned at the Army echelon above BDE most capable of integrating fires and effects and procedural control. When co-located with the DIV, the ASOC can form the JAGIC by integrating with the DIV fires, airspace element, air and missile defense, and aviation elements.

(1) The ASOC:

(a) Executes the ATO, as directed by the JFACC, to meet the ground commander's objectives by coordinating and integrating airpower in support of ground operations.

(b) Provides procedural control of air component aircraft operating in the AO.

(c) Establishes, maintains, and operates the autonomous communications architecture, including the joint air request net (JARN), necessary for mission execution.

(d) Provides decentralized air support coordinated with the commander's weight of effort and priority of fires.

(e) Coordinates with adjacent joint agencies for integrated fires and airspace management.

(f) Assists with dynamic targeting for CAS, AI, and SEAD.

(g) Coordinates airlift, airdrop, ISR, and PR missions within the AO.

(h) Assists the senior ALO.

(i) Establishes and maintains data link connectivity and maintain the common tactical picture.

(j) Deconflicts ground force maneuver and fires and provides target and threat updates.

(k) Coordinates air missions in the AO that do not directly support the ground component.

(2) During LSCO, the ASOC's designated area extends to the supported echelon's airspace boundaries. The JFACC may delegate launch authority for ground alert CAS missions and re-task missions for CAS to the ASOC. Unless delegated, targeting authority for all AI missions remains with the JFACC.

h. TACP. The TACP is a subordinate operational component of the TACS designed to provide air liaison to land forces and for the control of aircraft. TACP are organized into expeditionary ASOGs or ASOSs that are aligned with their respective Army corps, DIVs, or BDEs. The TACP has two primary missions: advise ground commanders on the capabilities and limitations of air operations and provide the primary terminal attack control of CAS. TACP coordinate airspace coordination measures (ACM) and FSCMs and deconflict aircraft with other fire support.

(1) In some instances the JFACC (through coordination with the JFC, JFLCC, JFSOCC or JFMCC) may employ United States Air Force (USAF) TACP outside of land or maritime areas of operation to extend TACS communications architecture forward into non-permissive contested environments. The TACP integrates and synchronizes effects by providing communications resiliency, tactical C2 extension, and terminal guidance operations. When employed independent of maneuver elements, a USAF C2 element will be the primary control agency for the subordinate TACP. When the JFACC is the supported commander, USAF C2 elements are TACON to the JFACC. Examples of C2 elements employed in this manner may include the agile control and integration team (ACIT) and integrated sensing and effects team (ISET).

(a) ACIT. The ACIT is a ground-based USAF C2 element comprised of TACP, functioning on behalf of the JFACC, and may combine with other C2 entities or elements. It relies on rapid deployment capabilities to create localized and dispersed nodes, providing limited command of airspace pockets and control (positive or procedural) for integration of joint fires across multiple domains in support of the air scheme of maneuver.

(b) ISET. The ISET is a TACP team that integrates with the joint service or partner nations capable of employing at the forward edge of the battle area. It provides a tactical advantage through advanced sensing grids, establishes or expands ground-based C2 mesh networks, and provides procedural control of net-enabled weapons, aircraft, and long-range precision fires.

(2) ALO. The ALO is the senior TACP member attached to a ground unit who functions as the primary advisor to the ground commander on air power. An ALO is an expert in the capabilities and limitations of air operations. The ALO plans and executes CAS in accordance with the ground commander's guidance and intent. At the BN level, the senior member of the TACP is called

the BN ALO, a specially trained and experienced non-commissioned officer. Additionally, ALOs may be certified and qualified to serve in the JTAC role.

(3) JTAC. The JTAC is a Service member, who, most often from a forward position, directs the action of combat aircraft engaged in CAS and other offensive air operations. The JTAC provides the ground commander recommendations on the use of CAS and its integration with ground maneuver.

i. Forward Air Controller (Airborne) FAC(A). A FAC(A) is an airborne extension of the TACP who exercises control of CAS missions from the air. The FAC(A) provides coordination, deconfliction, and terminal attack control for CAS missions.

j. Tactical Air Coordinator (Airborne) (TAC(A)). The TAC(A) is an extension of TACS agencies. The TAC(A) provides a communication relay between the TACP, attack aircraft, and other elements of the TACS. The TAC(A) expedites the CAS aircraft-to-JTAC handover. TAC(A) tasks may include coordination of CAS briefs, relay threat updates, battle damage assessment, aircraft coordination, and fire support.

k. Wing Operations Center (WOC). The Air Force WOC of an installation provides a standardized, functional organization to facilitate installation-level C2 across the competition continuum for all wing-assigned units and organizations. The WOC provides a single, consolidated C2 center to monitor mission execution of assigned or supported missions including tenant, joint, and combined missions. It interfaces with the JAOC and AFFOR staff and is the key C2 center that connects operational planning with tactical execution. The WOC is scalable and tailorable at the installation commander's discretion to provide the exact C2 capability required for the unique location mission, and operational situation. As a baseline, it consists of the following functional areas: operations control, maintenance coordination, aerial port coordination, reports, battle management, and incident response. It provides experts to receive, schedule, plan, and direct execution of the ATO. When required, the WOC can connect with TACS elements and is capable of coordination with host nation representatives, tenant organizations, and joint and coalition forces as required.

4. Air Force and Air Component Liaisons

a. JACCE. The JFACC may establish a JACCE with other component commander HQs to integrate air component operations. If the theater JFACC is designated in support of a JTF, then the JACCE may be assigned to a supported JTF HQ. The JACCE acts as the JFACC's primary representatives to commanders and facilitates interaction among associated staffs. The JACCE does not have the ability to C2 air operations.

b. AFLE. If the COMAFFOR is not the JFACC, AFLEs provide an interface between the COMAFFOR and the JFACC. This interface facilitates coordination and synchronization of Air Force assets supporting joint air operations. AFLE personnel are selected for BM expertise and knowledge of C2 concepts and

procedures. The AFLE is not a standing AFFOR element and is established only when required.

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Chapter IV
Navy Tactical Air Control System and Composite Warfare Commander

1. Background

This chapter provides a general understanding of the roles NAVFOR fill in joint operations and the doctrinal tools and C2 systems used to apply naval air power.

2. Navy Command and Control Structure

NAVFOR operate in a variety of modes, depending upon mission and deployment conditions. Groups, units, and elements may operate separately for a large percentage of a deployment, and, when required, NAVFOR must be capable of limited and independent C2 of joint air operations. Naval processes and procedures for joint air operations C2 align with joint air planning and execution doctrine and systems.

3. Maritime Operations Center

a. Maritime Operations Centers (MOC) function as the core organizational construct for a NCC, numbered fleet commanders (NFC), or a JFMCC to support operational-level assessment, planning, and execution. The MOC provides the commander a functionally organized staff and C2 suite capable of executing Navy, joint, or multinational responsibilities. MOCs can serve as the core construct for a JTF or multinational JTF. The MOC staff coordinates and liaises with other component operations centers (e.g., AOC).

b. In executing maritime operations, the JFMCC or NCC is the supported commander and the JFACC is the supporting commander conducting air operations in support of JFMCC or NCC objectives. The JFACC may attack targets posing a threat to JFMCC forces or conduct reconnaissance of installations of interest to the JFMCC. If the JFMCC needs additional aircraft to accomplish assigned missions, the JFMCC requests the aircraft from the JFACC via an ALLOREQ. If supportable and consistent with the JFC apportionment decision, the JFACC provides joint air assets to the JFMCC and transfers TACON of aircraft to the JFMCC for the duration of the sorties. The MOC follows joint and Service procedures and processes and uses compatible communications systems to C2 allocated air assets.

4. Composite Warfare Command Structure

a. Composite Warfare Doctrine. The Navy's composite warfare commander (CWC) doctrine is the cornerstone of their task force operational and tactical C2 systems. The CWC enables the officer in tactical command (OTC) of a naval force to wage combat operations across multiple domains 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 threats. See Navy Warfare Publication (NWP) 3-56, *Composite Warfare: Maritime Operations at the Tactical Level of War*, for more information on the CWC concept.

b. CWC Structure. The CWC structure was designed to fight open-ocean wars against a conventional enemy navy. CWC has evolved and supports expeditionary operations including overland and the littorals.

c. Warfare Commanders. Responsible to the CWC for conducting the tactical battle. Warfare commanders include:

(1) Air and Missile Defense Commander (AMDC). Protects the force against air and ballistic missile threats.

(2) Sea Combat Commander (SCC). Plans, directs, monitors, and assesses offensive and defensive surface and antisubmarine warfare tasks. Dependent on the threat and staff capability, SCC's responsibilities may be functionally divided into two separate warfare commanders:

(a) Surface Warfare Commander (SUWC). Conducts offensive and defensive surface warfare tasks.

(b) Antisubmarine Warfare Commander (ASWC). Directs task group antisubmarine warfare operations by controlling the antisubmarine warfare actions of all assigned units.

(3) Strike Warfare Commander (STWC). Coordinates offensive power projection operations for air and naval cruise missile engagements against land-based targets.

(4) Information Operations Warfare Commander (IWC). Directs the management and exploitation of the electromagnetic and acoustic spectra.

d. Responsibilities of Warfare Commanders. Warfare commanders control weapons deployment and/or sensor system employment across the entire force. They are allowed to autonomously initiate actions; however, they do not inherently have TACON over supporting forces. Although all warfare commanders interface with the TAGS, the primary operators are the STWC and AMDC. Warfare commanders issue an operation task (OPTASK) and weekly/daily intentions message promulgating their intentions to the forces under their control. The messages are addressed to all concerned forces (NAVFOR and other Service component forces performing missions for the OTC or CWC). The OTC or CWC coordinates with other Service or functional component commanders outside the naval force and warfare commanders through the NCC's staff.

e. Functional Group Commanders. Functional group commanders execute a specific activity in support of the overall mission and are only established when needed. They are allowed to autonomously initiate actions and will typically exercise TACON over assigned forces. Their freedom of command is dependent on how they are integrated into the overall force. Functional group commanders may include the Ballistic Missile Defense Commander (BMDC). The BMDC is responsible for providing strike group or theater BMD based on current assignment and TACON, and will coordinate with the AADC as required.

f. Coordinators. Coordinators support the CWC, warfare commanders, and functional group commanders by executing tasks or missions. They differ from warfare commanders by executing policy, but not controlling forces or initiating autonomous actions. Some common coordinators for air operations are:

(1) Air Resource Element Coordinator (AREC). Manages and coordinates the carrier aircraft allocation and distribution.

(2) Helicopter Element Coordinator. Manages naval helicopter assets.

5. Amphibious Forces

a. An amphibious operation is a military operation launched from the sea, by an amphibious force, embarked in ships or craft of an amphibious task force (ATF). Its primary purpose is introducing a landing force (LF) ashore to accomplish a mission.

(1) An ATF is a naval task force consisting of the amphibious ships necessary to transport and move ashore a LF.

(2) An amphibious ready group (ARG) consists of an ATF and LF. The LF is traditionally a MAGTF but may be an Army task organization formed to conduct amphibious operations.

(3) An ESG consists of an ARG plus the surface combatants, submarines, and other support ships in order to make the combined forces amphibious focused but strike capable.

b. The most common type of amphibious force is an ARG with a Marine expeditionary unit (MEU) as the LF. When amphibious operations are conducted by a Navy and Marine Corps team, the airspace C2 relationship is symbiotic. The Navy and Marine Corps team is designed to C2 operations while afloat, ashore, or both because of the broad spectrum of LF operations. The partial interchangeability of NTACS and MACCS provides the flexibility for meeting the complex air C2 needs of an amphibious force.

6. Landing Force

The size of the LF deploying with an ESG or ARG varies. LFs contain organic air C2 capabilities, depending on the assigned mission. The most common LF is the MEU, which is the smallest of the standing MAGTFs. Large-scale amphibious operations with a Marine expeditionary brigade (MEB) or Marine expeditionary force (MEF) require robust C2 architecture, established procedures, and division of responsibilities between the Navy and LFs. Large LFs provide the full spectrum of aviation C2 during amphibious operations.

7. Navy Tactical Air Control System

a. Navy Tactical Air Control Center (Navy TACC). The Navy TACC is the senior Navy amphibious air control agency responsible for future plans and current air operations. The Navy TACC's functional areas are:

(1) Plans and support section. The plans and support section performs future planning functions and the other four sections control and integrate air

operations. The plans and support section is responsible for developing the component ACO, ATO, SPINS, OPTASK air, and additional fire support asset requests for non-JTF operations or developing the amphibious force input to those plans in support of JTF operations.

(2) Air support control section (ASCS). See the Supporting Arms Coordination Center (SACC) paragraph.

(3) Passengers, mail, and cargo (commonly referred to as PMC) section.

(4) Air traffic control section (ATCS). The air traffic control section provides initial safe passage, radar control, and surveillance for assault support and CAS aircraft in the operating area.

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

b. SACC

(1) The SACC provides coordination and deconfliction of ground forces, naval surface fire support, indirect fires, and air. The SACC is the embarked equivalent of the LF's fire support coordination center (FSCC).

(2) The Navy TACC ASCS coordinates, controls, and integrates maritime, organic, mission aircraft and assault support operations. The ASCS, located in the SACC, is the embarked equivalent of the LF's DASC.

8. Navy Tactical Air Control System and Marine Air Command and Control System Coordination

The Marine Corps air C2 element is the Marine Corps tactical air command center (Marine TACC) and the Navy air C2 element is the Navy TACC. The Marine TACC and Navy TACC are functionally different depending on the phase of the amphibious operation. Table 1 depicts the relationships between Navy and Marine Corps C2 elements, their functions, and capability to phase functions ashore.

a. MEFs and MEBs can conduct future planning similar to the Navy TACC's plans and support section. The MEU Aviation Combat Element (ACE) provides the Navy TACC with future operations inputs and requests from the LF.

b. During MEU amphibious operations, the embarked Navy TACC coordinates sourcing support of nonorganic air assets to serve the LFs' immediate and scheduled air support requirements. Scheduled nonorganic support is coordinated through the Navy TACC, either by the MEU ACE or command element.

Table 1. Amphibious Afloat and Ashore Command and Control Counterparts			
Afloat Unit	**Function**	**Marine Expeditionary Unit (MEU)**	**Marine Expeditionary Brigade (MEB) or Marine Expeditionary Force (MEF)**
landing force operations center (LFOC)	Landing force (LF) function for the command element operations	MEU Command Operations Center	MEB/MEF Command Operations Center
supporting arms coordination center (SACC)	Coordination/deconfliction of ground forces, naval surface fire support, indirect fires, and air. amphibious task force (ATF) function, but can be supervised by either the ATF's supporting arms coordinator (United States Navy), the LF's force fires coordinator (United States Marine Corps), or fire support coordinator (United States Army) as designated by the commander.	fire support coordination center (FSCC)	fires and effects coordination center (FECC)
Navy tactical air control center (Navy TACC)	ATF function to conduct future operations planning (air tasking order [ATO] development) and execute current operations (supervise ATO execution).	N/A	Marine TACC
Navy TACC air support control section (ASCS)	ATF function to coordinate and control air support operations	air support element (ASE)	direct air support center (DASC), then tactical air operations center (TAOC)
air traffic control section (ATCS)	ATF function to perform terminal control of aircraft during takeoff and landing	Marine air traffic control mobile team (MMT)	Marine air traffic control (MATC)
Navy TACC air defense section (ADS)	ATF function to coordinate with air and missile defense commanders (AMDC) for the employment of aircraft and missiles to defend against enemy air threats	N/A	TAOC as sector/regional air defense commander (SADC/RADC)
Reference: NWP 3-30 *Maritime Command and Control of Air Operations (Organization and Processes), 2-7*			

c. The Navy TACC ASCS coordinates, controls, and integrates maritime, organic, mission aircraft and assault support operations. The Marine Corps counterpart to the Navy TACC's ASCS is the DASC. For MEU-level amphibious operations, the air support element (ASE) is deployed with identical capabilities, but limited assets and endurance.

d. During amphibious MEU operations, the ASE goes ashore in the same wave as the senior FSCC. The ASE physically or electronically collocates with the FSCC, integrates aircraft employment with other supporting arms, and processes immediate air support requests. When the ASE is established ashore, the embarked ASCS begins to phase amphibious airspace control to the ASE ashore. If an ASE is used, it may be expanded to a full DASC with additional follow-on force augmentation. For a LF, the Marine Corps' counterpart to the ATCS is the Marine air traffic control mobile team (MMT).

e. As the LF transitions ashore, they may establish their own air defense capability. If the LF is unable to do so, the Navy TACC's ADS does not phase control ashore for the air defense mission in support of LF operations.

9. Land-Based Naval Air Asset Planning and Support

Additional air C2 planning and support staffs exist for air assets that are not organic to an afloat naval task force. These assets include maritime patrol, reconnaissance, and fleet logistics aircraft. They have operational planning staffs, tactical support centers, operations wings, and other C2 elements. The staffs coordinate with the MOC staff.

Other Navy staffs not exclusively aviation-related may report to a unit other than an afloat naval task force. Examples of these units include naval special warfare units, tactical support centers, or Navy expeditionary combat command units with unmanned aircraft systems (UAS). These units may report directly to a task group commander, JFMCC, NCC, or a NFC. Navy organic air assets follow the C2 procedures in this document similar to other detached aviation units previously described. They may provide a liaison to the MOC or AOC.

Chapter V
Marine Air Command and Control System

1. Background

The Marine Corps projects combat power ashore for the JFC using the MAGTF. The MAGTF is a combined arms force with integrated ground, aviation, and logistics capabilities. It has an expeditionary focus and offers a unique organization to the JFC with a total-force package.

2. Marine Corps Aviation

a. Aviation Combat Element. The ACE is part of the MAGTF's combined-arms team, complementing the MAGTF's ground combat element (GCE) and logistics combat element (LCE), while functioning in consonance with the Marine Corps' doctrinal philosophy of maneuver warfare. The Marine Corps ACE is task-organized to perform all or part of the six functions of Marine aviation: offensive air support, antiair warfare, electromagnetic warfare, assault support, air reconnaissance, and control of aircraft and missiles.

b. Control of Aircraft and Missiles. Controlling aircraft and missiles allows the MAGTF commander to employ ACE assets and conduct combat operations. It includes the facilities, equipment, communications, procedures, and personnel to plan, direct, and control the ACE's effort. Collectively, these comprise the MACCS, which is the Marine Corps' contribution to the TAGS. It is shown in figure 6.

3. Marine Air Command and Control System

The Marine Corps uses centralized command and decentralized control to C2 aviation assets. The MACCS provides the MAGTF commander the means to exercise C2 authority over Marine aviation assets. The MACCS is capable of exercising C2 over joint and multinational aviation assets operating within MAGTF airspace.

a. Marine TACC. The TACC is the senior MACCS agency. It is the facility for the ACE commander and battle staff to command, supervise, and direct MAGTF air operations. If serving as the JFACC, the COMMARFOR will augment the Marine TACC with elements from other components to create a JAOC. Other Services' comparable agencies include the USAF air operations center and the Navy TACC. When air control is phased ashore, the MAGTF commander exercises control of air operations through the ACE commander in the Marine TACC. When the Marine TACC accepts responsibility for all aircraft and air warning functions of tactical air operations in the amphibious AO, the Navy TACC becomes a tactical air direction center (TADC). A Marine TACC is generally established for large-scale operations (MEB/MEF). A MEU does not have the assets to operate a Marine TACC, nor does the scope of its assigned missions warrant the establishment of such an organization (NTTP 3-02.1.3, *Amphibious/Expeditionary Operations Air Control*).

b. The Marine TACC consists of four mutually supporting, cross-functional, operational organizations. The Marine TACC organizations are future plans, future operations, current operations, and air combat intelligence (ACI).

(1) Future plans conduct aviation and aviation support planning for the next MAGTF mission.

(2) Future operations develop and prepare the MAGTF's portion of the ATO and ACO and interfaces with the JAOC's combat plans division by merging the MAGTF ATO into the joint ATO.

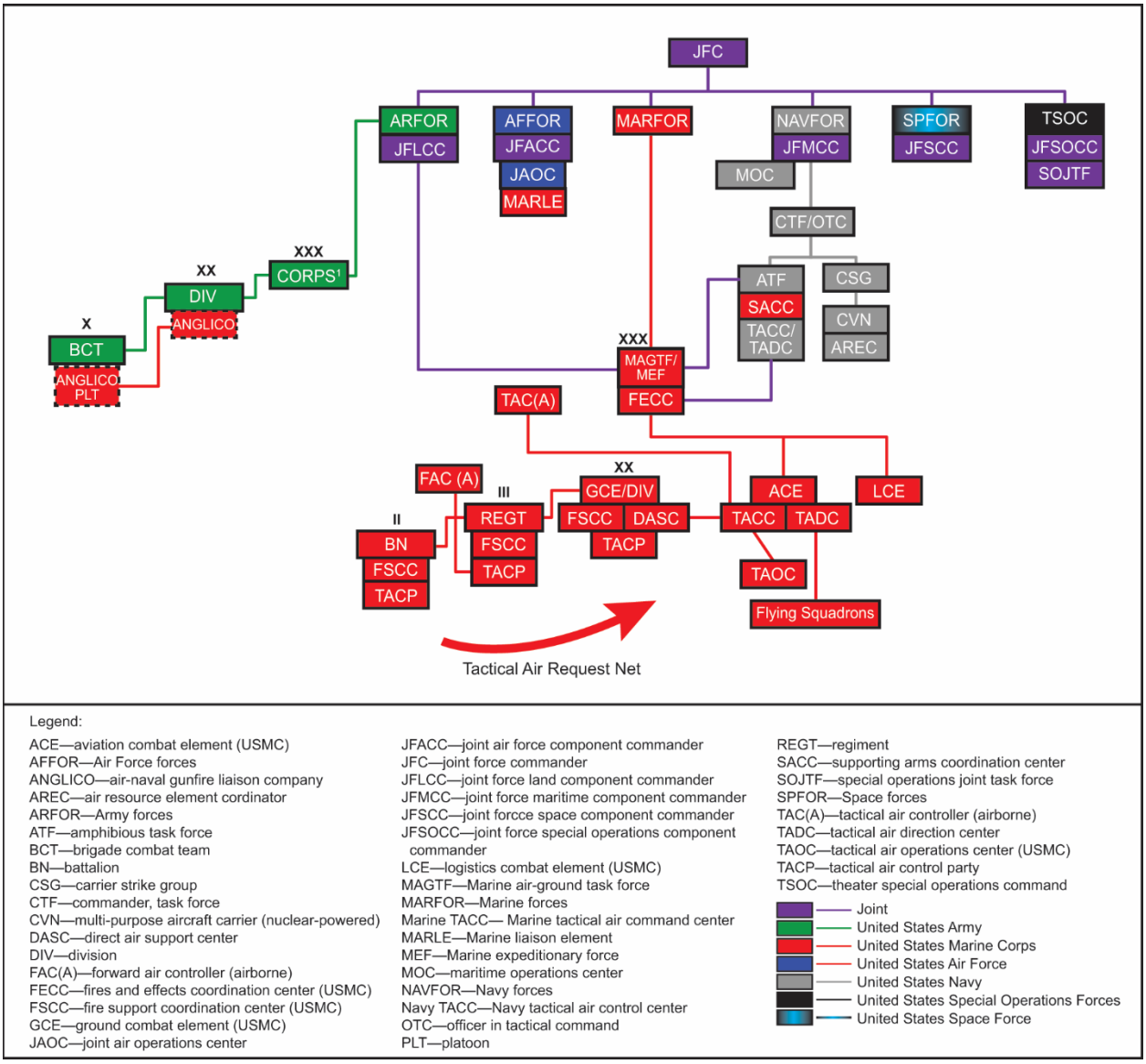

Figure 6. NTACS and MACCS

(3) Current operations execute the daily ATO and begins the assessment phase. This section interfaces with the JAOC's combat operations division.

(4) ACI provides timely, tailored, and fused intelligence integral to the functioning of future plans, future operations, and current operations.

c. DASC. The DASC is the principal MACCS air control agency responsible for directing air operations supporting ground forces. It functions in a decentralized mode of operation and is subordinate to the Marine TACC. During amphibious operations, the DASC is the first MACCS agency ashore and lands in the same wave as the GCE's senior FSCC. The DASC:

(1) Processes immediate air support requests; integrates air with other supporting arms; manages terminal control assets; and procedurally controls assigned airspace.

(2) Collocates with the senior FSCC.

(3) Employs two types of extensions: ASEs and air support liaison teams (ASLT).

(a) ASE. The ASE is an element which performs various air support control functions. Employment options range from MEU-level operations characterized by limited assets and endurance to multidivision operations where the ASE has similar capabilities, unique responsibilities, and is subordinate to the DASC. An ASE may function as an extension of the Navy TACC or helicopter direction center with the BN TACP, or it may be employed to reposition with the FSCC and take over control functions while the main DASC relocates.

(b) ASLT. The ASLTs are organized to maintain face-to-face liaison between the DASC and the FSCC and is employed where the DASC cannot remain collocated with the senior or subordinate FSCC during operations.

d. TAOC. The TAOC is the primary antiair warfare control agency within the MAGTF. The TAOC is responsible for real-time airspace surveillance, air direction and control, coordination, information exchange, and weapons systems integration for the six functions of Marine aviation. The TAOC collects, displays, and disseminates information from its organic sensors, other Marine Corps sources, and joint/multinational forces to enhance the ability of the Marine TACC to perform the ACE's mission. The TAOC performs a variety of delegated air direction functions, including air battle management, coordination and deconfliction of airspace, tanker control/management, and coordination and control of aviation fires in the deep area.

(1) Using organic sensors, the TAOC tracks, classifies, and identifies all air tracks within MAGTF airspace or its assigned sector. The organic radar systems augment the MAGTF's and the JAOC's surveillance picture during joint operations. Much like the Air Force's CRC, the TAOC can exchange its air picture data with adjacent, higher, and joint agencies via tactical data links. The TAOC, through Composite Tracking Network, provides information to the Navy Cooperative Engagement Capability Network. When provided the authority to do so, the TAOC evaluates and coordinates air-to-air threat engagements to the MAGTF, across multiple weapon engagement zones, and to any weapons systems under its direction. Additionally, the TAOC

provides BMC2 for all nonfighter aircraft within its sector of control, including the managing of all air-to-air refueling areas, aircraft, and fuel.

(2) The TAOC can employ an extension called the early warning/control (EW/C) site that primarily performs surveillance cueing, early warning, and/or fills surveillance and communications gaps. Geographically displaced from the TAOC, the EW/C serves as a TAOC extension that tasks assigned aviation assets outside the TAOC's organic radar and communications coverage. When its radar picture is electronically transferred to a TAOC or EW/C, the site is often referred to as a remote radar site. The early warning site is not manned and equipped to provide or participate in any air control or air direction functions. The early warning site is typically connected digitally to a larger aviation C2 agency (e.g., TAOC and/or EW/C).

e. Marine Air Traffic Control (MATC). MATC provides expeditionary all-weather radar and nonradar approach, departure, enroute, and tower ATC services to friendly aircraft and airspace control, management, and surveillance for its designated airspace sector. It also provides required ATC services supporting MAGTF and joint operations and navigational assistance to friendly aircraft, including enroute ATC services. Additionally, it interfaces with other MACCS and military C2 agencies, civilian agencies or organizations, the Federal Aviation Administration, and the International Civil Aviation Organization. MATC:

(1) Provides liaison personnel to the site survey and reconnaissance team to ensure air traffic procedures and MATC siting criteria; terminal instrument procedures are considered and addressed.

(2) Provides liaison personnel for the Joint Staff, ATC agencies, airspace management, C2, and host nation, as required, for integrated planning and management of air operations.

(3) Provides control tower, radar and nonradar approach and departure control services within its assigned airspace; precision and non-precision navigational aids; and landing services under all-weather landing conditions.

(4) Displays and disseminates air and ground situation information to designated higher and adjacent air C2 agencies.

(5) Serves as the operational liaison between the MAGTF, joint force, and national and international ATC agencies. It coordinates activation and execution of the airfield base defense zone and provides ATC subject matter experts for liaison billets with the joint, multinational force, civil, and military ATC agencies.

f. MMT. MMTs provide initial rapid-response ATC, and command, control, and communications in support of MAGTF and joint missions. The MMT provides all equipment for self-sustainment during initial operations. MMTs support operations at austere air sites, forward arming and refueling points (FARP), or laager points. As a standalone ATC capability, the MMT provides ATC services for airfield seizures, noncombatant evacuation operations, domestic or foreign

humanitarian assistance operations, civil assistance operations, and other short-duration MAGTF or joint operations.

g. Low-Altitude Air Defense (LAAD). The LAAD provides close-in, low altitude, surface-to-air weapons fires in defense of the MAGTF and defends forward combat areas, maneuver forces, vital assets, and installations or units engaged in special or independent operations. The LAAD:

(1) Maintains a man-portable or vehicle-mounted, surface-to-air weapons component of the MAGTF that deploys in the assault echelon of an expeditionary operation.

(2) Provides surface-to-air weapons and ground defensive fires for units engaged in special or independent operations.

(3) Provides for separate deployment of subordinate batteries and platoons accommodating special tactical situations and task organization.

(4) Plans and coordinates requirements for liaison and communications with appropriate commands, to incorporate LAAD units within the integrated air defense system.

h. TACP. The TACP is a subordinate operational component of a tactical air control system designed to provide air liaison to land forces and for the control of aircraft. In the Marine Corps, TACPs are organic to infantry DIVs, regiments, BNs, and other combat arms units and provide ground commanders the means to access offensive air support. TACPs establish and maintain facilities for liaison and communications between parent units and airspace control agencies, inform and advise the ground unit commander on employing supporting aircraft, and request and control air support.

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Chapter VI
Special Operations Air-Ground System

1. Background

a. Integrating SO into the TAGS requires a comprehensive and cohesive process which incorporates and supports:

(1) Highly trained aircrew, special tactics teams, multi-capable Airmen (support personnel), and specially modified aircraft.

(2) Increased operational security measures.

(3) Trained joint fires elements (JFE).

(4) Specially trained liaisons across components.

b. SOF may provide their own air support, use air support of another component, or provide air support for use by conventional forces (CF). For more information, see JP 3-05, *Joint Doctrine for Special Operations*.

2. Component Operations

SO are inherently joint and can be multinational, employed unilaterally, or synchronized with CF. SOF must be prepared to conduct scalable operations with various governmental and nongovernmental agencies, other Services, forces of other nations, or surrogates. Effective employment may require leveraging various strike assets, C2 systems, ISR elements, CF, and national intelligence networks.

3. Planning

a. The JFSOCC/SOJTF commander analyzes which theater mission requirements SOF can address and makes employment recommendations to the JFC on how SO can satisfy those requirements. SO must be coordinated, integrated, and deconflicted with conventional operations to enhance mission accomplishment and prevent friendly fires. Synchronizing and planning SO through TAGS interfaces are essential.

b. Some SOF missions require support from other forces to be successful. Support involves aiding, protecting, complementing, and sustaining employed SOF. Support includes conventional air support, intelligence, communications, and logistics. Support from conventional assets may include:

(1) Liaisons.

(2) ISR support.

(3) Refueling during deployments or long-range missions.

(4) SEAD.

(5) Electromagnetic warfare.

(6) Diverting enemy forces.

(7) Airlift capability.

(8) Providing air and ground landing zone or FARP security.

(9) CAS.

(10) Personnel recovery.

(11) Space support.

(12) Cyber support.

c. When conventional air forces are anticipated in support of SOF, an ASOC-like capability is made available through prior coordination with the JFACC.

d. SOF ensure adequate JTACs are available for the mission requirements in the proposed air-ground plan and should coordinate with other components if additional JTAC support is required.

e. Detailed planning is required when strike aircraft accompany a SOF infiltration, conduct preplanned CAS missions, or are on call during actions at an objective area. Any of these mission types are coordinated during SOF unit's mission-planning procedures.

f. Integrating conventional aviation assets into SO mission profiles requires advanced planning and extensive coordination. SOF operate on dynamic timelines. Planning times are based on intelligence-gathering requirements, detailed planning, and rehearsals. Because of the dynamic and short lead times, planning for, and receiving support from, other components requires competent liaisons and an interface for synchronizing SOF–CF requirements. It is sometimes difficult for components operating on long planning schedules to receive support from SOF; therefore, persistent coordination is key.

4. Command and Control

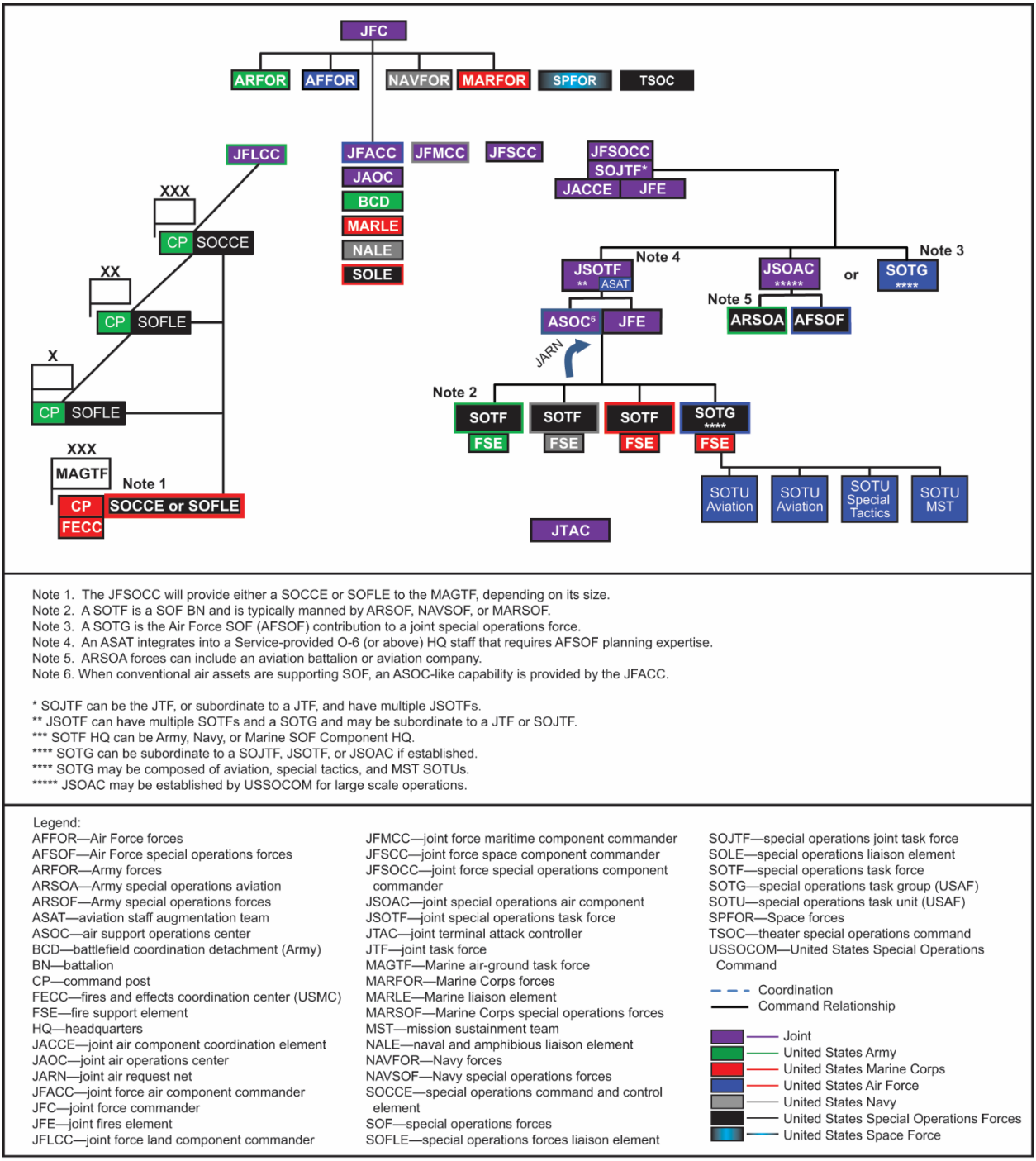
a. All SOF are under the COCOM of the CDRUSSOCOM. A CCDR exercises OPCON of theater SOF through the CDRTSOC. C2 of SOF is executed within a SOF chain of command. The C2 structure for SOF depends on objectives, security requirements, and the operational environment.

b. For most operations, Air Force SOF assets are force presented as organic, unit-based special operations task groups (SOTG) with subordinate special operations task units (SOTU). SOTG collectively refers to a SOTG HQ staff and subordinate SOTUs. SOTG HQs are organized, trained and equipped to deploy as Air Force Special Operations Command's (AFSOC) primary O-5 led Mission Command force offering for any/all Air Force SOF assets. SOTUs are O-3 or O-4 echelons that organize, train and equip via Mission/Design/Series (MDS)-specific guidelines, but are also certified, verified and validated in terms of their deployed SOTG structure.

c. For large-scale operations, CDRUSSOCOM, in concert with CDRTSOC, per USSOCOM Directive 10-1, may establish a joint special operations air component (JSOAC). The JSOAC is a task-organized unit that provides C2 functions for SOF aviation assets under the OPCON of the JFSOCC. The JSOAC is responsible for centralized planning, directing, and executing joint SO

air activities. If a joint special operations air component commander (JSOACC) is not established, a SOTG commander will be the senior Air Force SO representative. Air Force SOF, including the SOTG and subordinate SOTUs, are placed under the OPCON of a JSOACC, if established. The JSOAC collectively refers to the commander, staff, and assets of a SO functional air component. The JSOACC will be the commander with the preponderance of SO air assets and the greatest ability to plan, coordinate, allocate, task, control, and support the assigned or supporting air assets.

d. Principal functions supporting coordination within the SOAGS are the JSOAC or the Air Force SOTG/SOTU, SOLE, special tactics team (STT), SOCCE, special operations forces liaison element (SOFLE), the organization providing AOSC-like functions (when required), SOF JFE, and JTACs. When conventional assets are in support of SOF an organization providing an ASOC-like function, coordinated with the JSOAC (when established), is the senior organization for air support coordination within the SOAGS. Figure 7 provides options with or without a JSOAC or with a SOTG.



Note 1. The JFSOCC will provide either a SOCCE or SOFLE to the MAGTF, depending on its size.
Note 2. A SOTF is a SOF BN and is typically manned by ARSOF, NAVSOF, or MARSOF.
Note 3. A SOTG is the Air Force SOF (AFSOF) contribution to a joint special operations force.
Note 4. An ASAT integrates into a Service-provided O-6 (or above) HQ staff that requires AFSOF planning expertise.
Note 5. ARSOA forces can include an aviation battalion or aviation company.
Note 6. When conventional air assets are supporting SOF, an ASOC-like capability is provided by the JFACC.

* SOJTF can be the JTF, or subordinate to a JTF, and have multiple JSOTFs.
** JSOTF can have multiple SOTFs and a SOTG and may be subordinate to a JTF or SOJTF.
*** SOTF HQ can be Army, Navy, or Marine SOF Component HQ.
**** SOTG can be subordinate to a SOJTF, JSOTF, or JSOAC if established.
**** SOTG may be composed of aviation, special tactics, and MST SOTUs.
***** JSOAC may be established by USSOCOM for large scale operations.

Legend:
AFFOR—Air Force forces
AFSOF—Air Force special operations forces
ARFOR—Army forces
ARSOA—Army special operations aviation
ARSOF—Army special operations forces
ASAT—aviation staff augmentation team
ASOC—air support operations center
BCD—battlefield coordination detachment (Army)
BN—battalion
CP—command post
FECC—fires and effects coordination center (USMC)
FSE—fire support element
HQ—headquarters
JACCE—joint air component coordination element
JAOC—joint air operations center
JARN—joint air request net
JFACC—joint force air component commander
JFC—joint force commander
JFE—joint fires element
JFLCC—joint force land component commander
JFMCC—joint force maritime component commander
JFSCC—joint force space component commander
JFSOCC—joint force special operations component commander
JSOAC—joint special operations air component
JSOTF—joint special operations task force
JTAC—joint terminal attack controller
JTF—joint task force
MAGTF—Marine air-ground task force
MARFOR—Marine Corps forces
MARLE—Marine liaison element
MARSOF—Marine Corps special operations forces
MST—mission sustainment team
NALE—naval and amphibious liaison element
NAVFOR—Navy forces
NAVSOF—Navy special operations forces
SOCCE—special operations command and control element
SOF—special operations forces
SOFLE—special operations forces liaison element
SOJTF—special operations joint task force
SOLE—special operations liaison element
SOTF—special operations task force
SOTG—special operations task group (USAF)
SOTU—special operations task unit (USAF)
SPFOR—Space forces
TSOC—theater special operations command
USSOCOM—United States Special Operations Command

Coordination
Command Relationship

Joint
United States Army
United States Marine Corps
United States Air Force
United States Navy
United States Special Operations Forces
United States Space Force

Figure 7. SOAGS

5. Special Operations Air-Ground System Functional Elements

a. JSOAC. CDRUSSOCOM; CDRTSOC; or the JFSOCC may establish a JSOAC and designate a JSOAC that functions as the senior air advisor within the SOAGS. The JFSOCC exercises OPCON of assigned and attached joint SO aviation assets through the JSOACC when a JSOAC is established. At the operational level, the JSOAC plans and C2s CF air assets in support of SOF

when the appropriate organic C2 and CF air and space expertise are available. At the tactical level, when C2 of CF air support for the joint special operations task force (JSOTF) is required and this capability does not reside within a JSOAC, the JFACC provides an ASOC-like capability to interface with the JSOTF. The JSOAC can support multiple JSOTFs within a theater. A single JSOAC, with multiple, widely distributed joint SO aviation assets, empowers the execution of centralized command, distributed control, and decentralized execution.

b. Air Force SOTG. The SOTG is AFSOC's Service contribution to a SO joint force. A SOTG operates similarly to a special operations task force and uses C2, information, intelligence, fires, movement and maneuver, protection and sustainment functions to integrate and employ the full spectrum of Air Force special operations forces (AFSOF) capabilities into SOF JTF operations. The SOTG is normally an O-5 led organization comprised of a HQ element and is comprised of two or more SOTUs that conduct and/or support joint operations in support of SOF JTF directives. SOTGs provide the C2 for SOTUs which are tactical units that provide an agile and ready force for high-end competition and conflict, as well as crises response and counter–violent extremist organization (also referred to as C-VEO) operations. The SOTG exercises OPCON of assigned SOTUs and provides the necessary planning to direct and execute operations while also integrating C2, ISR, information operations, and ACS. SOTGs may assume OPCON of joint assets, as directed by the theater special operations command (TSOC), or the higher HQ, if requisite expertise and authorities are provided to the SOTG HQ staff. Day-to-day, the SOTG operates under the JTF or JSOTF but could be assigned to a TSOC depending on mission requirements. Figure 7 depicts a notional TSOC with subordinate units including a SOTG with its subordinate SOTUs.

c. Aviation Staff Augmentation Team (ASAT). At the request of a SOTG Commander, the SOTG may deploy a ASAT for use within other SOF component–led O6 or above HQ staffs serving as JSOTFs or JTFs that are leading a SOTG. More specifically, the ASAT integrates into a service–provided O6, or above, HQ staff that requires AFSOF aviation expertise. The ASAT facilitates and advises on the proper employment of joint SOF aviation.

d. ASOC-like Capability. When CF air assets are in direct support of SOF, an ASOC-like capability is normally collocated with the SOF JFE at the JSOTF and provides air and space power expertise. The SOF JFE or the JFACC-provided ASOC-like capability monitors a SO JARN and processes immediate requests for CAS and other fires and effects. The ASOC-like capability provided by the JFACC functions as the focal point for CF air support requests and advises the commander, joint special operations task force (CDRJSOTF) on effective use of CF air power in support of SOF. If available, airborne platforms, such as AWACS, can function as an extension of these ASOC-like capabilities in routing immediate CAS requests and fighter diversions. SOF are prepared to use digital targeting and established request procedures on the JARN, when possible. The JFSOCC coordinates with the JFACC for an ASOC-like capability at each JSOTF

prior to the commencement of operations in which CF air assets are in direct support of SOF.

e. SOF JFE. The SOF JFE plans, coordinates, synchronizes, and executes joint fires support for the JSOTF. The SOF JFE and ASOC-like capability (if established) monitor and respond to SOF joint fires requests. Through a single net (e.g., JARN), the SOF JFE and organization providing an ASOC-like capability determine the most responsive resource and delivery means responding to immediate support requests. The SOF JFE consolidates FSCMs and ACMs for the JSOTF, tracks team locations, and reports the locations to the SOLE to aid the air-ground deconfliction process.

f. STT. STTs consist of combat controllers, pararescuemen, TACPs, and special reconnaissance personnel. STTs are organized, trained, and equipped to establish visual and procedural terminal area airspace control (i.e., attack, air traffic services, and C2) at remote assault (drop or landing) zones and austere or expeditionary airfields. They sustain these operations until relieved by other elements. STT are under the OPCON of the JSOACC or Air Force SOTG. TACON of STT may be delegated to the JFACC for specific missions (e.g., air mobility operations) or to the CDRJSOTF, based on the SO mission.

g. SOLE. The SOLE is a liaison to the JFACC or a Service component air C2 organization. It is a joint team responsible for coordinating, deconflicting, and synchronizing SO air, surface, and subsurface operations with conventional air operations by placing SOF air, land, and maritime liaison personnel in the AOC. The SOLE director reports directly to the JFSOCC and has no command authority for mission tasking, planning, or execution. The SOLE provides SOF operation coordination in the ATO and ACO. The SOLE also coordinates FSCM between the AOC and SOF HQ, reducing the potential for friendly fire. A SOLE is tailored for the operation. SOLE functions include but are not limited to:

(1) Harmonizing JFSOCC strategy and targets with JFACC’s intent and vision via liaison with the JAOC strategy division.

(2) Injecting SOF requirements (including SOF ground and maritime contingents) within the JFACC’s master air attack plan (MAAP) via close coordination in the JAOC’s combat plans division.

(3) Facilitating JFSOCC inputs into the ACO, ATO, and SPINS.

(4) Providing updates for situational awareness to the JAOC’s combat operations division, coordinating CAS, and requesting immediate support for time-sensitive targets.

(5) Monitoring and deconflicting SOF activities and locations to reduce friendly fire.

(6) Coordinating real-time ISR requirements for the JFSOCC.

(7) Synchronizing SOF PR activities with the JPRC.

(8) Coordinating SOF component space requirements with the JFACC when those responsibilities are delegated to the JFACC.

(9) Coordinating and monitoring SOF support of conventional units and operations (e.g., AC-130 gunships conducting CAS in support of non-SOF units).

(10) Providing additional deconfliction between SOF and other aircraft, including UAS, during theater air operations.

h. SOCCE. A SOCCE is employed when SOF conduct operations in support of CF, such as an Army corps or a MEF. It collocates with the fires C2 element within the CP of the supported commander and performs C2, fire support coordination, and liaison functions. The SOCCE remains under the OPCON of the JSOTF. The SOCCE receives operational intelligence and target acquisition reports directly from deployed SOF elements and provides them to the supported HQ.

i. SOFLE. When SOF teams or companies are TACON to conventional ground forces, or are operating within CF unit boundaries, the SOCCE may have one or more subordinate SOFLE at the DIV level or below. The SOFLE conducts liaison functions with the ground force commander and exercises specific fire support coordination responsibilities for SOF teams operating within DIV boundaries, as delegated by the SOCCE.

j. Terminal Attack Control. SOF JTACs are certified and qualified to perform terminal attack control responsibilities. SOF JTAC training emphasizes night infrared, laser, and digital CAS equipment. For remotely deployed SOF units, requests for CAS are passed through the most expedient, direct, and available means of communications. Requests are sent to the SOF JFE or to the organization providing ASOC-like capabilities over the JARN. SOF JTACs are specially trained operators assigned to US Army Special Operations Command, AFSOC, Naval Special Warfare Command, and Marine Forces Special Operations Command. Any certified, qualified JTAC may be tasked to augment SOF specific missions.

k. SOF TAC(A). The SOF TAC(A) is an airborne extension of the JOC, JTAC, or equivalent air support control agencies.

l. SOF Aviation Advisors. These individuals coordinate coalition support with US activities. AFSOC maintains specially trained personnel to integrate allies and coalition partners into the TAGS. They assist their host nation counterparts with planning, ATO coordination, mission execution, and training on C2 systems and methods, if needed.

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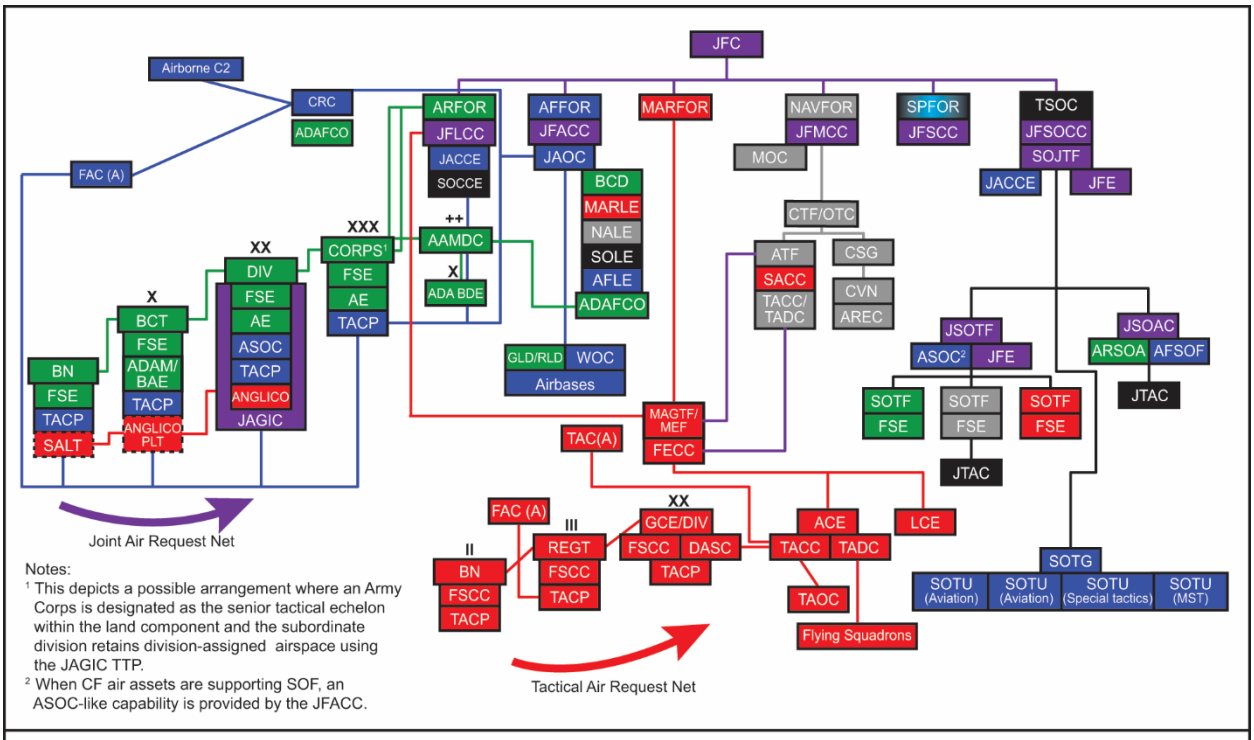
Appendix A
Theater Air-Ground System

Figure 8 depicts the Theater Air-Ground System (TAGS) using the Army construct joint force commander. It is an example and not intended to show every possible TAGS configuration. Each joint force commander tailors the system based on situation, mission, forces available, and command and control (C2) structure.



Notes:
[1] This depicts a possible arrangement where an Army Corps is designated as the senior tactical echelon within the land component and the subordinate division retains division-assigned airspace using the JAGIC TTP.
[2] When CF air assets are supporting SOF, an ASOC-like capability is provided by the JFACC.

Legend:

AAMDC—Army air and missile defense command
ACE—air combat element (USMC)
ADA—air defense artillery
ADAFCO—air defense artillery fire control officer
ADAM—air defense and airspace management
AE—airspace element
AFFOR—Air Force forces
AFLE—Air Force liaison element
AFSOF—Air Force special operations forces
ANGLICO—air-naval gunfire liaison company
AREC—air resource element cordinator
ARFOR—Army forces
ARSOA—Army forces special operations air
ASOC—air support operations center
ATF—amphibious task force
BAE—brigade aviation element
BCD—battlefield coordination detachment
BCT—brigade combat team
BDE—brigade
BN—battalion
C2—command and control
CF—conventional forces
CRC—control and reporting center
CSG—carrier strike group
CTF—commander, task force
CVN—multi-purpose aircraft carrier (nuclear-powered)
DASC—direct air support center
DIV—division
FAC(A)—forward air controller (airborne)
FECC—fires and effects coordination center (USMC)
FSCC—fire support coordination center
FSE—fire support element
GCE—ground combat element (USMC)
GLD—ground liaison detachment
JACCE—joint air component coordination element
JAGIC—joint air-ground integration center
JAOC—joint air operations center
JFACC—joint air force component commander
JFC—joint force commander
JFE—joint fires element
JFLCC—joint force land component commander
JFMCC—joint force maritime component commander
JFSCC—joint force space component commander
JFSOCC—joint force special operations component command
JSOAC—joint special operations air component
JSOTF—joint special operations task force
JTAC—joint terminal attack controller
LCE—logistics combat element (USMC)
MAGTF—Marine air-ground task force
MARFOR—Marine forces
Marine TACC— Marine tactical air command center
MARLE—Marine liaison element
MEF—Marine expeditionary force
MOC—maritime operations center
MST—mission sustainment team
NALE—naval and amphibious liaison element
NAVFOR—Navy forces
Navy TACC—Navy tactical air control center
OTC—officer in tactical command
PLT—platoon
REGT—regiment
RLD—reconnaisance liaison detachment
SACC—supporting arms coordination center
SALT—supporting arms liaison team
SOC—special operations command
SOCCE—special operations command and control element
SOF—special operations forces
SOLE—special operations liaison element
SOJTF—special operations joint task force
SOTF—special operations task force
SOTG—special operations task group (USAF)
SOTU—soecial operations task unit (USAF)
SPFOR—Space forces
TAC(A)—tactical air controller (airborne)
TACC—tactical air control center
TADC—tactical air direction center
TAOC—tactical air operations center (USMC)
TACP—tactical air control party
TSOC—theater special operations command
TTP—tactics, techniques, and procedures
USAF—United States Air Force
USMC—United States Marine Corps
WOC—wing operations center (USAF)

Joint
United States Army
United States Marine Corps
United States Air Force
United States Navy
United States Special Operations Forces
United States Space Force

Figure 8. Theater Air-Ground System (TAGS)

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Appendix B
Component Inputs to the Joint Air Tasking Cycle

1. Joint Air Tasking Cycle

a. The joint air tasking cycle provides for effectively and efficiently employing joint air capabilities and forces. This is an iterative, cyclic process for the planning, apportionment, allocation, coordination, and tasking joint air missions and sorties within the guidance of the joint force commander (JFC). The cycle accommodates changing tactical situations or JFC guidance and requests for support from other component commanders. The joint air tasking cycle is analytical and systematic and focuses joint air efforts on accomplishing operational requirements. In addition to the air tasking order (ATO), the JFC may delegate authorities to the joint force air component commander (JFACC) that requires the development of other products that affect joint force operations. The joint air tasking cycle may also produce the air operations directive (AOD), draft joint integrated prioritized target list (JIPTL), airspace control order (ACO), tactical operational data, operations task link (OPTASKLINK), special instructions (SPINS), and reconnaissance, surveillance, and target acquisition (RSTA) annex.

b. Designated component liaison officers conduct much of the day-to- day tasking cycle using an interrelated series of information exchanges and active involvement in plan development, target development, air execution, and assessment, which are means of requesting and scheduling joint air missions. A timely ATO is critical because other joint force components conduct their planning and operations based on a prompt, executable ATO. Figure 9 shows the joint air tasking cycle. The joint air tasking cycle facilitates a series of interrelated information and data exchanges between supported and supporting commanders.

c. The joint air tasking cycle battle rhythm is a predictable process with fixed suspense dates for component inputs to the joint air operations center (JAOC). It provides suspense dates for targeting, air support requests, airspace coordination measures requests (ACMREQ), and other inputs to produce a timely and executable ATO. The tasking process is a responsive cycle, capable of modification prior to, and during, the execution stage.

d. The joint air tasking cycle begins with the JFC’s objectives, incorporates guidance received during JFC and component coordination, and culminates with assessing previous actions.

e. The ATO articulates tasking for joint air operations for a specific execution timeframe, normally 24 hours. The joint air tasking cycle is synchronized with the JFC’s battle rhythm. The JAOC establishes a 72- to 96-hour ATO planning cycle. The battle rhythm, or daily operations cycle (schedule of events), articulates briefings and report requirements. It provides suspense for targeting, air support requests (AIRSUPREQ), and friendly order of battle updates to produce the air battle plan, which includes the ATO message and other products.

f. The battle rhythm is essential to ensure information is available, when and where required, to provide products necessary for synchronizing joint air operations with the JFC's concept of operations (CONOPS) and supporting other components' operations.

g. Airpower must be responsive to a dynamic operational environment and the joint air tasking cycle must be flexible and capable of modification during ATO execution.

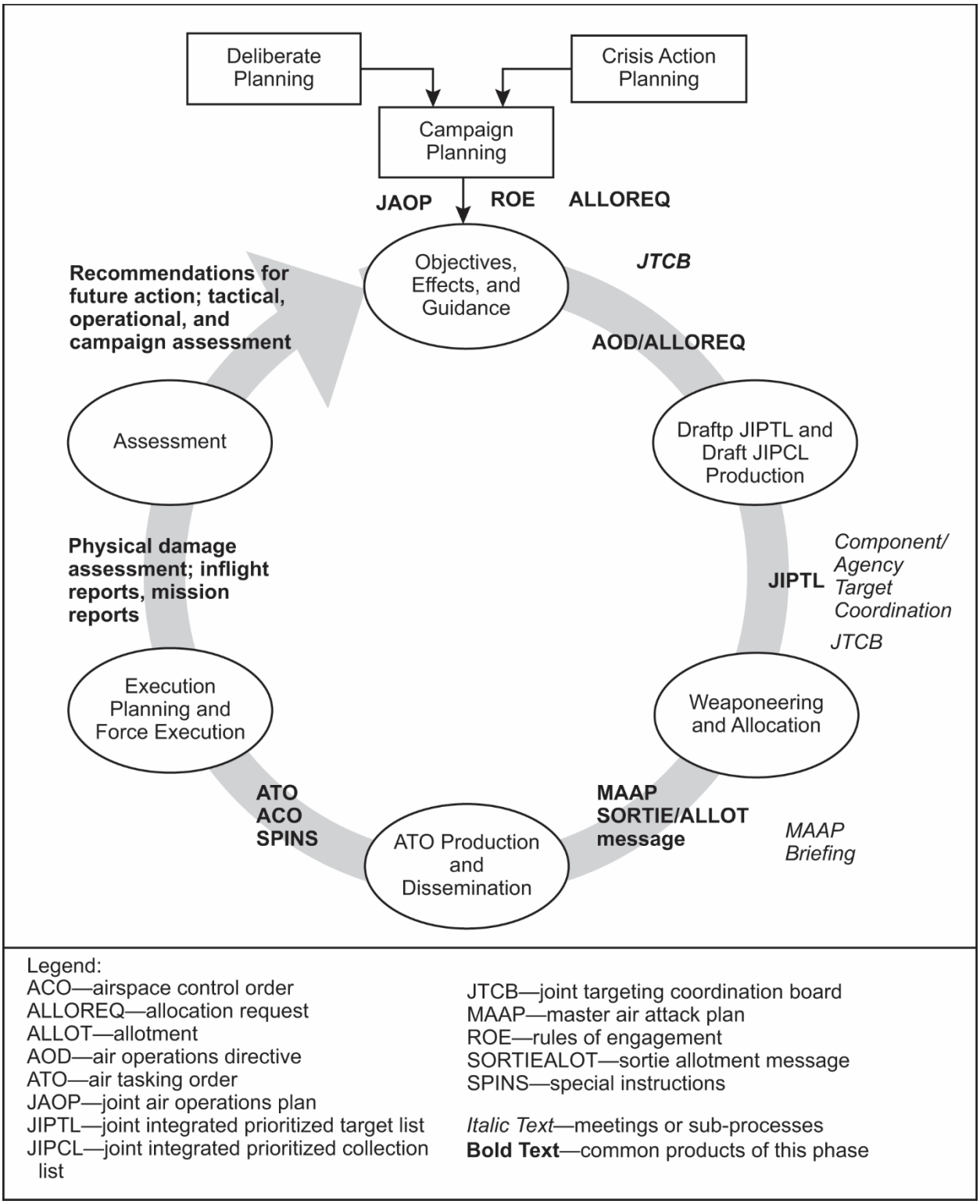

Figure 9. The Joint Air Tasking Cycle

h. The result of the tasking process is a series of ATO, and related products in various stages of process. (See figure 10). The primary factor driving the daily schedule for developing the ATO is the battle rhythm. The battle rhythm is a

detailed timeline that lists a series of briefings to produce specific products by a specified time.

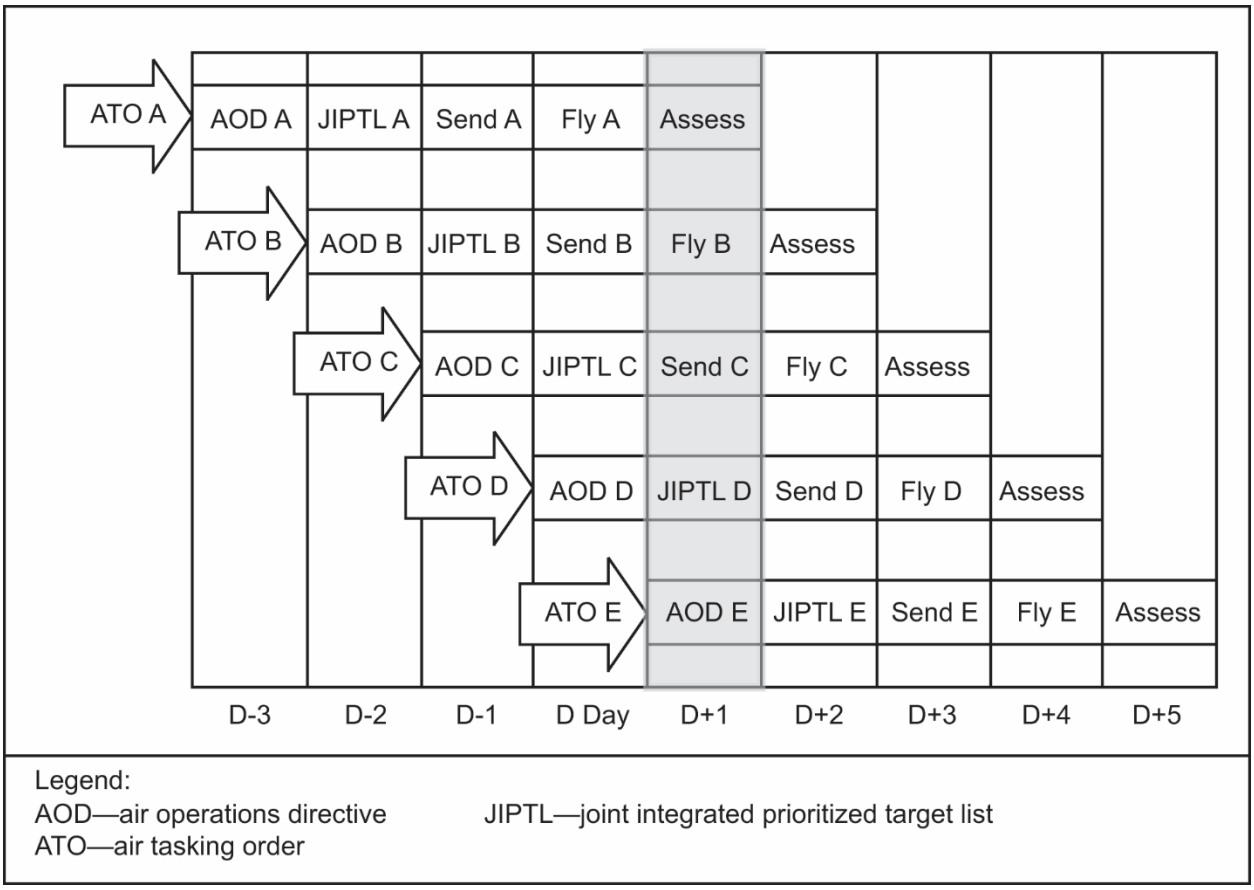

Figure 10. Multiple ATOs in Various Stages of Planning and Execution

i. The joint air tasking cycle, from JFC guidance to the start of ATO execution, depends on the JFC's and JFACC's procedures. A 72-hour cycle, starting with objectives, effects, and guidance is standard. The precise timeframes should be specified in the JFC's or JFACC's joint air operations plan. Long-range combat air assets, positioned outside the theater but operating in the joint operations area, may be airborne before ATO publication or execution. These assets require the most current ATO information and updates. The JAOC, however, can re-task such missions during execution. Intertheater air mobility missions may not operate within the established tasking cycle. The air mobility division in the air operations center assists the combat plans division with intertheater and intratheater air mobility missions that should be integrated into the ATO.

j. The ATO matches and tasks air forces and capabilities made available to the JFACC for tasking to prosecute targets and resource AIRSUPREQs and other requirements. Other component air missions should be on the ATO to improve joint force visibility and assist with overall coordination and deconfliction. The other-component air missions that appear on the ATO may not be under JFACC control and the JFACC will coordinate changes with all affected components.

k. The joint air tasking cycle consists of six stages (See figure 9). The joint air tasking cycle receives products from information developed during the joint targeting cycle and other joint force processes. The joint targeting cycle and joint air tasking cycle are systematic processes matching available capabilities and forces with specific targets to achieve the JFC's objectives. Unlike the joint targeting cycle, the joint air tasking cycle is time dependent and built around finite time periods to plan, prepare for, and conduct joint air operations. There is a set suspense for product inputs and outputs for each stage of the joint air tasking cycle. Prior to the JFC and component commanders' meeting, the JFACC should meet with senior component liaisons and the JFC's staff to develop recommendations for joint air planning and apportionment for future operations. This meeting may be used to review JFC objectives and guidance, assess and analyze results of joint force operations, and consider changes to ongoing joint air operations. Also, attendees may review adversary or enemy capabilities and courses of action, centers of gravity, decisive points, vulnerabilities, and key targets; and discuss updates to the JIPTL, based on JFC guidance. The JFACC should provide objectives and guidance to the joint air operations staff to achieve the JFC's intent, recommend an air scheme of maneuver, and review joint force capabilities and forces available to accomplish assigned tasks. The guidance should refine requirements for capabilities and forces from other components, and after consulting other component commanders, formulate an air apportionment recommendation for presentation to the JFC.

(1) Stage 1: Objectives, Effects, and Guidance.

(a) The JFC consults often with component commanders to assess the results of the joint force's efforts and to discuss the strategic direction and future plans. This provides component commanders an opportunity to make recommendations, make support requirements known, and state their ability to support other components. The JFC provides updates to the guidance, priorities, and objectives based on enemy operations and the current/expected friendly order of battle. The JFC also refines the intended CONOPS. The JFC's guidance on objectives and effects will identify targeting priorities and will include the JFC's air apportionment decision.

(b) Air Apportionment. Air apportionment allows the JFC to ensure the priority of the joint air effort is consistent with campaign or operation phases and objectives. Given the many functions that joint air forces can perform, its operational areawide application, and its ability to rapidly shift from one function to another, JFC pays particular attention to air apportionment. After consulting with other component commanders, the JFACC makes the air apportionment recommendation to the JFC. The methodology the JFACC uses to make the recommendation may include priority or percentage of effort devoted to assigned mission-type orders, JFC objectives, or other categories significant to the campaign or operation. The air apportionment recommendation is a vital part of the joint air planning and tasking process. The JAOC strategy division formulates the air apportionment recommendation that the JFACC submits

to the JFC for upcoming iterations of the joint tasking cycle. With air capabilities made available to the JFACC, the strategy plans team can recommend the relative level of effort and priority that may be applied to various JFC and/or JFACC objectives. The end result is an air apportionment recommendation. This product is normally forwarded to the joint targeting coordination board (JTCB) for coordination and approval by the JFC. In the case of a theater JFACC supporting multiple JFC (e.g., two or more joint task force commanders), the air apportionment recommendation (e.g., close air support (CAS) and interdiction) referenced here is made to each supported JFC. The JFC is the final approval authority for the air apportionment decision.

(2) Stage 2: Production of the draft JIPTL and draft joint integrated prioritized collection list (JIPCL).

(a) The production of the draft JIPTL and draft JIPCL is the point in the joint targeting cycle where efforts of the joint air targeting cycle relate component target and collection nominations to air tasking, and target aimpoints are selected. These and other data are submitted to the targeting effects team (TET). This occurs after analysts, from other organizations, have incorporated all-source intelligence reports into a targeting database. The TET correlates target nominations to the tactical tasks in the AOD for that air battle plan period.

(b) The TET screens nominated targets ensuring that, once attacked, the desired effects will achieve the JFC's guidance (as delineated in the AOD). Additionally, the TET verifies chosen measures of effectiveness (MOE) will accurately evaluate progress and can be collected. It prioritizes nominated targets based on the best potential for creating the JFC's desired effects and components' priorities and timing requirements. The product of this effort, when approved by the JFC or the JFC's designated representative (e.g., JTCB), is the JIPTL.

(3) Stage 3: Weaponeering and Allocation.

(a) During this stage, JAOC personnel quantify the expected results from employing lethal and nonlethal means, against prioritized targets, to create desired effects. The JIPTL provides the basis for weaponeering assessment activities. All approved targets are weaponeered, including recommended aimpoints, weapon systems and munitions, fuses, target identifications and descriptions, desired direct effects of target attack, probability of creating the desired effect, and collateral damage concerns. The final prioritized targets are developed and provided to the master air attack plan (MAAP) team.

- The TET may provide the MAAP team a draft JIPTL to begin planning. Once the JIPTL is approved by the JFC, the MAAP team can finalize force allocation (i.e., a sortie flow plan). The force application cell can complete coordination with the supporting force enhancement cell to satisfy mission requirements. This ensures the prioritized targets

are planned to generate effects and achieve objectives while maximizing the combat effectiveness of joint air assets. The resulting MAAP is the employment plan that forms the foundation of the ATO.

- The MAAP is a graphic depiction of capabilities required for a given period. Developing the MAAP includes reviewing JFC and JFACC guidance, component plans and their AIRSUPREQs, updates to targets, capabilities and force availability, target selection from the JIPTL, and weapon system allocation. Components may submit critical changes to targets, AIRSUPREQs, and asset availability during the final stages of ATO development.

- The completed MAAP matches available resources to the prioritized target list. It accounts for air refueling requirements, suppression of enemy air defenses requirements, air defense, intelligence, surveillance, and reconnaissance (ISR), and other factors affecting the plan.

(b) Following the JFC's air apportionment decision, the JFACC translates that decision into the total number of sorties by weapon system type available for each objective and task. Based on the apportionment decision, internal requirements, and AIRSUPREQ messages, each air-capable component prepares an allocation request (ALLOREQ) message for transmission to the JFACC (not less than 36 hours prior to the start of the ATO execution period). This coincides with the beginning of the MAAP process. ALLOREQ messages report (from other components to the JFACC):

- Number and type of air assets made available for tasking as directed by the JFC air apportionment decision. These sorties from the other air capable components are made available for tasking by the JFACC. The air capable component commander will direct what missions those assets are capable of conducting.

- Requests for air support from components to the JFACC that exceed the unit's capabilities.

(c) The sortie allotment message (SORTIEALOT) confirms, and where necessary modifies, the ALLOREQ and provides general guidance to plan joint air operations. The JAOC reviews each component's allocation decision/ALLOREQ message and may prepare a SORTIEALOT back to the components in accordance with established operations plans guideline. The SORTIEALOT addresses the following three basic requirements.

- Revisions, if any, to the component's planned allocation of joint air sorties necessitated by unforeseen joint force requirements and within the JFC's air apportionment guidance.

- Approval/disapproval of component requests and allotment of other component's excess sorties.

- Revisions to mission data for components' AIRSUPREQ.

(4) Stage 4: ATO Production and Dissemination.

(a) An ATO production team constructs, publishes, and disseminates the daily ATO and SPINS to forces. The team members develop and maintain a comprehensive address list of approved ATO recipients and coordinate redundant procedures for timely ATO dissemination and receipt.

(b) The air operations database (AODB) manager is an experienced ATO production technician who oversees the AODB update and change process.

(c) The AODB consists of the friendly order of battle that includes bases, units, aircraft, mission types, and call signs and incorporates the identification friend or foe/selective identification feature plan. JFC and JFACC guidance (including the AOD), target worksheets, the MAAP, and component requirements are used to create the final ATO, SPINS, and ACO.

(d) Planners must develop airspace control and air defense instructions in sufficient detail to allow components to plan and execute all air missions listed in the ATO. These directions must enable combat operations without undue restrictions while balancing combat effectiveness with the safe, orderly, and expeditious use of airspace.

(e) Instructions must provide for quick coordination of task assignment and reassignment (i.e., redirection, retargeting, or change of mission type) and must direct aircraft identification and engagement procedures and rules of engagement appropriate to the nature of the threat.

(f) These instructions also should consider the volume of friendly and possibly neutral air traffic, friendly air defense requirements, identification-friend-or-foe technology, weather, and adversary or enemy capabilities. Instructions are contained in SPINS and in the ACO and are updated as frequently.

(g) The AOD, ATO, ACO, and SPINS provide operational and tactical direction at appropriate levels of detail. The level of detail should be very explicit when forces operate from different bases and multicomponent or composite missions are tasked. In contrast, less detail is required when missions are tasked to a single component or base.

(5) Stage 5: Execution Planning and Force Execution. The JFACC directs executing air capabilities and forces made available for joint air operations. Inherent in this is the authority to redirect joint air assets. The JFACC coordinates with affected component commanders upon redirection of joint sorties previously allocated for supporting component operations. Aircraft or other capabilities and forces not apportioned for joint air operations, but included in the ATO for coordination purposes, may be redirected with the component commander's or JFC's approval. Aircraft, or other capabilities and

forces made available for joint air operations, may be redirected with the approval of the JFACC.

(a) The JAOC must be responsive to required changes while executing the ATO. Completing in-flight reports, discovering time-sensitive targets, and making an initial assessment (such as a battle damage assessment) may cause redirecting joint air capabilities and forces before launch or once airborne.

(b) During execution, the JAOC is the focal point for publishing changes to the ATO and is the centralized control node for tasking joint air capabilities and forces. Also, it is charged with coordinating and deconflicting those changes with the appropriate control agencies and components. Decentralized execution of the ATO at the lowest capable command and control (C2) element is preferred and determined by delegated authorities from the appropriate commander (e.g., JFACC, airspace control authority (ACA), area air defense command (AADC)).

Note: Take care when redirecting sorties from one target to another to ensure the proper weapons and fuses are available for the new target.

(c) Due to operational environment dynamics, the JFACC may be required to make changes to planned joint air operations during execution. Employing joint air assets against emerging targets requires efficient, timely information sharing and decision making among components. It is critical the JFC establishes, coordinates, and promulgates procedures before operations begin. The dynamic targeting portion of the joint targeting cycle is established to facilitate this process. The JFACC will coordinate with affected component commanders, to ensure target deconfliction and forces are out of danger relative to the new target areas.

(d) During execution, the JFACC redirects joint air assets to respond to moving targets or changing priorities. Ground or airborne, C2 platform, mission commanders may be delegated authority from the JFACC to redirect sorties or missions made available to higher priority targets. It is essential, however, the JAOC is notified of all redirected missions.

(6) Stage 6: Assessment. An assessment is performed by all levels of the joint force.

(a) The JFC should establish a dynamic system to conduct assessments throughout the joint force and ensure all components are contributing to the overall joint assessment effort. The joint force J-3, assisted by the J-2, is responsible for coordinating an assessment. An assessment is a continuous process that measures the overall effectiveness of employing joint force capabilities during military operations. It determines progress toward accomplishing tasks, creating effects, and achieving objectives. Continuously, the JFACC should plan and evaluate the results of joint air operations and provide assessments to the JFC for consolidation into the overall assessment of the current operation.

(b) Assessment is conducted at the tactical and operational levels within the joint force. At the tactical level, assessment is essential for decision making during ATO execution. However, the tactical assessment process continues for days or weeks to evaluate weapons and tactical engagement effectiveness as additional information and analyses become available from sources inside and outside the operational area. This should include an actual collateral damage determination. Air planners should determine measures of performance to evaluate task accomplishment and MOEs to assess changes in system behavior, capability or the operational environment. Planners should ensure they establish logical links between air objectives and tasks, and the measures used to evaluate them, early in the planning sequence. They should identify collection requirements as part of the planning process. At the operational level, assessment is concerned with gathering information on the broader results achieved by air operations and planning for future operations.

(c) The assessment process, at the tactical level, provides one of the major sources of information for performing an assessment at the operational level. Tactical inputs, along with a wide assortment of other information, aid in developing the air component's operational-level assessment.

(d) The JFACC's operational-level assessment should be forwarded to the joint force J-3 as one component's input to the JFC's overall determination of the operation's success. An operational-level assessment can serve as the basis for important recommendations that can affect the JFC's apportionment decision and the JFACC's air resource allocation.

(e) Although assessment appears to mark the end of the air tasking cycle, it is an ongoing activity that provides important inputs to decision making and aids processes throughout that cycle.

(f) There are at least five ATOs in various stages of the joint air tasking cycle at any time (see Figure 10):

- ATO A—Assessment of sorties already flown (strategy and ISR divisions).
- ATO B—Execution planning and force execution (combat operations division).
- ATO C—ATO production and dissemination (combat plans division).
- ATO D—Weaponeering and allocation (combat plans division).
- ATO E—Target development (combat plans and ISR divisions).

(g) The JFACC's responsibilities include monitoring joint air operations execution and redirecting joint air operations. Inherent in the JFACC's authority is the ability to redirect joint air assets. A JFACC may delegate authority to subordinate commanders' C2 nodes, thereby redirecting air

missions to higher priority targets or operations. For details, see JP 3-30, *Joint Air Operations*.

(h) The following are ATO mission changes.

- Retarget. This is used to deviate from an ATO-tasked mission to an emerging target or target of opportunity or provide an updated location or status of planned targets.
- Re-roll. A re-roll changes an aircraft mission type on the ATO, facilitating a higher priority requirement or satisfying an immediate air support request (e.g., change an air interdiction mission to CAS).
- Retask or redirect. This is a generic term for taking an ATO mission and retasking it to a dynamic event (e.g., troops in contact or combat search and rescue).
- Divert. This means to proceed to alternate base.

Note: For the purpose of the remainder of this section, it is assumed that a United States Army theater, corps, or division (DIV) headquarters (HQ) is designated as the HQ of the joint force land component commander (JFLCC); therefore, the following input procedures are "Army forces (ARFOR)-centric."

2. Army Forces Inputs to the Joint Air Tasking Cycle

The ARFOR HQ is responsible for providing inputs to the daily ATO, ACO, SPINS, and other products affecting air-ground operations with supporting air components through the battlefield coordination detachment (BCD) at the JAOC. The ARFOR HQ sets deadlines for brigade combat teams (BCT) and DIVs to nominate targets, and process preplanned AIRSUPREQs, joint tactical air strike requests (JTAR), ACMREQ, collection requirements, and other inputs influencing daily ATO and ACO production.

3. Army Operations Process Inputs

a. The Army's operations process provides products to joint C2 processes achieving joint air-ground integration as described in chapter II. During the operations process, the ARFOR HQ identifies requirements exceeding organic capabilities or identifies weaponeering solutions air support can provide. The Army's operations process nests its military decision-making process (MDMP) and targeting (decide, detect, deliver, and assess) battle rhythms to synchronize warfighting functions. This provides subordinate units guidance on when to submit a AIRSUPREQ/JTARs, ACMREQs, and collection requirements facilitating planning and preparation by supporting components. The ARFOR HQ develops operations and fires plans affecting other components and requires coordination with the JAOC and other joint forces.

b. Daily ARFOR tasks during the joint air tasking cycle include:

(1) Collaborate with the JAOC through the BCD. The Army submits the requirements and inputs (summarized in table 2) through the BCD to the JAOC per the prescribed battle rhythm.

Table 2. Daily ARFOR Inputs to JAOC Joint Air Tasking Cycle	
Army Forces (ARFOR) Daily Inputs	**ARFOR Daily Inputs During Planning Stages**
Air operations directive (AOD)	a. Provide the Army commander's inputs to the air apportionment recommendation for joint force commander (JFC) decision to influence the joint force air component commander's (JFACC) air allocation decision for using joint airpower in the daily air battle plan. b. ARFOR inputs to para. 1.c. Situation, Friendly forces. c. Develop and advocate for ARFOR prioritized tactical tasks used for prioritizing targets on the joint integrated prioritized target list (JIPTL). d. Provide ground-force priorities and objectives; give the battlefield coordination detachment (BCD) Army mission briefs and share operational data.
Theater battle management core system air tasking order (ATO)	a. Provide daily aircraft bed down report updating the joint air operations center (JAOC) friendly order of battle and the air operations database. b. Provide Army aircraft missions schedule to BCD for Army component inclusion in the ATO (provide valid identification, friend or foe codes). Provide platform subject matter experts (e.g., GUARDRAIL RC-12 or unmanned aircraft) to BCD for ATO mission planning. c. Provide scheduled fire missions (e.g., rocket and missiles or engagement areas) requiring coordination with other affected components. d. Send daily preplanned air support requests to the BCD via the Advanced Field Artillery Tactical Data System (AFATDS). Communicate the desired target priorities, timing, and effects inside the Army's assigned area of operation. e. Provide ARFOR friendly ground-operations briefings and graphics (fire support coordination measures, airspace coordinating measures (ACM), and maneuver graphic control measures).
Airspace control order (ACO)	a. Consolidate, integrate, and coordinate ARFOR requirements for airspace use and users facilitating air-ground operations (e.g., organic and supporting aircraft, fires, unmanned aircraft systems). b. Process Army unit airspace plan ACM requests and send them to BCD at the JAOC using the tactical airspace integration system. c. Participate in integrating ARFOR ACMs into theater ACO.
Special instructions (SPINS)	a. Provide SPINS inputs (e.g., Section 6: Operations—air interdiction and close air support (CAS)). b. Include provisions for: deliberate attacks with attack weapons teams, clearance of fires, CAS, targeting mobile targets, kill box procedures, joint tactical air strike request (JTAR) numbering, or processing immediate JTAR procedures.

Note: This list is not all-inclusive and the ARFOR HQ should coordinate requirements directly with the BCD.

(2) Establish and maintain connectivity and functionality between the BCT's air defense and airspace management/brigade aviation element with the DIV airspace element, fires support element (FSE), joint air-ground integration center (JAGIC) (if formed), corps, theater army, and BCD.

(3) Provide the ground commander's input to the JFACC air apportionment recommendation to the JFC influencing how joint air power is used in the daily air battle plan.

(4) Submit a ground CONOPS and priority of air support affecting the JFACC's guidance for the AOD. The ARFOR reviews operational objectives, tactical objectives, and tactical tasks for each AOD where target nominations are prioritized in the JIPTL. ARFOR must clearly and accurately define objectives, the main effort, and priority of support for supporting air forces. ARFOR accomplishes this by clearly linking its selected targets (candidate target list and target development nominations), prioritized objectives and tactical tasks, and effects in the AOD. The BCD requires a clear understanding of the commander, Army forces' (COMARFOR) intent, CONOPS, and priority of support to effectively represent and present the Army's requirements within the AOD and during the joint air tasking cycle.

(5) Project organic Army aircraft missions for operations requiring joint force visibility and ensuring ARFOR aviation missions are published in each ATO and ACO.

(6) Coordinates shaping operations and input planned missile and rocket fire missions into the ATO.

(7) Develop and approve the unit airspace plan (UAP) and sending ACMREQs to the ACA for coordination and inclusion in the daily ACO. Each Army echelon consolidates all airspace user requirements in their UAP for consolidation in the ARFOR UAP that is submitted to the BCD at the JAOC for approval in the theater ACO.

(8) Establish and coordinate various maneuver control measures, airspace coordination measures (ACM), and fire support coordination measures (FSCM), facilitating operations by making them available for inclusion in the ACO, as applicable.

(9) Provide relevant procedures for CAS, the Army Tactical Missile System (better known by the acronym ATACMS), or prosecuting targets with mobile characteristics that affect supporting joint air operations for inclusion in the SPINS. SPINS are detailed instructions for implementing missions on the ATO. However, the SPINS may supplement information in the ACO, area air defense plan (AADP), and OPTASKLINK. The ARFOR is responsible for coordinating inputs and changes to SPINS and providing sufficient details for other supporting aircraft operating inside the ARFOR AO.

(10) Approve and submit a preplanned air support list (ASL) which includes air support requests with targets and without targets. Validated air support requests are sourced on the ATO with scheduled and on-call air missions during stage 3 of the joint air tasking cycle. The ASL is submitted per the JFC's battle rhythm, during the planning stages of the joint air tasking cycle, and resourced on the initial ATO. Preplanned AIRSUPREQs with targets go through the joint targeting cycle as directed by the JFC. ARFOR submits

targets aligned with prioritized tactical tasks per the AOD, meeting JIPTL selection and prioritization criteria and justifying use of joint air assets (as shown in table 3).

Table 3. ARFOR Inputs to JAOC Joint Air Tasking Cycle (JATC) Products

JATC Products	Army forces (ARFOR) Daily Inputs
Joint integrated prioritized target list (JIPTL)	a. Send prioritized air support requests and candidate target list to the battlefield coordination detachment (BCD). • Include ARFOR target nominations (matched to tactical tasks per the air operations directive) to the BCD. • Ensure the candidate target list goes into the joint targeting toolbox and modernized integrated database. • Enter air support requests, without targets, into the air operations database. • The BCD advocates Army targets at the joint air operations center for inclusion in the JIPTL (when the joint force air component commander (JFACC) is given targeting oversight authority by the joint force commander (JFC) to develop the draft JIPTL.
Joint integrated prioritized collection list Component prioritized collection list	a. Send ARFOR collection requirements through joint intelligence channels and a courtesy copy to BCD intelligence. b. When the JFACC is the JFC airborne intelligence, surveillance, and reconnaissance (ISR) manager, coordinate ARFOR ISR capabilities to support collection efforts. The BCD monitors and assists tasking airborne ISR assets and satisfying the collection plan, reconnaissance, surveillance, and target acquisition annex, and ISR synchronization matrix development to meet the ARFOR commander's critical information requirements and requests for information.
Tactical operations data	a. The Army air and missile defense command inputs air and missile defense functions on behalf of the commander, Army forces. b. Update the ARFOR critical asset list and provide subject matter experts for phased array tracking radar to intercept of target (PATRIOT) and Terminal High Altitude Area Defense (THAAD) systems.
Operations task link	Submit Army communications and frequency requirements.

(11) Prepare and submit friendly ground order of battle and aircraft bed down reports to the BCD to provide an update in the JAOC air operations database.

(12) Submit the component's prioritized collection list for integration into the JIPCL. This list is approved by the joint collection management board for JFACC tasking of airborne ISR assets.

(13) Share the commander's critical information requirements with the BCD and supporting components.

(14) Submit Army component critical targets to the JAOC dynamic targeting cell.

(15) Submit communications and frequency requirements for deconfliction and inclusion in the joint integrated frequency list.

(16) Submit ARFOR-approved air mobility requests to the deployment and distribution operations center for prioritization and to the BCD airlift section for coordination at the JAOC.

c. ARFOR provides support to the JFACC, ACA, and area AADC. The JFC may direct components to support joint air operations with assets, capabilities, or forces not under tactical or operational control to the JFACC. The JFLCC provides ground forces and capabilities in support of the JFACC when directed as follows.

(1) Provide supporting fires engagement options including:

(a) An attack weapons team and any planned manned and unmanned teams.

(b) Rocket and missile systems.

(c) An unmanned aircraft system.

(2) Share intelligence.

(3) Provide dynamic collection capability with organic assets.

(4) Track, target, and provide observed fires and intelligence.

(5) Provide personnel recovery (PR) support.

(6) Provide target and air support request updates confirming the validity of previous requests for support.

(7) Identify airspace users and needed ACM.

(8) Deconflict airspace requirements per the airspace control plan (ACP).

(9) Assist theater air control system C2 agencies (e.g., control and reporting center or airborne warning and control system) airspace control efforts.

(10) Identify and share FSCMs with other affected components.

(11) Provide maneuver control measures, CONOPS and fires through the BCD to the JAOC.

(12) Share ground operations briefings, orders, graphics, and other pertinent information with the JFACC or JAOC through the BCD.

d. ARFOR provides the following inputs during ATO execution. They:

(1) Submit timely target and air support request updates revalidating requirements.

(2) Provide target updates and verify supporting air missions are tasked as planned or modify the aircraft mission tasking.

(3) Prepare and share friendly ground operations briefings and the commander's updates with the BCD at JAOC and ground liaison detachments at the wing operations center (WOC).

(4) Provide air mission assessments to the JFACC for operational-level combat assessments.

(5) Exchange current operational and intelligence data between the ARFOR staff (e.g., chief of fires or chief of operations) and BCD at the JAOC.

(6) Provide situational understanding. They update information about the current operations and friendly forces.

(7) Coordinate changes to aircraft missions (i.e., aborts, re-targets, re-roles, diverts) of previously tasked aircraft that may affect timelines or desired effects. This is accomplished via the air support operations center.

(8) Participate in dynamic targeting, PR, and combat search and rescue activities.

(9) Provide commander update briefs and inform supporting commanders participating in the commander's update.

(10) Coordinate changes to Army airlift and airdrop support.

4. Army Forces Input to the Joint Operation Planning Process for Air

During campaign and operations planning or order development, the ARFOR component collaborates with the supported combatant commander and JFC's joint planning group. The ARFOR is obligated to provide a liaison to the supporting air component or JFACC (who is assigned other JFC-designated authorities, such as AADC or ACA), to influence theater-level guidance affecting ground operations. Some ARFOR joint operation planning process for air (JOPPA) inputs are listed in table 4.

a. All airspace users (i.e., manned aircraft, unmanned aircraft, artillery, missiles, or other flying assets) are required to comply with the airspace guidance promulgated in the ACP. ARFOR participates in the ACP development and modification process.

b. ARFOR also participates in developing the AADP and ensures tasks for ARFOR assets (such as phased array tracking radar to intercept of target [PATRIOT] missile systems and Terminal High Altitude Area Defense [THAAD]) are incorporated. The Army air and missile defense command (AAMDC) represents the COMARFOR in this process.

c. The AAMDC, in the role of the theater army air and missile defense coordinator (TAAMDCOORD), provides assistance to the JFLCC's/Army force's staff (J3 and J5) in providing recommendations on Army critical asset priorities for nomination to the critical asset list (CAL).

Table 4. Army forces (ARFOR) Collaboration to the Joint operation planning process for air (JOPPA)	
Plans	**ARFOR Inputs**
Joint air operations plan	a. Establish commander, Army forces (COMARFOR) representation with the commander, Air Force forces' A staff, joint air operations center, and wing operations center (WOC) enhancing air-ground integration. b. Provide input to the joint operation planning process for air operations supporting the land operations plan or order for each phase of the operation. c. Coordinate COMARFOR inputs to the air apportionment recommendation by phase (updated daily).
Airspace control plan	a. Assist with planning and developing airspace control system and airspace control procedures enhancing land operations. b. Determine airspace sectors and command and control agencies. c. Coordinate Army airspace priorities with airspace control authority.
Area air defense plan and joint forces commander-approved defended asset list	a. ARFOR send critical asset list to the area air defense commander and subject matter experts for the phased array tracking radar to intercept of target (PATRIOT) missile system and Terminal High Altitude Area Defense (THAAD) systems.

5. Army Processing of Air Support Requests

The Army processes preplanned and immediate air support requests through the Army air-ground system (AAGS). The Army approves or denies requests for external air support and identifies air support requirements to the air component using air support requests. Air support requests are processed through the FSE at each echelon of command, for approval and prioritization before being sent to the supporting air component. The Army nests its MDMP and targeting battle rhythm with the joint air tasking cycle providing subordinates guidance regarding submission timelines of preplanned air support requests. Tactical air control parties are located at each echelon of command to advise and assist the FSE with completing valid air support requests. The DIV JAGIC, if established, provides comprehensive assistance in consolidating and validating battalion and BCT-generated immediate air support requests.

a. The Army's operations process is driven by operational events, but using joint air assets requires the Army to submit preplanned air support requests on time to meet the daily battle rhythm of the joint air tasking cycle. The joint air tasking cycle is time driven and designed to enable the JFACC to publish the ATO on time, enabling tasked aviation units to conduct tactical mission planning. When the suspense for sending a preplanned air support request is met, the supported ground forces' commander knows whether or not dedicated joint air support

sorties are available to support the ground scheme of maneuver (via dissemination of the ATO).

b. ARFOR must submit their preplanned air support requests to the supporting air component in time to meet the planning stages of the joint air tasking cycle. The suspense for a preplanned air support requests is identified by the BCD, communicated with the ARFOR, and included in the ARFOR's decision cycle at each echelon of command. Depending on the operational tempo, a trained DIV or corps FSE may take the initiative and submit preplanned air support requests for on-call air missions in support of subordinate units that are unable to meet the suspense. ARFOR submits preplanned air support requests for on-call air missions and area targets to receive dedicated sorties on the ATO to support anticipated ground force operations.

c. Every air support request must contain sufficient information for the supporting air component to task aircraft via the ATO, but may require additional information before the tasked unit can complete mission planning. The preferred system to process an air support request is the Advanced Field Artillery Tactical Data System (AFATDS). Units prioritize their air support list. The BCD AFATDS is interoperable with the theater battle management core system at the JAOC, enabling digital parsing by the BCD into the database for air component planning and resourcing.

d. Immediate requests for close air support are requests that were not requested in sufficient time to go through the planning stages of the joint air tasking cycle. High priority immediate air support requests are resourced with air assets already on the current ATO that were previously sourced from preplanned air support requests, or by diverting other aircraft from their planned missions. In either case, the air mission on the ATO may not be the optimum resource for supporting an immediate JTAR.

e. The air support operations center and joint terminal attack controllers use the joint air request net to send immediate JTARs. If time permits, an immediate AIRSUPREQ (D670) is sent through the AAGS, using AFATDS to go through fire support processing.

6. Special Operations Integration into Air Tasking Order Cycle

See Chapter 6 paragraph 5.g. for discussion of the special operations liaison element and its responsibilities.

Appendix C
Battle Management Area Construction

1. The Construct

The battle management area (BMA) construct is to position tactical battle management command and control (BMC2) elements to provide areas of responsibility, for decentralized execution of offensive and defensive operations to achieve the joint force commander's objectives. (See Figure 14.) Additionally, it ensures wide-area surveillance coverage of the joint operations area. (See figure 15.) The number and arrangement of assets should consider desired surveillance, data links, and communication coverage. Also, the battle manager's ability to handle task loads and provide appropriate span of control should be considered.

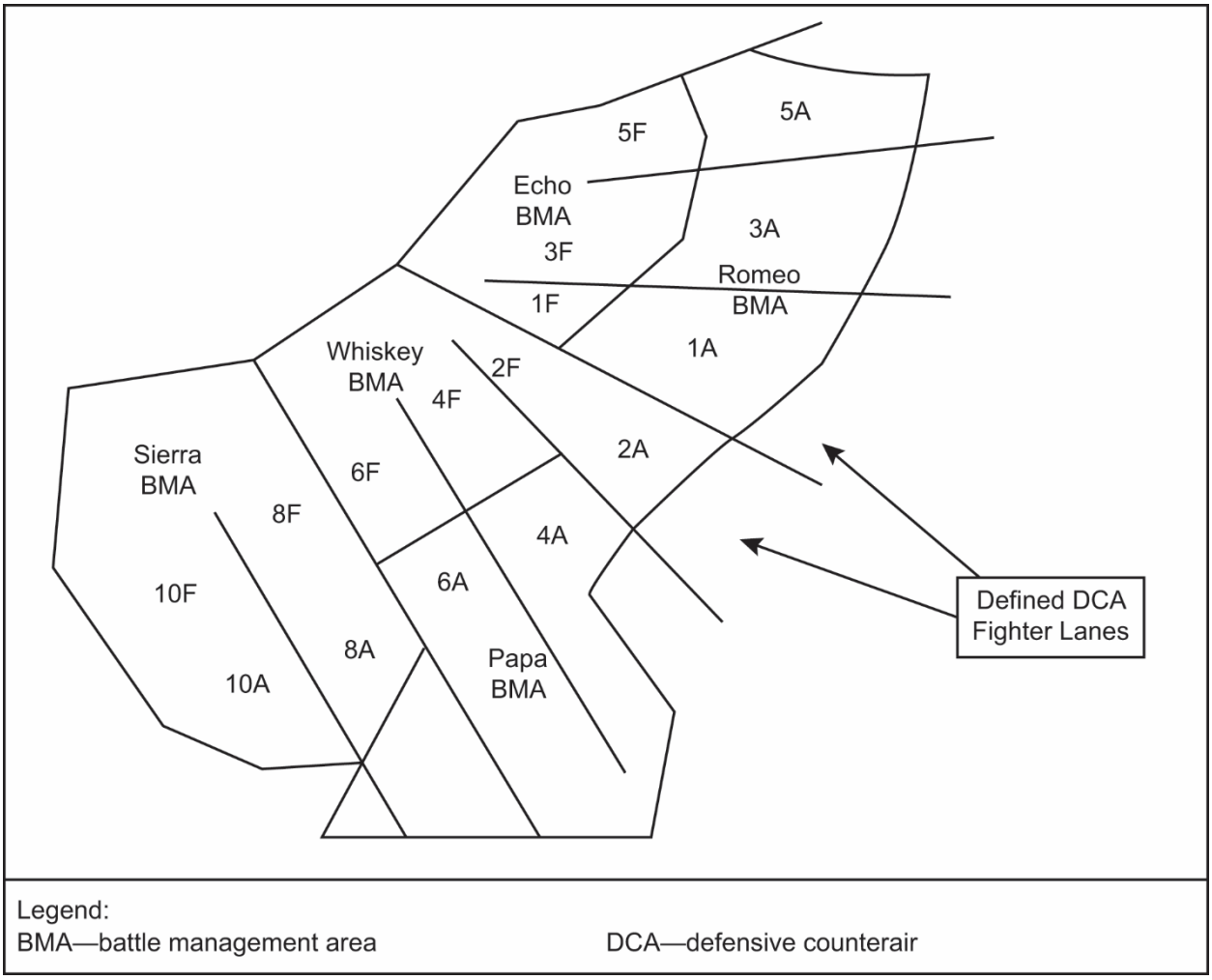

Figure 11. Notional BMAs

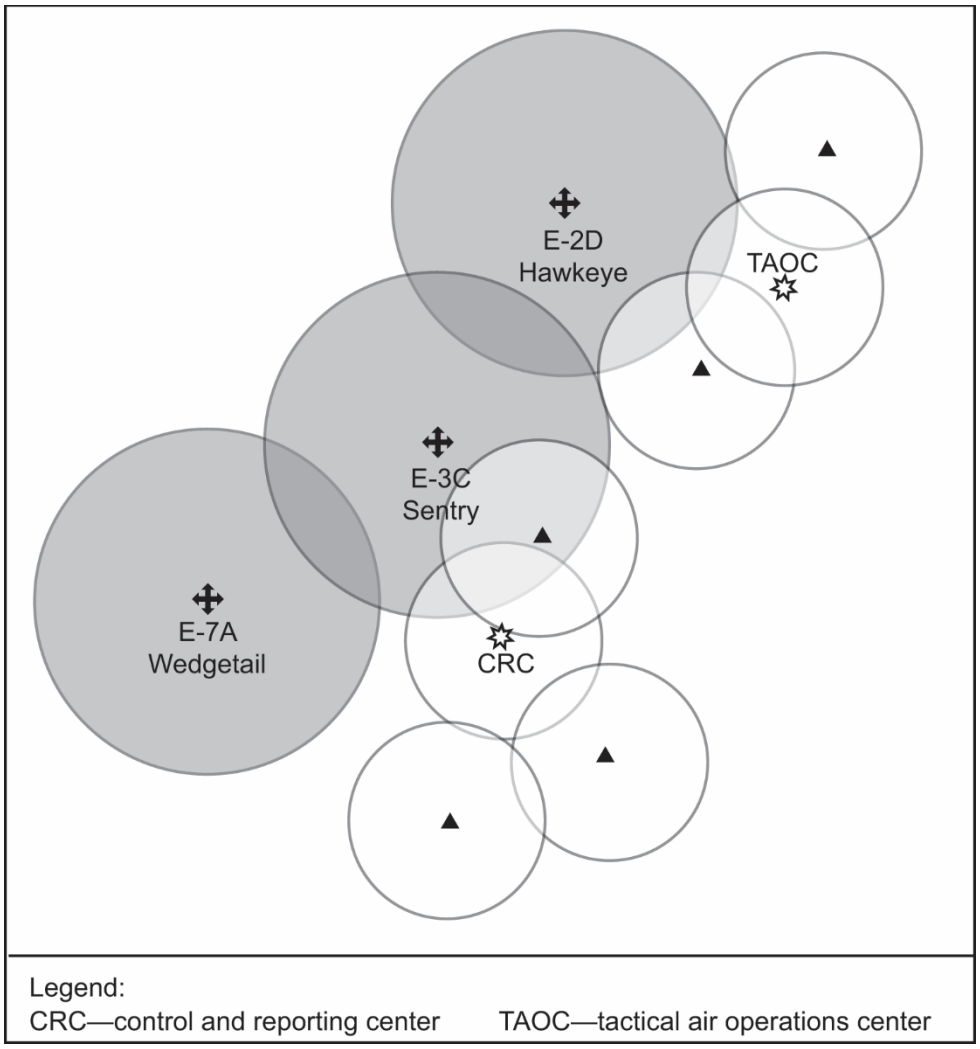

Figure 12. Surveillance Areas of Responsibility/Track Production Areas

2. Joint Force Air Component Commander Responsibilities

a. The Joint Force Air Component Commander (JFACC) divides the area of responsibility to account for various tactical BMC2 elements' abilities to maintain an optimum span of control of counterair operations. The JFACC delegates authorities for properly managing counterair activities and providing accountability of the JFACC's and area air defense commander's assets operating within the BMA. The controlling element manages all air defense assets within the BMA.

b. Consider the following factors when constructing the BMA and assigning roles and responsibilities:

(1) Expected crew task load and task saturation levels.

(2) Surveillance capabilities and coverage.

(3) Radio and tactical data link, network capability and coverage.

(4) Operator capabilities.

(5) Tanker, shooter locations, and fighter lanes.

(6) Terrain or other environmental factors.

c. BMAs promote maximum mutual support among the tactical execution elements while reducing ambiguity, confusion, and mutual interference. BMC2 conducts 24/7, full-spectrum command and control (C2) of JFACC forces and includes:

(1) Collaborating and coordinating air tasking order activities with multinational and host nation self-defense C2.

(2) Integrating and deconflicting air and surface-to-air missile engagements.

(3) Mitigating friendly fire occurrences between multinational and US forces.

(4) Minimizing interference among component activities.

(5) Performing airspace management.

(6) Integrating and deconflicting dynamic surface fires.

(7) Providing safe aircraft separation.

(8) Executing area air defense commander delegated authorities for integrated air missile defense in assigned operating areas.

(9) Managing defensive counterair (DCA) capabilities and tanker flow.

(10) Committing DCA fighters and providing targeting.

(11) Directing and integrating surface-to-air engagements.

(12) Supporting strike package commanders from check-in, ingress, on target, egress, and return to base.

(13) Directing movements and providing oversight of high-value airborne asset retrograde activities.

(14) Managing tanker support; dynamically reallocating fuel to meet offensive counterair and DCA commander’s needs.

(15) Deconflicting and integrating air mobility and theater aeromedical evacuation operations.

(16) Supporting joint force maritime component commander air assets conducting countermaritime operations.

(17) Providing a common air picture through precisely tracking all air activity in assigned areas.

(18) Finding, identifying, and categorizing adversary aircraft at maximum ranges.

(19) Maintaining a continuous track of all US and multinational air assets to the highest degree possible.

(20) Managing tactical data links.

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GLOSSARY

PART I – ABBREVIATIONS AND ACRONYMS

A

AADC	area air defense commander
AADP	area air defense plan
AAGS	Army air-ground system
AAMDC	Army air and missile defense command
ACA	airspace control authority
ACE	aviation combat element (USMC)
ACI	air combat intelligence
ACIT	agile control and integration team (USAF)
ACM	airspace coordinating measure
ACMREQ	airspace coordinating measure request (USMC)
ACO	airspace control order
ACP	airspace control plan
ACS	airspace control system
ADA	air defense artillery
ADAFCO	air defense artillery fire control officer
ADAM	air defense and airspace management
ADP	Army doctrine publication
ADS	air defense section
AE	airspace element (Army)
AEGIS	Advanced Electronic Guided Interceptor System
AFATDS	Advanced Field Artillery Tactical Data System
AFFOR	Air Force forces
AFLE	Air Force liaison element
AFSOC	Air Force Special Operations Command
AFSOF	Air Force special operations forces
AFTTP	Air Force tactics, techniques, and procedures
AI	air interdiction
AIRSUPREQ	air support request message
ALLOREQ	allocation request

ALO	air liaison officer
ALSSA	Air Land Sea Space Application (Center)
AMD	air and missile defense
AMDC	air and missile defense commander
ANGLICO	air-naval gunfire liaison company
AO	area of operations
AOC	air operations center
AOD	air operations directive
AODB	air operations database
AOR	area of responsibility
AREC	air resource element coordinator
ARFOR	Army forces
ARG	amphibious ready group
ASAT	aviation staff augmentation team
ASCC	Army Service component command
ASCS	air support control section
ASE	air support element
ASL	air support list
ASLT	air support liaison team
ASOC	air support operations center
ASOG	air support operations group
ASOS	air support operations squadron
ATACMS	Army Tactical Missile System
ATC	air traffic control
ATCS	air traffic control section
ATF	amphibious task force
ATO	air tasking order
ATP	Army techniques publication
AWACS	Airborne Warning and Control System

B

BAE	brigade aviation element
BCC	battle control center
BCD	battlefield coordination detachment (Army)

BCT	brigade combat teams
BDE	brigade
BM	battle management
BMA	battle management area
BMC2	battle management command and control
BN	battalion

C

C2	command and control
CAS	close air support
CCDR	combatant commander
CCMD	combatant command
CDRJSOTF	commander, joint special operations task force
CF	conventional forces
COCOM	combatant command (command authority)
COMAFFOR	commander, Air Force forces
COMARFOR	commander, Army forces
COMMARFOR	commander, Marine forces
COMNAVFOR	commander, Navy forces
COMSPFOR	commander, Space forces
CONOPS	concept of operations
CP	command post
CRC	control and reporting center
CSG	carrier strike group
CTF	commander, task force
CWC	composite warfare commander
CVN	multi-purpose aircraft carrier (nuclear-powered)

D

DASC	direct air support center
DCA	defensive counterair
DD	Department of Defense (form)
DFSCOORD	deputy fire support coordinator
DIV	division

E

ESG	expeditionary strike group
EW/C	early warning/control (USMC)
	F
FAC(A)	forward air controller (airborne)
FARP	forward arming and refueling point
FC	fires cell (Army)
FECC	fire and effects coordination center (USMC)
FIST	fire support team
FM	field manual
FMF	Fleet Marine Forces
FSCC	fire support coordination center
FSCM	fire support coordination measure
FSCOORD	fire support coordinator (Army)
FSE	fires support element
	G
GCE	ground combat element (USMC)
GLD	ground liaison detachment (Army)
	H
HQ	headquarters
	I
IAMD	integrated air and missile defense
ISET	integrated sensing and effect team (USAF)
ISR	intelligence, surveillance, and reconnaissance
	J
J-2	intelligence directorate of a joint staff
J-3	operations directorate of a joint staff
J-6	communications system directorate of a joint staff
JACCE	joint air component coordination element
JAGIC	joint air-ground integration center
JAOC	joint air operations center
JAOP	joint air operations plan
JARN	joint air request net
JCC	joint cyberspace center
JFACC	joint force air component commander

JFC	joint force commander
JFE	joint fires element
JFLCC	joint force land component commander
JFMCC	joint force maritime component commander
JFSCC	Joint Force Space Component Commander (USSTRATCOM)
JFSOCC	joint force special operations component commander
JIPCL	joint integrated prioritized collection list
JIPTL	joint integrated prioritized target list
JOA	joint operations area
JOC	joint operations center
JOPPA	joint operation planning process for air
JP	joint publication
JPRC	joint personnel recovery coordinator
JSOAC	joint special operations air component
JSOACC	joint special operations air component commander
JSOTF	joint special operations task force
JTAC	joint terminal attack controller
JTAR	joint tactical air strike request
JTCB	joint targeting coordination board
JTF	joint task force

K, L

LAAD	low-altitude air defense (USMC)
LCE	logistics combat element (USMC)
LF	landing force
LSCO	large-scale combat operations

M

MAAP	master air attack plan
MACCS	Marine air command and control system
MAGTF	Marine air-ground task force
Marine TACC	Marine tactical air command center
MARLE	Marine liaison element
MATC	Marine air traffic control
MCRP	Marine Corps reference publication

MDMP	military decision-making process
MEB	Marine expeditionary brigade
MEF	Marine expeditionary force
MEU	Marine expeditionary unit
MMT	Marine air traffic control mobile team
MOC	maritime operations center
MOE	measure of effectiveness
MTTP	multi-Service tactics, techniques, and procedures

N

NALE	naval and amphibious liaison element
NAVFOR	Navy forces
Navy TACC	Navy tactical air control center
NCC	Navy component commander
NFC	numbered fleet commander
NTACS	Navy tactical air control system
NTTP	Navy tactics, techniques, and procedures
NWDC	Navy Warfare Development Center
NWP	Navy warfare publication

O

OCA	offensive counterair
OPCON	operational control
OPLAN	operation plan
OPORD	operation order
OPTASK	operation task
OPTASKLINK	operations task link
OTC	officer in tactical command

P, Q

PATRIOT	phased array tracking to intercept of target
PLT	platoon
PMC	passengers, mail, and cargo
PR	personnel recovery

R

RADC	regional air defense commander

RLD	reconnaissance liaison detachment
RSTA	reconnaissance, surveillance, and target acquisition

S

SACC	supporting arms coordination center
SADC	sector air defense commander
SALT	supporting arms liaison team
SEAD	suppression of enemy air defenses
SO	special operations
SOAGS	special operations air-ground system
SOCCE	special operations command and control element
SOF	special operations forces
SOFLE	special operations forces liaison element
SOJTF	special operations joint task force
SOLE	special operations liaison element
SORTIEALOT	sortie allotment message
SOTF	special operations task force
SOTG	special operations task group (Air Force)
SOTU	special operations task unit (Air Force)
SPFOR	Space forces
SPINS	special instructions
STT	special tactics team
STWC	strike warfare commander

T

TAC(A)	tactical air coordinator (airborne)
TACON	tactical control
TACP	tactical air control party
TACS	theater air control system
TADC	tactical air direction center
TAGS	theater air-ground system
TAOC	tactical air operations center (USMC)
TECOM	Training and Education Command
TET	targeting effects team
THAAD	terminal high altitude area defense

TSOC	theater special operations command
TTP	tactics, techniques, and procedures

U

UAP	unit airspace plan
UAS	unmanned aircraft system
US	United States
USA	United States Army
USAF	United States Air Force
USMC	United States Marine Corps
USN	United States Navy
USSF	United States Space Force
USSOCOM	United States Special Operations Command

V, W, X, Y, Z

WOC	wing operations center (USAF)

PART II – TERMS AND DEFINITIONS

air apportionment—The determination and assignment of the total expected effort by percentage and/or by priority that should be devoted to the various air operations for a given period of time. (DoD Dictionary of Military and Associated Terms. Source: JP 3-0)

air interdiction—Air operations to perform interdiction conducted at such distances from friendly forces that detailed integration of each air mission with the fire and movement of friendly forces is not required. Also called AI. (DoD Dictionary of Military and Associated Terms. Source: JP 3-03)

airspace control—The exercise of delegated authority over designated airspace and users through control procedures and coordination measures to maximize operational effectiveness. (DoD Dictionary of Military and Associated Terms. Source: JP 3-52)

airspace control authority—The commander designated for overall responsibility for airspace control. Also called ACA. (DoD Dictionary of Military and Associated Terms. Source: JP 3-52)

airspace control plan—The document approved by the joint force commander that provides specific planning guidance and procedures for the airspace control system for the joint force operational area. Also called ACP. (DoD Dictionary of Military and Associated Terms. Source: JP 3-52)

airspace coordinating measures—Measures employed to facilitate the efficient use of airspace to accomplish missions and simultaneously provide safeguards for

friendly forces. Also called ACMs. (DoD Dictionary of Military and Associated Terms. Source: JP 3-52)

apportionment—The quantities of force capabilities and resources provided for planning purposes only, but not necessarily an identification of the actual forces that may be allocated for use when a plan transitions to execution. (DoD Dictionary of Military and Associated Terms. Source: JP 5-0)

area air defense commander—The component commander with the preponderance of air defense capability and the required command, control, and communications capabilities who is assigned by the joint force commander to plan and execute integrated air defense operations. Also called AADC. (DoD Dictionary of Military and Associated Terms. Source: JP 3-01)

area of operations—An operational area defined by a commander for the land and maritime force commander to accomplish their missions and protect their forces. Also called AO. (DoD Dictionary of Military and Associated Terms. Source: JP 3-0)

area of responsibility—The geographical area associated with a combatant command within which a geographic combatant commander has authority to plan and conduct operations. Also called AOR. (DoD Dictionary of Military and Associated Terms. Source: JP 1)

battle management—The management of activities within the operational environment based on the commands, direction, and guidance given by appropriate authority. (DoD Dictionary of Military and Associated Terms. Source: JP 3-01)

battle management area—The Airspace Control Authority (ACA) designated volume of airspace in which airspace control is performed by ACA-delegated airspace control elements best able to provide control in that geographic area. Also called BMA.

combatant command (command authority)—Nontransferable command authority, which cannot be delegated, of a combatant commander to perform those functions of command over assigned forces involving organizing and employing commands and forces; assigning tasks; designating objectives; and giving authoritative direction over all aspects of military operations, joint training, and logistics necessary to accomplish the missions assigned to the command. Also called COCOM. (DoD Dictionary of Military and Associated Terms. Source: JP 1, V2)

combatant commander—A commander of one of the unified or specified combatant commands established by the President. Also called CCDR. (DoD Dictionary of Military and Associated Terms. Source: JP 3-0)

combat identification—The process of attaining an accurate characterization of detected objects in the operational environment sufficient to support an engagement decision. Also called CID. (DoD Dictionary of Military and Associated Terms. Source: JP 3-09)

command and control—The exercise of authority and direction by a properly designated commander over assigned and attached forces in the accomplishment of the mission. Also called C2. (DoD Dictionary of Military and Associated Terms. Source: JP 1, V2)

command and control system—The facilities, equipment, communications, procedures, and personnel essential for a commander to plan, direct, and control operations of forces pursuant to the missions assigned. (DoD Dictionary of Military and Associated Terms. Source: JP 6-0)

command relationships—The interrelated responsibilities between commanders, as well as the operational authority exercised by commanders in the chain of command. (DoD Dictionary of Military and Associated Terms. Source: JP 1, V2)

common operational picture—A single, identical display of relevant information shared by more than one command, that facilitates collaborative planning and assists all echelons to achieve situational awareness. Also called COP. (DoD Dictionary of Military and Associated Terms. Source: JP 3-0)

concept of operations—A verbal or graphic statement that clearly and concisely expresses what the commander intends to accomplish and how it will be done using available resources. Also called CONOPS. (DoD Dictionary of Military and Associated Terms. Source: JP 5-0)

conventional forces—1. Those forces capable of conducting operations using nonnuclear weapons. 2. Those forces other than designated special operations forces. Also called CF. (DoD Dictionary of Military and Associated Terms. Source: JP 3-05)

joint fires—Fires delivered during the employment of forces from two or more components in coordinated action to create desired effects in support of a common objective. (DoD Dictionary of Military and Associated Terms. Source: JP 3-0)

joint fire support—Joint fires that assist the joint force in creating effects and achieving objectives. (DoD Dictionary of Military and Associated Terms. Source: JP 3-0)

joint force—A force composed of significant elements, assigned or attached, of two or more Military Departments operating under a single joint force commander. (DoD Dictionary of Military and Associated Terms. Source: JP 3-0)

joint force air component commander—The commander within a unified command, subordinate unified command, or joint task force responsible to the establishing commander for recommending the proper employment of assigned, attached, and made available for tasking air forces; planning and coordinating air operations; or accomplishing such operational missions. Also called JFACC. (DoD Dictionary of Military and Associated Terms. Source: JP 3-0)

joint force commander—A general term applied to a combatant commander, subunified commander, or joint task force commander authorized to exercise combatant command (command authority) or operational control over a joint

force. Also called JFC. (DoD Dictionary of Military and Associated Terms. Source: JP 1, V1)

joint force land component commander—The commander within a unified command, subordinate unified command, or joint task force responsible to the establishing commander for recommending the proper employment of assigned, attached, and made available for tasking land forces; planning and coordinating land operations; or accomplishing such operational missions. Also called JFLCC. (DoD Dictionary of Military and Associated Terms. Source: JP 3-0)

joint force maritime component commander—The commander within a unified command, subordinate unified command, or joint task force responsible to the establishing commander for recommending the proper employment of assigned, attached, and made available for tasking maritime forces and assets; planning and coordinating maritime operations; or accomplishing such operational missions. Also called JFMCC. (DoD Dictionary of Military and Associated Terms. Source: JP 3-0)

joint force special operations component commander—The commander within a unified command, subordinate unified command, or joint task force responsible to the establishing commander for recommending the proper employment of assigned, attached, and made available for tasking special operations forces and assets; planning and coordinating special operations; or accomplishing such operational missions. Also called JFSOCC. (DoD Dictionary of Military and Associated Terms. Source: JP 3-0)

joint operations—Military actions conducted by joint forces and those Service forces employed in specified command relationships with each other, which, of themselves, do not establish joint forces. (DoD Dictionary of Military and Associated Terms. Source: JP 3-0)

joint operations area—The airspace, land area, and maritime area defined by a combatant commander or subordinate unified commander, in which a joint force commander directs military operations to accomplish a specific mission. Also called JOA. (DoD Dictionary of Military and Associated Terms. Source: JP 3-0)

joint terminal attack controller—A qualified (certified) Service member who, from a forward position, directs the action of combat aircraft engaged in close air support and other offensive air operations. Also called JTAC. (DoD Dictionary of Military and Associated Terms. Source: JP 3-09.3)

kill box—A three-dimensional permissive fire support coordination measure with an associated airspace coordinating measure used to facilitate the integration of fires. (DoD Dictionary of Military and Associated Terms. Source: JP 3-09)

large scale combat operations – Extensive joint combat operations in terms of scope and size of forces committed, conducted as a campaign aimed at achieving operational and strategic objectives. (ADP 3-0)

Marine tactical air command center—The principal United States Marine Corps air command and control agency from which air operations and air defense warning

functions are directed. Also called Marine TACC. (DoD Dictionary of Military and Associated Terms. Source: JP 3-09.3)

Navy tactical air control center—The principal air operations installation (ship-based) from which all aircraft and air warning functions of tactical air operations are controlled. Also called Navy TACC. (DoD Dictionary of Military and Associated Terms. Source: JP 3-09.3)

operational environment—The aggregate of the conditions, circumstances, and influences that affect the employment of capabilities and bear on the decisions of the commander. Also called OE. (DoD Dictionary of Military and Associated Terms. Source: JP 3-0)

special operations—Activities or actions requiring unique modes of employment, tactical techniques, equipment, and training often conducted in hostile, denied, or politically sensitive environments. Also called SO. (DoD Dictionary of Military and Associated Terms. Source: JP 3-05)

special operations forces—Those Active and Reserve Component forces of the Services designated by the Secretary of Defense and specifically organized, trained, and equipped to conduct and support special operations. Also called SOF. (DoD Dictionary of Military and Associated Terms. Source: JP 3-05)

tactical air control party—A subordinate operational component of a tactical air control system designed to provide air liaison to land forces and for the control of aircraft. Also called TACP. (DoD Dictionary of Military and Associated Terms. Source: JP 3-09.3)

targeting—The process of selecting and prioritizing targets and matching the appropriate response to them, considering operational requirements and capabilities. (DoD Dictionary of Military and Associated Terms. Source: JP 3-0)

theater—The geographical area for which a commander of a geographic combatant command has been assigned responsibility. (DoD Dictionary of Military and Associated Terms. Source: JP 1, V1)

theater of operations—An operational area defined by the combatant commander for the conduct or support of specific military operations. (DoD Dictionary of Military and Associated Terms. Source: JP 3-0)

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***ATP 3-52.2**
MCRP 3-20.1
NTTP 3-56.2
AFTTP 3-2.17

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