Joint Pub 3-52

Doctrine for Joint Airspace Control in the Combat Zone

22 July 1995

PREFACE

1. Scope

This publication provides broad doctrinal guidance for joint forces involved in the use of airspace over the combat zone. This airspace control is in the various operating environments that might constitute the combat zone—foreign continent, high seas, amphibious objective area, littoral, or the North American Continent outside the United States. The combat zone described in this publication applies to the broadest interpretation of areas where combat forces are required to conduct operations, including operations other than war. For example, it also includes areas such as the communications zone (COMMZ). Unlike ground forces, the inherent nature of air operations mitigates strict compliance with terrestrial boundaries. Therefore, airspace control in the combat zone integrates transitions from noncombat air traffic control.

2. Purpose

This publication has been prepared under the direction of the Chairman of the Joint Chiefs of Staff. It sets forth doctrine and selected joint tactics, techniques, and procedures (JTTP) to govern the joint activities and performance of the Armed Forces of the United States in joint operations as well as the doctrinal basis for US military involvement in multinational and interagency operations. It provides military guidance for the exercise of authority by combatant commanders and other joint force commanders and prescribes doctrine and selected tactics, techniques, and procedures for joint operations and training. It provides military guidance for use by the Armed Forces in preparing their appropriate plans. It is not the intent of this publication to restrict the authority of the joint force commander (JFC) from organizing the force and executing the mission in a manner the JFC deems most appropriate to ensure unity of effort in the accomplishment of the overall mission.

3. Application

a. Doctrine and selected tactics, techniques, and procedures and guidance established in this publication apply to the commanders of combatant commands, subunified commands, joint task forces, and subordinate components of these commands. These principles and guidance also may apply when significant forces of one Service are attached to forces of another Service or when significant forces of one Service support forces of another Service.

b. The guidance in this publication is authoritative; as such, this doctrine (or JTTP) will be followed except when, in the judgment of the commander, exceptional circumstances dictate otherwise. If conflicts arise between the contents of this publication and the contents of Service publications, this publication will take precedence for the activities of joint forces unless the Chairman of the Joint Chiefs of Staff, normally in coordination with the other members of the Joint Chiefs of Staff, has provided more current and specific guidance. Commanders of forces operating as part of a multinational (alliance or coalition) military

command should follow multinational doctrine and guidance ratified by the United States. For doctrine and procedures not ratified by the United States, commanders should evaluate and follow the multinational command's doctrine and procedures, where applicable.

For the Chairman of the Joint Chiefs of Staff:

WALTER KROSS
Lieutenant General, USAF
Director, Joint Staff

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Airspace Control in the Combat Zone

Airspace control increases combat effectiveness by promoting the safe, efficient, and flexible use of airspace with a minimum of restraint placed upon the friendly airspace users.

Airspace control includes coordinating, integrating, and regulating airspace to increase operational effectiveness; however, the airspace control authority does not have the authority to approve, disapprove, or deny combat operations. That is vested only in operational commanders. Airspace control needs to provide a commander the operational flexibility to employ forces effectively in a joint or multinational campaign or operation.

Fundamental Considerations

The primary objective of airspace control is to maximize the effectiveness of combat operations without adding undue restrictions and with minimal adverse impact on the capabilities of any Service or functional component.

The airspace of the combat zone is a crucial dimension of the battlespace and is used by all components of the joint and allied forces to conduct assigned missions. **A high concentration of friendly surface, subsurface, and air-launched weapon systems must share this airspace** without unnecessarily hindering combat power that is being applied in accordance with the joint force commander's (JFC) campaign or operation plan. **The goal of combat zone airspace control is to enhance air, land, maritime, and special operations force effectiveness in accomplishing the JFC's objectives.** Airspace control procedures must prevent mutual interference from all users of the airspace, facilitate air defense identification, and safely accommodate and expedite the flow of all air traffic in the theater of operations.

Organization

The joint force commander (JFC) normally designates a joint force air component commander (JFACC), an airspace control authority (ACA), and an area air defense commander (AADC). The ACA and AADC duties are normally performed by the same person who may also be the JFACC.

The organizational form of the airspace control system may vary depending on the assigned mission, the JFC's concept of operations, and assigned forces. The JFC normally designates a **joint force air commander** (JFACC). Because of the integrated relationship between airspace control measures and air defense operations, **air space control authority** (ACA) and **air defense commander** (AADC) duties normally should be performed by the same person, who may also be the JFACC.

Each component commander plans and executes a portion of the total air effort and interacts with other components.

The component commander advises the JFC on the employment of component forces and the direction and control of those forces. Subject to the authority of the JFC, each component commander within a joint force: (1) **employs air defense weapons systems** in accordance with the principles established in the Joint Pub 3-01 series, Joint Pub 3-04, "Doctrine for Joint Maritime Operations (Air)," established rules of engagement, and the area air defense plan; (2) **coordinates and deconflicts the employment of assigned and attached forces** with other subordinate commands as required by the operational situation; (3) **provides airspace control in areas designated by the ACA** in accordance with directives and/or procedures in the airspace control plan (ACP); (4) **forwards requests for airspace control measures** to the ACA in accordance with the ACP; (5) **develops detailed airspace control instructions, plans, and procedures** in accordance with guidance in the ACP; and (6) **provides necessary facilities and personnel for airspace control** functions in assigned areas of operations and identify these facilities and personnel to the ACA for inclusion in the ACP.

The broad responsibilities of the ACA include coordinating and integrating the use of the airspace control area.

Subject to the authority and approval of the JFC, **the ACA develops broad policies and procedures for airspace control** and for the coordination required among units within the area of responsibility/joint operations area (AOR/JOA). **The ACA establishes an airspace control system** that is responsive to the needs of the JFC, provides for integration of the airspace control system with that of the host nation, and coordinates and deconflicts user requirements. **The ACA develops the ACP** and, after JFC approval, promulgates it throughout the AOR/JOA. Implementation of the ACP is **through the airspace control order which must be complied with by all components**. Centralized direction by the ACA does not imply assumption of operational control or tactical control over any air assets.

The successful conduct of air defense operations requires the integrated operation of all available air defense systems. **Air defense operations must be coordinated with other operations**, both on and over land and sea. The responsibilities of the AADC are interrelated with those of the ACA.

The Airspace Control Plan

The airspace control plan is approved by the JFC to establish procedures for the airspace control system in the joint force area of responsibility/joint operations area (AOR/ JOA).

The ACA prepares the ACP. **The ACP must be tied to the area air defense plan and coordinated with the other joint operation plans** because these documents together allow for the conduct of operations along the range from fully capable and operating command and control systems to greatly degraded command and control systems.

The ACP should be **coordinated** with representatives of the host nation(s) in whose airspace the operations will take place and with civil air activities that may occur in or near the airspace. Broad areas of concern for developing the ACP include **familiarity with the basic operation plan,** combined with knowledge of host-nation and multinational political constraints, capabilities and procedures of military and civil air traffic control systems, and general locations of friendly and enemy forces. The ACP needs to **support an orderly transition from peacetime operations to combat operations.** The ACP should **specify airspace control measures** to be used in the AOR/JOA and how these measures will be promulgated.

The ACP also should **include fire support coordination measures** and all Service and functional component-unique airspace control measures and terms. The ACP should provide procedures to fully **integrate the resources of the military air traffic control (ATC) facility** responsible for terminal-area airspace control. The area air defense plan needs to be written with **detailed engagement procedures** that are integral to the airspace control plan and operations in the combat zone. Combat zone airspace control and area air defense operations need to plan for **operations in a degraded command, control, communications, and computers (C4) environment**. Detailed engagement procedures and decentralized control procedures (as apply to air defense) are key to operations in a degraded environment. **Air defense interface** is critical to effective combat zone airspace control. The **geographic arrangement of weapons** and the location of specific types of air defense operations, as well as specific procedures for identification of aircraft, are important factors to include in the airspace control plan.

Each AOR/JOA has differing specific operational requirements for airspace control.

Other key factors to consider are as follows: (1) procedures that include **rules of engagement,** disposition of air defense weapon systems such as air defense fighters, air defense artillery, surface-to-air missiles, and air defense command and control operations; (2) **air, land, and maritime situations** in the AOR/JOA such as existing equipment limitations, electronic warfare, and C4 requirements that may adversely affect adherence to the ACP; (3) **anticipated restricted areas** based on initial deployment of friendly air, land, maritime, and special operations forces and bases; (4) **existing air traffic control areas,** base defense zones, controlled or uncontrolled airspace, and overflight of neutral nations; (5) **mission profiles, combat radii, and identification, friend or foe (IFF) or other identification capability** of aircraft that will operate in the AOR/JOA; (6) **enemy air defense weapons capabilities,** deployment, and electronic attack and deception capabilities; (7) **emergency procedures** for aircraft experiencing difficulties (to include IFF problems); (8) procedures for **day or night operations** and for aircraft experiencing adverse weather; (9) procedures for **en route and terminal-area ATC procedures** for aircraft transitioning to and from the battle area that complement planned combat requirements; (10) procedures to **support surge operations** requiring high volumes of air traffic; and (11) **enemy offensive air capabilities.**

Peacetime to Combat Considerations

JFCs should have an airspace control plan that is continually updated and a standing air control order to provide airspace control in the event of surprise attack.

Peacetime airspace rules and organizations change during actual conflict, and the nature of these changes is different from theater to theater. During military operations other than war, normal airspace control and air defense operations may be in place. **The ACP needs to provide instructions to transition from peacetime to combat** in simple, clear steps. Existing air defense structures may be overwhelmed by massed enemy attacks over small geographic areas.

Integration of Combat Zone Airspace Control and Air Defense Operations

The airspace control function must be performed in close conformity with air defense operations.

Because airspace control and air defense would conflict and interfere with each other if operating independently, **prioritization and integration of each mission is essential**. Airspace control procedures will be used to assist in aircraft identification, facilitate engagement of enemy aircraft, and provide safe passage of friendly aircraft.

Methods of Airspace Control in the Combat Zone

Methods of combat zone airspace control range from positive control of all air assets in an airspace control area to procedural control of all such assets.

Enemy forces will attempt to degrade airspace control capabilities by direct attack and electronic measures directed against control nodes or other specific targets. **Methods of combat zone airspace control under these conditions range from positive control of all air assets in an airspace control area to procedural control of all such assets**, with any effective combination of positive and procedural control measures between the two extremes. **Airspace control plans and systems need to accommodate these methods** based on component, joint, and national capabilities and requirements. The airspace control structure needs to be responsive to evolving enemy threat conditions and changing tactical situations.

Enemy Engagement Operations

Engaging enemy air vehicles with friendly air, land, and maritime assets is an important aspect of battle.

These operations must be "seamless" in order to reduce uncoordinated simultaneous engagements, unengaged penetrators, and fratricide. Combat zone airspace control and area air defense operations are inseparably linked in enemy engagement operations. Further, enemy engagement operations are inextricably linked to the JFC's overall campaign or operation plan. **Some of the joint planning and coordinating areas that must be considered are:** joint engagement zone operations; fighter engagement zone operations; missile engagement zone operations; coordination for enemy engagement operations; and suppression of enemy air defenses.

Airspace Control for Specified Missions

The ACA may assign a portion of airspace to a subordinate commander to accomplish a specified mission.

A subordinate commander who has been assigned a portion of airspace by the ACA **must coordinate with the ACA to ensure unity of effort and minimal interference along adjacent boundaries**. The commander must also coordinate with the ACA to agree on **procedures for coordination** of flight information, **clearance of aircraft** to enter and depart the airspace, and **coordination of combat zone airspace control services**. Combat zone airspace control must also be coordinated during amphibious operations; military operations other than war (MOOTW), including foreign internal defense, peace operations, antiterrorism, and other types of MOOTW; and while using unmanned aerial vehicles.

CONCLUSION

This publication prescribes doctrine for joint airspace control in the combat zone. The prescribed doctrine is broadly stated to fit a wide range of situations primarily involving the control of airspace in areas where the use of combat forces is required to conduct joint or multinational operations. The basic premise is to develop combat zone airspace control procedures that increase combat effectiveness by promoting the safe, efficient, and flexible use of airspace with a minimum of restraint placed upon the friendly airspace users. Emphasis is placed on the close integration of airspace control and area air defense operations.

CHAPTER I
INTRODUCTION

"Gulf lesson one is the value of air power... we must retain combat superiority in the skies."

President George Bush

1. General

This publication prescribes doctrine for joint airspace control in the combat zone.

a. The prescribed doctrine is broadly stated to fit a wide range of situations primarily involving **the control of airspace in areas where the use of combat forces is required to conduct joint or multinational operations**. International agreements, enemy and friendly force structures and deployments, commanders' concepts of operations, and operating environments such as foreign continents, the high seas, and amphibious objective areas will necessitate different specific arrangements for joint airspace control in the combat zone in a theater of war or in a subordinate theater of operations. However, the basic doctrine, ideas, and concepts relating to joint airspace control in the combat zone are intended to be universal.

b. Although space-based (exo-atmospheric) assets will play an important role in the joint campaign or operation, **combat zone airspace control in this publication will refer only to controlling airspace in the atmosphere**. However, since future airspace control also may involve the deconfliction of space operations over an existing joint force area of responsibility (AOR)/joint operations area (JOA) in support of a single joint force commander, the enduring principles of combat zone airspace control should apply, and evolutionary doctrinal development based upon these principles should occur.

c. **Doctrine in this publication is broad in nature and is designed as a guide for airspace control by US forces during combat operations.** Accordingly, unless specifically noted otherwise, the term "joint force commander" (JFC) refers to the geographic combatant commander and to the commanders of subordinate joint force commands (subordinate unified commands and joint task forces) that may be established. **This publication outlines fundamental principles, relationships, and broad operational-level guidelines.** It is not intended to limit the authority and responsibility of commanders over their forces but is intended to provide basic framework upon which to build an airspace control system for an AOR/JOA.

d. Using current US national military objectives and assigned missions as a baseline, **the JFC develops AOR/JOA-specific concepts for combat zone airspace control operations to aid in accomplishing these objectives**. Procedures to implement these concepts must take into consideration the likelihood of multinational warfare. As such, they should consider the need for developing doctrine and procedures to ensure compatibility and interoperability of support systems and methods to handle potential alliances and coalitions. US forces participating in multinational operations also may be subject to command arrangements and authorities established in international agreements.

A safe, efficient, and flexible combat zone airspace control system must exist within the Area of Responsibility prior to the onset of air operations.

2. Joint Airspace Control in the Combat Zone*

* For the purposes of this publication, the terms "airspace control in the combat zone," "combat zone airspace control," and "airspace control" are synonymous.

Combat zone airspace control increases combat effectiveness by promoting the safe, efficient, and flexible use of airspace with a minimum of restraint placed upon the friendly airspace users. **Airspace control includes coordinating, integrating, and regulating airspace to increase operational effectiveness**; however, the airspace control authority does not have the authority to approve, disapprove, or deny combat operations that is vested only in operational commanders. Combat zone airspace control needs to provide a commander the operational flexibility to employ forces effectively in a joint or multinational campaign or operation.

3. Fundamental Considerations

The basic principles of war and the commander's concept of operations are the cornerstone of operations. **The primary objective of combat zone airspace control is to maximize the effectiveness of combat operations** without adding undue restrictions and with minimal adverse impact on the capabilities of any Service or functional component. Other fundamental considerations are shown in Figure I-1.

FUNDAMENTAL CONSIDERATIONS OF AIRSPACE CONTROL IN THE COMBAT ZONE

- The need for each Service or functional component within the joint force to operate a variety of air vehicles and weapon systems, both high and low speed, rotary- and fixed-wing (manned and unmanned), within the combat zone airspace control area.
- The need for each Service or functional component to use the airspace with maximum freedom consistent with the degree of risk operationally acceptable to the joint force commander.
- The need for airspace control activities to be performed in congruence with air defense operations to integrate and synchronize surface-to-air defense weapons and air defense aircraft for maximum effectiveness.
- The need to discriminate quickly and effectively between friendly, neutral, and enemy air operations and vehicles.
- The need for the combat zone airspace control system to be responsive to the requirements of the joint force. The airspace control system needs to be capable of supporting high-density traffic and surge operations as may be required by the joint force commander.
- The need for close coordination and integration of surface force operations, supporting fires, air operations, air defense operations, special operations, and airspace control activities.
- The need to accommodate US, host-nation, and multinational airspace control activities within the joint combat zone.
- Recognition of the saturation levels and limitations of airspace control networks.
- The need for temporary restrictive airspace control measures on certain areas of airspace to allow subordinate commanders total freedom of operations.
- Detailed incorporation of coordinated offensive operations using electronic warfare elements, strike aircraft, and cruise missiles to ensure that defensive elements or procedures of the force do not unacceptably inhibit or degrade offensive capabilities.
- The need to ensure that the airspace control network remains survivable and effective.
- The need to provide maximum opportunities to employ deception measures.
- The need to standardize communications data, format, and language requirements in multinational operations to reduce the possibility for differences in interpretation, translation, and application of airspace control procedures during multinational operations.
- The capability to support day or night and all-weather operations.

Figure I-1. Fundamental Considerations of Airspace Control in the Combat Zone

4. Basic Principles

The airspace of the combat zone is a crucial dimension of the battlespace and is used by all components of the joint and multinational forces to conduct assigned missions. A high concentration of friendly surface, subsurface, and air-launched weapon systems must share this airspace without unnecessarily hindering the application of combat power in accordance with the JFC's campaign plan. **The primary goal of combat zone airspace control is to enhance air, land, maritime, and special operations force effectiveness in accomplishing the JFC's objectives.** Basic principles of airspace control in the combat zone are listed in Figure I-2 and described below.

a. The airspace control system supporting joint force operations must be based on the principle of **unity of effort**. A coordinated and integrated combat airspace control system (ACS) is essential to successful operations.

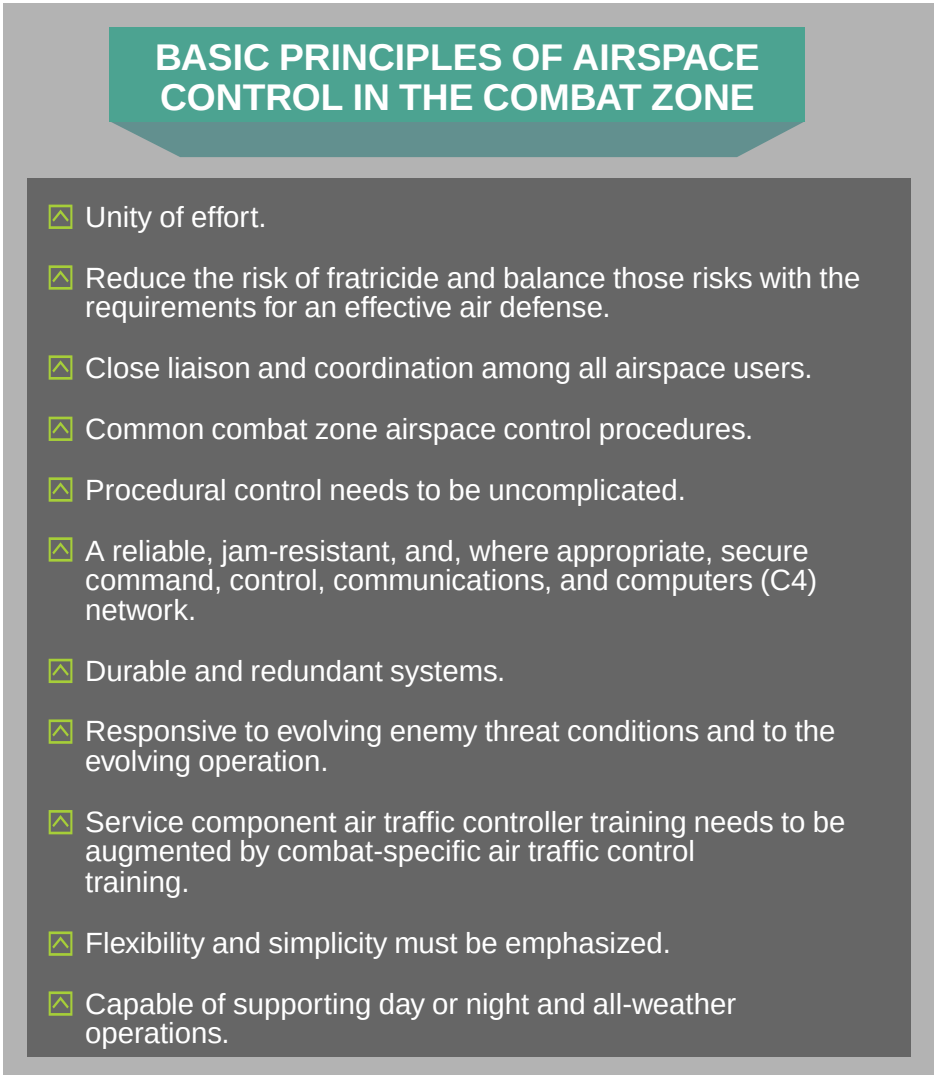

Figure I-2. Basic Principles of Airspace Control in the Combat Zone

b. A major reason for close coordination between airspace control, air traffic control, and area air defense elements is to **reduce the risk of fratricide and balance those risks with the requirements for an effective air defense**. Identification requirements for airspace control must be compatible with those for air defense. Combat zone airspace control, air defense, military air traffic control, and supporting command, control, communications, and computers (C4) procedures, equipment, and terminology need to be compatible and mutually supporting and should be interoperable.

c. **Close liaison and coordination among all airspace users** is necessary to promote timely and accurate information flow to combat zone airspace managers. The success of the campaign or operation plan may be directly related to the effectiveness of this liaison and coordination.

d. **Common combat zone airspace control procedures** within the joint force AOR/JOA enhance the effectiveness of air operations. These procedures need to allow maximum flexibility through an effective mix of positive and procedural control measures. The control structure needs to permit close coordination between land, maritime, special operations forces (SOF), and air operations and allow rapid concentration of combat power in a specific portion of airspace in minimum time.

e. **Procedural control needs to be uncomplicated** and readily accessible to all aircrews, air traffic controllers, air defense weapons controllers, and airspace controllers.

f. The airspace control system in the combat zone must have a **reliable, jam-resistant, and, where appropriate, secure C4 network**. However, care must be exercised to avoid control procedures that rely heavily on voice communications. Emphasis should be placed on simple, flexible air traffic control schemes, and "in the blind" procedures. Some provisions also need be made to decentralize control should communications become degraded. In this manner, flexibility and battlefield responsiveness are preserved. Coordinated and detailed planning is required to ensure that communications systems and procedures are compatible among all airspace managers and users.

g. **Airspace control systems in the combat zone need to be durable and redundant** because they are likely to be prime targets for an attacker.

h. The airspace control structure in the combat zone needs to be **responsive to evolving enemy threat conditions and to the evolving operation**. The design, responsiveness, and procedures of the airspace control structure in the combat zone need to promote the rapid massing of combat power.

i. Airspace control functions in the combat zone rely on air traffic control resources, but these functions are separate and distinct from real-time control of air vehicles and the terminal air traffic control environment. **Service component air traffic controller training**, which emphasizes military terminal air traffic control in peacetime conditions, **needs to be augmented by combat-specific air traffic control training**. Combat zone airspace control procedures and personnel must be exercised in peacetime to be effective in combat.

j. Combat zone airspace control is a compromise between a wide variety of conflicting demands for airspace use. **Flexibility and simplicity** must be emphasized throughout to maximize the effectiveness of forces operating within the system.

k. Combat zone airspace control needs to be **capable of supporting day or night and all-weather operations**.

l. In summary, the combat zone airspace control procedures must prevent mutual interference from all users of the airspace, facilitate air defense identification, and safely accommodate and expedite the flow of all air traffic in the theater of operations. In accomplishing these broad tasks, the basic principles of war and the JFC's concept of operations remain the cornerstones of operations.

CHAPTER II
GENERAL ORGANIZATION AND RESPONSIBILITIES

"Generally, management of the many is the same as management of the few. It is a matter of organization."

Sun Tzu

1. General

a. Consistent with existing provisions of Joint Pub 0-2, "Unified Action Armed Forces (UNAAF)," **JFCs organize assigned and attached forces to perform their assigned mission to their best ability**. The organization of forces will depend on the mission assigned, the manner in which the mission is to be fulfilled, and the capabilities and strength of the component elements of the forces assigned. **Consequently, the organizational form of the airspace control system may vary.**

b. **The following organizational arrangements apply to combat zone airspace control for joint forces.** When circumstances dictate, appropriate modification may be prescribed by the JFC.

2. Organization

The following descriptions of broad duties are central to effective airspace control in the combat zone. Further, complete understanding of the role of the JFC, the joint force air component commander (JFACC), the component commanders, the airspace control authority (ACA), the area air defense commander (AADC), and fire support coordination agencies and the roles that they play in executing the JFC's campaign or operation plan is essential. Other key combat zone airspace control definitions are addressed in the Glossary.

a. **Joint Force Commander. A combatant commander exercises combatant command (command authority) and a subordinate JFC exercises operational control (OPCON) over assigned forces. The JFC normally exercises OPCON over attached forces**, unless otherwise specified in the establishing directive. The JFC is responsible for employment of forces assigned, attached, or otherwise made available to accomplish the assigned mission or objective according to guidance provided by the establishing commander. **Key to the JFC's responsibilities is the development of objectives and priorities for the joint force.** Objectives and priorities provide the basis for all subordinate and supporting plans, including the airspace control plan. Finally, **the JFC provides authoritative direction to subordinate commanders** that includes assigning objectives, priorities, and tasks. For air operations, this includes general and specific direction on the objectives and priorities.

b. **Joint Force Air Component Commander.** The JFC will normally designate a JFACC, whose authority and responsibilities are defined by the establishing JFC based on the JFC's estimate of the situation. **The JFACC's responsibilities normally will include, but are not limited to, planning, coordinating, allocating, and tasking** based on the JFC's concept of operations and air apportionment decision. Because of the integrated relationship between airspace control measures and air defense operations, ACA and AADC duties normally should be performed by the same person, who may also be the JFACC. Normally, the JFACC will be the Service component commander who has the

preponderance of the air assets to be used and the ability to assume that responsibility. (For additional details on the organization and functioning of a JFACC, see Joint Pub 3-56.1, "Command and Control for Joint Air Operations.")

c. **Component Commanders. The component commander advises the JFC on the employment of component forces** and the direction and control of those forces. Each component commander plans and executes a portion of the total air effort and interacts with other components. **Subject to the authority of the JFC, each component commander within a joint force:**

- **Employs air defense weapon systems** in accordance with the principles established in the Joint Pub 3-01 series, Joint Pub 3-04, "Doctrine for Joint Maritime Operations (Air)," established rules of engagement, and the area air defense plan.

- **Coordinates and deconflicts the employment of assigned and attached forces** with other subordinate commands as required by the operational situation. Coordination for combat zone airspace control may be facilitated through collocation of key airspace control, air defense, and fire support coordination agencies. When collocation is not possible, such facilities need to be connected with appropriate secure communications. Liaison personnel should be exchanged. This coordination is especially important during the planning phases of an operation. It is critical to provide proper resources for surveillance and operational interfaces necessary to ensure mutual support and unity of effort among all forces involved in the operation.

- **Provides airspace control** in areas designated by the ACA in accordance with directives and/or procedures in the airspace control plan (ACP). Be prepared to provide airspace control in other areas designated by the ACA when combat or other factors degrade the airspace control system.

- **Forwards requests for airspace control measures** to the ACA in accordance with the ACP.

- **Develops detailed airspace control instructions, plans, and procedures** in accordance with guidance in the ACP. These detailed instructions, plans, and procedures need to be coordinated by the ACA to ensure consistency with JFC-approved airspace control guidance and approved in accordance with directives and/or procedures in the ACP.

- **Provide necessary facilities and personnel** for airspace control functions in assigned areas of operations and identify these facilities and personnel to the ACA for inclusion in the ACP.

d. **Airspace Control Authority.** The JFC designates the ACA. **The broad responsibilities of the ACA include coordinating and integrating the use of the airspace control area.** Subject to the authority and approval of the JFC, the ACA develops broad policies and procedures for airspace control and for the coordination required among units within the AOR/JOA. **The ACA establishes an airspace control system** that is responsive to the needs of the JFC, provides for integration of the airspace control system with that of the host nation, and coordinates and deconflicts user requirements. **The ACA develops the ACP** and, after JFC approval, promulgates it throughout the AOR/JOA. Implementation of the ACP is through the airspace control order (ACO) which must be complied with by all components, as described in Joint Pub 3-56.1, "Command and Control Doctrine For

Joint Air Operations." **A key responsibility of the ACA is to provide the flexibility needed within the airspace control system** to meet contingency situations that necessitate rapid employment of forces. Finally, centralized direction by the ACA does not imply assumption of operational control or tactical control over any air assets. Matters on which the ACA is unable to obtain agreement will be referred to the JFC for resolution. Airspace control authority responsibilities are summarized in Figure II-1.

e. **Area Air Defense Commander (AADC).** The JFC will normally designate an AADC. The successful conduct of air defense operations requires the integrated operation of all available air defense systems. **Air defense operations must be coordinated with other operations, both on and over land and sea.** The responsibilities of the AADC are interrelated with those of the ACA. Preferably, one individual will be assigned the responsibilities of the AADC and the ACA. If, however, this is not the case, close

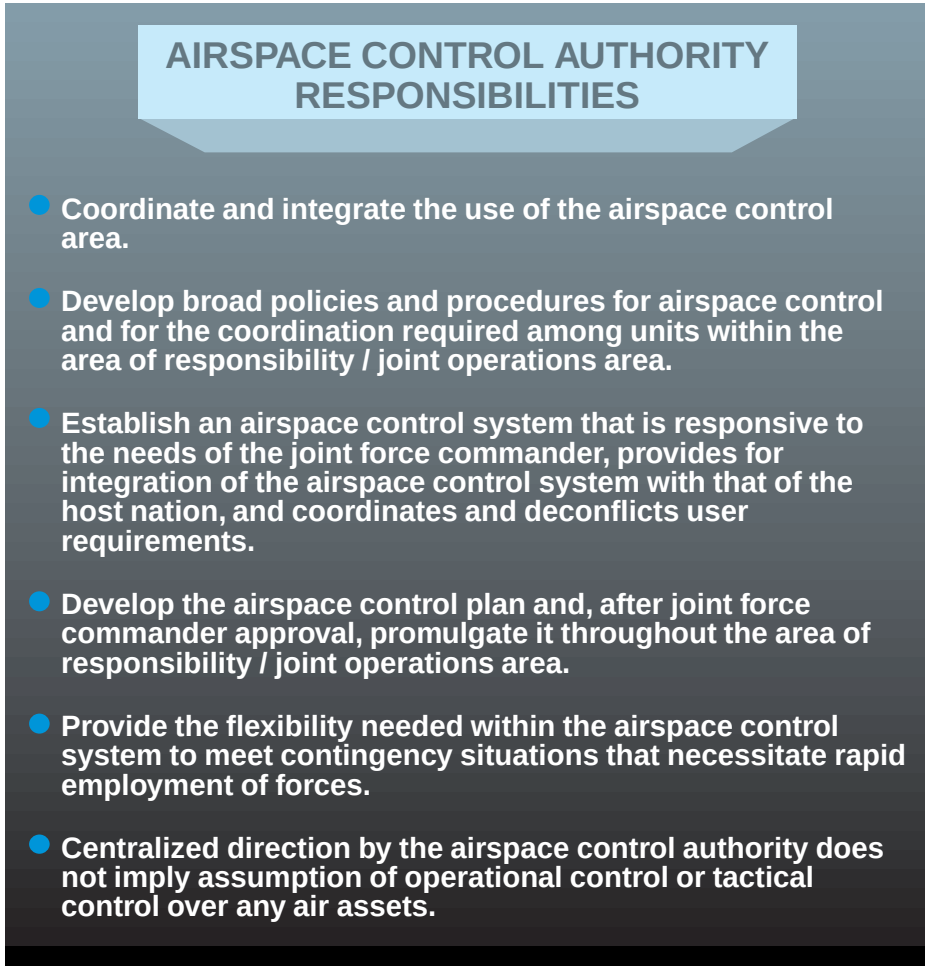

Figure II-1. Airspace Control Authority Responsibilities

Airspace control activities must synchronize surface-to-air defense weapons and air defense aircraft for maximum effectiveness.

coordination between the AADC and ACA is absolutely essential. **The AADC develops the area air defense plan** and, after JFC approval, promulgates it throughout the AOR/JOA. For a detailed discussion of the AADC, see Joint Pubs in the 3-01 series.

3. Airspace Control Plan

The ACP is approved by the JFC to establish procedures for the airspace control system in the joint force AOR/JOA. An example of the topics that should be considered when developing an ACP is provided in Appendix A, "Airspace Control Plan." The ACA prepares the ACP. **The ACP must be tied to the area air defense plan and coordinated with the other joint operation plans** because these documents together allow for the conduct of operations along the range from fully capable and operating command and control systems to greatly degraded command and control systems. **The ACP must consider procedures and interfaces with the international or regional air traffic systems** necessary to effectively support air logistics, augmenting forces, and JFC objectives. As a consequence, the ACP should be preplanned as much as possible and be put in a simplified, understandable format. Because the airspace control area normally coincides with air defense boundaries, coordination between combat zone airspace control and area air defense operations must be addressed.

a. **The ACP should be coordinated with representatives of the host nation(s)** in whose airspace the operations will take place and with civil air activities that may occur in or near the airspace. There also should be close planning and coordination between representatives of both offensive and defensive weapon systems of US and multinational armed services.

b. **Broad areas of concern for developing the ACP include** familiarity with the basic operation plan, combined with knowledge of host and multinational political constraints, capabilities and procedures of military and civil air traffic control systems, and general locations of friendly and enemy forces.

c. **The ACP needs to support an orderly transition from peacetime operations to combat operations.** Such a transition could occur during a period of increasing tensions or suddenly without much warning.

d. **The ACP should specify airspace control measures to be used in the AOR/JOA** and how these measures will be promulgated. The ACP also should include fire support coordination measures and all Service and functional component-unique airspace control measures and terms.

An effective airspace control plan must be integrated with air traffic control facilities to ensure a safe and efficient flow of combat aircraft.

e. The ACP should provide procedures to fully **integrate the resources of the military air traffic control (ATC) facility responsible for terminal-area airspace control.** ATC facilities should be interfaced and linked with ACS communications to form a system that ensures safe efficient flow of air traffic supporting the combat effort while permitting maximum combat flexibility.

f. **The area air defense plan needs to be written with detailed engagement procedures** that are integral to the airspace control plan and operations in the combat zone. Combat zone airspace control and area air defense operations need to plan for operations in a degraded C4 environment. Detailed engagement procedures and decentralized control procedures (as apply to air defense) are key to operations in a degraded environment. **Air defense interface is critical to effective combat zone airspace control.** The geographic arrangement of weapons and the location of specific types of air defense operations, as well as specific procedures for identification of aircraft, are important factors to include in the airspace control plan. Other key factors to consider are listed in Figure II-2.

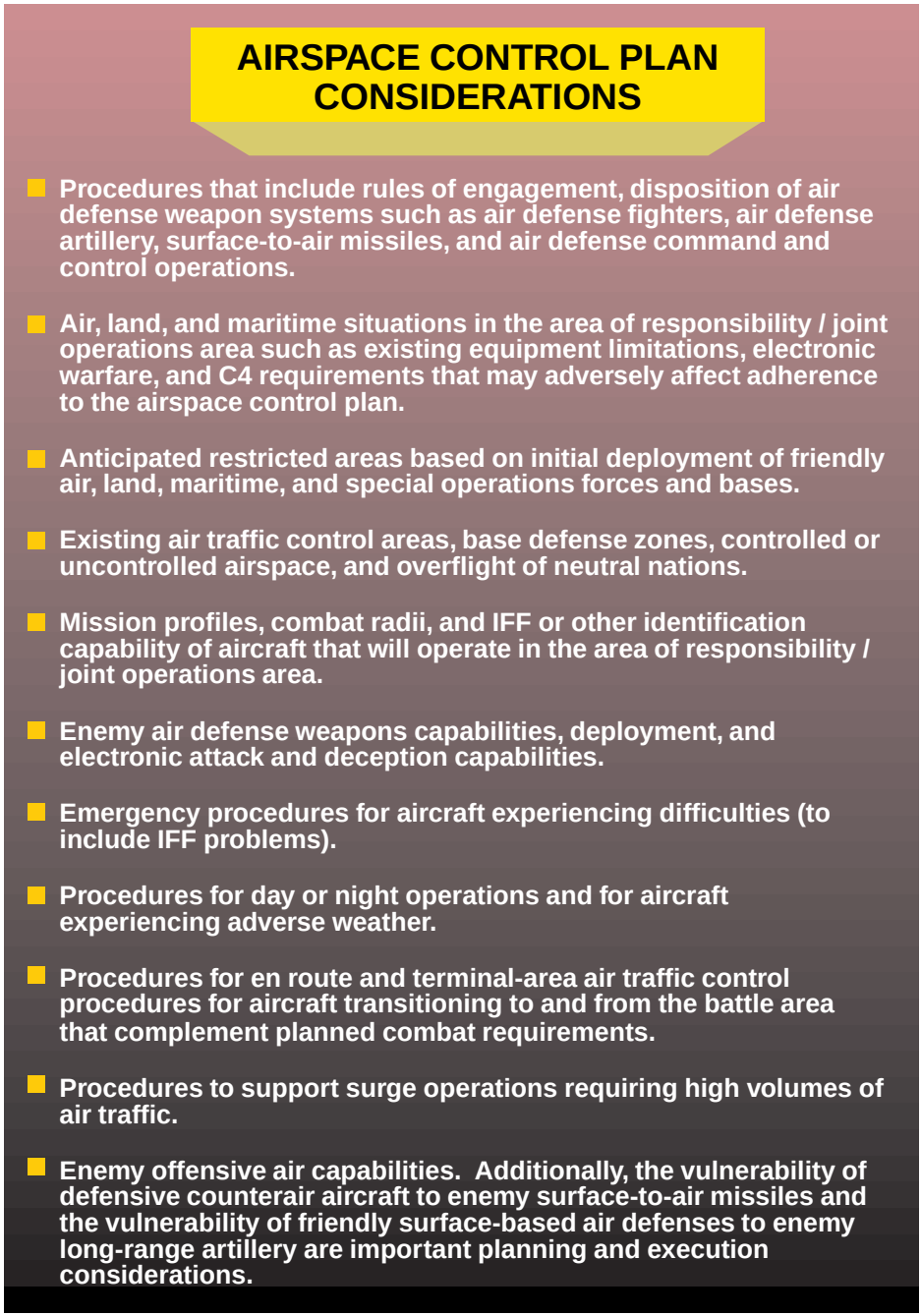

Figure II-2. Airspace Control Plan Considerations

CHAPTER III
ELEMENTS OF AIRSPACE CONTROL IN THE COMBAT ZONE

"Now those skilled in war must know where and when a battle will be fought. They measure the roads and fix the date. They divide the army and march in separate columns. Those who are distant start first, those who are nearby, later. Thus the meeting of troops from far distances takes place at the same time. It is like people coming to a city market."

Tu Yu (735-812 AD)

1. Operational Area Considerations

Each AOR/JOA has differing specific operational requirements for combat zone airspace control. These requirements must be determined as early as possible to be incorporated in the overall joint force planning effort. Political constraints, national and military air traffic control systems and procedures, and the capabilities and limitations of these systems are important considerations. Rules of engagement, disposition of air defense weapons, fire support plans, and procedures for identification of US and multinational aircraft are also important items that should be considered. **Every joint force is different, and the forces assigned will have specific operational requirements for airspace.**

2. Planning for Airspace Control in the Combat Zone

The following broad principles of planning (see Figure III-1) **are essential to effective combat zone airspace control:**

a. **Support the Joint Force.** The airspace control system in the combat zone must be planned and integrated to meet and complement the JFC's campaign or operation plan.

b. **Interoperability.** Combat zone airspace control needs to be exercised in both the multi-Service and in the multi-nation environments in peacetime to operate effectively during conflict. Planning for combat zone airspace control must include planning for interoperability of equipment, as well as personnel and terminology.

Figure III-1. Principles for Planning Airspace Control in the Combat Zone

c. **Mass and Timing.** Planning for combat zone airspace control needs to include the aircraft traffic volume needed for the anticipated offensive operations and the timing constraints placed on those operations. Planning also needs to be fully integrated with

the needs of air defense operations to respond quickly and with adequate force to enemy intrusion.

d. **Unity of Effort.** Proper liaison between joint force components should be identified and exercised prior to hostilities. Representatives from different components need to integrate information flow throughout the system and provide expertise to the designated combat zone airspace control authorities.

e. **Integrated Planning Cycles.** The airspace planning cycle should be integrated with the planning cycle for the joint campaign or operation plan. Input from all organizations involved in the conflict must be consolidated, and the final airspace control plan devised and disseminated to users in the ACO. The ACP can be added as an appendix to the operations annex to the joint force operation plan.

f. **Degraded Operations.** Plans should anticipate the effects of electronic warfare and communications degradation on system operations. An effective combat zone airspace control system needs to plan for the full spectrum of communications from no degradation to full degradation. Plans also should consider the effects of weather and darkness.

3. Peacetime to Combat Considerations

Although strategic warning of conflict or war probably will be available, **it is imperative to be prepared for the first hectic days of battle**. Therefore, JFCs should have an ACP that is continually updated both in peacetime and throughout the evolution of a campaign or operation and a standing ACO to provide airspace control in the event of surprise attack. **Peacetime airspace rules and organizations change during actual conflict**, and the nature of these changes is different from theater to theater. During military operations other than war, normal airspace control and air defense operations may be in place. **The ACP needs to provide instructions to transition from peacetime to combat in simple, clear steps.** Existing air defense structures may be overwhelmed by massed enemy attacks over small geographic areas. These massed attacks may be heavily supported by electronic and communications jamming. Once the scope

The E-3 Airborne Warning and Control System provides a long-range air picture to theater commanders during the transition from peacetime to combat.

and nature of enemy massed operations are determined, friendly air defenses can be massed within the AOR/JOA to counter the enemy threat.

4. Integration of Combat Zone Airspace Control and Air Defense Operations

Because these two areas would conflict and interfere with each other if operating independently, prioritization and integration of each mission is essential. Ultimately, **the airspace control function must be performed in close conformity with air defense operations**. Airspace control procedures will be used to assist in aircraft identification, facilitate engagement of enemy aircraft, and provide safe passage of friendly aircraft.

a. Air defense units must be free to engage hostile aircraft within prescribed rules of engagement. However, **procedures may need to be established within the combat zone airspace control system** to allow identification of friendly aircraft, not cause delays in offensive operations, and prevent fratricide. **These procedures need to be simple to execute for both aircrews and ground operations personnel** and may include visual, electronic, geographic, and/or maneuver means for sorting friend from foe. Air defense operations should not cause delays in air operations by creating an unnecessarily complicated or lengthy air route structure. Likewise, airspace control measures should not unduly restrain surface-to-air weapons systems so as to put them at increased risk of enemy air attack. Characteristics of procedures used to deconflict in time and space, coordinate and integrate the activities of all users of airspace (including fixed- and rotary-winged aircraft) are shown in Figure III-2.

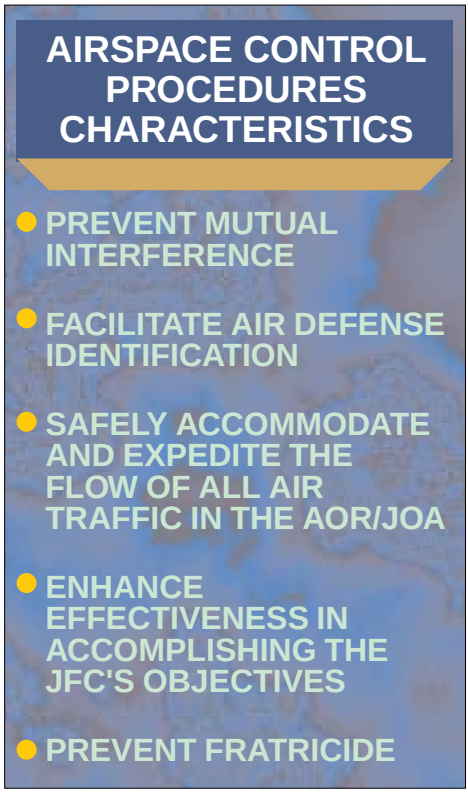

Figure III-2. Airspace Control Procedures Characteristics

b. Air defense systems might be overwhelmed by massed enemy attacks across limited geographic areas along the front. Therefore, **highly flexible airspace control procedures need to be devised to anticipate the perceived threat**. The procedures should allow coordinated employment of air and land or maritime air defense systems against the threat and use the inherent flexibility of air defense airborne platforms to mass forces to meet the enemy attackers. However, the problem of separating friendly and enemy aircraft during the heat of battle and employing land- or maritime-based air defenses against these enemy elements is a highly complex task.

c. In **joint maritime operations**, the mobile air base and layered defense system represented by aircraft carriers and their surface screening units **create options other**

than airborne defense alone. Specific control and defensive measures may differ from those used in a land-based operation. The ACA may designate the maritime commander as the control authority for a specific airspace control area or sector for the accomplishment of a specific mission. The massing of maritime forces into a battle force of combined arms (air, surface, and subsurface) under a single commander reduces the front to be defended, enhances mutual support, and simplifies identification and deconfliction of friendly aircraft and other air defense measures. To ensure unity of effort and minimal interference along adjacent boundaries, **the commander responsible for the maritime airspace sector should coordinate with the ACA on the items listed in Figure III-3**.

d. In joint operations composed of **adjacent maritime and land environments**, specific control and defensive measures may be a composite of those measures normally employed in each environment. **The JFC for such operations needs to ensure detailed coordination of control and defensive measures with the affected air, land, and maritime commanders.** The exchange of liaison personnel at the joint force level will facilitate coordination to ensure the following:

- **Unity of effort** and to minimize interference along adjacent boundaries.
- **Agreement on procedures** for coordination of flight information, clearance of aircraft to enter and depart the adjoining airspace, and the corresponding coordination of airspace control services.

5. Methods of Airspace Control in the Combat Zone

Enemy forces will attempt to degrade airspace control capabilities by direct attack and electronic measures directed against control nodes or other specific targets. **The methods of airspace control vary throughout the range of military operations from war to MOOTW that include both combat and non-combat activities. The methods range from positive control of all air assets in an airspace control area to procedural**

Figure III-3. Maritime Airspace Sector Commander Coordination Responsibilities

control of all such assets, with any effective combination of positive and procedural control measures between the two extremes. **Airspace control plans and systems need to accommodate these methods based on component, joint, and national capabilities and requirements.** Full positive control would rely on radars, other sensors, identification, friend or foe (IFF)/selective identification feature (SIF), digital data links, and other elements of the air defense network C4 system to positively identify, track, and direct air assets. Full procedural control would rely on previously agreed to and promulgated air space control measures such as comprehensive air defense identification procedures and rules of engagement, low-level transit routes (LLTR), minimum-risk routes (MRR), minimum-risk levels, aircraft identification maneuvers, fire support coordination measures, and coordinating altitudes. In any case, all missions remain subject to the ACO. Figure III-4 summarizes both methods of airspace control. A list of procedural airspace control measures with an accompanying description, discussion of uses, and considerations is contained in Appendix B, "Procedural Airspace Control Measures." **The airspace control structure needs to be responsive to evolving enemy threat conditions and changing tactical situations.** It is up to the JFC, through the ACP, to decide the appropriate method based on the concept of operations.

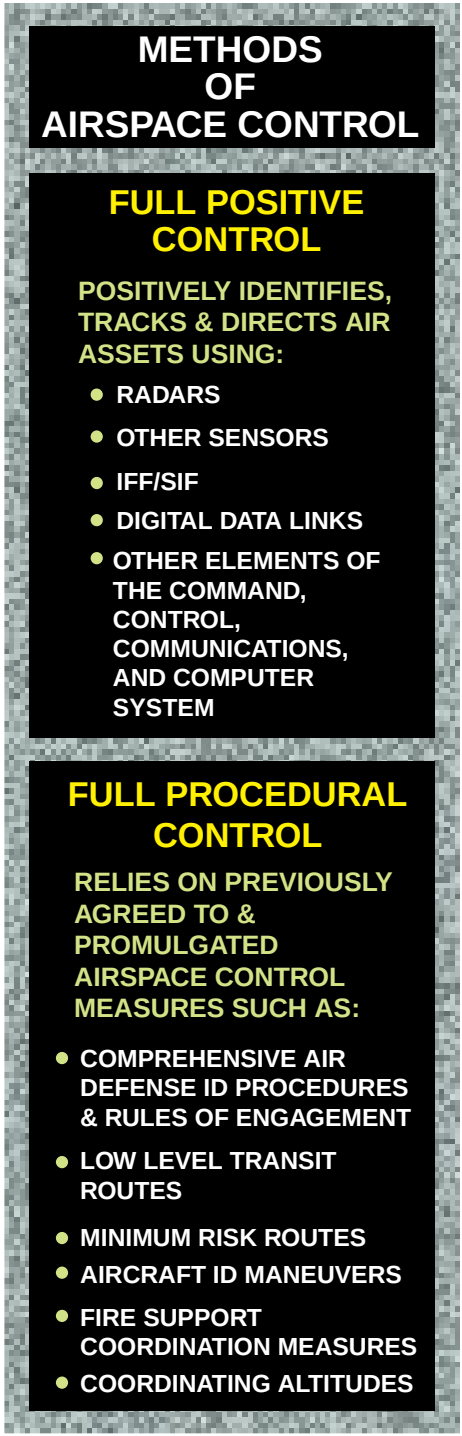

Figure III-4. Methods of Airspace Control

6. Enemy Engagement Operations

Engaging enemy air vehicles with friendly air, land, and maritime assets is an important aspect of battle. These operations must be as "seamless" as possible and fully coordinated to ensure all aspects of friendly combat power contribute as fully as possible to the battle. This reduces uncoordinated simultaneous

engagements, unengaged penetrators, and fratricide. **Combat zone airspace control and area air defense operations are inextricably linked in enemy engagement operations.** Further, enemy engagement operations are inextricably linked to the JFC's overall campaign or operation plan. The airspace control system plays a key role in identifying friendly and enemy air vehicles and ensuring safe passage of friendly aircraft throughout the AOR/JOA and in coordinating and disseminating information throughout the area air defense network. Reliable voice and data communications, use of proper joint procedures, effective joint training and exercises, and exchange of liaison personnel are necessary for information flow. Also, joint planning and coordination are extremely important and necessary to optimally deploy air defense assets prior to the start of hostilities.

a. **Joint Engagement Zone (JEZ) Operations.** These operations involve multiple air defense weapon systems of one or more Service components, simultaneously and in concert, engaging enemy airpower in the same airspace. However, **successful JEZ operations depend on correctly identifying friendly, neutral, and enemy aircraft**. Positive control may ensure that real-time engagement taskings are based on comprehensive situational awareness. Under procedural control, all air defense systems must be capable of accurately discerning between enemy, neutral, and friendly air vehicles in a highly complex environment before full joint engagement operations could occur. If these conditions cannot be met, separate zones for missile and fighter engagement should be established. **JEZ, without effective command and control, is extremely difficult to implement.** In maritime air operations, airspace control will tend toward procedural control, with aircraft bearing the burden of following promulgated procedures to avoid fratricide. Such an arrangement allows a layered series of engagements by both friendly aircraft and surface missile systems.

b. **Fighter Engagement Zone (FEZ) Operations. These operations usually take place in airspace above and beyond the engagement ranges of surface-based (land and sea) and short-range air defense systems** and are an alternative engagement operation if the detailed control aspects of joint engagement operations cannot be met. The principle of meeting the massed combat airpower of the enemy with comparable mass to defeat enemy efforts is highly **dependent on coordination and flexibility within the airspace control system** in the combat zone. Under FEZ operations, surface-to-air missile systems will not be allowed to fire weapons unless targets are positively identified as hostile and assigned by higher authority, or unless they are firing in self-defense. **FEZ operations offer great ability for the JFC to respond immediately with fighter assets** to an enemy air offensive regardless of its location. FEZ and missile engagement zone (MEZ) operations present the enemy with the dilemma of defending against two entirely different weapon systems, greatly decreasing enemy survivability. FEZ operations within the airspace control area should not result in undue restraints on the ability of surface-based air defense systems to engage the threat.

c. **Missile Engagement Zone Operations.** These operations are ideal for point defense of critical assets, protection of maneuver units in the forward area, and area coverage of rear operations. **MEZ operations offer the JFC the ability to meet the enemy with a high- and low-altitude, all-weather capability.** Advanced surface-to-air missile systems have long-range, high-firepower capability that can engage enemy aircraft beyond the forward line of own troops (FLOT) or disrupt massed enemy air attacks prior to committing fighter assets. Properly employed, **MEZ operations are effective across the full range of air defense operations and enemy threats**. **MEZ operations need to be designed to maximize the full range and capabilities of various systems.** Finally, MEZ operations

When circumstances dictate, mobile factilities provide airspace control in the combat zone.

within the airspace control area should not result in undue restraints on the flexibility and ability of friendly air assets to respond to the changing enemy threat and should not result in attacks on friendly assets.

d. **Coordination for Enemy Engagement Operations.** As discussed in Chapter II, "General Organization and Responsibilities," subparagraph 2e, the ACA and the AADC are normally the same person. This is extremely important in order to maintain the flexibility needed for effectively meeting the enemy air threat. With this in mind, **the following general guidelines apply:**

- When urgent or emergency combat situations arise, **the airspace control authority can authorize deviations from established policies and procedures**. In these exceptional situations, the airspace control authority should notify all affected air defense assets and airspace users prior to authorizing deviations. The JFC also should be informed as soon as possible.

- When the circumstances of a contingency situation necessitate the rapid deployment and employment of forces for which there are no approved operation plan or previously established airspace control plans, **the ACA**, when directed by the JFC, **will establish a temporary airspace control system** responsive to immediate tactical or operational requirements. As soon as practicable, the ACA will implement the planning and coordination requirements to modify or adjust the system to meet requirements of all components employed in the joint force.

e. **Combat Zone Airspace Control and Integration of Friendly Electronic Warfare and Suppression of Enemy Air Defenses Measures (SEAD). The JFC will integrate electronic warfare and SEAD measures into the overall plan.** This integration could degrade the effectiveness of some combat zone airspace control assets, degrade some of the positive control aspects of the system, and reduce the capability to identify aircraft. Proper coordination by the ACA for the JFC will allow procedural control measures to be developed to compensate for this degradation. **Thorough planning is required** to preclude electronic warfare efforts from unduly degrading air defense and airspace control efforts.

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CHAPTER IV
AIRSPACE CONTROL FOR SPECIFIED MISSIONS

"The way of the warrior is to master the virtue of his weapons."

Myamoto Mushaski,
A Book of Five Rings

1. General

The ACA may assign a portion of airspace to a subordinate commander to accomplish a specified mission. This airspace control arrangement may be at the direction of the JFC or implemented in accordance with procedures contained in the ACP. In this situation, the ACA may temporarily designate a subordinate commander as the control authority for the specified airspace area. **This designated commander must coordinate with the ACA to ensure:**

a. **Unity of effort** and minimize interference along adjacent boundaries.

b. **Agreement on procedures** for coordination of flight information, clearance of aircraft to enter and depart the airspace, and coordination of combat zone airspace control services.

2. Combat Zone Airspace Control in Amphibious Operations

See Figure IV-1.

3. Airspace Control in the Combat Zone During Military Operations Other Than War (MOOTW)

Joint forces must be ready to undertake a variety of missions. Military operations other than war are generally confined to a specific geographic area and are often characterized by constraints on the forces, weapons, and tactics employed and the level of violence. Depending on the environment,

During amphibious operations, the Commander, Amphibious Task Force (CATF) controls all air operations and airspace control procedures in the Amphibious Objective Area.

COMBAT ZONE AIRSPACE CONTROL IN AMPHIBIOUS OPERATIONS

- For airspace control, the joint force commander (JFC) or higher authority who orders the amphibious operation will assign to the Commander, Amphibious Task Force (CATF), who may be the JFC, an airspace of defined proportions, which will include the amphibious objective area (AOA).
- All air operations and airspace control procedures in the AOA will be under the control of the CATF, or designated CATF representative, until the amphibious operation is terminated.
- To ensure unity of effort in overall air operations, the CATF will coordinate air operations within the defined airspace with the commander responsible for airspace control in the surrounding area when adjacent airspace control areas exist.
- As conditions warrant and as control and coordination agencies are established ashore, the CATF delegates the authority to control and coordinate supporting arms to the Commander, Landing Force. At the discretion of the CATF, airspace control and the control of air operations in the AOA are passed to the Commander, Landing Force, if Marine Corps, or to a commander of forces ashore who has the capability to control and coordinate such operations.
- At the termination of the amphibious operation, the AOA will be disestablished. Airspace control will be passed to the airspace control authority designated for that area in accordance with the JFC's initiating directive.
- Guidance on the coordination procedures required for aircraft providing support into the AOA and amphibious task force aircraft providing support outside the AOA must be established in the initiating directive. Approved missions will be reflected in the standard joint force air tasking order as described in the Joint Pub 3-56 series of publications.
- For specific details on airspace control in amphibious operations, refer to Joint Pub 3-02, "Joint Doctrine for Amphibious Operations," and Joint Pub 3-02.1, "Joint Doctrine for Landing Force Operations."

Figure IV-1. Combat Zone Airspace Control in Amphibious Operations

mission, and location throughout the range of military operations, **the degree of control may need to be rigorous and the rules of engagement may be more restrictive**. This is especially true in a MOOTW environment that can transition quickly from combat to noncombat and back again and often has constraints on the forces, weapons,

tactics employed, and level of violence. Consequently, as a minimum, in MOOTW environments prone to such fluctuations, **all air missions**, including both fixed- and rotary-wing of all components, **must appear on the appropriate air tasking order (ATO) and/or flight plan**. In addition, **all aircraft must monitor a common frequency and operate on designated IFF modes and codes**, which must be appropriately checked prior to mission start. In cases of high density aircraft operations, such as in a properly designated high density airspace control zone (HIDACZ) or amphibious objective area (AOA), published on the ACO, aircraft may operate without an ATO mission number. **This type of rigorous control is necessary during such MOOTW** because the mix of friendly, enemy, and neutral aircraft and mission constraints require the JFC to strictly control flights in the AOR/JOA (e.g., peace operations). No matter what methods the JFC chooses, they need to be continually evaluated for effectiveness and efficiency as the environment and mission change.

a. **Foreign Internal Defense (FID).** When supporting FID, the focus is to support the host nation in such a way that the host nation becomes the primary agent in most actions.

- **Combat zone airspace control** in FID is based on air traffic regulations and control of civil and military airspace users. In FID, **the ATC system of the host nation frequently provides the framework** around which most of the combat zone airspace control function takes place. A theater air control system may or may not be established. The existing airspace control system may require some modification as the specific situation requires.

- **Bilateral and international agreements often establish regulatory guidance** affecting the use of airspace and the conduct of ATC activities. Any required changes or waivers to national regulations, as well as problems that result from restrictions to military operations, should be forwarded to the JFC and may be referred through diplomatic channels for resolution.

- **Procedural airspace control plans and measures**, such as weapons-free zones, base defense zones, low-level transit routes, coordinating altitudes, and identification requirements, **may or may not be required**. Although the threat, friendly surface-to-air weapons systems, and density of friendly air operations are not as significant a consideration in FID as in higher intensity forms of combat, **effective control of the airspace remains as important as in any other military operation**. First consideration is given to national sovereignty and host-nation laws and procedures. If such procedures or capabilities are inadequate to support military operations, specialized training and/or ATC liaison should be conducted or host-nation capabilities should be augmented by equipment, personnel, or both. Augmentation is the least desirable course of action. **Wherever possible, the host nation will likely solve its problems with its own resources**, thus reinforcing its sovereignty.

- **Airspace control in FID operations** primarily focuses on providing air traffic control services, coordinating military airspace requirements with host-nation civil air operations, and integrating and coordinating air operations with ground activities. Air traffic services may be expanded to provide greater positive control of airspace users.

b. **Peacekeeping Operations. Peacekeeping operations are military**

In military operation other than war, joint force command and control aircraft may be required to conduct surface surveillance coordination and communications relay within the framework of the host nation's air traffic control system.

operations undertaken with the consent of all major parties to a dispute, designed to monitor and facilitate implementation of an agreement and support diplomatic efforts to reach a long-term political settlement. Peacekeeping forces are interposed between two or more belligerents. This force may be composed of international contingents.

- **Terms of reference will govern participation in the peacekeeping mission.** They dictate how the airspace control function is accomplished and establish the policies and procedures governing the use of airspace. Of fundamental importance is that the airspace belongs to the belligerent entities involved. Use of that airspace by the peacekeeping force is governed by the terms of reference between the belligerents.

- **Airspace control activities in this environment are largely related to air traffic regulation and control.** Special identification procedures and air traffic regulation may require that all flight operations be planned and coordinated with the appropriate ATC systems of the nations involved. Adherence to International Civil Aviation Organization (ICAO) regulatory procedures must be considered.

c. **Antiterrorism.** A primary concern in antiterrorism lies in protecting personnel, units, and facilities from terrorist acts. **The measures adopted and implemented by command directives dictate how airspace will be used and the airspace control function performed.** Antiterrorism operations will overlap all aspects of military operations to some degree. **Antiterrorism measures can have an impact on air traffic control** and on the operations of air terminals, aerial ports, airfields, and heliports. The use of restricted areas around sensitive facilities is commonplace.

d. **Other Types of Military Operations Other Than War. Joint forces may be called on to participate in operations to**

resolve situations that involve US security for intelligence missions, raids, rescue missions, or other limited uses of military forces. In these operations it may not be possible to implement some of the airspace control procedures described in this publication. Joint forces may encounter opposing military forces when conducting these missions whose capabilities and potential for hostilities vary widely, so the airspace control function will have to vary accordingly. **Planning for these operations, however informal or brief, should include:**

- **Deconfliction** between units and aircraft performing the military mission and with other types of air traffic.
- **Timely and effective implementation** of appropriate airspace control procedures if hostilities ensue.

4. Unmanned Aerial Vehicles (UAVs)

UAVs are operated in the airspace control area by each component of the joint force. **The established principles of airspace management used in manned flight operations will normally apply to UAV operations.** The UAV is difficult to acquire and does not provide a clear radar signature, presenting a potential hazard to high performance aircraft. Therefore, **UAV operations should be coordinated with all appropriate airspace control agencies** to provide safe separation of UAVs and manned aircraft and prevent engagement by friendly forces. UAV airspace control considerations are shown in Figure IV-2. Specific information on UAVs can be found in Joint Pub 3-55.1, "JTTP for Unmanned Aerial Vehicles."

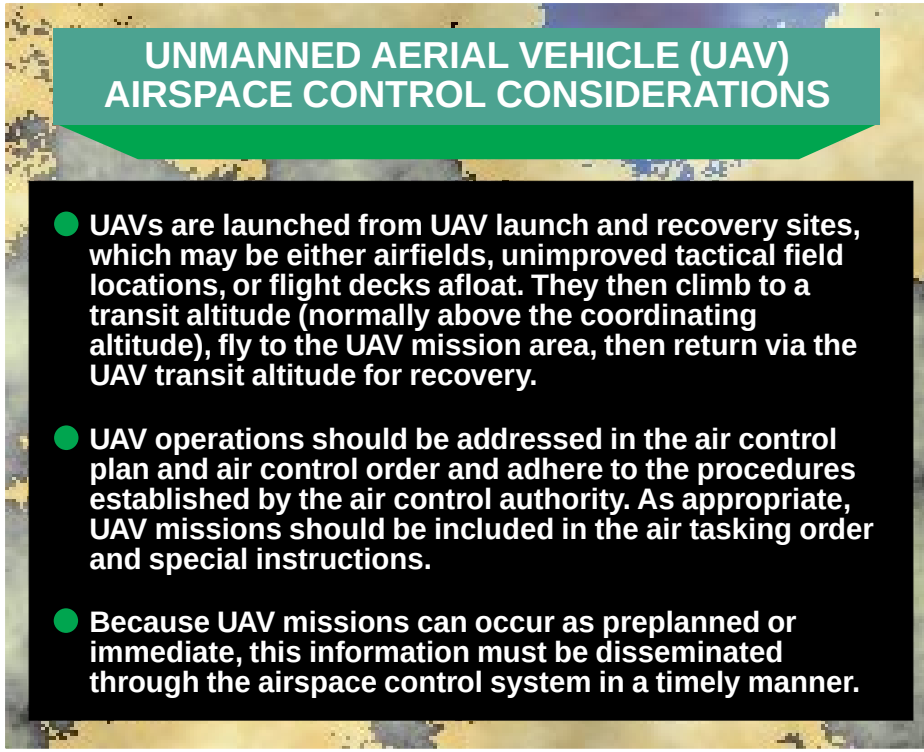

Figure IV-2. Unmanned Aerial Vehicles (UAV) Airspace Control Considerations

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APPENDIX A
AIRSPACE CONTROL PLAN

1. Purpose

This appendix provides an example of the topics that should be considered when developing an airspace control plan.

2. Airspace Control Plan Topics

Every airspace control plan will be unique and must be based on the objectives of the military operations, the capabilities and shortcomings of both friendly and enemy forces, and the contributions and complexities introduced by host-nation and multinational forces, as well as the access required to the airspace by nonbelligerent aircraft. Airspace control plan topics include:

a. Description of the conditions under which the guidance and procedures in the airspace control plan are applicable (e.g., the exercise, operation plan, operation order, military operation).

b. Description of the AOR/JOA within which the airspace control plan applies.

c. Appointment of the ACA; location of ACA headquarters.

d. List of the capability that exists within the joint force and in the AOR/JOA to provide airspace control (ground sites, airborne capability) and means of communicating with those elements.

e. Description of the duties and responsibilities of:

- The Airspace Control Authority.
- Each airspace user within the joint force (to include requirements for liaison to and coordination with the ACA).
- Each element used in the airspace control system (site, facility, or airborne platform).

f. Description of the interface between the ACA, the AADC, and fire support coordination elements and the procedures adopted to coordinate and deconflict air defense and operational requirements.

g. Description of interface with the Federal Aviation Administration, host-nation Air Traffic Control System, and/or ICAO.

h. Description of the interface between the tactical air control system(s) and the elements within those systems for air traffic control.

i. If operations include forces from other nations, description of the interfaces between US and multinational forces to coordinate and deconflict airspace requirements.

j. Plans to provide for continuity of airspace control operations under degraded conditions (alternate headquarters, alternatives for key radar or command and control nodes, and other required capabilities).

k. Description of the positive airspace control measures and procedures for the joint force.

l. Description of the procedures to propose, approve, modify, and promulgate each procedural airspace control measure available for use within the AOR/JOA (HIDACZ, JEZ, FEZ, MEZ, MRR, LLTR, coordinating altitude, air routes, corridors, restricted operations zones, and other appropriate procedures).

m. Description of IFF/SIF procedures.

n. Description of orbit procedures.

o. Description of procedures and systems to compile and promulgate the airspace control order that provides airspace control procedures and/or guidance in effect for a specified time period. The airspace control order would normally contain:

- Modifications to guidance and/or procedures contained in the ACP.
- Active or current IFF/SIF procedures.
- Location and procedures associated with active procedural airspace control measures (HIDACZ, JEZ, FEZ, MEZ, MRR, LLTR, coordinating altitude, air routes, corridors, restricted operations zones, and other appropriate procedures).
- Procedures for entering and transiting active restricted operations zones (e.g., amphibious objective area, naval control zones).
- Location of active orbit areas.
- Active UAV launch and recovery areas and mission areas.

APPENDIX B
PROCEDURAL AIRSPACE CONTROL MEASURES

1. Purpose

This appendix provides a description, considerations, and uses of Service measures for controlling airspace. The following airspace control measures are provided to aid in defining airspace control requests, orders, and plans. A sample airspace control request is provided in the Annex.

2. Procedural Airspace Control Measures

a. **Air Corridor**

- **Description.** An air corridor is a restricted air route of travel specified for use by friendly (primarily Army) aircraft and established to prevent friendly forces from firing on friendly aircraft.

- **Uses.** Air corridor procedures are used to route aviation combat elements between such areas as forward arming and refueling points, holding areas, and battle positions. Altitudes of an air corridor do not exceed the coordinating altitude, if established.

- **Point of Contact (POC).** If a coordinating altitude has been established, an air corridor is implemented by the using authority. If a coordinating altitude has not been established, an air corridor is established by the ACA at the request of the appropriate ground commander.

b. **Air Defense Action Area**

- **Description.** An air defense action area and the airspace above it is an area within which friendly aircraft or surface-to-air weapons are normally given preference to conduct air defense operations except under specific conditions.

- **Uses.** An air defense action area is an engagement area used for preference of a specific weapon system over another without excluding the other from use under certain operational conditions. From an airspace control perspective, an air defense action area provides airspace users with location of air defense areas for mission planning purposes.

- **POC.** AADC.

c. **Air Defense Area**

- **Description.** An air defense area is a specifically defined airspace for which air defense must be planned and provided.

- **Uses.** An air defense area defines, in an area of operations, the area to be defended.

- **Considerations.** An air defense area is a planning or division-of-responsibility aid; it is not used as an airspace control measure.

- **POC.** AADC.

d. **Air Defense Identification Zone (ADIZ)**

- **Description.** An ADIZ is airspace of defined dimensions within which the ready identification, location, and control of airborne vehicles are required.

- **Uses.** Associated with nations or areas of operation, the ADIZ is normally the transition between procedural control areas (outside) and the positive control areas (inside). Typically, ADIZ is used for sovereign national boundaries, or in the case of areas of operations, for identification into the rear areas.

- **Considerations.** See flight information publications/ICAO for theater-specific ADIZ and associated procedures and limitations.

- **POC.** AADC.

e. **Air Defense Operations Area**

- **Description.** An air defense operations area and the airspace above it is an area within which air defense procedures are specified. It may include designation of one or more of the following:

  •• Air defense action area.

  •• Air defense area.

  •• Air defense identification zone.

  •• Firepower umbrella.

- **Uses.** Air defense operations areas are established to minimize mutual interference between air defense and other operations. These areas are not used for airspace control but aid planning and division of responsibilities. From an airspace control perspective, these areas provide airspace users with the location of air defense operations for mission planning purposes.

- **Considerations.** See individual descriptions for air defense action area, air defense area, air defense identification zone, and firepower umbrella in this section.

- **POC.** See individual descriptions for air defense action area, air defense area, air defense identification zone, and firepower umbrella in this section.

f. **Airspace Control Area**

- **Description.** An airspace control area is airspace that is laterally defined by the boundaries of an area of operations. The airspace control area may be divided into airspace control sectors.

- **Uses.** Airspace control areas are a means of planning or dividing responsibility.

- **Considerations.** Geographically defined, an airspace control area may include political boundaries.

- **POC.** ACA.

g. **Airspace Control Sector**

- **Description.** An airspace control sector is a subelement of the airspace control area established to facilitate the control of the overall area. Airspace control sector boundaries normally coincide with air defense organization subdivision boundaries.

- **Uses.** An airspace control sector provides airspace control of an area by a component or other airspace control-capable entity best able to provide control in that geographic area.

- **Considerations.** An airspace control sector interface with the airspace control system needs to be developed.

- **POC.** Airspace control sectors are designated by the ACA in consideration of joint force

component, host-nation, and multinational airspace control capabilities and requirements.

h. **Airspace Coordination Area**

- **Description.** An airspace coordination area is a three-dimensional block of airspace of defined dimensions and used as a restrictive fire support coordination measure.

- **Uses.** An airspace coordination area is used primarily in close air support situations for high-volume fire. Friendly aircraft are reasonably free from friendly surface fires, with artillery, helicopters, and fixed-winged aircraft given specific lateral or vertical airspace within which to operate.

- **Considerations.** Timely implementation of the area is dependent on the ground situation. Burden of deconfliction rests with the ground commander.

- **POC.** An airspace coordination area is established by the ACA at the request of the appropriate ground commander.

i. **Amphibious Defense Zone**

- **Description.** An amphibious defense zone is the area encompassing the AOA and additional adjoining airspace as needed for the accompanying naval force for the purpose of air defense.

- **Uses.** An amphibious defense zone provides an antiair warfare area for protection of the amphibious task force.

- **Considerations.** If an amphibious defense zone overlaps other land-based air defense areas, appropriate coordination for division of responsibilities and boundaries must be conducted.

- **POC.** CATF.

j. **Amphibious Objective Area**

- **Description.** An AOA is a geographic area, delineated in the initiating directive for purposes of command and control, within which is located the objective(s) to be secured by the amphibious task force. This area must be of sufficient size to ensure accomplishment of the amphibious task force's mission and provide sufficient area for conducting necessary sea, air, and land operations. The airspace associated with this area is included in the AOA. When dissolved, airspace control passes to the ACA.

- **Uses.** With respect to airspace control, AOA allows the Commander, Amphibious Task Force freedom of air operations within the AOA.

- **Considerations.** Coordination with nonorganic aircraft for entry, exit, and deconfliction operations within the AOA with operations just outside the AOA normally requires continuous, active involvement of the affected commanders and staffs.

- **POC.** JFC.

k. **Base Defense Zone (BDZ)**

- **Description.** BDZ is an air defense zone established around an air base and limited to the engagement envelope of short-range air defense weapon systems defending that base. BDZs have specific entry, exit, and IFF procedures established.

- **Uses.** From an airspace control perspective, a BDZ provides airspace users with location of the engagement zone for the air defense systems

defending a base for mission planning purposes.

- **Considerations.** See short-range air defense zone (SHORADEZ) in this section.

- **POC.** AADC.

l. **Coordinating Altitude**

- **Description.** A coordinating altitude is a procedural method to separate fixed- and rotary-winged aircraft by determining an altitude below which fixed-wing aircraft normally will not fly and above which rotary-wing aircraft normally will not fly. It may include a buffer zone for small altitude deviations and extend from the forward edge of the communications zone to the FLOT. The coordinating altitude does not restrict either fixed- or rotary-winged aircraft when operating against or in the immediate vicinity of enemy ground forces. Fixed- or rotary-winged aircraft planning extended penetration of this altitude will notify the appropriate airspace control facility. However, approval acknowledgment is not required prior to fixed-wing aircraft operating below the coordinating altitude or rotary-wing aircraft operating above the coordinating altitude.

- **Uses.** Coordinating altitude allows procedural separation of aircraft types.

- **Considerations.** See-and-avoid procedures are used during visual meteorological conditions.

- **POC.** The coordinating altitude is normally specified in the ACP, which is approved by the JFC.

m. **Falcon Radials**

- **Description.** Falcon radials are the planned magnetic bearings along which aircraft depart or return to aircraft-capable ships.

- **Uses.** Falcon radials provide tracking, control, and assistance to friendly aircraft within the antiair warfare surveillance area of the battle group.

- **POC.** Antiair warfare commander (AAWC).

n. **Fighter Engagement Zone**

- **Description:** FEZs normally will be established in those areas where no effective surface-to-air capability is deployed. These operations usually take place in airspace above and beyond the engagement ranges of surface-based (land and sea), short-range air defense systems, and are an alternative type of engagement operation if the detailed control aspects of joint engagement operations cannot be met. FEZ is an air defense control measure.

- **Uses.** From an air defense perspective, FEZ normally is used when fighter aircraft have the clear operational advantage over surface-based systems. These advantages could include range, density of fire, rules of engagement, or coordination requirements. From an airspace control perspective, provides airspace users with location of the engagement zone for fighter aircraft for mission planning purposes.

- **Considerations.** Coordination and flexibility within the combat airspace control system may be a limiting factor with FEZ. Under fighter engagement zone operations, surface-to-air missile systems will not be allowed to fire

weapons unless targets are positively identified as hostile and assigned by higher authority, or unless they are firing in self defense.

- **POC.** AADC.

o. **Firepower Umbrella**

- **Description.** Firepower umbrella is an area of specified dimensions defining the boundaries of the airspace over a naval force at sea within which the fire of a ship's antiaircraft weapons can endanger aircraft, and within which special procedures have been established for the identification and operation of friendly aircraft.

- **POC.** AAWC.

p. **High-Altitude Missile Engagement Zone (HIMEZ)**

- **Description.** Normally applied to long-range surface-to-air missiles, a HIMEZ will limit the volume of airspace within which these weapons may conduct engagements without specific direction of the AADC. HIMEZ is an air defense control measure.

- **Uses.** From an air defense perspective, HIMEZ normally is used when a high-altitude missile system has a clear operational advantage over using aircraft. These advantages could include range, command and control, rules of engagement, or response time. From an airspace control perspective, provides airspace users with location of the engagement zone of a high-altitude missile system for mission planning purposes.

- **Considerations.** Design of the HIMEZ is contingent on specific weapon system capabilities.

- **POC.** AADC.

q. **High-Density Airspace Control Zone**

- **Description.** HIDACZ is an area in which there is a concentrated employment of numerous and varied weapons or airspace users. A high-density airspace control zone has defined dimensions that usually coincide with geographical features or navigational aids. Access to and air defense weapons status within a high-density airspace control zone is normally approved by the appropriate commander.

- **Uses.** HIDACZ allows ground/Marine air-ground task force commanders to restrict a volume of airspace from users not involved with ongoing operations. Restricts use of the airspace because of the large volume and density of fires supporting the ground operations within the described geographic area.

- **Considerations.** The volume of air traffic demands careful coordination to limit the potential conflict among aircraft needed for mission essential operations within the HIDACZ and other airspace users. When establishing a HIDACZ, consider the following:

  •• Minimum risk routes (MRR) into and out of the HIDACZ and to the target area.

  •• Air traffic advisory as required. Procedures and systems also must be considered for air traffic control service during instrument meteorological conditions.

  •• Procedures for expeditious movement of aircraft into and out of the HIDACZ.

  •• Coordination of fire support, as well as air defense weapons control orders or

status within and in the vicinity of the HIDACZ.

•• Location of enemy forces inside of and within close proximity to the HIDACZ.

- **POC.** HIDACZ is nominated by the ground commander and approved by the ACA.

r. **Joint Engagement Zone**

- **Description.** JEZ is airspace of specified dimensions within which multiple air defense weapon systems (surface-to-air missiles and fighters) of one or more Service components are simultaneously employed and operated.

- **Uses.** From an airspace control perspective, JEZ provides airspace users with location of the joint engagement zone for mission-planning purposes.

- **Considerations.** JEZs are highly dependent on correct differentiation between friendly, neutral, and enemy aircraft. Procedures for effectively using a JEZ are under development.

- **POC.** AADC.

s. **Low-Altitude Missile Engagement Zone (LOMEZ)**

- **Description.** LOMEZ is a volume of airspace established to control engagements of low- to medium-altitude surface-to-air missiles. Subject to weapon system capabilities, the LOMEZ normally will extend beyond the forward edge of the battle area.

- **Uses.** From an airspace control perspective, LOMEZ provides airspace users with location of the engagement zone of low-altitude missile systems for mission planning purposes.

- **Considerations.** The design of the LOMEZ is contingent on specific weapon system capabilities.

- **POC.** AADC.

t. **Low-Level Transit Route**

- **Description.** LLTR is a temporary bidirectional corridor of defined dimensions that facilitates the low-level passage of friendly aircraft through friendly air defenses and controlled or restricted airspace. LLTR currently is used only within the North Atlantic Treaty Organization (NATO).

- **Uses.** LLTR normally is used by high performance aircraft. LLTR is an airspace control measure in NATO.

- **Considerations.** LLTR is a procedural method. See NATO Regional Airspace Control Plans (MIKE-Plans).

- **POC.** ACA.

u. **Minimum Risk Route**

- **Description.** An MRR is a temporary corridor of defined dimensions recommended for use by high-speed, fixed-wing aircraft that presents the minimum known hazards to low-flying aircraft transiting the combat zone. MRRs are established considering the threat, friendly operations, known restrictions, known fire support locations, and terrain.

- **Uses.** MRR is an airspace control measure used primarily by cross-FLOT operations. Close air support aircraft do not usually use MRRs in the vicinity of the target area.

- **Considerations.** MRRs are established based on known threats.

- **POC.** ACA.

v. **Positive Identification Radar Advisory Zone (PIRAZ)**

- **Description.** PIRAZ is a designated area within which Navy ships (usually naval tactical data systems equipped) separate friendly from hostile aircraft.

- **Uses.** PIRAZ provides tracking, control, and assistance to friendly aircraft within the antiair warfare surveillance area of the battle group.

- **POC.** AAWC.

w. **Restricted Operations Area (ROA)**

- **Description.** ROA is airspace of defined dimensions created in response to specific operational situations or requirements within which the operation of one or more airspace users is restricted. Also known as a Restricted Operations Zone.

- **Uses.** An ROA is an airspace control measure used to separate and identify areas. For example, artillery, mortar, naval gunfire support, UAV operating areas, aerial refueling, concentrated interdiction areas, areas of search and rescue (SAR), SOF operating areas, and areas in which the AADC has declared "weapons free." Commonly used for drop zones, landing zones, SAR areas, UAV launch and recovery sites, UAV mission areas, and special electronics mission aircraft.

- **Considerations.** ROA can adversely affect air defense operations; therefore, air defense missions generally have priority over ROAs.

- **POC.** ACA.

x. **Return To Force (RTF)**

- **Description.** RTFs are planned route profiles for use by friendly aircraft returning to an aircraft-capable ship.

- **Uses.** RTF provides a means for easily identifying friendly aircraft.

- **POC.** AAWC.

y. **Short Range Air Defense Engagement Zone (SHORAD)**

- **Description.** Areas of SHORAD deployment may fall within a LOMEZ or HIMEZ. It is possible that some areas may be solely defended by SHORAD assets. A SHORADEZ can be established to define the airspace within which these assets will operate. Because centralized control over the SHORAD weapons may not be possible, these areas must be clearly defined and disseminated so friendly aircraft can avoid them.

- **Uses.** SHORADEZ is normally established for the local air defense of high-value assets. From an airspace control perspective, SHORADEZ provides airspace users with the location of the engagement zone of short-range air defense systems for mission planning purposes.

- **Considerations.** Centralized control of SHORADEZ may not be possible.

- **POC.** AADC.

z. **Special Use Airspace**

- **Description.** Special use airspace is a term used to define airspace for a specific purpose. It may also designate airspace in which no flight activity is authorized.

General subdivisions (regions, sectors, and AOA) are not special use airspace.

- **Uses.** Special use airspace is typically applied to BDZs and cap/orbit areas.

- **Considerations.** Special use airspace typically is a peacetime term contained in FAAH 7610.4 (Special Military Operations) to include military operating areas, Air Traffic Control assigned airspace (ATCAAs), and other airspace.

- **POC.** ACA.

aa. **Standard Use Army Aircraft Flight Route (SAAFR)**

- **Description.** SAAFR are routes established below the coordinating altitude to facilitate the movement of Army aviation assets and normally located in the corps through brigade rear areas of operation.

- **Uses.** SAAFR is an airspace control measure used by Army assets for administrative and logistic purposes.

- **POC.** If altitudes are at or below the coordinating altitude, SAAFR is implemented by the using authority. If a coordinating altitude has not been established, an air corridor is established by the ACA at the request of the appropriate ground commander. See FM 100-10 for additional information.

bb. **Weapons Engagement Zone (WEZ)**

- **Description.** In air defense, WEZ is airspace of defined dimensions within which the responsibility for engagement normally rests with a particular weapon system. These include FEZ, HIMEZ, LOMEZ, SHORADEZ, and JEZ.

- **Uses.** WEZ defines air defense areas by weapon system. From an airspace control perspective, WEZ provides airspace users with location of the air defense engagement for mission planning purposes.

- **Considerations.** Design of the WEZ is dependent on specific weapon system capabilities.

- **POC.** AADC.

cc. **Weapons Free Zone**

- **Description.** A weapons free zone is an air defense zone established for the protection of key assets or facilities, other than air bases, where weapons systems may be fired at any target not positively recognized as friendly.

- **Uses.** A weapons free zone is an air defense control measure normally used for high-value assets defense and in areas with limited command and control authority. From an airspace control perspective, this zone provides airspace users with location of a weapons free area for mission planning purposes.

- **POC.** AADC declares weapons free with the ACA establishing the zone.

ANNEX A TO APPENDIX B
AIRSPACE CONTROL REQUEST REPRESENTATIVE FORMAT

TO:

FROM:

SUBJECT: Request for Airspace

(A) Airspace Control Measure Requested

(B) Location (Lat/Long)

(C) Altitude(s)

(D) Valid/Void Times (normally ZULU)

(E) Type Aircraft/Mission

(F) Controlling Agency

(G) Comments

NOTE: This format is representative of the appropriate US Message Text Format (USMTF). Refer to Joint Pub 6-04.10, "US Message Text Formatting Program, Description of US Message Text Formatting Program," (to become CJCSI 5725.02) and associated directives for detailed instructions.

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APPENDIX C
REFERENCES

The development of Joint Pub 3-52 is based on the following primary sources:

1. Title 10, US Code, as amended by DOD Reorganization Act of 1986.

2. DOD Directive 5100.1, "Functions of the Department of Defense and Its Major Components."

3. Joint Pub 0-2, "Unified Action Armed Forces (UNAAF)."

4. Joint Pub 1-01, with Change 1, "Joint Publication System: Joint Doctrine and Joint Tactics, Techniques, and Procedures Development Program."

5. Joint Pub 1-02, "DOD Dictionary of Military and Associated Terms."

6. Joint Pub 3-0, "Doctrine for Joint Operations."

7. Joint Pub 3-56.1, "Command and Control for Joint Air Operations."

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APPENDIX D
ADMINISTRATIVE INSTRUCTIONS

1. User Comments

Users in the field are highly encouraged to submit comments on this publication to the Joint Warfighting Center Attn: Doctrine Division, Fenwick Road, Bldg 96, Fort Monroe, VA 23651-5000. These comments should address content (accuracy, usefulness, consistency, and organization), writing and appearance.

2. Authorship

The lead agent for this publication is the US Air Force. The Joint Staff doctrine sponsor for this publication is the Director, J-7.

3. Change Recommendations

a. Recommendations for urgent changes to this publication should be submitted:

TO: CSAF WASHINGTON DC//XOXD//
FROM: JOINT STAFF WASHINGTON DC//J5/J7-JDD//

Routine changes should be submitted to the Director for Operational Plans and Interoperability (J-7), JDD, 7000 Joint Staff Pentagon, Washington, D.C. 20318-7000.

b. When a Joint Staff directorate submits a proposal to the Chairman of the Joint Chiefs of Staff that would change source document information reflected in this publication, that directorate will include a proposed change to this publication as an enclosure to its proposal. The Military Services and other organizations are requested to notify the Director, J-7, Joint Staff, when changes to source documents reflected in this publication are initiated.

c. Record of Changes:

CHANGE NUMBER	COPY NUMBER	DATE OF CHANGE	DATE ENTERED	POSTED BY	REMARKS

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Coast Guard:	Coast Guard Headquarters, COMDT (G-REP) 2100 2nd Street, SW Washington, D.C. 20593-0001

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GLOSSARY
PART I—ABBREVIATIONS AND ACRONYMS

AADC	area air defense commander
AAWC	antiair warfare commander
ACA	airspace control authority
ACO	airspace control order
ACP	airspace control plan
ACS	airspace control system
ADIZ	air defense identification zone
AOA	amphibious objective area
AOR	area of responsibility
ATC	air traffic control
ATCAA	air traffic control assigned airspace
ATO	air tasking order
BDZ	base defense zone
CATF	commander, amphibious task force
CJCSI	Chairman of the Joint Chiefs of Staff Instruction
C4	command, control, communications, and computers
DOD	Department of Defense
FEZ	fighter engagement zone
FLOT	forward line of own troops
FID	foreign internal defense
HIDACZ	high-density airspace control zone
HIMEZ	high-altitude missile engagement zone
ICAO	International Civil Aviation Organization
IFF	identification, friend or foe
IFF/SIF	identification, friend or foe/selective identification feature
JEZ	joint engagement zone
JFACC	joint force air component commander
JFC	joint force commander
JOA	joint operations area
JTTP	joint tactics, techniques, and procedures
LLTR	low-level transit route
LOMEZ	low-altitude missile engagement zone
MEZ	missile engagement zone
MOOTW	military operations other than war
MRR	minimum-risk route

NATO	North Atlantic Treaty Organization
OPCON	operational control
PIRAZ	positive identification radar advisory zone
POC	point of contact
ROA	restricted operations area
RTF	return to force
SAAFR	standard use Army aircraft flight zone
SAR	search and rescue
SEAD	suppression of enemy air defense
SHORAD	short-range air defense
SHORADEZ	short-range air defense zone
SIF	selective identification feature
SOF	special operations forces
UAV	unmanned aerial vehicle
UNAAF	Unified Action Armed Forces
WEZ	weapon engagement zone

active air defense. Direct defensive action taken to nullify or reduce the effectiveness of hostile air action. It includes such measures as the use of aircraft, air defense weapons, weapons not used primarily in an air defense role and electronic warfare. (Joint Pub 1-02)

airborne early warning. The detection of enemy air or surface units by radar or other equipment carried in an airborne vehicle, and the transmitting of a warning to friendly units. (Joint Pub 1-02)

air corridor. A restricted air route of travel specified for use by friendly aircraft and established for the purpose of preventing friendly aircraft from being fired on by friendly forces. (Joint Pub 1-02)

air defense. All defensive measures designed to destroy attacking enemy aircraft or missiles in the Earth's envelope of atmosphere, or to nullify or reduce the effectiveness of such attack. (Joint Pub 1-02)

air defense action area. An area and the airspace above it within which friendly aircraft or surface-to-air weapons are normally given precedence in operations except under specified conditions. (Joint Pub 1-02)

air defense area. 1. overseas—A specifically defined airspace for which air defense must be planned and provided. 2. United States—Airspace of defined dimensions designated by the appropriate agency within which the ready control of airborne vehicles is required in the interest of national security during an air defense emergency. (Joint Pub 1-02)

air defense identification zone. Airspace of defined dimensions within which the ready identification, location, and control of airborne vehicles are required. Also called ADIZ. (Joint Pub 1-02)

air defense operations area. An area and the airspace above it within which procedures are established to minimize mutual interference between air defense and other operations; it may include designation of one or more of the following: air defense action area, air defense area, air defense identification zone, and/or firepower umbrella. (Joint Pub 1-02)

airspace control. See airspace control in the combat zone. (Joint Pub 1-02)

airspace control area. Airspace which is laterally defined by the boundaries of the area of operations. The airspace control area may be subdivided into airspace control sub-areas. (Joint Pub 1-02)

airspace control authority. The commander designated to assume overall responsibility for the operation of the airspace control system in the airspace control area. (Joint Pub 1-02)

airspace control center. The airspace control authority's primary airspace control facility, including assigned Service component, host nation, and/or allied personnel and equipment. (Joint Pub 1-02)

airspace control facility. Any of the several Service component, host nation, or allied facilities that provide airspace control in the combat zone. (Joint Pub 1-02)

airspace control in the combat zone. A process used to increase combat

effectiveness by promoting the safe, efficient, and flexible use of airspace. Airspace control is provided in order to prevent fratricide, enhance air defense operations, and permit greater flexibility of operations. Airspace control does not infringe on the authority vested in commanders to approve, disapprove, or deny combat operations. Also called combat airspace control; airspace control. (Joint Pub 1-02)

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

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 area of responsibility/ joint operations area. Also called ACP. (Approved for inclusion in the next edition of Joint Pub 1-02)

airspace control sector. A subelement of the airspace control area, established to facilitate the control of the overall area. Airspace control sector boundaries normally coincide with air defense organization subdivision boundaries. Airspace control sectors are designated in accordance with procedures and guidance contained in the airspace control plan in consideration of Service component, host nation, and allied airspace control capabilities and requirements. (Joint Pub 1-02)

airspace control system. An arrangement of those organizations, personnel, policies, procedures and facilities required to perform airspace control functions. (Joint Pub 1-02)

airspace coordination area. A three-dimensional block of airspace in a target area, established by the appropriate ground commander, in which friendly aircraft are reasonably free from friendly surface fires. The airspace coordination area may be formal or informal. (Approved for inclusion in the next edition of Joint Pub 1-02.)

airspace management. The coordination, integration, and regulation of the use of airspace of defined dimensions. (Joint Pub 1-02)

airspace restrictions. Special restrictive measures applied to segments of airspace of defined dimensions. (Joint Pub 1-02)

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

air traffic control facility. Any of the component airspace control facilities primarily responsible for providing air traffic control services and, as required, limited tactical control services. (Joint Pub 1-02)

amphibious objective area. A geographical area, delineated in the initiating directive, for purposes of command and control within which is located the objective(s) to be secured by the amphibious task force. This area must be of sufficient size to ensure accomplishment of the amphibious task force's mission and must provide sufficient area for conducting necessary sea, air, and land operations. (Joint Pub 1-02)

area air defense commander. Within a unified command, subordinate unified command, or joint task force, the commander will assign overall responsibility for air defense to a single commander. Normally, this will be the component commander with the preponderance of air defense capability and the command, control, and communications capability to plan and execute integrated air defense operations. Representation from the other components involved will be provided, as appropriate, to the area air defense commander's headquarters. Also called AADC. (Joint Pub 1-02)

base defense zone. An air defense zone established around an air base and limited to the engagement envelope of short-range air defense weapons systems defending that base. Base defense zones have specific entry, exit, and identification, friend or foe procedures established. Also called BDZ. (Joint Pub 1-02)

campaign plan. A plan for a series of related military operations aimed at accomplishing a strategic or operational objective within a given time and space. (Joint Pub 1-02)

combat airspace control. See airspace control in the combat zone. (Joint Pub 1-02)

combat zone. 1. That area required by combat forces for the conduct of operations. 2. The territory forward of the Army rear area boundary. (Joint Pub 1-02)

combined operation. An operation conducted by forces of two or more allied nations acting together for the accomplishment of a single mission. (Joint Pub 1-02)

concept of operations. A verbal or graphic statement, in broad outline, of a commander's assumptions or intent in regard to an operation or series of operations. The concept of operations frequently is embodied in campaign plans and operation plans; in the latter case, particularly when the plans cover a series of connected operations to be carried out simultaneously or in succession. The concept is designed to give an overall picture of the operation. It is included primarily for additional clarity of purpose. Also called commander's concept. (Joint Pub 1-02)

coordinating altitude. A procedural airspace control method to separate fixed- and rotary-wing aircraft by determining an altitude below which fixed-wing aircraft will normally not fly and above which rotary-wing aircraft normally will not fly. The coordinating altitude is normally specified in the airspace control plan and may include a buffer zone for small altitude deviations. (Joint Pub 1-02)

drone. A land, sea, or air vehicle that is remotely or automatically controlled. (Joint Pub 1-02)

fighter engagement zone. See weapon engagement zone. (Joint Pub 1-02)

firepower umbrella. An area of specified dimensions defining the boundaries of the airspace over a naval force at sea within which the fire of ships' antiaircraft weapons can endanger aircraft, and within which special procedures have been established for the identification and operation of friendly aircraft. (Joint Pub 1-02)

fire support coordination. The planning and executing of fire so that targets are adequately covered by a suitable weapon or group of weapons. (Joint Pub 1-02)

foreign internal defense. Participation by civilian and military agencies of a government in any of the action programs taken by another government to free and protect its society from subversion, lawlessness, and insurgency. Also called FID. (Joint Pub 1-02)

forward line of own troops. A line which indicates the most forward positions of friendly forces in any kind of military operation at a specific time. The forward line of own troops normally identifies the forward location of covering and screening forces. Also called FLOT. (Joint Pub 1-02)

functional component command. A command normally, but not necessarily, composed of forces of two or more Military Departments which may be established across the range of military operations to perform particular operational missions that may be of short duration or may extend over a period of time. (Joint Pub 1-02)

high-altitude missile engagement zone. See weapon engagement zone. (Joint Pub 1-02)

high-density airspace control zone. Airspace designated in an airspace control plan or airspace control order, in which there is a concentrated employment of numerous and varied weapons and airspace users. A high-density airspace control zone has defined dimensions, which usually coincide with geographical features or navigational aids. Access to a high-density airspace control zone is normally controlled by the maneuver commander. The maneuver commander can also direct a more restrictive weapons status within the high-density airspace control zone. Also called HIDACZ. (Joint Pub 1-02)

identification, friend or foe. A system using electromagnetic transmissions to which equipment carried by friendly forces automatically responds, for example, by emitting pulses, thereby distinguishing themselves from enemy forces. Also called IFF. (Joint Pub 1-02)

identification, friend or foe/selective identification feature procedures. The directives that govern the use of identification, friend or foe selective identification feature equipment. (Joint Pub 1-02)

joint engagement zone. See weapon engagement zone. (Joint Pub 1-02)

joint force. A general term applied to a force composed of significant elements, assigned or attached, of two or more Military Departments, operating under a single commander authorized to exercise operational control. (Joint Pub 1-02)

joint force air component commander. The joint force air component commander derives authority from the joint force commander who has the authority to exercise operational control, assign missions, direct coordination among subordinate commanders, redirect and organize forces to ensure unity of effort in the accomplishment of the overall mission. The joint force commander will normally designate a joint force air component commander. The joint force air component commander's responsibilities will be assigned by the joint force commander (normally these would include, but not be limited to, planning, coordination, allocation, and tasking based on the joint force commander's apportionment decision). Using the joint force commander's guidance and authority, and in coordination with other Service component commanders and other assigned or supporting commanders, the joint force air component commander will recommend to the joint force commander apportionment of air sorties to various

missions or geographic areas. Also called JFACC. (Joint Pub 1-02)

joint operations area. An area of land, sea, and airspace, defined by a geographic combatant commander or subordinate unified commander, in which a joint force commander (normally a joint task force commander) conducts military operations to accomplish a specific mission. Joint operations areas are particularly useful when operations are limited in scope and geographic area or when operations are to be conducted on the boundaries between theaters. Also called JOA. (Joint Pub 1-02)

low-altitude missile engagement zone. See weapon engagement zone. (Joint Pub 1-02)

low level transit route. A temporary corridor of defined dimensions established in the forward area to minimize the risk to friendly aircraft from friendly air defenses or surface forces. (Joint Pub 1-02)

minimum-risk route. A temporary corridor of defined dimensions recommended for use by high-speed, fixed-wing aircraft that presents the minimum known hazards to low-flying aircraft transiting the combat zone. Also called MRR. (Joint Pub 1-02)

minimum-risk level. A specific altitude or altitude block that allows homebound aircraft to return in a homebound direction without lateral restrictions. Also called MRL. (Joint Pub 1-02)

point defense. The defense or protection of special vital elements and installations; e.g., command and control facilities, air bases. (Joint Pub 1-02)

positive control. A method of airspace control which relies on positive identification, tracking, and direction of aircraft within an airspace, conducted with electronic means by an agency having the authority and responsibility therein. (Joint Pub 1-02)

procedural control. A method of airspace control which relies on a combination of previously agreed and promulgated orders and procedures. (Joint Pub 1-02)

restricted operations area. Airspace of defined dimensions, designated by the airspace control authority, in response to specific operational situations/ requirements within which the operation of one or more airspace users is restricted. (Joint Pub 1-02)

rules of engagement. Directives issued by competent military authority which delineate the circumstances and limitations under which United States forces will initiate and/or continue combat engagement with other forces encountered. Also called ROE. (Joint Pub 1-02)

Service component command. A command consisting of the Service component commander and all those Service forces, such as individuals, units, detachments, organizations and installations under the command including the support forces, that have been assigned to a combatant command or further assigned to a subordinate unified command or joint task force. (Joint Pub 1-02)

short-range air defense engagement zone. See weapon engagement zone. (Joint Pub 1-02)

standard use army aircraft flight route. Routes established below the coordinating altitude to facilitate the movement of Army aviation assets. Routes are normally located in the corps through brigade rear areas of operation and do not require approval by the airspace control authority. Also called SAAFR. (Joint Pub 1-02)

unmanned aerial vehicle. A powered, aerial vehicle that does not carry a human operator, uses aerodynamic forces to provide vehicle lift, can fly autonomously or be piloted remotely, can be expendable or recoverable, and can carry a lethal or nonlethal payload. Ballistic or semiballistic vehicles, cruise missiles, and artillery projectiles are not considered unmanned aerial vehicles. Also called UAV. (Joint Pub 1-02)

weapon engagement zone. In air defense, airspace of defined dimensions within which the responsibility for engagement of air threats normally rests with a particular weapon system. Also called WEZ. (Joint Pub 1-02)

a. fighter engagement zone. In air defense, that airspace of defined dimensions within which the responsibility for engagement of air threats normally rests with fighter aircraft. Also called FEZ.

b. high-altitude missile engagement zone. In air defense, that airspace of defined dimensions within which the responsibility for engagement of air threats normally rests with high-altitude surface-to-air missiles. Also called HIMEZ.

c. low-altitude missile engagement zone. In air defense, that airspace of defined dimensions within which the responsibility for engagement of air threats normally rests with low- to medium-altitude surface-to-air missiles. Also called LOMEZ.

d. short-range air defense engagement zone. In air defense, that airspace of defined dimensions within which the responsibility for engagement of air threats normally rests with short-range air defense weapons. It may be established within a low- or high-altitude missile engagement zone. Also called SHORADEZ.

e. joint engagement zone. In air defense, that airspace of defined dimensions within which multiple air defense systems (surface-to-air missiles and aircraft) are simultaneously employed to engage air threats. Also called JEZ.

weapons free zone. An air defense zone established for the protection of key assets or facilities, other than air bases, where weapon systems may be fired at any target not positively recognized as friendly. (Joint Pub 1-02)

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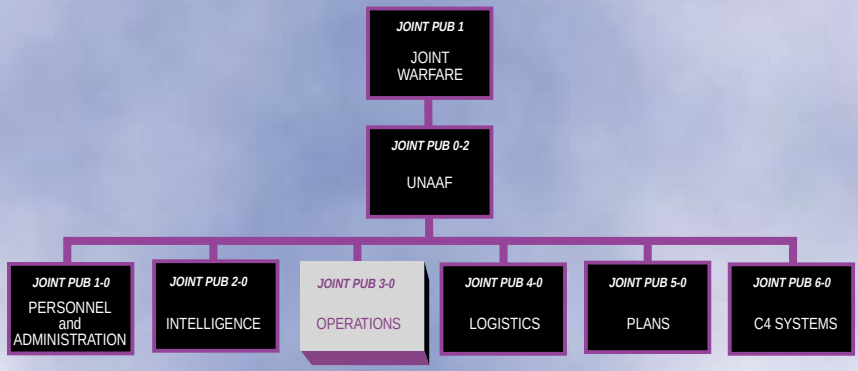
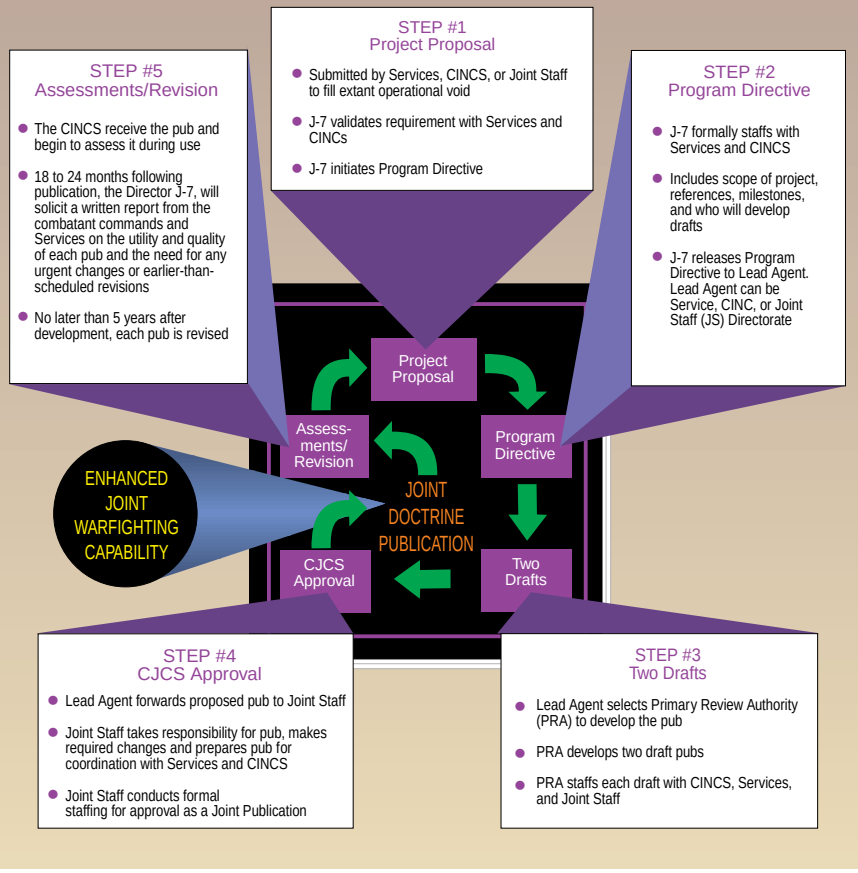


All joint doctrine and tactics, techniques, and procedures are organized into a comprehensive hierarchy as shown in the chart above. **Joint Pub 3-52** is in the **Operations** series of joint doctrine publications. The diagram below illustrates an overview of the development process:

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