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Effective Airspace Management to Facilitate Fires – Establishing an Airspace Management Authority (AMA)

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(USMC Photo)

It used to be enough to establish a coordinating altitude and communicate jointly only on those rare occasions when United States Army (USA) or United States Marine Corps (USMC) operations required venturing to higher altitudes. However, while the Air Force still maintains the preponderance of air assets, the airspace has become saturated with much more than USAF aircraft. Ground fires, Close Air Support (CAS) stacks, and a multitude of unmanned platforms occupying the same airspace will require a steady-state coordination mechanism for continuously servicing joint and coalition dynamic requests for airspace.

The term “mechanism” may imply new cutting edge command and control (C2) systems such as the Tactical Airspace Integration System (TAIS) for the USA and Battle Control Center-Central Command Air Forces (BC3) for the United States Air Force (USAF). After years of mere lateral, vertical or time deconfliction, they do provide an opportunity for integration using situational awareness (SA) from on and offboard sensors and datalink information. Unfortunately, all of this new capability has seemingly made C2 crews more adept at airspace *control* for their respective services’ needs, while joint airspace *management* is truly where joint fires integration becomes difficult.

Historical Precedence

But, why? After all, it’s not as if our services have never operated as a joint force in the past. In fact, it’s worth examining how fires have historically been integrated. The World War II Battle of Iwo Jima is a poignant example of persistent, coordinated naval, air and land fires delivered in an extremely timely manner. All air strikes were broadcast over the Corps Artillery Fire Direction Control net with time, area, axis, number and type of aircraft and minimum altitude.¹ Each battery of artillery could then control its fires accordingly. An Air Support Coordination Unit was also established to service close troop support missions and warn aircraft of conflicting fire missions overhead on the broadcast.²

Although successful, several aspects of this battle simplified fires integration. First, the fight axis and general location of friendly forces was fairly straight forward- good guys in the south, bad guys in the north. Second, the entire area of operations (AOR) was very small- only about one third the size of Manhattan. Also, targets and target areas were fixed, heavily entrenched bunkers and tunnel systems incapable of rapid redeployment. Finally, every military asset present at that island was in support of the same Operation with the same objectives.

In fact, the USMC integrates fires as their baseline concept of operations: a Marine Air-Ground Task Force (MAGTF). Coordinated air, land, and naval fires are orchestrated by a central command element for a specific mission. This system, although highly effective, still has significant disparities from the joint service concept because of many of the same reasons we identified at Iwo Jima *as well as* the very important advantage of having organic air support- the USMC does not require coordination with the JFACC to be apportioned air missions. The USMC is evidence of the effectiveness of integrated fires if a fighting force can eliminate the tug-of-war between ownership of mission sets and priority for airspace by establishing a centralized authority with big-picture battlespace situational awareness.



Sgt Addison C. Hall, Marine Light-Attack Helicopter Squadron 167 crew chief, shoots an M240D machine gun mounted to a UH-1N Huey during a close air support mission involving 18 aircraft. (USMC Photo)

The Challenges

Integrating fires is difficult because it couples vital effects with lethal consequences- we've got to do it, but we've got to do it right. Second, targets are oftentimes dynamic and fleeting- they require nothing less than real-time information to service them in a rapid manner. Today's battlefields are asymmetric. Populated, urbanized terrain creates multiple, overlapping fight axes. These scenarios do not lend themselves to the use of traditional ACMs and FSCMs. Subsequently, the use of the ACP/ACO to structure such a dynamic battlespace is difficult. Finally, over a large area, or with a multi-faceted enemy, and especially in a joint or coalition operation, there will likely be several missions and objectives being serviced simultaneously.

When there exists several operational commanders with separate objectives, or various air missions other than those in direct support of the ground forces, or when there is otherwise potential for conflict between the ACA and the operational commander- there will be a need for prioritization and resolution

Ownership and Responsibility

Operators are left wondering who can prioritize and resolve missions at the tactical level- who “owns” the airspace? Ownership of airspace, in regards to prioritizing missions, taking responsibility for safety of flight and deconfliction, is unclear between the supported ground element, the pilots (TAC-A, FAC-A), the tasking C2 agency and the executing C2 agency. In fact, the only true owner of airspace is the Airspace Control Authority (ACA), commonly triple-hatted as the Joint Force Air Component Commander (JFACC) and Area Air Defense Commander (AADC). The ACA’s responsibilities include:

“...planning, coordinating, and developing airspace control procedures and operating an [Air Control System]... The ACA establishes an ACS that is responsive to the needs of the JFC... and coordinates and deconflicts user requirements.” (JP 3-52 Joint Doctrine for Airspace Control in the Combat Zone, II-1, II

This would seemingly put the JFACC, acting as ACA, in the awkward position of planning procedures for the Joint Force Land Component Commander’s (JFLCC) fires. However, JP 3-52 goes on to clarify,

“The ACA does not have the authority to approve, disapprove, or deny combat operations. That authority is only vested in operational commanders. Matters on which the ACA is unable to obtain agreement will be referred to the JFC for resolution.”

The result is a ground commander who owns the air medium above him in order to support his combat operations, but an airspace system overhead, to include air defense assets, tankers, air mobility, the ISR constellation, UAVs, and civilian air traffic, being mostly managed and executed by the JFACC and the TACS. The ground commander is forced to coordinate within that system to establish adequate freedom of maneuver, but oftentimes it is not clear which tactical level agency (Army A2C2, ASOC, CRC, AWACS, JSTARS, TAC-A, FAC-A) has the information or vested authority to orchestrate a plan that will meet the needs of all dynamic airspace users.

In the absence of such an agency, individual users and lateral agencies make use of airspace without adequate coordination or their coordination is centralized at the CAOC airspace cell where the decision loop often moves more slowly than the pace of the ongoing fight. The ACA at the CAOC is a general officer and cannot be expected to service real-time, dynamic airspace requirements at the tactical level. This certainly also applies to the JFC who is charged, doctrinally, with resolving conflicts.

Need for an Airspace Management Authority

The goal of this proposal is to develop the functions, responsibilities and authorities of an Airspace Management Authority (AMA). The AMA will serve as the single, decentralized control agency for real-time airspace management in an effort to align command and control responsibilities and authorities for joint use of airspace.

The need for an AMA has grown exponentially as the number of airspace users, especially those working above the coordinating altitude, has increased. Particularly in

asymmetric operations, there is not a distinct division of airspace among airspace users, causing airspace utilization requirements to overlap. The stovepipe effect among lateral agencies servicing separate objectives leaves warfighters having to coordinate up the chain of command, lengthening the kill chain. The underlying issue is a lack of understanding among joint users of airspace over when to coordinate with whom across the joint battlespace.

Definition

An Airspace Management Authority should be established as soon as more than one agency has established separate Battle Management Areas (BMA), and no later than the point at which there is more than one service making use of the same airspace - with fires or aircraft. The AMA will reside at a Tac-C2 agency and will track and manage all active ACMs, FSCMs, airspace assignments, and allocations through the use of organic tools, techniques and/or procedures specific to that platform. Secondly, the AMA will be delegated the authority from the ACA to authorize deviations from governing documents (retroactively coordinating with operational commanders), and build and execute real-time airspace management plans to service dynamic needs. These plans may include releasing airspace to lateral or subordinate airspace management agencies and delegating responsibility for safety and deconfliction along with that ownership.

Integration-Hierarchy-Coordination

The AMA is not meant to be a lengthy chain of command amongst lateral agencies. Nor is it meant to establish yet another Tac-C2 agency entirely. Since the skillset and systems required already exist, it is meant only to be a clarification among Tac-C2 over whom is fusing together the big picture for airspace. Much like the Signals Intelligence (SIGINT) Identification (ID) Authority or the Command and Control Intelligence Surveillance and Reconnaissance (C2ISR) Package Commander concepts, the AMA will be the central point of contact across lateral agencies to take responsibility for overall airspace management.

During Operation DESERT STORM (ODS), after establishing air superiority, the campaign to liberate Kuwait required close coordination between the massive ground component and the air assets servicing their requests. The Air Force Control and Reporting Center (CRC) was responsible for ferrying A-10s safely into and out of killboxes and managing their airspace needs procedurally with airborne killer scouts.³ Additionally, CRCs served their traditional role of Sector and Regional Air Defense Commander (SADC, RADC). The presence of the air defense mission meant that at least two services required use of the same airspace: the Air Force fighters and the Army PATRIOT. Here was an example of the Air Force and the Army sharing and coordinating the full air medium from low to high altitude. A United States Army (USA) Air Defense Artillery Fire Control Officer (ADAFCO) was embedded onsite at the CRC for rapid coordination regarding deconfliction of fires and aircraft. This successful TTP continues today and serves as an example of one proven solution to joint airspace management.

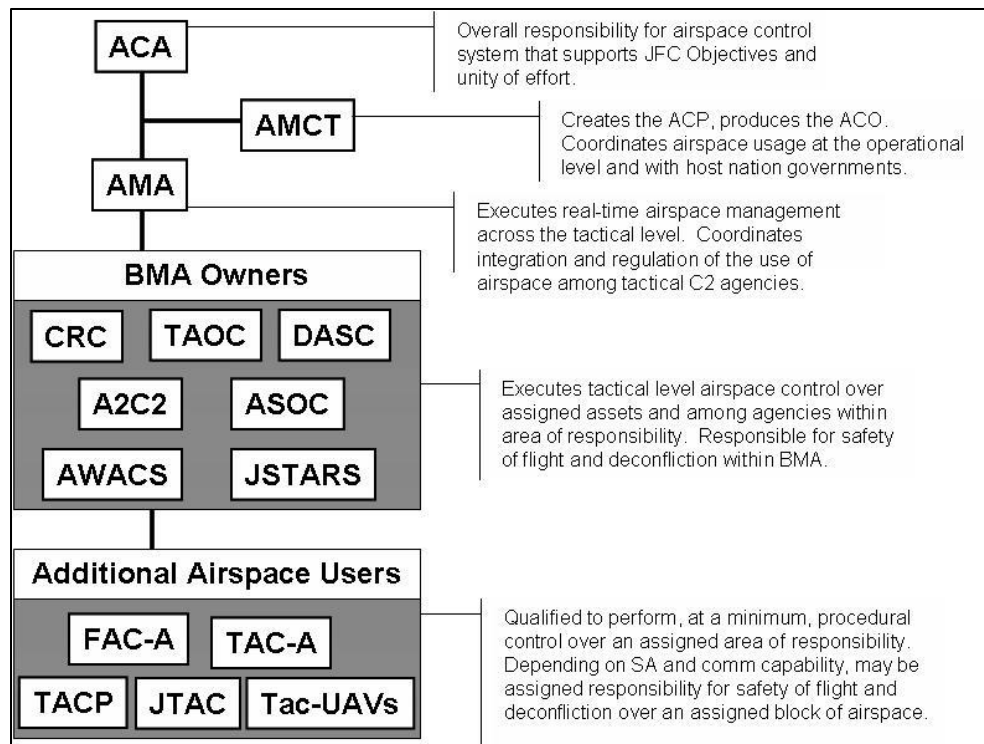


Figure 1. Hierarchy of Responsibilities

It is also a testament to the importance of decentralized authority from the operational level to the tactical level, "The AADC may also designate [RADC] and [SADC] to allow for ease of command and control (C2) of airspace based on the size and scope of the mission/operation." (JP 3-52, II-2) The AMA would be largely equivalent to a RADC, but for airspace management. It is the execution arm of the JFACC's role as ACA at the tactical level with whom lateral and subordinate agencies must coordinate (Figure 2).

In its simplest form, the hierarchy of airspace control would be from the ACA to the AMA. Then, the AMA will work with lateral C2 agencies to establish their respective BMAs. Finally, the BMA owners will have the additional option to "release" airspace to qualified agencies or operators within their BMA. The possibilities are many, but the concept is universal: formal allocation of airspace to agencies that then become responsible for safety and deconfliction. (See figure 1) If the agency is either unwilling or incapable of accepting the responsibility, the airspace will remain with the AMA for control.

Summary

In conflicts where active killboxes overlap active ROZs underneath Air Mobility Command (AMC) corridors within ATC rings straddling BMA lines, so too are entangled the responsibilities for airspace management among tactical level players. Yet despite the complexity of the battlespace, airspace allocations remain largely stovepiped among lateral agencies. Simultaneous operations servicing separate mission objectives over

large areas with incongruent fight axes are new challenges that call for new solutions to joint fires integration. Inarguably, our next war will see this challenge further exacerbated by the growth in airspace users, both aircraft and fires. The argument for an AMA will be even more compelling. Joint users of airspace require one agency to prioritize and rationalize all the dynamic moving pieces of the AOR. They require a safe, simple and flexible airspace plan that does not hinder operations. To achieve the success that has already been proven for the air defense mission, the ACA should devolve authority for dynamic airspace management decisions to a single, capable agency. That agency must be at the tactical level or mission execution could be delayed and mission success jeopardized. On the road to integration, the AMA is the simplest, most effective mechanism to counter the challenges of joint fires.

Endnotes

¹ Department of the Navy, *Amphibious Operations--Capture of Iwo Jima--16 February to 16 March 1945*, 3-3

² Ibid, 3-3.