



ATC OPERATIONS ELEMENTS

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Air Traffic Control Operation Elements

Air traffic control (ATC) operation elements can provide air traffic control services from fixed sites or deployable facilities. The services include procedural, radar, tower, approach, and en route control. As the situation permits, host nation personnel and facilities may benefit operations by reducing force demands and expediting return to normal ATC operations; however, as the situation dictates, service ATC personnel with deployable capabilities can provide the required ATC services. Coalition ATC capabilities may also be leveraged to provide air traffic control services. It is important to note that coalition partners are not only able to provide garrison ATC services, but often have the additional skills to provide a wide range of tactical battlefield [airspace control](#) and contested/non-contested airspace management expertise.

Air Force deployable air traffic control and landing systems (DATCALs) capabilities include deployable control towers, airport surveillance radars, precision approach radar, tactical air navigation aids, , and a limited number of very high frequency omni-directional range station/distance measuring equipment systems. Air Force ATC personnel and DATCALs are normally aligned under units within an AEW. The AFFOR/A-3 (or the Air Force Flight Standards Agency when no AFFOR/A-3 expertise is assigned) provides functional oversight for unit level ATC operations including policy guidance, waiver approval, flight check coordination, and resource requests. Air traffic control units provided by other components or coalition partners fall under their organizational chain of command unless otherwise coordinated. Close coordination between ATC (especially ATC radar units), AWACS, and CRC units is required to ensure effective airspace integration. Air traffic control services may be provided by contract personnel during certain phases of military operations.

Air Mobility Liaison Officer (AMLO)

AMLOs are rated air mobility officers supporting the Army through corps, division, and separate brigade or regiment levels. AMLOs advise ground commanders, commanders' staffs, and the ALO on the capabilities, limitations, and use of air mobility resources. They also assist in planning, requesting, and using airlift resources.

Special Tactics Teams (STTs)

STTs establish visual and procedural terminal area airspace control, C2, and air traffic services at remote drop/landing zones and austere or expeditionary airfields. They conduct these operations until relieved by other elements (TACP, contingency response group [CRG], or general purpose air traffic service forces). Special tactics combat controllers are certified as air traffic controllers, and a portion are qualified as JTACs. STTs are a part of the theater special operations forces and normally under the operational control of the JFSOCC. Depending on mission requirements, and upon JFC direction, STTs may be tasked to support other component requirements

Contingency Response Forces (CRF)

The [CRG](#) is the Air Force's standing initial airfield-opening response force. These units are designed as organic, rapid response, initial airfield-opening units. As such, CRGs are continually engaged with the respective COMAFFOR and A-staff's contingency planning process helping to ease the transition from airbase opening planning to airbase opening execution. For additional information, see Annex 4-0.

Combat Communications Groups (CCG)

The Air Force has DATCALs assigned at 2 CCGs and 10 Air National Guard (ANG) ATC squadrons across the country. These units can deploy as an entire airfield systems/support package or as individual DATCAL packages (tower, TACAN, radar, etc.). They are the Air Force's interim airfield-opening response force and are designed to provide an initial cadre of associated maintenance personnel. As such, they are continually engaged with the respective COMAFFOR and A-staff's contingency planning process helping to ease the transition from airbase opening planning and execution to airbase sustainment. CCGs and ANG ATC squadrons can provide a full range of ATC service and procedural and positive control capabilities.

Service Component Airspace Control Systems

As a system of systems, the airspace control system has multiple parts. Listed below are the DOD Service airspace systems. Depending upon the size of the operation, inclusion of one or more of these systems into the operation may be appropriate.

Army Air-Ground System (AAGS)

The AAGS is the Army's organic airspace control system designed to operate both autonomously and jointly. The AAGS provides the means to initiate, receive, process, and execute requests for air support. It enables the synchronizing, coordinating, and integrating of air operations with the joint force land component commander's (JFLCC's) scheme of maneuver. The AAGS also disseminates information and intelligence produced by aerial assets. Some elements attached to the AAGS are liaisons provided by the Air Force. These elements are the AMLO, the TACP, and the ASOC. They function as a single entity in planning, coordinating, deconflicting, and integrating air support operations with ground elements. The principal Army agencies are command posts, fires cells, Army C2, air defense airspace management/brigade aviation elements, Army airspace C2 elements, and coordination and liaison elements, such as the BCDs, theater Army air and missile defense coordinator, and ground liaison officers.

Additionally, the joint fires observer (JFO) is a trained Service member who can request, adjust, and control surface-to-surface fires, provide targeting information in support of CAS terminal attack controls, and perform autonomous terminal guidance operations. The JFO cannot provide terminal attack control during CAS operations.¹

Navy Tactical Air Control System (NTACS)

The principle naval warfare commanders involved in airspace control are the air defense commander, normally located on an Aegis cruiser/destroyer, and the strike warfare commander, normally the air group commander aboard an aircraft carrier. The Navy uses coordinators to allocate and distribute air assets. Pertinent coordinators include the air resource element coordinator, responsible for carrier aircraft, and the naval force ACA responsible for managing the use of airspace by the naval force. Other coordinators include the Tomahawk land attack missile (TLAM) strike coordinator and TLAM launch area coordinator. The Navy also uses airborne C2 nodes including the E-2C Hawkeye, which can provide C2 services similar to AWACS, JSTARS, CRC and United States Marine Corps tactical air operations center (TAOC) and airborne Direct Air Support Center (DASC).² See AFTTP 3-2.17, *MTTP for the Theater Air-Ground System* for a more detailed description of the NTACS.

Marine Air Command and Control System (MACCS)

The senior air C2 agency for the MACCS is the tactical air control center (TACC). It provides the facility from which the Marine air-ground task force (MAGTF) commander and battle staff plan, supervise, coordinate, and execute all current and future MAGTF air operations. The TACC has the capability to plan, produce, and execute an ATO/ACO. The principle air defense agency for the Marine Corps is the TAOC which may be assigned sector air defense commander duties. It provides positive airspace control and navigational assistance to friendly aircraft. The TAOC may forward deploy an early warning/control (EW/C) element to extend its radar and radio coverage. The EW/C provides a similar function as the TAOC but on a smaller scale. The DASC is the principal agency responsible for control and direction of air operations directly supporting ground forces. The DASC uses procedural control methods to control airspace users. At the tactical level, the Air and Naval Gunfire Liaison Company (ANGLICO) provides small unit teams specializing in all aspects of fire support. See AFTTP 3-2.17 for a more detailed description of the MACCS.³

Special Operations Air Ground System

Special operations forces operate under a dynamic unity of command architecture that is often tailored for specific mission needs and thereby have unique TAGS requirements. The integration of special operations forces (SOF) into the TAGS requires a comprehensive and cohesive process that incorporates and supports uniquely trained [Airmen](#) and surface forces and specially equipped aircraft, increased operational security measures, trained SOF joint fires elements, and extensive liaison among components. SOF may provide their own air support, use air support of another

¹ AFTTP 3-2.6, *MTTP for the Joint Application of Firepower*

² AFTTP 3-2.17, *MTTP for the Theater Air Ground System*

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

Service or Coalition component, or provide air support for use by conventional forces.⁴ Special operations airspace integration and deconfliction issues are worked in the AOC by members of the SOLE. Special operations airspace managers may be located in the joint special operations air component, joint special operations task force, and joint special operations air detachment that coordinate airspace issues through the SOLE.⁵ See AFTTP 3-2.17, *MTTP for the Theater Air-Ground System* for a more detailed description of the SOAGS.

Engagement, Cooperation, and Deterrence Operations

During this stage of operations, the likely mix of economic, commercial, stability, and combat air traffic activities may increase the complexity of the airspace environment more than during major combat activities. Airspace control resources should be allocated accordingly.

Homeland Operations

The US homeland represents a complex political-military environment different from any other combatant commander's AOR. Within the United States, the FAA is granted statutory authority over managing airspace by [Title 49 of the United States Code](#). [Title 49](#) directs the Administrator of the FAA to develop plans and policy for the use of the navigable airspace and assign by regulation or order the use of the airspace necessary to ensure the safety of aircraft and the efficient use of airspace. With this authority, the FAA directs and controls all air traffic within the United States. However, DOD may direct and implement emergency security control of air traffic in certain specified circumstances in accordance with [32 C.F.R. Part 245](#) (Plan for the Emergency Security Control of Air Traffic (ESCAT)). Additionally, during wartime, the President may transfer FAA responsibilities to DOD in accordance with [49 U.S.C. 40107](#) and [E.O. 11161](#), as amended.

Similarly, military use of radio frequencies within the United States and its Territories are managed and controlled by the Department of Commerce, National Telecommunications and Information Administration (NTIA) in accordance with [Title 47 of the United States Code](#). As such, the NTIA's Interdepartmental Radio Advisory Committee (IRAC) through the military services, regulates use in accordance with the NTIA's Manual of Regulations and Procedures for Federal Radio Frequency Management". This presents additional and sometime more complex EMS access and coordination requirements.

Complicating the FAA's control of US airspace, two separate commands share the responsibility of defending the United States. The operational missions of North American Aerospace Defense Command (NORAD) and United States Northern Command (USNORTHCOM) intersect within the homeland AOR. Subsequently, the continental United States NORAD region and First Air Force (Air Force Northern [1 AF AFNORTH]) combine to function as part of the United States theater air control system. The Secretary of Defense assigns forces to NORAD and USNORTHCOM's assigned

⁴ AFTTP 3-2.17, *MTTP for the Theater Air Ground System*

⁵ AFTTP 3-2.17, *MTTP for the Theater Air Ground System*

homeland defense and civil support missions. Unity of effort is achieved by ensuring a clear division of geography and labor with a spirit of mutual support and cooperation among these commands.⁶

AFNORTH achieves unity of effort with ANG leadership by providing air component planning, deconfliction and coordinating capabilities to state ANG organizations through the AOC. This coordination also provides commander United States Northern command (CDRUSNORTHCOM) and the JFACC situational awareness of the affected air, space, and cyberspace domains even before National Guard units are federalized under Title 10, U.S.C. authority. 1AF (AFNORTH) works within a civilian interagency environment composed of government and civilian organizations (FAA, Federal Emergency Management Agency, US Secret Service, etc.) to apply air and space effects prior to (crisis management) and after (consequence management) manmade and natural disasters.

Unlike the federalized model where National Guard units operate under Title 10 orders, normally the National Guard operates under the command authority of the state governor and The Adjutant General (TAG) in state active duty status (*Title 32 USC – National Guard*). AFNORTH uses an approved legal model based on memoranda of understanding with the governors to receive ANG volunteers for short notice federal missions.

When Title 10 forces are called to assist in a disaster, state governors and TAGs are generally reluctant to relinquish control of state forces to other military/federal organizations. Parallel operations within a JOA by uncoordinated forces are potentially unsafe and inefficient. In rare circumstances such operations can result in opposing objectives and activities. Seeking unity of effort, AFNORTH provides a trained Air Force air component headquarters staff and associated capabilities to state joint force headquarters and interagency partners before Title 10 forces are introduced into the JOA.

The ACA is the designated military commander responsible for operations of the military side of the airspace control system in the designated area. The ACA coordinates with the FAA for approval of all issues involving the national airspace system. This partnership ensures immediate implementation of dynamic solutions while minimizing mission impact on the national airspace system. Military air operations are normally designed to coexist with civilian operations. Airspace deconfliction and coordination are accomplished through the CAOC and approved by the FAA. For additional information, see JP 3-27, [Homeland Defense](#), JP 3-28, [Defense Support of Civil Authorities](#), and Annex 3-27, [Homeland Operations](#).

Crisis Response and Limited Contingency Operations

Non-combat activities across the range of military operations, such as disaster relief or other support to government activities, share many of the same characteristics of post major combat activities. For instance, a disaster may destroy a nation's airspace

⁶ JP 1, [Doctrine for the Armed Forces of the United States](#), Ch IV, Title 10 US Code Section 162(a)

control capability and the US Government may elect to provide assistance until the capability can be restored. Many of the same considerations which apply in the combat zone would also apply equally well to non-combat activities. The International Civil Aviation Organization (ICAO) has guidelines for airspace practices in the event of a disaster or significant non-combat events and these should be referenced together with existing host nation procedures. Coordination with the host nation; determination of authorities; interfacing with joint, interagency, and multinational organizations; providing service; and deconflicting military and civilian traffic are all applicable to operations other than combat.
