MAJOR OPERATIONS AND CAMPAIGNS

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Traditional Warfare

According to Joint Publication 1, *Doctrine for the Armed Forces of the United States*, traditional war normally focuses on focuses on an adversary's armed forces (including cyberspace) with the ultimate objective of influencing the adversary's government. In contrast, what makes war "irregular" is the focus of its operations—"a relevant population"—and its strategic purpose—"to gain or maintain control or influence over, and the support of" that relevant population through political, psychological, and economic methods. The genesis of the military's role in airspace control lies within the realm of traditional warfare. The current tactical air control system (TACS) organization is optimized for theater-level traditional warfare. For clarity and understanding, the following sections presume deterrence operations have failed and hostilities have progressed to open warfare in the traditional sense.

Transitioning to traditional combat operations from a position of deterrence may be accomplished on the joint force commander's (JFC) initiative or in response to an enemy attack. During combat operations, peacetime airspace rules and organizations change and the nature of these changes will vary from theater to theater. The airspace control plan (ACP) should contain instructions to transition from peacetime to combat in simple, clear steps. The ACP should include the airspace control concepts for transition to combat operations and robust procedural control methods for potential degraded operations. Airspace planners should be integrated into development of the master air attack plan to ensure required airspace is designed for combat operations and the transition from peacetime to combat airspace control is seamless.

At the onset of combat operations, every effort should be made to sanitize and exclude civil aviation operations from the affected joint operations area (JOA). Redesign of airspace or notification of impending changes to airspace control could signal adversaries of a pending operation so timing for airspace transition to potential combat should be considered. Advanced or open notification of airspace changes should be integrated into information operations for OPSEC or tactical deception considerations. During this transition period, the air component plays a critical role in any joint force commander's (JFC) course of action to shock, demoralize, disrupt, or gain access to a theater or joint operating area. In seizing the initiative, "the JFC seeks decisive advantage through the use of all available elements of combat power to seize and

maintain the initiative, deny the enemy the opportunity to achieve its objectives, and generate in the enemy a sense of inevitable failure and defeat. Against adversaries with a credible air and air defense threat, efforts to seize the initiative will likely be more sequential than simultaneous because many operations may require air superiority as a precondition for success." Additionally, the JFC coordinates with other governmental agencies to facilitate coherent use of all instruments of national power in achieving national strategic objectives. In combat operations, this involves executing offensive operations at the earliest appropriate time, forcing the enemy to offensive culmination and setting the conditions for decisive operations.

Integration of Airspace Control and Air Defense Operations

During combat operations the joint force air component commander (JFACC), acting as the airspace control authority (ACA) and area air defense commander (AADC), normally unifies the functions of airspace control and air defense within the joint operating area. This integration prevents these two functional areas from conflicting and interfering with each other and enables prioritization and integration of air assets. Integrating the airspace control function with air defense operations is especially critical during the initial efforts to control enemy airspace and gain air superiority. Effective airspace control procedures assist in aircraft and missile identification, facilitate engagement of enemy aircraft and missiles, and provide safe passage of friendly air vehicles.

Planning Considerations

In the opening stages of combat, effective airspace control hinges on understanding the operations plan, JFC intent, the airspace environment, and the requirements to effectively control it. During these initial stages of major combat operations the joint force air component commander (JFACC) is typically the supported commander for the theater-wide counterair effort and integrates offensive and defensive counterair with air defense assets to achieve air superiority. Against countries with a credible air and air defense threat, efforts to "seize the initiative" have historically been more sequential than simultaneous because air superiority is a precondition for most operations' success. For operations where the United States already has access and air superiority, the ACP and the area air defense plan may be less restrictive and operations to establish the required access may be either sequential or simultaneous.

Until air superiority is achieved, the initial ACP may restrict friendly military and civil airspace users. Operating airborne systems with limited identification and communications equipment places those aircraft at risk and also complicates counterair operations by increasing the risk of fratricide and the probability of successful enemy air or missile attacks. Certain friendly airborne systems (e.g., cruise missiles, unmanned aircraft systems [UAS]) may be mission-essential and yet lack identification, communications equipment or autonomous sense-and-avoid capability. Specific airspace measures are required for these users to minimize the impact to the counterair fight while maximizing efforts to seize the initiative.

✪ Systems that cannot be positively identified as friendly may be restricted during the opening stages of combat operations prior to obtaining air superiority.

✪ At commencement of combat operations the JFACC should immediately execute plans and procedures to reduce civil aviation to levels most compatible with combat operations. Some level of civil aviation, especially commercial airlift flying in support of coalition operations, will probably continue throughout all the phases (where they operate and under what restrictions will be fluid). The JFACC may assign to the director of air mobility forces the responsibility to manage these operations.

✪ The ACP should be continuously updated during the operation and for each of its phase transitions.

The JFACC should ensure the ACP and airspace control order (ACO) are fully coordinated with supporting components, coalition partners, and host nation air and air defense forces, even if the host nation is not participating in combat operations. This coordination should also include all SOF elements who participate in access operations. Because some of these plans are highly sensitive, the JFACC should ensure alternate communication means are available to pass information to friendly organizations that do not have access to normal military communications. In addition, consideration should be given to how airspace control system elements will interface and coordinate with civil air traffic control agencies just outside of the joint operating area for follow-on operations (JP 3-52).

Integration with Fires

Planning airspace control (JP 3-52) for combat operations should fully integrate fires from all friendly and coalition forces. Failure to integrate all fires in initial planning significantly increases the potential for fratricide and may delay execution of combat operations. Early integration of airspace and fires prevents costly decisions which result when two components plan to use the same airspace, at the same time, for different missions. Air component airspace managers and airspace control system elements should coordinate with the JFLCC's senior fires element, air naval gunfire liaison company (ANGLICO), special operations forces (SOF), and Tomahawk land attack missile (TLAM) planners to identify conflicting airspace requirements and quantify risk.

The JFACC, working with the JFC and other components, should clearly identify the risk of combining fires and aircraft operations (manned and unmanned), particularly at the outset of the campaign where airspace may be more constrained due to the higher density of air and land operations. These risks should be codified in the ACP, along with the level of risk the JFC is willing to accept for each phase. Risk is further discussed later in this chapter.

Some component fires systems; such as conventional air-launched cruise missile, TLAM, Army tactical missile system, and other future systems, have small radar cross sections and are difficult to track with typical surveillance and ATC radar systems. As a result, these systems do not lend themselves to positive control and should be deconflicted with procedural airspace coordination measures. The ACP should establish procedures to include procedural control and coordination of fires. These

procedures should also include real-time deconfliction measures for missions in the air tasking order, airspace control order, and special instructions (SPINS).

The JFACC normally serves as the supported commander for the JFC's overall air interdiction effort. Airspace control, to include deconfliction with fires, is critical to the success of interdiction. The JFACC should ensure that all interdiction operations use common reference systems and tactics, techniques, and procedures (TTP). The JFACC should advise the JFC and clearly define these reference systems and TTPs in the ACP, area air defense plan, and ACO. These plans should also include real time airspace control procedures for time-sensitive interdiction events and fires.

Theater Air Control System

During the initial stages of major combat operations, the airspace control system may be predominantly airborne e.g., AWACS and JSTARS and elements such as ASOCs and CRCs may not be fully deployed due to cargo transport capabilities.[1] When this occurs, airborne elements of the theater air control system (TACS) and naval tactical air control system (NTACS) will accomplish C2 functions until appropriate TAGS is established. Planning for follow-on basing of the Air Force TACS should occur either before or during the early stages of combat and be coordinated with other components and coalition forces (including support of special operations forces). Failure to conduct this planning may prevent critical TACS elements from deploying to the theater at the appropriate time and will result in a less-than-optimum long-term airspace control capability. When practical, collocating key air C2, fire support coordination elements, air support operations centers (ASOCs), and SOF airspace planning and operations nodes significantly eases coordination and increases the effectiveness of airspace control procedures.

Integration of Unmanned Aircraft Systems (UAS) Plan

The use of unmanned aircraft (UA) over the battlefield has increased significantly in recent years. UA compete for airspace with manned aircraft, particularly in the vicinity of high value targets. In order to minimize risk and maximize the effectiveness of UAS, the ACP should direct the deconfliction of joint, Service, and coalition UA platforms operating at all altitudes. Unlike their manned counterparts, the vast majority of UAs do not have on-board sense-and-avoid capabilities. Therefore, other means of aircraft separation should be employed to reduce the risk of mid-air collisions. UAS deconfliction is critical to all phases and requires detailed planning and coordination.

Integration of UAS and Theater Intelligence, Surveillance, and Reconnaissance Plan

Prior to and during a joint force's operation, the JFC and components should conduct thorough intelligence preparation of the operational environment. Part of this intelligence preparation includes information gained through the use of intelligence, surveillance and reconnaissance (ISR) platforms. Many ISR platforms are airspace users and may be vying for the same airspace. The JFC's ISR priorities should be widely disseminated to authorized airspace control system elements responsible for

[1] AFTTP 3-2.17, *MTTP for the Theater Air Ground System*

airspace control to facilitate required airspace planning and execution deconfliction for mission accomplishment. Prior to the JFACC achieving air superiority, friendly airborne ISR platforms that do not meet identification or control requirements increase the difficulty of counterair operations and increase the risk of successful enemy air attack. If the JFC decides to restrict the use of friendly platforms without sufficient identification or communications systems, the ACP should clearly delineate which operating areas are restricted, and what capabilities (e.g., Identification, Friend or Foe (IFF)) are required to operate within them. If the JFC elects not to restrict operations by these systems, the airspace control authority (ACA) should clearly outline the increased risk to the JFC for approval.

ISR asset congestion in airspace over high interest areas may be mitigated through integration of joint collection management board airborne ISR collection plan into airspace planning and control documents. Multiple, component-organic, airborne ISR assets viewing the same objective area add complexity to airspace control operations and may delay fire support to forces on the ground. For more information, see Annex 2-0, *Globally Integrated Intelligence, Surveillance, and Reconnaissance Operations*; and JP 2-0, *Joint Intelligence*.

Air Operations in Conjunction with Land Component Operations

Regardless of whether the theater campaign is sequential or simultaneous, normally a joint force land component commander (JFLCC) will become the supported commander for one or more AO as friendly forces gain the initiative. Ideally, the air component will have achieved at least localized air superiority over the AO, but this may not always be the case.

Once air superiority is achieved, the JFC may allow increased operations by airborne systems with limited identification and communications capabilities. A theater-wide COP is still a significant contributor to both air defense and airspace control. The JFC's ACP may employ fewer restrictions on certain systems which are visible on the airspace COP, whereas systems with less identification and communications equipment may require more restrictions and coordination.

When one or more land component commanders become supported commanders for their areas of operations, the ACS should be modified to meet this mission. The JFACC normally remains the supported commander for counterair and air interdiction efforts, and may be a supporting commander for other operations(JP 3-0). It is critical that the ACP acknowledge this transition and provide guidance for integrating airspace control with airspace control elements from other component commanders. The JFACC, in the AADC and ACA roles, provides air defense and airspace control for the JOA. During this portion of operations the initial placement of both Air Force TACS and other component airspace control system elements is critical to the success of the ACP. The JFACC should consider the following when creating the operational transition portion of the ACP:

- ✪ The C2 plan for the initial employment of ground forces.

✪ Adequate communications within theater to execute the plan.

✪ TACS elements required to meet the scheme of maneuver for other component commanders.

✪ Delegation of airspace control authority to components (e.g., joint special operations area, amphibious objective area, HIDACZ, or sectors) and integration of component airspace control agencies.

✪ Location and required phased movements of the air support operations center, the command and reporting center, the tactical air operations center (Marines), the direct air support center, and DATCALS.

✪ Planned use of enemy personnel or systems for the post-hostility airspace control system (consider which, if any, facilities should be placed on the restricted target list for preservation).

✪ Authorities and procedures for real-time airspace control execution in the JFLCC's area of operations including integration of JFLCC fires and ISR planning.

Airspace Coordinating Measures

A key role of the ACP is to define the processes to propose, approve, modify, and promulgate airspace coordination measures. As the ACA, the JFACC defines theater-wide airspace coordination measures with components and coalition airspace users and provides recommended airspace control procedures for JFC approval and publication in the ACP. Once approved, these ACP airspace coordination measures are promulgated throughout the joint and coalition forces via the airspace control order, air tasking order, and special instructions. For effective airspace control it is critical that all joint and coalition airspace users, including indirect fires platforms, understand the theater-wide airspace coordination measures including:

✪ Airspace coordination measures that should also be considered to deconflict them from ground fires.

✪ Activation of theater-wide fire support coordination measures including fire support coordination line, coordinated fire line, kill box, etc.

✪ Establishment of the coordinating altitude (if used).

✪ Promulgation of airspace coordination measures required for special missions (e.g., air assaults, airborne operations).

✪ Establishment of areas that will become high density airspace and the type of control procedures used to mitigate risk.

✪ Provision for automated tools and systems that ensure promulgation of the airspace coordination order and changes to airspace users.

Major Combat Operations and Risk

Risk is a fundamental consideration of airspace control. Joint doctrine recognizes the need for each Service and functional component to use the airspace with maximum availability consistent with the JFC's acceptable level of risk. The JFC's acceptable level of risk for all airspace users (including fires) should be clearly delineated in the ACP. The ACP should include a risk matrix that is agreed upon by components prior to commencement of combat operations. At a minimum, this matrix should include the types of risk shown in figure titled *Notional risk assessment matrix* (the actual risk levels shown are notional).

From **Major Combat Ops Risk**	**To** **Platforms**	**Acceptable Level of Risk**
Indirect fires versus	UA	High
	Fighter/attack fixed wing	Medium
	Manned rotary wing	Low
	Tanker/airlift/civilian	Low
UA versus	UA	High
	Fighter/attack fixed wing	Medium
	Manned rotary wing	Medium
	Tanker/airlift/civilian	Low
Fighter/attack fixed wing versus	UA	Medium
	Fighter/attack fixed wing	Medium
	Manned rotary wing	Low
	Tanker/airlift/civilian	Low
Manned rotary wing versus	UA	Medium
	Fighter/attack fixed wing	Low
	Manned rotary wing	Medium
Tanker/airlift/civilian versus	UA	Low
	Fighter/attack fixed wing	Low
	Manned rotary wing	Low
	Tanker/airlift/civilian	Low

Notional risk assessment matrix

During all operational phases, the assumption of risk is a command decision. Definitions of high, medium, and low risk vary from theater to theater based on commander's guidance. In general terms, high risk prioritizes mission accomplishment over the preservation of resources; medium risk seeks to balance mission

accomplishment with potential resource losses and may require slight mission adjustments to achieve desired effects; and low risk prioritizes the preservation of resources and may require substantial mission adjustments to achieve desired effects. During major combat operations the risk matrix assumes the JFC has the authority to deny access to civil aviation in the joint operating area. If that is not the case, then civil aviation should be added to the matrix. The risk of fratricide with civil aviation may be a decision that exceeds the authority of theater commanders. As the volume of airspace users increases, control should be enhanced to keep the level of risk acceptable to the JFC. The ACP should specify areas where high volumes of airspace users are projected and plan for increased control capability (i.e., positive versus procedural control). If an enhanced control capability is not an option, then commanders should understand they are accepting a higher risk of mid-air collisions and fratricide with indirect fires, manned systems, and UAS.

Transition from "Seize the Initiative" to "Dominate"

Having established a foothold from where combat operations can commence, the dominate phase includes the full employment of joint force capabilities and continues the appropriate sequencing of forces into the operational area as quickly as possible. When a campaign is focused on conventional enemy forces, this phase normally concludes by achieving the JFC's operational objectives. Operations may involve ground forces bringing a large number of manned and unmanned aircraft into the theater. Additionally, the volume of fires assets using airspace will likely increase, requiring additional planning, deconfliction, and airspace control actions. The ACP should include updates and changes that will occur as the JFC transitions the force to this stage of combat.

Planning Considerations

Prior to initiating this next phase in operations, the JFACC should ensure a fully operational TACS is in place. Additionally, component portions of the ACS required for the operation should also be functional. Both the Air Force TACS and ACS elements should be able to move forward with surface elements. Because airspace control is a critical C2 function, elements of the TACS and ACS should be given appropriate movement priority. At the commencement of decisive combat operations, a reliable and jam-resistant communications system should be available within the entire JOA for airspace control. While the COMAFFOR is normally responsible for the majority of this system, Service component contributions can significantly increase its capability. During this stage in combat operations, the ACP, ACO, ATO, and SPINS should be updated to include responsibilities and authorities (including SOF and coalition) for the following:

- ✪ Unassigned areas within the JFLCC AO.
- ✪ Procedures for forward operating bases and airfields.
- ✪ DATCALS/air traffic control/air traffic service at forward operating bases.

✪ Air traffic control/air traffic service at captured airfields.

✪ Placement of the CRC, Marine tactical air operations center, and air defense radars to provide coverage and sharing of coverage pictures, if required.

✪ Area air defense and short-range air defense integration behind the fire support coordination line and forward line of troops.

✪ UA and rotary wing deconfliction methods.

✪ Continued integration of the air support operations center, tactical air control parties, and direct air support center with the ACS.

As operations prepare to transition towards stabilization efforts, the JFC may terminate kill box procedures. If portions of a kill box have been considered during airspace control or deconfliction, the ACP should be updated to detail the changes. The global area reference system, or theater-specific area reference system, is still a valid reference system for airspace control even if the fire support coordination measures have been removed.

Airspace Control System

At the beginning of decisive combat operations the airspace control system will build upon the system the JFACC used to prosecute the initial combat operations. When ground AOs are established, key C2 nodes may move forward to support JFLCC or SOF components. Airspace control system elements in direct support of the JFLCC, SOF, or other component commanders play a key role in airspace control. These elements control close air support, ISR, and interdiction in the affected area of operation, and are the primary control node for deconfliction of fires.

Integration with Indirect Fires

During decisive operations, airspace control elements should expect a significant increase in the number of indirect fires in the JFLCC AO. Indirect fire systems are airspace users; however, current airspace control TTP and FSCMs do not lend themselves to seamless integration. Airspace coordination measures do not normally prevent fires from entering the airspace, only FSCMs serve to restrict fires. To effectively integrate fires and airspace control, airspace control elements should determine which airspace coordination measures should also be fire support coordination measures and coordinate accordingly. As an example, an air to air refueling area is an airspace coordination measure which would prevent other aircraft from entering the area without coordination with the controlling agency. Without an appropriate FSCM, however, nothing prevents fires from passing through the air to air refueling area. Integrating fires with other airspace users requires careful consideration of risk and user priority as well as an understanding of the joint area operations plan and land component fires plan.

Airspace planners should minimize the number of combined airspace coordination measure/fire support coordination measure requests so as not to overly restrict fires. In the same manner, fires planners should understand there are some areas in which the JFC cannot accept the risk of mixing fires and manned aircraft. Effective real-time execution can solve many of these issues by moving either fires or aircraft to allow both systems to operate. Deconfliction of fires and aircraft is a critical part of planning airspace control for decisive combat operations.

Airspace Command and Control of Special Missions

Missions such as air assaults, airborne assaults, and other excursions into enemy territory require specific airspace control coordination. These events may require airspace coordination measures such as HIDACZ, restricted operations zones, minimum risk routes or low-level transit routes. These missions may require specific command and control relationships, organizations, and authorities that should be planned for and included in ACP, ACO, ATO, and SPINS.