



THEATER AIR CONTROL SYSTEM

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Within the Theater Air Ground System (TAGS), the [theater air control system](#) (TACS) is the [air component commander's](#) mechanism for commanding and controlling USAF airpower. It consists of airborne and ground elements to conduct tailored command and control (C2) of air operations. The air component commander ensures all elements of the TACS are in place, including liaison positions, which are filled prior to, or soon after, the start of an operation or campaign. The structure of the TACS should reflect sensor coverage, component liaison elements¹, and the communications required to provide adequate support. **The TACS provides the air component commander the capability to centrally plan and control [joint air operations](#) through the [air operations center](#) (AOC) while facilitating decentralized execution through the subordinate elements of the TACS.**

GROUND-BASED C2 ELEMENTS

AOC. The AOC is the senior C2 USAF element of the TACS and includes personnel and equipment from necessary disciplines to ensure the effective planning and conduct of operations (e.g., communications, operations, intelligence, etc.). The AOC is normally the headquarters in which the joint force commander's (JFC) draft joint integrated prioritized target list is built based on the Service/component target nominations presented by Service/component liaisons. Those target nominations begin the process of allocation of air interdiction (AI) in support of the JFC's apportionment guidance. Similarly, the Service/component liaisons bring to the AOC their Service/component's Department of Defense Form 1972s² for close air support (CAS), which begins the AOC's allocation of CAS.

[Control and Reporting Center \(CRC\)](#). The CRC is a deployable ground-based airspace control element that manages air component missions as specified in the ATO. For CAS missions, the CRC may relay the current situation update from the [air support operations center](#) (ASOC) to ingressing CAS aircraft and may receive battle damage assessment from egressing aircraft for immediate relay to the ASOC. For AI missions,

¹ A detailed description component liaison elements can be found in JP 3-30, [Joint Air Operations](#).

² Joint Tactical Air Strike Request.

the CRC may relay updates from previous AI missions to ingressing AI assets in order to improve the situational awareness of the inbound AI assets.

The CRC performs centralized C2 of joint operations by conducting threat warning, battle management, weapons control, combat identification, and strategic communications. It can facilitate decentralized execution of air defense and [airspace control](#) functions by detecting and identifying hostile airborne objects or by scrambling and diverting air defense aircraft. In a limited capacity, the CRC can relay AOC/ASOC information to and from aircraft. The CRC integrates a comprehensive air picture via multiple data links from air-, sea-, and land-based sensors and surveillance and control radars.

[ASOC](#). The ASOC is the primary control agency of the TACS for execution of airpower in direct support of Army or joint force land component operations. As a direct subordinate element of the AOC, the ASOC is responsible for the direction and control of air operations within Division Assigned Airspace. Division Assigned Airspace is normally short of the [fire support coordination line](#) (FSCL), from the left to right boundaries of the division area of operations, upward to the coordinating altitude. Within Division Assigned Airspace, the close proximity of friendly forces and enemy forces requires integration with other supporting arms and ground forces in order to prevent friendly fire incidents. To accomplish this, the ASOC is collocated with the division fires cell to form the joint air-ground integration center (JAGIC). The ASOC coordinates operations with the assigned [tactical air control parties](#) (TACPs) and the AOC. For further discussion on the ASOC, see Air Force Tactics, Techniques, and Procedures (TTP) 3-2.17, [Multi-Service TTP for the Theater Air-Ground System](#).

The AOC may delegate launch or divert authority for alert CAS missions to the ASOC, providing a faster response time when air support is needed. The decision to delegate retargeting authority to the ASOC for specific AI missions inside the FSCL will depend on actual circumstances, including the timeliness required for getting desired effects on target.

Air support operations group (ASOG) and air support operations squadron (ASOS). The air component commander presents TACS capabilities to ground forces through ASOGs and ASOSs. The ASOG is aligned, in garrison, to a corps and the ASOS is aligned to a division. Both the ASOG and ASOS are tasked to provide air support liaisons to assist in planning. However, only the ASOS is charged with execution capabilities, via JTACs and the ASOC, within Division Assigned Airspace. The personnel and capabilities depend upon the mission assigned to the corps or division, and the level (operational or tactical) at which the corps or division is operating. When/if the corps is designated as the land-component senior tactical echelon, normally the ASOC will still reside at the division, thus enabling the JAGIC to conduct airspace control within Division Assigned Airspace.

The ASOC is one mission task of an ASOS (the other is TACP), and the ASOS commander is typically dual hatted as the ASOC director. In this dual role, the ASOC director normally exercises [operational control](#) and [administrative control](#) of subordinate

Operation ENDURING FREEDOM Theater Air Control System

During the initial stages of Operation ENDURING FREEDOM, there was no conventional Army corps deployed to Afghanistan. At this time, the ASOC was aligned with the Army's corps. Thus, an ASOC was not deployed to handle the CAS in what was an AI / terminal guidance operations-centric air war in Afghanistan. Prior to March 2002, land forces in Afghanistan consisted of limited numbers of Special Forces Operational Detachment Alphas (ODAs) deployed in Afghanistan. Because the limited numbers of ODAs were geographically spread across Afghanistan, the lack of an ASOC had little effect on air operations. In March 2002, Operation ANACONDA signaled a change from Special Operations Forces-centric operations, to conventional land force operations. However, the conventional force used in Operation ANACONDA was a partial division, not a corps...thus, still no ASOC deployed to Afghanistan. This hampered airpower in a number of different ways. Real-time target updates, target prioritization for air assets, and aircraft deconfliction in the target area were often accomplished solely by on-station forward air controllers (airborne). The lack of an ASOC caused counterland assets to spend valuable time and fuel seeking information normally found in the situation update regarding the ground order of battle. Without the situation update normally passed from the JTACs to the ASOC, mission essentials such as frequencies to contact ground forces, preliminary 9-line briefings, and any target information other than a set of friendly coordinates were lacking. These shortcomings hampered the integration required to ensure efficient CAS operations.

TACP, as delegated from the air component commander. Further, when operating within a joint environment, the ASOC director normally exercises [tactical control](#) of air component assets made available for tasking. The ASOC commander / ASOC director usually acts as the division air liaison officer and the air component commander's primary representative to the division commanders.

Three principles should be considered when employing an ASOC. First, an ASOC should not be divided other than to relocate it. The ASOC derives synergy and efficiency from a group of highly trained Airmen working in concert. Second, the ASOC should be in a relatively secure location. If taken out through enemy action, friendly ground forces lose a significant force multiplier. However, security should be weighed against radio limitations. In order to control airpower, an ASOC needs the ability to communicate with aircraft. Thus, the third principle is that the ASOC should be located where it can maintain line-of-sight communications with aircraft to its maximum operating depth. While high frequency and satellite radio enhance the range of the joint air request net, many aircraft communications are restricted by factors such as radio power, antenna size, and so forth. Terrain is another consideration: if located in a valley, for instance, the ASOC's range is reduced because of line-of-sight restrictions.

AIRBORNE TACS ELEMENTS

Airborne TACS elements act as extensions of the AOC or ASOC. Airborne elements of the TACS, such as [Airborne Warning and Control System](#) (AWACS) and [Joint Surveillance Target Attack Radar System](#) (JSTARS), operate beyond the normal communication coverage of ground TACS elements and may act either as a self-contained airborne command post or as a relay.³ Airborne TACS elements ensure continuity of operations in the event ground elements of the TACS are not yet deployed or have been disabled. Attack aircraft checking in for CAS within an AO may communicate with airborne TACS elements when unable to talk directly with the ASOC, due to radio or line-of-sight limitations. Attack aircraft conducting AI within an AO will normally communicate with airborne TACS elements en route to their target area, only contacting the ASOC for AI conducted short of the FSCL.

★ **AWACS.** AWACS is normally the air component commander's first tactical C2 element to arrive in theater. Its primary mission is to conduct air surveillance, identify airborne objects, and control air operations. AWACS provides the deep look capability to support offensive and defensive air operations. It provides low-level and extended radio coverage for the control of air operations. AWACS performs these roles as the primary C2 extension of the AOC, until such time that the CRC can be employed. As an ASOC serves as the air component commander's airspace control element within Division Assigned Airspace, AWACS are normally the airspace control element responsible for airspace control outside, and above, Division Assigned Airspace.

³ Unmanned Aircraft can act as a communications link when equipped with appropriate communications gear. This can be very useful in small-scale operations or [stability operations](#) when low-supply and high-demand aircraft such as AWACS or JSTARS are unavailable.

- ★ **JSTARS.** JSTARS is an integrated Army-Air Force airborne C2 platform. It provides deep look, ground moving target indicator radar for real-time detection of moving surface targets, rotating antennas, and low, slow-flying fixed and rotary-wing aircraft and synthetic aperture radar for stationary targets. The system provides ground situational awareness data to multiple air and ground C2 nodes.

Counterland Operations at Al Khafji

During the evening of 29 January 1991, the Iraqi Army set elements of three divisions in motion southward out of static positions in occupied Kuwait. While their ultimate objectives were not known, there is no question all three advances were aimed at engaging coalition forces, with the largest ground battle developing in the Saudi town of Ra's al Khafji. As news of the initial contacts with Iraqi ground forces flowed into the air control center at Riyadh, additional sorties by JSTARS and fighters armed for AI were ordered.

JSTARS located and tracked columns of advancing Iraqi vehicles, and provided vectors for fighters, bombers, attack aircraft, and attack helicopters from all the Services. Close air support was flown in and around Khafji itself in support of engaged coalition ground forces, resulting in heavy losses to the Iraqi 5th Mechanized Division. Further north, the other two lines of Iraqi advance suddenly found themselves very exposed, with their own movement serving only to highlight themselves as targets. Coalition air interdiction missions took full advantage of this, using a variety of night vision devices and precision guided munitions to inflict even greater damage and stop the Iraqi advance. After losing hundreds of vehicles and taking thousands of casualties, the Iraqis abandoned the attack as a costly failure.



For more information on TAGS, see Air Force Tactics, Techniques, and Procedures (TTP) 3-2.17, [Multi-Service TTP for the Theater Air-Ground System](#).