COMPLIANCE WITH THIS PUBLICATION IS MANDATORY

This volume implements Air Force Policy Directive (AFPD) 13-1, *Theater Air Control System.* It provides guidance for Air Force personnel to perform duties within a United States Air Force (USAF) Air Support Operations Center (ASOC). This Air Force Instruction (AFI) is applicable to the Air National Guard (ANG). This AFI applies to Air Force Reserve (AFR) personnel assigned to ASOC units or assigned to ASOC duties. Refer to paragraph **1.4.** for waiver information and paragraph **1.6.** for rules regarding supplements. This is a completely new instruction. It establishes the operating procedures for USAF Air Support Operations Centers and incorporates the majority of the unclassified information on ASOCs from Air Force Tactics, Techniques, and Procedures (AFTTP) 3-1, Volume 26, *Tactical Employment – Theater Air Control System.*

This publication requires the collection and or maintenance of information protected by the Privacy Act (PA) of 1974. The authorities to collect and/or maintain the records prescribed in this instruction are Title 10 § 8013, AFI 36-2608, and E.O. 9397. Forms affected by the PA have an appropriate PA statement. System of records notice F036 AF PC C, Military Personnel Records System (October 13, 2000, 65 FR 60916) applies. Ensure that all records created as a result of processes prescribed in this publication are maintained in accordance with (IAW) Air Force Manual (AFMAN) 33-363, *Management of Records*, and disposed of in accordance with Air Force Records Information Management System (AFRIMS) Records Disposition Schedule (RDS) located at https://www.my.af.mil/gcss-af61a/afrims/afrims/. See Attachment 1 for a glossary of references and supporting information.

Refer recommended changes and questions about this publication to the Office of Primary Responsibility (OPR) using the AF Form 847, Recommendation for Change of Publication; route AF Form 847s from the field through the appropriate functional's chain of command.

Chapter 1

POLICIES AND RESPONSIBILITIES

1.1. Introduction. This instruction establishes operating procedures for personnel assigned to a United States Air Force (USAF) Air Support Operations Center (ASOC). Personnel will have varying backgrounds and skills with different levels of experience and proficiency.

1.1.1. ASOC Mission and Function. The ASOC is the primary control agency of the Theater Air Control System (TACS) for execution of air and space power in direct support of land operations— its primary mission is to control air operations short of the Fire Support Coordination Line (FSCL). Normally collocated with the senior Army fires element, the ASOC coordinates and directs air support for land forces at the tactical level. The ASOC is directly subordinate to the Air and Space Operations Center (AOC), and is responsible for the coordination and control of air component missions in its assigned area. Located within the supported ground commander's Area of Operation (AO), the ASOC's designated area typically extends to the FSCL for actual control of mission execution, and may extend to the corps' forward boundary for planning and advisory purposes. Air missions that fly within the ASOC's control area but do not directly support the ground component will normally be coordinated through the ASOC to deconflict with ground force maneuver and fires in addition to receiving target and threat updates.

1.2. Policies. The operating procedures outlined in this instruction facilitate the employment of ASOC personnel to effectively and efficiently accomplish their duties and responsibilities. This instruction is applicable to operations and support personnel assigned to ASOC duty positions.

1.3. Responsibilities. Specific responsibilities are listed in **Table 1.1**. Air Combat Command (ACC) is considered the Lead Command for this instruction. ACC/A3Y is the officer of primary responsibility for ACC.

Table 1.1. Responsibilities.

R U L E	RESPONSIBILITY	AF/A3O-AYO	ACC/A3Y	User Command	Group Commander	Unit Commander	Unit Supervisors
1	Establish policy and provide guidance for ASOC procedures.	X					
2	Resolve operational issues that arise between using major commands (MAJCOMs).		X				
3	Resolve implementation and interpretation issues that arise during use of these procedures.		X				
4	Review and process all change requests to this instruction.	X	X	X			

#	Description					
5	Resolve major operational issues that arise between units within their purview.		X			
6	Forward all requested MAJCOM supplements to ACC/A3Y for coordination. Inform all MAJCOM Offices of Primary Responsibility (OPRs) of approved supplements to this AFI.	X	X			
7	Execute group-level responsibilities over squadrons that lack group oversight or assign group-level responsibility directly to the squadron.	X	X			
8	Ensure compliance with this instruction by their subordinate units. Provide staff support and assist those units to meet DOC statement readiness requirements.			X		
9	Forward recommended supplements to this instruction and any supporting documents to the parent MAJCOM for review. The Group and MAJCOM will review approved supplements annually.			X		
10	Identify operational shortfalls that adversely impact combat capability through appropriate channels using the USAF Status of Resources and Training System (SORTS).			X	X	
11	Maintain duty position descriptions for all assigned positions.			X	X	X

1.4. Waivers. Unless otherwise noted, the waiver authority for this instruction is HQ ACC/A3Y. The coordination process for the waiver will go through the appropriate chain of command to HQ ACC/A3Y. Waivers to this instruction are valid for one year from approval date, unless specified otherwise.

1.5. Deployments. Individuals deploying to fill an ASOC requirement must deploy combat mission ready for the duty position they are tasked to support for that deployment. Refer to AFI 13-114, Volume 1, *ASOC Training Program*, for training requirements.

1.6. Supplements. MAJCOMs and/or subordinate groups may supplement this instruction in order to provide specific guidance to their aligned units. The parent MAJCOM Office of Primary Responsibility (OPR) must approve all group-level supplements. HQ ACC/A3Y will coordinate prior to publication on all MAJCOM supplements. MAJCOM OPRs will forward all approved supplements to the other MAJCOMs within 30 days of publication. The National Guard Bureau will provide a copy of any approved supplement to their gaining MAJCOM.

Chapter 2

AIR SUPPORT OPERATIONS CENTER MISSION AND ORGANIZATION

2.1. General. This chapter describes the composition and mission of the ASOC, and its mission within the TACS. The chapter identifies responsibilities of the ASOC, describes the various ASOC duty positions, and how an ASOC integrates with the Army and Air Force elements of the TACS.

2.2. Mission. The ASOC is the principle command and control (C2) node for integrating air and space power into counterland operations within the land component commander's area of operation (AO). As a subordinate element of the air and space operations center (AOC), the ASOC is responsible for the direction of air component assets involved in air operations directly supporting the ground combat element in its assigned area. It processes and coordinates air missions requiring integration with other supporting arms and ground forces. Its primary mission is to control air operations short of the fire support coordination line (FSCL). The ASOC is organized into Operations and Support.

2.2.1. Operations. Matches allocated air component assets to prioritized land component requirements. Executes that portion of the Joint Force Air Component Commander's (JFACC's) Air Battle Plan requiring integration with ground force supporting arms and maneuver objectives. Maintains and enhances situational awareness to all agencies contacting the ASOC. Provides procedural control of air component assets within the supported ground commander's AO requiring integration with supporting arms and ground forces; processes CAS requests, and controls the flow of allocated aircraft; integrates aircraft operating within its assigned area (normally short of the FSCL) using airspace coordination measures/fire support coordination measures (ACM/FSCM); assigns and directs allocated air component aircraft to the joint terminal attack controllers (JTACs); and manages the Air Force Air Request Net (AFARN)/Joint Air Request Net (JARN) and allocated tactical air direction net (TAD) frequencies. Additionally, the ASOC may coordinate in other mission areas, to include air interdiction (AI), information operations (IO), electronic warfare (EW), intelligence surveillance and reconnaissance (ISR), suppression/destruction of enemy air defenses (SEAD/DEAD), and joint personnel recovery, normally short of the FSCL.

2.2.2. Support. The support section provides the following: administrative management and personnel accountability for ASOC and subordinate tactical air control party (TACP) personnel, long-haul communications, theater deployable communications-integrated communications access package (TDC-ICAP) operations, theater battle management core systems (TBMCS) connectivity, ASOC GATEWAY operations, Joint Range Extension and Datalink Interface Control/network management, power production, heating, ventilation, air conditioning (HVAC), vehicle operation and logistics/supply operations. Additionally, provides maintenance of assigned equipment to enable combat operations.

2.2.3. Location. The ASOC usually collocates with the senior Army tactical echelon and coordinates operations with the aligned TACP, Army Fires Cell (FC), Airspace Command and Control (AC2) and other supporting arms (e.g. ISR), allocated aircraft, and the AOC. The ASOC Director, Assistant Director and planners must consider several factors in choosing a location:

2.2.3.1. Communications. The single most important factor to consider for ASOC location is its ability to communicate. The ASOC should be located and equipped to maintain reliable, secure communications with aircraft (voice and/or digital) to its maximum operating depth. The ASOC must also be able to communicate securely and effectively with all elements of the TACS, assigned land component tactical operations center, and other ground-based agencies. As a

subordinate element of the AOC, the ASOC must be able to collaborate and share situational awareness with the AOC via TBMCS, datalink, and Internet Relay Chat (IRC) operations.

2.2.3.2. Security. Protection from the enemy's direct and indirect fire weapons is essential for the ASOC to maintain continuous operations. As the ASOC operates in a net-centric environment, security of communications, networks, and datalinks is critical to mission success.

2.2.3.3. Multiple command posts. The ASOC is a centralized operations center and cannot be split between command posts.

2.2.4. Functions. The ASOC provides tactical C2 to ensure the proper, real-time integration of offensive air power with U.S. and coalition ground forces anywhere in the world. As such, the ASOC will perform, but is not limited to, the following key functions:

2.2.4.1. Executes the air tasking order (ATO) as directed by the JFACC to meet the ground commander's objectives by coordinating and integrating air, space and cyber power in support of air component operations.

2.2.4.2. Provides procedural control of CAS aircraft operating in the AO inside the FSCL. Provides procedural control of other air component aircraft as required.

2.2.4.3. Establishes, maintains, and operates the autonomous reach-forward and reach-back communications architecture/infrastructure necessary for mission execution, to include the AFARN/JARN.

2.2.4.4. Provides decentralized execution of immediate air support in coordination with the established ground commander's weight of effort and priority of fires. Obtains clearance of fires from the FC.

2.2.4.5. Integrates, coordinates, directs and controls other air component missions, as required, within its assigned area (primarily inside the FSCL) in direct support of land maneuver objectives, and as directed by the JFACC.

2.2.4.6. Coordinates air missions that fly within the ASOC's control area but do not directly support the ground component and other supporting arms activities (i.e. ATACM missions) to deconflict with ground force maneuver and fires, in addition to receiving target and threat updates.

2.2.4.7. Assists with time-sensitive targeting and friendly force location information to CAS, AI, SEAD, airlift/airdrop, ISR, IO, and personnel recovery missions within their AO.

2.2.4.8. Assists the senior air liaison officer (ALO)/TACP with advising the senior ground maneuver commander on the proper integration of air, space and cyber power, to include CAS employment, target nominations for those AI and SEAD missions that support the ground force, and that part of airborne ISR and airlift that directly supports the land component.

2.2.5. Procedures.

2.2.5.1. The ASOC receives the ATO, airspace control order (ACO), air operations directive, special instructions (SPINS), OPTASKLINK, and rules of engagement (ROE) from the AOC, and transmits this information, if required, to the TACPs collocated with ground maneuver units.

2.2.5.2. During execution of the ATO, the ASOC provides C2 for all missions tasked to the ASOC within the ground commander's AO, and provides coordination, situational awareness and battlespace integration for air operations.

2.2.5.3. The ASOC responds to changing situations by processing requests for immediate air support submitted by TACPs/JTACs sent to the ASOC primarily via the AFARN/JARN, or other means as the ASOC directs. Once the JTAR is approved by the ground force, the ASOC tasks allocated on-call missions or diverts (with supported commander approval) scheduled missions. The AOC will normally grant the ASOC control (launch and divert authority) of missions tasked to it on the ATO.

2.2.5.3.1. If the ASOC has not been given control of on-call or scheduled missions, they must receive permission and instructions from the AOC to launch or divert air support missions.

2.3. ASOC Operations Personnel and Duty Position Descriptions. Operations personnel include fighter duty officers; fighter duty technicians; intelligence duty officers; and intelligence duty technicians. The duty position descriptions for ASOC Operations personnel are as follows:

2.3.1 ASOC Director. The senior ALO, normally the corps ALO, becomes the ASOC director and exercises operational control (OPCON) of all subordinate TACPs. The ASOC director is the joint force air component commander's (JFACC's) primary representative to the senior tactical ground commander.

2.3.2. Assistant ASOC Director. When deployed, the ASOS commander (or designated representative, e.g. ASOG Deputy Commander) acts as the assistant ASOC director, and performs overall supervisory functions of the ASOC and personnel resources.

2.3.3. Fighter Duty Officer (FDO). The FDO is normally a rated officer (pilot, navigator or air battle manager), but may also be a senior 1C4XX (1C471 or higher). They are responsible for executing operational functions in the ASOC. The FDO performs the following duties:

2.3.3.1. Senior Air Director (SAD). The Senior Air Director is the senior ASOC officer that oversees ASOC personnel, and is responsible for ASOC operations. The SAD acts as the primary operational liaison between the supported ground unit and the AOC on ASOC matters. The SAD assists the senior Corps/Division ALO with advising the senior ground maneuver commander on the proper integration of airpower, and coordinating air support requests (ASRs) through Army channels.

2.3.3.2. ATO Manager (ATOM). The ATOM monitors CAS stacks; maintains situational awareness (SA) on the ground fight; assigns air missions to active joint tactical air strike requests (JTARs); maintains the status of the web air request processor (WARP) in the Theater Battle Management Core System (TBMCS); maintains tactical level liaison with the CAS Duty Officer (CASDO) at the AOC; maintains tactical level liaison with the FC duty officer in the Army command post (CP); and reviews target locations.

2.3.3.3. Air Space Manager (ASM). The Air Space Manager, in conjunction with the Army AC2, assists in managing the airspace in the ground commander's AO. This includes coordinating/using ACMs, FSCMs, and killboxes/joint fires areas; and maintaining SA on all missions under ASOC control. The ASM ensures ground fires and other supporting arms are deconflicted with ASOC controlled aircraft. The ASM maintains tactical level liaison with Army's AC2, the FC and aviation duty officers in the Army CP, control and reporting center (CRC), AOC Airspace Control Cell, the AOC Interdiction Duty Officer, and the Corps/Division TACP Interdiction Coordinator. They also review target locations, and coordinate mission routing and target airspace.

2.3.4. Fighter Duty Technician (FDT). The FDT assists the FDO with all his responsibilities. The FDT performs the following duties:

2.3.4.1. <u>Crew Superintendent (CS)</u>.   The Crew Superintendent is the senior enlisted 1C4 that, in conjunction with the SAD, oversees ASOC operations. The CS focuses on the technical aspects of the ASOC processes, ensuring the JARN and PC duty position personnel are effectively accomplishing their duties. The CS works with the ATOM to process immediate JTARs, and monitors the status of assigned TACPs and JTACs.

2.3.4.2. <u>JARN Voice Operator(s)</u>.   This duty position manages the voice JARN system (i.e. UHF SATCOM and/or high frequency [HF]). They record and review immediate voice JTARs (hardcopy DD Form 1972) to begin the JTAR tasking process. The JARN Voice Operator passes the JTAR approval or disapproval (DD Form 1972 Section II or III data) back to the requestor. They notify the TACPs/JTACs when assigned aircraft have checked-in with the ASOC, and take mission reports from the TACPs.

2.3.4.3. <u>JARN Digital Operator(s)</u>.   This duty position manages the digital JARN (i.e. TACP-Close Air Support System [CASS] to TBMCS). Through the WARP function in TBMCS, they review immediate digital JTARs (softcopy DD Form 1972 in WARP) to begin the JTAR tasking process. The JARN Digital Operator electronically passes the JTAR approval or disapproval back to the requestor. Additionally, they are responsible for recording JTARs received by other digital means (i.e. integrated work station [IWS]/Internet Relay Chat [IRC], email, joint automated deep operations coordination system [JADOCS], etc.) and entering these JTARs into WARP.

2.3.4.4. <u>Procedural Controller 1 (PC1)</u>.   In conjunction with the ASM, Procedural Controller 1 is responsible for the procedural control of assigned aircraft. PC1 coordinates with the CRC to accept aircraft hand-off, provides aircraft check-in briefs, and maintains SA on all ASOC controlled aircraft, including stack deconfliction. They must be able to communicate with assigned aircraft operating in their AO. The PC1 provides situational awareness to aircrews on Army supporting arms that are a factor to operations, situation update, 9-line, and targeting data, when available. Position may also be manned by a FDO. The situation update should include the unit mission, enemy disposition, threat activity in the target area, weather, friendly positions and current FSCMs/ACMs, whenever possible.

2.3.4.5. <u>Procedural Controller 2 (PC2)</u>.   In conjunction with the ASM, Procedural Controller 2 is also responsible for the procedural control of assigned aircraft. Their duties include relaying JTARs to aircraft once they are tasked, and ensuring these tasked aircraft receive a hand-off to the TACP/JTAC. They accept/provide aircraft check-out briefs, and ensure the aircraft receives a positive hand-off to a control agency upon check-out. The PC2 records Phase 1 battle damage assessment (BDA) or any other in-flight report and any JTAC mission effectiveness reports, and provides this information to the appropriate Intel agencies. PC2 coordinates with the CRC to provide hand-off of aircraft and directs aircraft back to CRC control. Like PC1, they maintain SA on all ASOC controlled aircraft, and Army air missions in the vicinity of ASOC missions. Position may also be manned by a FDO.

2.3.5.   <u>Intelligence Duty Officer/Intelligence Duty Technician (IDO/T)</u>.   Intelligence personnel work with the FDOs and FDTs in ASOC operations as well as provide intelligence support to the ASOC Director. They operate various systems to assist them in the accomplishment of the duties, and establish and maintain close ties to AOC intelligence functions and aligned Army G2 intelligence staffs.

2.3.5.1. Monitor the battlespace, and deconflict/validate CAS requests with all targets on the joint integrated prioritized target list (JIPTL), as well as the restricted target list (RTL) and no-

strike list (NSL). They conduct combat assessments, and are knowledgeable in the employment of ISR and Non-Traditional ISR assets and capabilities.

2.3.5.2. Track enemy and friendly disposition, monitor order of battle, land component priority of fires, CAS allocation and priority, weather, and keep the ASOC aware of all threats prior to and during air operations. Intel personnel ensure the ASOC is equipped with an accurate and effective intelligence common operating picture (COP), and perform ad hoc tasks to provide SA to all ASOC personnel. They also ensure threat and AO updates are relayed to subordinate TACPs/JTACs and aircrew via PC 1.

2.3.5.3. Intel specialists record BDA and other pertinent Mission Report (MISREP) data to the DD Form 1972 section III via WARP, and ensure BDA and MISREP data is channeled to the appropriate Air Force agencies.

2.3.5.4. Coordinates with collocated Army intelligence cell (G-2), the ISR Division in the AOC, and intelligence personnel at the wing operations centers (WOC) and TACP for mission planning requirements.   Maintain liaison with the AOC SIDO and G-2 ISR Cell for on-going ISR flight operations within the ASOC's assigned area.

2.3.5.5. Assist in the production of essential elements of information published in the ATO SPINS. They produce and disseminate effects summaries from in-flight reports and situation reports from deployed TACPs/JTACs.

2.3.5.6. Fuse information from multiple sources to produce an ASOC common operating picture for better situational awareness.

2.4.   ASOC Support Personnel and Duty Position Descriptions. Support personnel include communications officers; satellite communications (SATCOM); communications/computer; ground radio; personnel management, power professional; HVAC; supply; and vehicle maintenance specialists.

2.4.1. Communications Flight Commander.   The Communications Flight Commander is the officer responsible for integrating communications between the ASOC, Army and AOC. They manage and employ all communication and C2 networks, direct the operations of the maintenance control center cell, and oversee the ASOC support personnel. Manages the ASOC Gateway/datalink.

2.5. ASOC Integration.

2.5.1. Mission Integration.   The ASOC, as part of the TACS, works with the AOC, CRC, subordinate TACPs, forward air controllers (airborne) [FAC(As)], airborne warning and control system (AWACS), and joint surveillance target attack radar system (JSTARS). The ASOC must coordinate directly with the elements of the Army Air-Ground System, specifically the Army FECC/FSE/FC, AC2, and the G-2, to establish good working relationships.

2.5.2.   Fire Support Integration.   The ASOC must ensure the effects of air operations are closely integrated with the desired results of the ground commander's scheme of maneuver. This requires ASOC operations personnel to be knowledgeable of the Army's Military Decision Making Process (MDMP) and its possible/selected courses of action (COAs). This involvement includes assisting the Corps/division ALO/TACP in the development of ground force CAS priorities and SEAD contingency plans and ensuring the proper use of ISR and tactical airlift assets.

2.5.2.1. Fires Cell (FC).   Within the senior maneuver force commander's staff resides the targeting function that supports air-to-ground operations.   Shared battlespace must be coordinated with the affected ground force commanders to identify and integrate with supporting arms (ISR, Fires, airlift, etc.) posing a threat to the safe access of air component aircraft to the

target area. The FC has the delegated authority to clear all fires within the maneuver force boundaries. The ASOC and FC should have organic liaison personnel and communications with their respective cells. The FC integrates lethal and non-lethal targeting processes for the ground commander. The FC is responsible for target development, fire support planning and coordination, and electronic attack currently dispersed among multiple units and staff sections. Ground commanders delegate authority to the FC to conduct effects planning, recommend allocation of effects resources, and coordinate the supporting effects regardless of arm or service. The FC has electronic linkages to joint C2 systems, and receives joint personnel and equipment augmentation, when required. The FC could also be referred to as the Fires and Effects Coordination Cell (FECC) or the Fire Support Element (FSE).

2.5.3. Army G-2 ISR Integration. Land force commanders normally use an interrelated process to enhance joint fire support planning and interface with the joint targeting cycle by a methodology known as decide, detect, deliver, and assess (D3A). D3A facilitates synchronized maneuver, intelligence, and fire support. Upon execution of the collections plan, ISR assets detect HPTs and firing units deliver fires on them in accordance with the commander's guidance. The use of organic Army UAS assets for target acquisition and tracking presents a unique hazard to Joint Airpower integration requiring continuous ASOC coordination to ensure airspace deconfliction, Armed-FMV integration, and sensor-to-shooter support to aircrew.

2.5.4. Airspace Integration. The ASOC coordinates airspace operations in the Army's deep, close, and rear AOs. This requires continuous involvement with AC2. The ASOC and AC2 will nominate ACMs through Army channels to the Battlefield Coordination Detachment (BCD) for inclusion in the ACO. The ASOC develops minimum risk routes (MRR) for safe passage of aircraft transiting through their AO, and coordinates aircraft routing from rear orbit/hold points to forward contact/initial points. The ASOC monitors all ACMs within its AO. The goal is to deconflict fixed-wing assets with Army assets maneuvering or firing within the AO while maximizing freedom of maneuver and operational effectiveness. The ACO, along with the timely execution of airspace coordination areas, forms the basis for procedural control that deconflicts and integrates air component assets. Additionally, the ASOC should ensure its contact points are within UHF radio range and situate their communications systems to maximize coverage throughout the AO.

2.5.5. AOC Integration. The AOC is the senior operational-level TACS element responsible for planning, directing, coordinating, controlling and assessing air and space operations. The AOC exercises overall command and control of CAS aircraft. The ATO, ACO, and SPINS task, deconflict and integrate CAS aircraft. The ASOC is responsible for the coordination within its assigned area. The ASOC normally exercises TACON of joint forces made available for tasking by the AOC.   The ASOC collaborates with the AOC through TBMCS, IRC, and digital/secure phone coordination with various combat operations elements, including the CASDO, SODO and SIDO. (see paragraph A2.2)

2.5.6. AWACS Integration. The AWACS may provide aircraft hand-off and radio relay to the ASOC. It can communicate with the ASOC via secure, jam-resistant (e.g., HAVE QUICK II) UHF, secure very high frequency (VHF) voice, UHF tactical satellite (TACSAT) communications, and Link 16. The ASOC must plan and coordinate with AWACS air battle managers to effectively integrate aircraft flow and rapidly resolve airspace conflicts. The ASOC should always notify AWACS and the AOC immediately upon scrambling ground-alert missions. (see **paragraph A2.5**)

2.5.7. JSTARS Integration. The JSTARS can provide the ASOC with enhanced battlefield SA to facilitate effective and responsive AI and CAS operations. It can communicate with the ASOC via

secure, jam-resistant (e.g., HAVE QUICK II) UHF, secure VHF voice, and UHF TACSAT communications. The ASOC or Army FC, if equipped with a Joint STARS Work Station, may be able to receive JSTARS moving target indicator and synthetic aperture radar imagery. (see **paragraph A2.7**)

2.5.8.   CRC Integration.   The CRC may provide aircraft hand-off to the ASOC, and can communicate with the ASOC via UHF TACSAT, IRC, voice, and Link 16 communications links. The ASOC must plan and coordinate the CRC air battle managers to effectively integrate aircraft flow and rapidly resolve airspace conflicts. The ASOC will notify the CRC and the AOC immediately upon scrambling ground alert missions.

2.5.9.   TACP Integration.   The ASOC must correlate TACP/JTAC location(s) with CAS tasking to ensure that JTACs are available at the right place and the right time to provide required terminal attack control. Additionally, TACP must report their status to the ASOC with sufficient frequency and detail for the ASOC to understand their operational capabilities and limitation and how the ASOC can support the TACPs.

2.5.10.   FAC(A) Integration.   FAC(A), being an airborne element of the TACS, can provide the ASOC with the speed, flexibility and range to quickly get terminal attack control capability anywhere on the battlefield. The ASOC must provide the FAC(A) with all the information pertinent to operating area where the ASOC tasks them. When a TACP/JTAC is not already there, the ASOC must provide contact frequencies and callsigns of the ground commander and fires functions in addition to commander's intent and scheme of maneuver.

2.5.11.   TAC(A) Integration.   The Tactical Air Coordinator (Airborne) is an extension of the ASOC. It is an airborne element of the TACS located far enough from threats and jamming to provide a communications relay between the ASOC, TACPs, and JTACs, and provides procedural control of CAS aircraft outside the communications range of the ASOC. The ASOC must provide the TAC(A) with all of the information pertinent to the operating area where the ASOC works with them.

Chapter 3

ASOC OPERATIONS

3.1. ASOC Execution. The ASOC planning and coordination is meant to support ASOC execution. In many instances, planning, coordination and execution will be occurring concurrently to minimize the time from requirement identification to support on scene. To execute quickly and correctly and for maximum effect, ASOC situational awareness of assets available, land component priorities and pertinent coordination requirements must remain high.

3.1.1. CAS Execution.   Command and control of air component assets to execute joint fire support to meet land component requirements. Immediate CAS missions may be filled by on-call CAS, diverting scheduled CAS, or requesting AOC re-role aircraft tasked to perform another mission. The method depends on the ground commander's priorities and available assets.

3.1.1.1. Preplanned.   Preplanned CAS are allocated CAS missions that the land component coordinated through their channels in time for inclusion in the ATO. Preplanned CAS requests are submitted IAW procedures outlined in theater SPINS and Army standing operating procedures (SOPs), and are normally submitted through the fires cell (FC) at each echelon of command, and coordinated through the commander, TACP, FC, and G-3/S-3 at each echelon. Ultimately, the requests are passed to the BCD in sufficient time for inclusion in the ATO. The important thing to remember about preplanned CAS is that the requesting forces must forward the requests up through the land component channels as soon as the need is identified. Preplanned CAS missions can be tasked on the ATO as either scheduled or on-call.

3.1.1.1.1. Scheduled.   Through the ATO planning process, scheduled CAS missions are designated a target and given specific mission information to meet planned ground force operations.   Scheduled CAS missions are designed to be employed at a flow rate that complements the ground commander's scheme of maneuver. Additionally, the ATO tasks these assets to support a specific ground element. This provides lower echelons with a CAS window and type of aircraft/munitions availability.

3.1.1.1.1.1. Scheduled missions have all necessary information to find and contact the ASOC/TACP/JTAC. Normally, the aircraft will contact the airspace control agency (CRC or AWACS) prior to transfer to the ASOC. The JARN operator should query the TACP/JTAC for any mission updates prior to aircraft check-in and pass updates to the PC. The PC, in turn, will pass any necessary updates (mission or threat), route the aircraft to the assigned contact/initial point (normally via an MRR), and include call sign, number and type of any other aircraft working in the area, along with any other supporting arms activity affecting mission accomplishment.

3.1.1.1.1.2. If the TACP/JTAC (on ground commander authority) cancels their scheduled CAS mission, the ASOC will need to look for an alternate target or killbox for the mission. This may require the ASOC to place the mission into an orbit (procedural deconfliction) until the mission can be retasked (see paragraph 3.1.1.3 on CAS Divert/Retasking).

3.1.1.1.2. On-call.   On-Call missions identify an anticipated requirement for CAS to be available during a specific time period, and configured with ordnance for the anticipated target/desired effect. On-call missions will not have specific information on tasking in the ATO, and generally maintain two alert postures: ground alert (GCAS) and airborne alert

(XCAS). The ASOC will have to pair this mission to a specific air support request and relay mission details. As soon as the pairing is complete, the ASOC should relay mission details to the aircraft or preferably to the wing operations center, CRC and AOC prior to aircraft launch to provide aircrew the maximum opportunity for mission planning and target area study. Updates and aircraft routing should follow scheduled mission procedures once the ASOC has paired and passed mission details. While awaiting tasking, the ASOC should consider on-call aircraft's capability to concurrently perform non-traditional ISR.

3.1.1.2. Immediate requests. Immediate requests are requests that do not meet the time criteria for inclusion in an ATO. The land component must provide a relative priority of immediate requests against other immediate and preplanned requests for the ASOC to know how to allocate available air component assets. Immediate requests are passed directly to the ASOC primarily via the AFARN/JARN. The ASOC must coordinate closely with the FC to understand land component priorities among all requests and in light of published priorities of fires.

3.1.1.2.1. JTAR Process. Typically, a JTAC sends the immediate JTAR to the ASOC via the AFARN/JARN. The JARN Operator receives and reviews the request. If there are any discrepancies or omissions, the request will go back to the sender for clarification. The request then goes to the IDO/IDT that checks the target information, threats, friendly locations, target environment, etc. Again, if there are any discrepancies or omissions, the request will go back to the sender for clarification. The request will then go to the ATOM. The ATOM will coordinate with the Army (FC, G-3 Air, or designated representative) for approval, and then match the request against an available CAS asset. When the Army approves or disapproves a request, the JARN Operator notifies the requesting JTAC immediately. The ATOM in turn notifies the ASM, who will then coordinate the routing and mission airspace for the assigned CAS mission sortie.

3.1.1.2.2. Command levels between the corps/division and originating requestor may disapprove the request, with reason, over the AFARN/JARN. Silence, over the voice AFARN/JARN, is implied approval from intermediate echelons. If disapproved at the corps/division level, the ASOC notifies the TACP of the disapproved request with the reason for disapproval in section 2 of the JTAR. If approved, the ASOC sends the JTAC section 3 of the JTAR, which includes mission number, aircraft call sign and type, number of aircraft, ordnance, and time-on-target.

3.1.1.2.3. In summary, the ASOC processes a JTAR IAW ground commander's approval and guidance, deconflicts the routing and target area (coordinates with Army AC2, G-2, and FC, and AOC), and then matches it against available CAS missions. Final approval/disapproval rests with the Army, either the ground commander or designated representative.

3.1.1.2.4. Ground Alert CAS (GCAS). GCAS assets maintain a capability to takeoff under a specified launch time criteria. Normally, the AOC delegates scramble authority to the ASOC. The ASOC should scramble GCAS sorties, as necessary, to fill immediate requests or to backfill diverted pre-planned missions. The ASOC contacts the WOC and directs the aircraft to the CP/ROP where mission information and TACP hand-off occur. If the AOC retains scramble authority for ground alert aircraft, the ASOC must contact the AOC to request that aircraft be scrambled and sent to a CP/ROP. Coordinate with the FC prior to scrambling aircraft to confirm that known requests' priorities are sufficiently high to outweigh potential future requests because once the aircraft launch they cannot launch again

until being refit and rearmed. Inform TACPs/JTACs, CRC and AC2 of scramble plans and time before assets will be on station.

3.1.1.2.5. Airborne CAS (XCAS). XCAS are airborne assets that loiter at a predetermined orbit point awaiting tasking. If not tasked prior to a designated fuel state or end of vulnerability time, the aircraft must be tasked to a secondary target or killbox/ACM/FSCM to optimize air assets. Unpaired airborne on-call missions will probably be the most responsive available asset, but may not have optimum ordnance, sensors or target acquisition. Coordinate XCAS pairing to immediate requests with the FC. Inform TACPs/JTACs, CRC and AC2 of pairings.

3.1.1.3. CAS Divert/Retasking. For immediate requests with a higher priority than pre-planned missions, when on-call assets are not available or cannot achieve the desired effect, the ASOC will coordinate with the FC to divert the pre-planned mission to the higher priority immediate request. With FC/ground commander approval, inform the pre-planned requester (TACP/JTAC) of the diversion and any plans to backfill the diverted assets. Inform all affected TACPs/JTACs of CAS divert plans.

3.1.1.4. Re-role Missions. Should the ASOC exhaust all allocated assets or the land component submit immediate requests requiring specialized effects, the ASOC may need to request a re-role of other assets under AOC control to meet land component requirements. Final approval/disapproval authority for a re-role mission is at the AOC. Should the AOC re-role assets, the ASOC will have to provide re-roled aircrews with all mission details for planning and execution. Additionally, coordinate with the FC to fully integrate re-roled aircraft into the land component fire support plan.

3.1.1.5. Aircraft Check-in. ASOC must provide aircrew with pertinent information for mission accomplishment. The ASOC must inform aircrew of threats (enemy or environmental) within their working AO, land component's priority targets, closest friendlies (if available), any friendly artillery missions (include impact coordinates, gun to target line, max ordinate) or other friendly supporting arms activity affecting their AO (ISR, EW, helicopters, etc.), other aircraft operating in the AO, and call sign, frequency and handover point of agency providing control and clearance of fire. This may include directing the mission aircraft from the CP/ROP to the appropriate IP for execution. For pre-planned missions, the ASOC only needs to provide changes or situation updates to ATO information and threat briefs. The ASOC should authenticate any aircraft not operating in secure modes after routing aircraft to prevent conflicts. The procedural controller normally receives the hand-off from the CRC and checks in aircraft. If out of voice radio range of the CP/ROP, the process can use Link-16 or the CRC, AWACS, JSTARS or FAC(A) to relay the pertinent information.

3.1.1.6. Aircraft Check-out. ASOC must understand and disseminate aircraft generated effects. Aircrew should pass mission results, including BDA, during check-out for the ASOC to document on the Inflight Report (JP 3-09.3) to indicate air component fulfillment of the land component request. ASOC must route aircraft to prevent conflict and to expedite the aircraft's RTB for refit and rearm. The procedural controller normally notifies the CRC of the hand-off and checks out aircraft.

3.1.2. ISR Execution. Many land component requests will include specified or implied requests for ISR support. ASOC personnel must anticipate and actively pursue ISR that enhance fulfilling land component support requests.

3.1.2.1. Collection Management changes.   ASOC intelligence functions must maintain situational awareness on available ISR assets and leverage their capabilities to enhance or fulfill land component requirements. The ASOC must maintain a close liaison with the AOC SIDO and request information available from AOC level ISR sources.

3.1.2.2.   Non-traditional ISR options. Tactical level target acquisition and avionics systems include an inherent capability to provide ISR. The ASOC must leverage these non-traditional sources of ISR when the opportunity presents itself. The ASOC can use unpaired XCAS holding in CAS stacks, aircraft enroute to or from target areas and completed mission with time on station still available to meet land component ISR requirements without tasking additional air component assets.

3.1.3.   Air Interdiction.   AI missions are normally under the control of the JAOC and CRC/AWACS, however, AI missions short of the FSCL must be coordinated with the ASOC. The ASOC must coordinate with the FC, AC2, G2, and AMD to ensure safety of friendly personnel. The ASOC may be responsible for coordinating the opening and closing of killboxes or Joint Fires Areas for AI engagements. While the ASOC normally does not provide targeting information to AI missions, it may be required to do so for dynamic attacks. The ASOC is also responsible for tracking AI missions in their supported ground unit's AO.

3.1.4. SEAD Execution.   Enemy air defense present a direct threat to the effective and efficient application of airpower. The ASOC should use all avenues to mitigate threats to CAS assets and other assets supporting the land component

3.1.4.1. Pre-planned SEAD.   ASOC should preview pre-planned missions for SEAD plans and allocated SEAD assets for mission scheduled into areas of known threats. Query TACPs if SEAD plans are inadequate.

3.1.4.2. Pop-up SEAD.   ASOC should request SEAD support for all pop-up threats that will affect known missions. First request SEAD support from organic land component assets before requesting theater level SEAD support from the AOC.

3.1.4.3. Clearance of fire.   If non-land component assets are providing SEAD support, the ASOC must plan how the assets will get clearance of fire to expend ordnance within the land component AO. The ASOC can request that the assets contact the JTAC to get clearance of fire from the local ground commanders or the ASOC can work clearance of fire through the FC. If requesting clearance of fire from the FC, provide attack axis, TOT window and launch altitude

3.1.5. EW/IO Execution.   EW/IO assets operating with the ASOC AO require procedural control and integration within the ASOC airspace. Transit routes or orbits and altitudes must mesh with other airspace users. The ASOC must maintain reliable communication contact in order to meet their procedural control responsibility

3.1.5.1. Kinetic (leaflet drops, etc) and Non-Kinetic (Jamming) EW/IO effects must also be coordinated to allow freedom of action for Joint Air operations. IO effects may negatively impact other Counterland operations without coordination with the ASOC.

3.1.6.   CSAR and other specialized missions.   CSAR or other specialized mission may require large volumes of airspace requiring ACMs that may not be under the control of the ASOC. ASOC planning must include any missions that will transit or have ACMs in the ASOC AO. The ASOC will coordinate with the AOC, CRC, and assist the on-scene commander as required/directed. Even though the ASOC will not have control, the on-scene commander or controlling agency may require the ASOC to coordinate land component clearance of fires for assets working there.

3.1.7. Airlift. Airlift is not an inherent function of the ASOC, but airlift/airdrop missions operating within the ASOC AO may require procedural control and integration from CRC hand-off to entry in their restricted operating area (ROA)/restricted operating zone (ROZ). Once in the ROA/ROZ, if aircraft are under ASOC control, the ASOC normally hands-off the aircraft to a terminal controller. ASOC airspace planning must incorporate all airspace users even if not under direct mission control of the ASOC.

3.1.8. Air Tasking Order/Airspace Control Order/Special Instructions Dissemination. The AOC disseminates the ATO to the ASOC via TBMCS. If TBMCS is not available, the AOC may use other means, such as the secret internet protocol network (SIPRNET), the Army's JADOCS, or AFATDS via the BCD to transmit the ATO. The ASOC parses the pertinent information from the ATO, ACO and SPINS, and if required, sends that information to their assigned TACPs. TACPs should be able to parse their own pertinent information from JADOCS or AFATDS.

3.2. ASOC Coordination. The ASOC mission to execute the Air Battle Plan requiring integration with Army supporting arms and maneuver requires coordination crossing functional component boundaries. To make timely and appropriate Airpower decisions, to include matching land component requirements to airpower capabilities, the ASOC must have high situational awareness and be able to coordinate with all affected agencies in near real time. This requires that the ASOC have systems capable of interfacing into air and land component command and control systems.

3.2.1. Systems. The ASOC must have and use systems that permit cross component collaboration, that can gain the situational awareness necessary to make well founded recommendations that correctly match air component capabilities to immediate land component air support requests, and systems that automate mission tracking to maintain all affected agencies' SA.

3.2.1.1. Collaboration. Tools include internet chat rooms, meetings/briefings, telephone calls and VTCs. Systems include, but not limited to, TBMCS Web applications (WARP, ESTAT, etc.), SIPRNET, JABBER, Adobe Connect, IRC, IWS, JADOCS Managers, VOIP/ROIP, Command Post of the Future (CPoF), and telephone switches.

3.2.1.2. Common Operating Picture. The ASOC must maintain a common operating picture to maximize SA of its AO. The necessary information includes pertinent data from the land and air components on friendly/enemy orders of battle, maneuver boundaries, active FSCMs and ACMs, current reference points, current air tracks, target and air threat locations. Systems include JADOCS, C2PC, TBMCS WEBMAP, TACP-CASS, Falconview, and various ISR feeds.

3.2.1.3. Automated mission tracking. TBMCS automated mission tracking displays the current Air Battle Plan execution, and provides all users with current information on the status and tasking of air component resources. ESTAT/WARP applications show available resources and permit automated matching of allocated air component resources to preplanned and immediate land component requirements. Each command and control center updates the system during mission progression. That information gives the ASOC necessary data to choose the best option for meeting dynamic situations.

3.2.2. Internal Coordination. Prior to executing, the ASOC needs to share information, situational awareness, confer and reach a conclusion on the best course of action to take based on land component requirements and priorities. An internal ASOC chat room has proved successful as a collaboration tool to disseminate information across all positions rapidly. Each duty position should have input, but the final decision will rest with the SAD or in his absence the ATOM.

3.2.3.   External Coordination. The ASOC links the air component to the land component and melds the operational to the tactical. The ASOC has a requirement to coordinate with air and land command and control at operational and tactical levels.

3.2.3.1. Land Component.

3.2.3.1.1. FC/FECC/FSE. The ASOC must coordinate with the FC when changing planned resources or matching on-call assets to immediate requests. The ASOC must also get clearance of fire from the FC for air component assets employing ordnance not under the control of a JTAC.

3.2.3.1.2. AC2. As the delegated land component authority for airspace, the ASOC must coordinate and integrate air component airspace requirements with AC2. Procedural control plans, reference points and ACMs needs close coordination with AC2 to ensure air and land components make maximum use of AO airspace.

3.2.3.1.3. G2. Land component intelligence sources can provide a plethora of information on enemy ground order of battle and courses of action. Establishing, maintaining and enhancing links between air and land intelligence functions can only improve ASOC situational awareness and understanding of land component collection requirements.

3.2.3.1.4. Ground Commander. As the delegated authority within maneuver boundaries, the ground commander initiates preplanned and immediate air support requests that creates a requirement for air support. The ASOC's conduit for coordination with the ground commander is the TACP.

3.2.3.2. Air Component.

3.2.3.2.1. AOC. As the senior element of the TACS, the AOC does the operational planning that results in the allocated resources of the ATO. The ASOC needs to keep operational level decision makers' situational awareness as high a possible by providing mission updates via TBMCS ESTAT/WARP.

3.2.3.2.1.1. CASDO. As the designated manager of JFACC CAS assets, the CASDO is a key element for the ASOC to consult in recommending assets to the land component. The CASDO also acts as a conduit for the ASOC to leverage supplemental resources for SEAD, CSAR, tankers and re-role AI assets from other members of the combat operations cell.

3.2.3.2.1.2. SIDO. As the designated operational manager of JFACC intelligence, the SIDO is a key element for the ASOC to consult when needing information and real time ISR. Since the JFACC is normally designated collection operations management (COM) authority, the CCO exercises COM for JFACC ISR assets. Through close coordination with the SIDO, the ASOC IDO/IDT can use the RSTA to ensure the supported land component has the necessary ISR assets available if/when an immediate request arises. In some cases, the SIDO can delegate COM for tactical ISR assets to the ASOC to assist the TACP, e.g. MQ-1.

3.2.3.2.1.3. Airspace Management Cell. The airspace management cell of the AOC normally fulfills the JFACC assigned responsibility for Airspace Control Authority. In conjunction with AC2 the ASOC should coordinate ACMs and procedural control plans with the AOC airspace management cell in order for the ACO/SPINS to contain the necessary information for aircrew and controllers.

3.2.3.2.2. Aircraft/WOC. To optimize combat airpower and enhance safety of friendly air operations, the ASOC needs to create and coordinate procedural control plans that allocated aircraft can easily understand and execute. The broader the dissemination of their local airspace control plan through such vehicles as the ACO will permit aircrew and wings to plan more efficiently.

3.2.3.2.3. TACP/JTAC. Mobile field units may not always have access to all C2 systems. It is incumbent on the ASOC to ensure subordinate TACPs/JTACs have all necessary information, to include ATO, ACO, and SPINS, in a useful format. This may mean that the ASOC parses and reformats ATO, ACO, and/or SPINS information and disseminates to subordinate TACPs/JTACs via secure and reliable methods. This may require using available land component systems such as JADOCS or AFATDS. War is a dynamic endeavor and the ASOC should query TACPs/JTACs on status and obtain situation updates about their tactical situation and equipment operability.

3.2.3.2.4. CRC/AWACS/JSTARS. The ASOC must provide and get information from all other TACS elements. CRC and AWACS provide airspace information and aircraft handoff sequencing. JSTARS provides information on the dynamics of the ground situation. As a command and control node, the ASOC must work to maintain and provide high levels of situational awareness to all entities with which it has contact.

3.3. ASOC Planning. While TACP ALOs and JTAC have primary responsibility for planning air support of ground forces, the ASOC must remain cognizant of these planning efforts and the criteria applied in deciding on the approved course of action. Similarly, while the AOC has primary responsibility for planning air operations, the ASOC must perform many planning functions in deciding what capability to match to immediate air support requests.

3.3.1. Understand the joint force commander's objectives with associated operational-level effects and assessment indicators and the implications to ASOC Operations. The CONOPS will set priorities between and among the functional components that directly affect resources allocation and hence ASOC resource allocation real-time decisions of air support assets to land component requirements.

3.3.2. Understand the land component air support requirement driven by the CONOPS, primarily in the Operational Fires section.

3.3.2.1. Know land component objectives. The MDMP (See Attachment 3) will produce a five paragraph operations order (OPORD) or fragmentary order (FRAGO) that contains all critical information outlining ground commander's intent, objectives, scheme of maneuver and fire support plan that drives the requirement for air component delivered joint fire support. ASOC daily planning starts with reviewing and understanding the current OPORDs and FRAGOs.

3.3.2.2. Know land component priority of fire/fire support concept, and review land component target synchronization matrix. That same OPORD or FRAGO will either have paragraphs that spells out priority of fires among and between the various subordinate units or may have an Annex D that gets even more specific about joint fire support concepts. ASOC decisions must reflect these same priorities.

3.3.2.3. Understand land component battlespace and its implications to ASOC operations.

3.3.2.3.1. Unit maneuver boundaries and associated TACP/JTACs. ASOC planning must include a detailed understanding of the friendly order of battle and how the various maneuver

units will accomplish the scheme of maneuver. This ASOC planning also needs to correlate ground unit designation with associated TACP/JTACs.

3.3.2.3.2. Fire support coordination measures. Permissive and restrictive fire support coordination measures will apply equally to all components whether the fire is ground or air delivered. The ASOC must know and then communicate these measures to aircraft and TACPs.

3.3.2.3.3. Enemy ground order of battle. Equally important to understanding friendly order of battle is detailed knowledge of enemy order of battle that correlates unit designation to combat capability and equipment type.

3.3.2.3.4. Know the Support Crew requirements for proper site location(s) for the TDC-ICAP equipment, and logistics areas for maintenance and personnel support.

3.3.2.3.5. Know the requirements for the life support area site setup, and Army-provided requirements such as security, food, water, ammunition, and medical care.

3.3.3. Understand the air component commander's direction/intent and those resources allocated to support land component objectives from the AOD and ATO.

3.3.3.1. Know the air component resources allocated to support land component from the AOD and ATO as driven by JFC apportionment.

3.3.3.1.1. Know preplanned and on-call CAS resources. ASOC planning must discriminate between allocated missions that have already been planned and approved within ground force coordination channels and missions that the JFACC allocated to CAS but are on-call to meet emerging land component requirements. Preplanned missions have sufficient information within the ATO to find and contact their JTAC in order to complete their tasking, but will require updated information from the ASOC on factors impacting safe access to the target area. Supplemental information from the ASOC will improve mission accomplishment through situation updates and enhance safety of flight through procedural control integration and deconfliction with other airspace users. On-call missions, either XCAS or GCAS, will require additional information from the ASOC or other command and control agencies to provide fire support or create effects. By studying and understanding mission types, the ASOC can customize situation updates for aircrafts.

3.3.3.1.2. Understand the capability and limitations of ATO allocated resources.

3.3.3.1.2.1. Aircraft. Know aircraft data such things as speed, range, fuel capacity and primary mission/pilot proficiency to consider mission impact on time to reach a target area versus time available, number of engageable targets, loiter time in target area and time required to integrate into the ground commander's fire support plan. Know the aircraft digital communications capabilities and addresses. Other important factors are susceptibility to air defenses (ground or air), available countermeasures and communications capability.

3.3.3.1.2.2. Munitions (kinetic and non-kinetic). Know munitions data such things as specific number and type of munitions carried, guidance methods (precision, non-precision) and requirements (coordinate type, laser/thermal), effects of weather, weapons effects and ways to alter effects, danger close distance and potential impact on friendly or follow-on forces. GPS system accuracies based on current satellite configuration.

3.3.3.1.2.3. Sensors and avionics. Know how the sensors and avionics available in

targeting pods, radars or munitions along with navigation and data links will assist in target acquisition and engagement.

3.3.3.1.2.4. <u>Enemy air order of battle/air defense</u>. Know and understand the air defense threat of the ASOC AO and its impact on allocated aircraft types to include planning how to suppress threats prioritized by mission. Find this information in air component intelligence summaries.

3.3.3.1.3. Identify pertinent supplemental support resources available.

3.3.3.1.3.1. <u>ISR, SEAD, EW, IO, AI/INT, Tanker, CSAR, Airlift</u>. Know available assets and how to access their capability through the AOC divisions, cells or teams or other TACS agencies. The land component may require ISR, EW, IO, CSAR or airlift effects. Aircraft allocated to work with the ASOC may require SEAD, EW, Tanker or CSAR effects. AI/INT is a possible source should CAS priority require re-role of assets.

3.3.3.2. Understand airspace as outlined in the ACP, ACO, SPINS, ADP and host nation procedures.

3.3.3.2.1. <u>ASOC lateral and vertical limits</u>. The FSCL, unit boundaries and hand-off points will likely define the lateral limits of airspace where the ASOC will exercise procedural control. Know the vertical limits as well. The coordinating altitude is usually the ASOC floor and requires coordination with AC2 for aircraft working below that altitude. The upper limit depends on many factors, but it should generally not be less than 20,000 ft with at least 10,000 feet of vertical altitude available. SPINS should contain information on altitudes, ingress and egress routes.

3.3.3.2.2. <u>Adjacent control agencies</u>. Know the call sign and contact frequency or coordination method for all adjacent agencies, lateral and vertical. For air component frequencies, consult the SPINS. For land component frequencies, consult the command and signal paragraph of the OPORD.

3.3.3.2.3. Applicable airspace coordination measures and reference points. Know and plot all ACMs within the vertical and lateral limits of the ASOC airspace. Know distances to important ACMs such as tanker tracks and MRRs. Know and plot orbit/hold points, contact points, hand-off/over points, TACP/JTAC initial points. Provide inputs as required to change ACO reference points. Coordinate with AC2 to understand land component airspace.

3.3.3.2.4. Understand implications of current and forecast weather conditions for the ASOC AO, as well as the launch/divert base status. Knowing all the above, know how weather will affect/limit ASOC procedural control options and capability to safely route aircraft to and from tasking. Base weather conditions could affect aircraft availability and timing. Coordinate as needed with AWACS and CRC to mitigate any identified limitations. Air Force weather teams, collocated with ground forces, will have weather information available.

3.3.3.2.5. Plan aircraft ingress and egress routing from hold/orbit points to TACP/JTAC contact/initial points. Use altitudes in accordance with the above and promulgated procedures in SPINS. Using all the above planning information develop aircraft ingress and egress routes and altitudes that minimizes potential conflicts and optimize the flow of aircraft into the land components battlespace.

3.3.4. Understand joint, land and air components' communications plans from J6, G6 and A6.

3.3.4.1. Know allocated frequencies. Use assigned frequencies to maintain connectivity with the AOC, TACPs, aircraft and assigned ground unit headquarters.

3.3.4.2. Air control and tactical air direction nets.

3.3.4.2.1. JARN/AFARN. Operate and disseminate JARN protocols.

3.3.4.2.2. ASOC chat rooms. Create or find appropriate chat rooms to coordinate and execute each duty position. As a minimum, the ASOC should plan to have an internal chat room for coordination between crew positions and an external chat room to disseminate ASOC guidance or direction. The ASOC should be in an FC, CASDO, SIDO and AC2/Airspace Management Cell chat room, if established. Chat room organization should be identified in the component communication plans.

3.3.4.2.3. Tactical data links. The ASOC must set up and use ASOC systems to establish and maintain data link connectivity. The ASOC is responsible for ensuring OPTASKLINK compliance by subordinate TACPs and JTACs, activating filters, evaluating link effectiveness, monitoring track exchanges, validating ad ensuring tracks are dropped when directed, and initiating data link messages onto the link when directed. The ASOC will also provide the TACP/JTAC with track numbers and update the Mission Planner file.

3.3.4.3. Know command and control communications architecture. Communication flight needs to understand how they fit into the larger command and control network and what unique capabilities, such as TDC-ICAP, ASOC Gateway and TACP-CASS that they bring to their AO.

3.3.4.3.1. Air component – reference SPINS and component communication plans.

3.3.4.3.2. Land component – reference OPORD/FRAGO command and signal paragraphs.

3.4. Adopted Forms.

AF Form 847, *Recommendation for Change of Publication*

DD Form 1972, *Joint Tactical Airstrike Request*

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Asst DCS, Operations, Plans, & Requirements

Attachment 1

GLOSSARY OF REFERENCES AND SUPPORTING INFORMATION

References

Note: Air Force publications listed below can be found at http://www.e-publishing.af.mil/.
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for the publication.

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AFDD 2-1.7, *Airspace Control in the Combat Zone,* 13 July 2005
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Note: The AFTTP 3-1 volumes listed below can be found at
http://www.naic.wrightpatterson.af.smil.mil/Documents/HANDBOOK/SXX00001/HTML/main.html
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AFTTP 3-1, Volume 30, *Tactical Employment; JSTARS,* 15 January 2007
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C1 2 September 2005
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JP 3-52, *Joint Doctrine for Airspace Control in the Combat Zone,* 30 August 2004
JP 6-0, *Joint Communications System,* 13 April 2007

Abbreviations and Acronyms

AC2—Airspace Command and Control (Army)

ACM—Airspace Coordination Measure

ACO—Airspace Control Order

ADA—Air Defense Artillery

AFARN—Air Force Air Request Net

AFATDS—Advanced Field Artillery Tactical Data System

AFDD—Air Force Doctrine Document

AFI—Air Force Instruction

AFMAN—Air Force Manual

AFPD—Air Force Policy Directive

AFSC—Air Force Specialty Code

AFTTP—Air Force Tactics, Techniques, and Procedures

AFTTP(I)—Air Force Tactics, Techniques, and Procedures (Interservice)

AI—Air Interdiction

ALE—Automatic Link Establishment

ALO—Air Liaison Officer

AM—Amplitude Modulation

ANG—Air National Guard

AO—Area of Operation

AOC—Air and Space Operations Center

AOD—Air Operations Directive

ASM—Air Space Manager

ASOC—Air Support Operations Center

ASR—Air Support Request

ATO—Air Tasking Order

ATOM—Air Tasking Order Manager

AWACS—Airborne Warning and Control System

BCD—Battlefield Coordination Detachment

BDA—Battle Damage Assessment

C2—Command and Control

CAS—Close Air Support

CASDO—Close Air Support Duty Officer (AOC)

COA—Course of Action

COP—Common Operating Picture

CP—Contact Point

CRC—Control and Reporting Center

CS—Crew Superintendent

DAGR—Defense Advanced GPS Receiver

DD—Department of Defense

DEAD—Destruction of Enemy Air Defenses

DOC—Designed Operational Capability

FAC(A)—Forward Air Controller (Airborne)

FC—Fires Cell

FDO—Fighter Duty Officer

FDT—Fighter Duty Technician

FECC—Fires and Effects Coordination Cell

FM—Field Manual (U.S. Army); Frequency Modulation

FSCL—Fire Support Coordination Line

FSCM—Fire Support Coordination Measure

FSE—Fire Support Element

G-2——Army component intelligence staff officer (Army division or higher)

G-3——Army component operations staff officer (Army division or higher)

GCAS—Ground Close Air Support

GPS—Global Positioning System

HHQ—Higher Headquarters

HF—High Frequency

HMMWV—High Mobility Multipurpose Wheeled Vehicle

IAW—In Accordance With

IDO—Intelligence Duty Officer

IDT—Intelligence Duty Technician

IP—Initial Point

IRC—Internet Relay Chat

IWS—Integrated Work Station

JADOCS—Joint Automated Deep Operations Coordination System

JARN—Joint Air Request Net

JFACC—Joint Force Air Component Commander

JFLCC—Joint Force Land Component Commander

JFSOCC—Joint Force Special Operations Component Commander

JIPTL—Joint Integrated Prioritized Target List

JMMTIDS—Joint Moving Map Tactical Information Display System

JP—Joint Publication

JSOAC—Joint Special Operations Air Component

JSTARS—Joint Surveillance Target Attack Radar System

JTAC—Joint Terminal Attack Controller

JTAR—Joint Tactical Air Strike Request

KDU—Keypad Display Unit

LOS—Line of Sight

MAJCOM—Major Command

MBITR—Multi-Band Inter/Intra Team Radio

MDMP—Military Decision Making Process

MISREP—Mission Report

MRR—Minimum Risk Route

MTI—Moving Target Indicator

NAVSTAR—Navigation Satellite Timing and Ranging

NGB—National Guard Bureau

NSL—No-Strike List

NVIS—Near Vertical Incidence Skywave

OPCON—Operational Control

OPR—Office of Primary Responsibility

PA—Privacy Act

PC—Procedural Controller; Personal Computer

PLGR—Precision Lightweight GPS Receiver

PPS—Precise Positioning Service

ROP—Rear Orbit Point

ROVER—Remotely Operated Video Enhanced Receiver

RSTA—Reconnaissance, Surveillance, Targeting and Acquisition

RTL—Restricted Target List

S-2——Army brigade or battalion intelligence staff officer

S-3——Army brigade or battalion operations staff officer

SA—Situational Awareness

SAD—Senior Air Director

SAR—Synthetic Aperture Radar

SAASM—Selective Availability Anti-Spoofing Module

SATCOM—Satellite Communications

SEAD—Suppression of Enemy Air Defenses

SIDO—Senior Intelligence Duty Officer (AOC)

SINCGARS—Single Channel Ground to Air Radio System

SIP—Session Initiation Protocol

SIPRNET—Secret Internet Protocol Network

SOCCE—Special Operations Command and Control Element

SODO—Senior Operations Duty Officer

SOF—Special Operations Force

SOLE—Special Operations Liaison Element

SORTS—Status of Resources and Training System

SPINS—Special Instructions

SPS—Standard Positioning Service

SSB—Single Side Band

TACP—Tactical Air Control Party

TACP—CASS—Tactical Air Control Party-Close Air Support System

TACS—Theater Air Control System

TACSAT—Tactical Satellite

TAD—Tactical Air Direction (Net)

TBMCS—Theater Battle Management Core System

TOD—Time of Day

UAV—Unmanned Aerial Vehicle

UHF—Ultra High Frequency

USAF—United States Air Force

UTC—Unit Type Code

VHF—Very High Frequency

WARP—Web Air Request Processor

WGS—World Geodetic System

WOC—Wing Operations Center

XCAS—Airborne Close Air Support

Terms

Operations Personnel—-Individuals assigned to an ASOC duty position with the following AFSCs: 11XXU, 12XXU, 13BXU, 14NX, 1C4X1, 1C5X1, and 1N0XX.

Support and Maintenance— Personnel--Individuals (other the Operations personnel) assigned to an ASOC unit type code (UTC) duty position.

Tactical Air Control Party (TACP)—-A subordinate operational component of a tactical air control system designed to provide air liaison to land forces and for control of aircraft. (JP 3-09.3) TACPs are

the principal Air Force liaison elements aligned with Army maneuver units from battalion through corps and consist of air liaison officers and joint terminal attack controllers. TACPs advise ground commanders on the capabilities and limitations of aerospace power and provide the primary Air Force terminal attack control of close air support in support of ground force. (AFDD 2-1.7)

Attachment 2

THEATER AIR CONTROL SYSTEM

A2.1. Theater Air Control System (TACS) Integration. The TACS, based on the tenet of centralized control and decentralized execution, is well suited for CAS planning and execution through liaison with the ground forces. In the AOC, CAS planning and execution is facilitated through integration of the battlefield coordination detachment (BCD), special operations liaison element (SOLE), naval and amphibious liaison element, and Marine liaison officer. Finally, the AOC CASDO works with the ASOC to provide assets to the TACP or JTAC in the field who have the responsibility to direct the delivery of weapons on target.

A2.2. AOC Combat Operations. The CASDO and the SIDO are normally the focal point for CAS issues in the AOC Combat Operations Division. ASOCs work in close coordination with the CASDO and SIDO for immediate CAS concerns with the AOC. The CASDO is often in charge of a CAS cell made up of CAS experts, JTACs, or ALOs and is responsible for the following:

A2.2.1. Monitors execution of the ATO to optimize support to the battle situation.

A2.2.2. Ensures the WOCs for each asset are informed of changes in the ATO, and the WOCs coordinate their own changes with the AOC.

A2.2.3. Remains in close contact with the ASOC via radio, phone, or secure Internet relay chat programs (e.g., IRC, IWS or Jabber).

A2.2.4. Informs the senior operations duty officer (SODO) of potential deviations from the ATO. Additionally, up channels recommendations if inefficiency is noted in areas such as inappropriate munitions load, aircraft not flying primary mission, excessive tanker off load, and so forth.

A2.2.5. Coordinates with the BCD to ensure the joint force land component commander (JFLCC) CAS objectives are being met.

A2.2.6. Coordinates with the SODO and BCD to re-role AI missions to CAS, when necessary.

A2.2.7. Ensures SODO/chief of combat operations is updated on killbox/ACM/FSCM status.

A2.3. Battlefield Coordination Detachment (BCD). The BCD is the JFLCC's liaison to the air component. The BCD represents the JFLCC and keeps the AOC informed of changing ground unit locations, requests airspace control measures for the JFLCC, advises of shifting CAS priorities, receives preplanned CAS requests, and aids in CAS request prioritization for ATO inclusion.

A2.4. Special Operations Liaison Element (SOLE). Like the BCD, the SOLE provides the same functions for the special operations component command. Due to the nature of special operations forces (SOF), it is imperative that deconfliction for airpower, especially in open Air Force killboxes/joint fires areas or beyond the FSCL, is coordinated real-time with the SOLE.

A2.5. Airborne Warning and Control System (AWACS) Integration. The AWACS can provide aircraft hand-off and radio relay to the ASOC. It can be connected to the ASOC via secure, jam-resistant (HAVE QUICK II) UHF, clear VHF voice, and secure UHF SATCOM. The ASOC must effectively plan and coordinate with AWACS via the air operations C2 net to integrate aircraft flow and resolve airspace conflicts. The ASOC should always notify AWACS and the AOC immediately upon scrambling ground-alert CAS missions.

A2.6. Control and Reporting Center (CRC) Integration. The CRC provides control of air assets, provides aircraft hand-off to the ASOC or other controlling agencies (e.g. U.S. Marines' direct air

support center), and can be connected to the ASOC via HAVE QUICK UHF, secure VHF voice, and secure UHF SATCOM links. The CRC also provides air defense warnings to the ASOC when required.

A2.7. Joint Surveillance Target Attack Radar System (JSTARS) Integration. JSTARS can provide the ASOC with enhanced battlefield SA to facilitate effective and responsive CAS operations. The ASOC or Army FC, if so equipped, may be able to receive JSTARS moving target indicator (MTI) and synthetic aperture radar (SAR) imagery. MTI is normally used to locate enemy units and potential targets. MTI/SAR imagery can also be cross-checked with other real-time ISR feeds from unmanned aerial vehicles (UAVs) and RC-135 Rivet Joint. The ASOC can also use the MTI display to correlate friendly and enemy information attained from other sources used in the target prioritization process. When required, the AOC can delegate limited ASOC functions to the JSTARS. *It is imperative that an Army G-3 element with CAS approval authority be in immediate radio contact with the JSTARS mission crew.* (For more information on JSTARS integration, see AFTTP 3-1.30, *Tactical Employment – JSTARS*)

A2.8. Forward Air Controller (Airborne) [(FAC(A)]. Due to the inherent nature of airpower, the FAC(A) brings several important advantages to the fight: rapid response, range, and agility on the battlefield; broader situational awareness; good communications linkage with other elements of the TACS; and an airborne perspective of the battlefield. When able to work in conjunction with JTACs, the FAC(A) complements the JTAC's unique capabilities and perspective on the battle as an airborne extension of the TACP.

A2.9. Tactical Air Control Party (TACP). The TACP is the principal Air Force liaison element aligned with Army maneuver units from battalion through corps. The primary mission of corps through brigade-level TACPs is to advise their respective ground commanders and staffs on the capabilities and limitations of air, space and cyber power, and assist the ground commander in planning, requesting, deconflicting, and coordinating CAS, air interdiction, airlift, and ISR. The battalion TACP provides the primary terminal attack control of CAS in support of ground forces.

A2.10. Joint Special Operations Air Component (JSOAC). Although not part of the TACS, the JSOAC maintains a small fleet of fixed- and rotary-wing assets for use by the joint force special operations component commander (JFSOCC). Some of these aircraft, such as the AC-130, are capable of performing CAS but may only be used if released to the JFACC for tasking.

A2.10.1. Special Operations Command and Control Element (SOCCE). The SOCCE is subordinate to the JFSOCC, and performs C2 or liaison functions according to mission requirements and as directed by the JFSOCC. Its level of authority and responsibility may vary widely. It is the C2 focal point for CAS requests for SOF units in support of a conventional joint or Service force.

A2.11. Strike Coordination and Reconnaissance (SCAR). A mission flown for the purpose of detecting targets and coordinating or performing attack or reconnaissance on those targets. Strike coordination and reconnaissance missions are flown in a specific geographic area and are an element of the command and control interface to coordinate multiple flights, detect and attack targets, neutralize enemy air defenses and provide battle damage assessment. (JP 1-02) SCAR missions may serve as an extension of the ASOC in areas where FAC-As are not available.

A2.12. Tactical Air Coordinator (Airborne) [TAC(A)]. An officer who coordinates, from an aircraft, the actions of other aircraft engaged in air support of ground or sea forces. (JP 1-02)   The TAC-A serves as an extension of the ASOC. The TAC(A) may provide communications relay between the ASOC and aircraft under its control, and may assist the ASOC by providing localized area control between the ASOC and JTAC, such as during "heavy traffic" CAS operations.

Attachment 3

MILITARY DECISION MAKING PROCESS

A3.1.   General.   While the ASOC is a primary C2 node in the TACS, it is also a customer of information produced by the Army's Military Decision Making Process (MDMP).   The TACP is primarily responsible for participating in MDMP; however, understanding the process provides greater ASOC insight into actual ground force requirements.   Furthermore, ASOC personnel may be required to assist ALOs with the planning process as a tertiary ASOC function.   Detailed information on the MDMP can be found in FM 5-0, *Army Planning and Orders Production*

A3.1.1. The Military Decision Making Process (MDMP) has seven steps. Each step in the process begins with an input that builds upon the previous steps, and each step has an output that drives subsequent steps.

A3.2.   MDMP Steps.   The seven steps in the MDMP are: Receipt of Mission; Mission Analysis; Course of Action (COA) Development; COA Analysis; COA Comparison; COA Approval; and Orders Production.

A3.2.1.   Step 1 – Receipt of Mission.   The decision making process begins with the receipt or anticipation of a new mission, and is itself a six-part process that takes approximately 45 minutes. Typically, a corps may be planning for an operation 72 hours in advance, a division for 48 hours, a brigade for 12 to 24 hours, and a battalion for 6 to 8 hours; although based on the type of mission, time to execute could be compressed.   Receipt of mission consists of staff alert (ALO notified), preparation (read applicable portion of HHQ notification), initial assessment conducted (determine resources and constraints), available time allocation, commander's initial guidance issued (ALO assists), and warning order issued.

A3.2.2.   Step 2 – Mission Analysis.   Mission analysis is the most crucial step of the MDMP. Mission analysis is a 17-step process (steps are not included in this document) which uses the METT-TC (Mission, Enemy, Terrain and weather, Troops and support available – Time available, Civil considerations) process to define the mission objectives.   It is also the beginning of the process to determine possible courses of action.   The ground commander will release the approved mission statement which will clearly define the unit's mission.

A3.2.3.   Step 3 – Course of Action (COA) Development.   After receiving guidance, the staff develops COAs for analysis and comparison.   The commander's guidance and intent focuses staff creativity toward producing a comprehensive, flexible plan within available time constraints.   COA development consists of six steps:

A3.2.3.1. Analyze Relative Combat Power. Typically accomplished by weighing the individual effectiveness of air and space platforms against anticipated enemy surface forces, including ADA threats and assigning numerical values in order to determine force ratios.

A3.2.3.2. Generate Options. Develop the possible COAs.

A3.2.3.3. Array Initial Forces. Identifies the total number of units needed, develops a base of knowledge to make decisions, and identifies possible methods of dealing with the enemy during scheme of maneuver development.

A3.2.3.4.   Develop the Scheme of Maneuver.   Develops the scheme of maneuver, which describes how arrayed forces will accomplish the commander's intent.   The ALO assists in developing engagement areas, target areas of interest, triggers, objective areas, and obstacle plan,

and a movement plan. This also includes determining - at the division and brigade - who will work at the tactical operations center (TOC) and tactical command posts. For the battalion, this means determining where to place the forward-based JTAC teams.

A3.2.3.5. Assign Headquarters. Staff assigns headquarters to groupings of forces, and creates a task organization.

A3.2.3.6. Prepare COA Statements and Sketches. Involves development of COA statements and battle graphics sketches to clearly portray how the unit will accomplish the assigned mission.

3.2.4. Step 4 – COA Analysis (War Game). The COA analysis identifies the best COA based on the commander's intent. The war game is a disciplined process that attempts to visualize the flow of a battle. During the war game, the staff begins to develop a detailed plan and determines the strengths and weaknesses of each COA.

3.2.5. Step 5 – COA Comparison. COA comparison is a systematic method for choosing the best COA from the developed COAs. The TACP must identify strengths and weaknesses associated with each COA. The TACP must provide accurate Air Force data for inclusion in the Army decision matrix. The planning team will decide the best means for employment of air and space power based on the decision matrix. The TACP must compare, critique, and refine the plan based on the tenets of air and space power.

3.2.6. Step 6 – COA Approval. The ground commander selects the optimum COA during this stage. The staff will start the entire process over again if the commander rejects all developed COAs. The approved COA is refined into a final plan and is normally the basis for the OPORD.

3.2.7. Step 7 – Orders Publication. Once the rehearsal results are known, the staff issues the OPORD based on the commander's final guidance. The commanders ensure each TACP and ASOC member understands the plan and are prepared to implement it.

Attachment 4

COMMUNICATIONS LINKS/NETS

A4.1. Air Force Air Request Net (AFARN)/Joint Air Request Net (JARN). The AFARN/JARN is the C2 link between the ASOC and subordinate JTACs for request and coordination of immediate air support. The ASOC controls the AFARN/JARN and will activate and operate as many nets as necessary depending on requirements, available equipment, and allocated frequencies. The normal mode for the AFARN/JARN will be secure UHF SATCOM digital communication using TACP-CASS. The ASOC must be capable of operating the AFARN/JARN (secure) on other radios or on other C2 systems (e.g. HF, IRC, IWS, Jabber or TACP-CASS) when the tactical situation requires.

A4.2. TACP Administration (Admin) Net. This HF (VHF/AM backup) net is used to pass urgent administrative, logistics, and command information between the ASOC and TACP elements. This can also be accomplished using an Internet Relay Chat function or using the TACP-CASS digital Chat (via TACSAT).

A4.3. Tactical Air Direction (TAD) Net. This UHF net (VHF or FM backup) is used by the ASOC, TACPs or FAC(A)s for directing and/or controlling air support mission aircraft. The TACP is the prime user of this net and is allocated specific frequencies to conduct tactical operations. The ASOC is also authorized to enter this net to pass time-sensitive information. The TAD net should be reserved for time critical terminal attack control information only. The list of TAD frequencies is published in the SPINS. TAD frequencies may be secure or non-secure. Do not discuss the TAD frequency on a non-secure net; use the TAD number.

A4.4. In-Flight Report Net. This UHF net is used for the airborne transmission of in-flight reports to the elements of the TACS. Aircraft normally pass ASOC personnel an in-flight report when departing the ASOC AO. In the case of degraded communications, the CRC, AWACS, or JSTARS can relay this information to the ASOC.

A4.5. Tactical Air Control Net. The purpose of this net is to coordinate mission direction of airborne aircraft under control of the CRC.   The ASOC interfaces with the air control net through the command and control net.

A4.6. Command and Control Net. This net may also be referred to as the air operations net or the air defense command and control net. The air operations net interfaces with other ground and airborne TACS units primarily through UHF SATCOM systems that are always secure. This net is used for command traffic (normally from the AOC to the CRC, AWACS and JSTARS, including operations and air defense warnings.

Attachment 5

AIR SUPPORT OPERATIONS CENTER EQUIPMENT

A5.1. General. An ASOC uses many different types of radios and equipment to aid in communications and navigation.

A5.2. Radio Equipment. An ASOC has a combination of vehicle and man-portable radio systems to use.

A5.2.1. AN/MRC-144/AN/GRC-206 Communications System. The AN/GRC-206 communications pallet can be mounted in an M-series high mobility multipurpose wheeled vehicle (HMMWV). The consolidated system is referred to as an AN/MRC-144. The AN/GRC-206 communications pallet can also be mounted in an M-113 armored personnel carrier or an M-2 Bradley infantry fighting vehicle. The GRC-206 version 5 consists of two VHF/FM Single Channel Ground to Air Radio System (SINCGARS), a UHF/AM HAVE QUICK II, a VHF/AM, and an HF/SSB automatic link establishment (ALE); it may be remotely located up to 3 kilometers with no degradation. The GRC-206 version 6 cannot access HF/SSB ALE nets. Version 5 is principally designed to be placed at each TOC where remote operations are required. The specific radios used include the AN/VRC-83, AN/URC-113 and AN/VRC-91.

A5.2.1.1. AN/VRC-83 (VHF-UHF). Two VRC-83s are mounted in the radio set. When configured for UHF operations, it is HAVE QUICK/HAVE QUICK II-capable. Secure voice is provided on both radios with the KY-57 or the KY-99A. The system is line-of-sight (LOS) limited.

A5.2.1.2. AN/URC-113 (HF). The URC-113 is a pallet-mounted HF/SSB radio. When operated over short distances (30 to 300 miles), it is best used with a near vertical incidence skywave (NVIS) antenna. Secure voice is provided by the KY-99A. Signal reliability is limited by environmental and atmospheric conditions.

A5.2.1.3. AN/VRC-91 (VHF/FM). There are two VRC-91 SINCGARS radio sets mounted in the pallet. The system is LOS limited.

A5.2.2. Man-portable/Manpack radios.

A5.2.2.1. AN/PRC-150 (HF). The AN/PRC-150(C) is an advanced HF-SSB/VHF-FM manpack radio that provides reliable tactical communications through enhanced secure voice and data performance, networking, and extended battery life. In addition to the HF capability, the transceiver's extended frequency range (to 60 MHz) provides secure voice and data in the VHF band.

A5.2.2.2. AN/PRC-113 (UHF-VHF/AM). The PRC-113 portable transceiver is HAVE QUICK/HAVE QUICK II-capable. The RT-1319B can be pallet mounted without any loss of operational capability. It is secure capable with the KY-57 or KY-99A. This system is limited to LOS only.

A5.2.2.3. AN/PRC-117F Tactical Radio. The PRC-117F is a man-portable, tactical radio that weighs 15.9 pounds with batteries. It operates in the 30 to 512 MHz frequency range with embedded crypto in which COMSEC can be loaded. The radio is software programmable and is capable of multi-band communications in VHF-FM, VHF-AM, UHF-AM, and UHF-SATCOM. It is PSN-11/PSN-13 compatible for TOD transfer and coordinate display via the keypad display unit (KDU). The KDU is remote capable from the radio set up to 250 feet. It is SINCGARS SIP

and HAVE QUICK/HAVE QUICK II-capable. Power output is maximum 20 watts FM and 10 watts AM. The UHF-SATCOM mode power output is 20 watts.

A5.2.2.4. AN/PRC148 Multi-Band Inter/Intra-Team Radio (MBITR). The MBITR is a hand-held ruggedized radio that weighs less than 2 pounds with battery. It is capable of 30 to 512 MHz continuous frequency coverage in the AM/FM spectrum with voice or data. It is SINCGARS SIP and HAVE QUICK II-capable. Power output is 5 watts continuous. With the low power output, satellite communications requires precise antenna orientation. A power amplifier is available and recommended for uninterrupted satellite communications.

A5.3. Navigation Equipment.

A5.3.1. Global Positioning System (GPS). The NAVSTAR GPS provides continuous, real-time, all-weather, global, 3-dimensional navigation information. A GPS receiver needs to have line of sight to at least four GPS satellites to accurately calculate position, velocity and time. GPS provides two levels of navigation accuracy: the standard positioning service (SPS) (an unencrypted signal available to all users) and the precise positioning service (PPS) (an encrypted signal for US military users).

A5.3.1.1.   Datums. Geodetic datums define the size and shape of the Earth, as well as the origin and orientation of the coordinate system used to reference and map the Earth. Using the wrong geodetic datum can induce GPS position errors as great as or greater than all of the other types of GPS errors combined, as much as hundreds of meters. The standard for GPS receivers is the World Geodetic System-1984 (WGS-84) datum plane. For operations in the field, the user's map/chart may be a datum plane different than WGS-84. It is imperative to recognize any datum mismatch scenarios and resolve the issue.

A5.3.1.2. GPS Vulnerabilities. Adversaries may attempt to jam or spoof the GPS navigational signal. Additionally, friendly jamming operations may interfere with GPS receiver operations.

A5.3.1.2.1. Jamming. Typically, jamming will prevent a receiver from locking onto the GPS signal during its initialization or signal acquisition phase. If the jamming is strong enough, it can cause the receiver to break-lock and cause the navigation solution to fail. Report unexplained GPS anomalies to the G-2/S-2 and AOC.

A5.3.1.2.2. Spoofing. Spoofing is when the adversary provides deceptive GPS signals, thereby misguiding the GPS receiver with false location data. SPS receivers are very susceptible to spoofing because they rely on the unencrypted signals; PPS receivers using the encrypted signal are not. When operations permit, use the encrypted PPS signal.

A5.3.2. PSN-13 Defense Advanced GPS Receiver (DAGR). The DAGR is the replacement GPS receiver for the PSN-11 Precision Lightweight GPS Receiver (PLGR). The GPS program office began replacing PLGRs with the DAGR in FY05 and plans to replace all fielded PLGRs by FY13. The Rockwell Collins DAGR is advertised to incorporate five times the capabilities and functions of the PLGR while reducing the overall size, weight and power requirements of the receiver. The receiver includes a graphical user interface which greatly enhances the user's effectiveness and safety. The DAGR also incorporates anti-jam/anti-spoofing improvements for enhanced protection and is the first U.S. program to include the next generation security device, the Selective Availability Anti-Spoofing Module (SAASM), for handheld GPS receivers.

A5.4. Tactical Air Control Party – Close Air Support System (TACP-CASS).

A5.4.1. The TACP Close Air Support System (TACP-CASS) mission software package is the key integrating component of TACP/ASOC digital communications networks. At its core, TACP-CASS is a data base that processes and stores messages, target data, friendly tracks, ATO/ACO information, and Falcon View based maps and imagery. A graphic user interface allows operators to view maps, view imagery, compose messages, create new tracks, and other functions.

A5.4.2. Although the same TACP-CASS program is loaded on computers fielded at all echelons from the ASOC down to the front-line JTACs, software configurations and permissions are changed to provide those functions required at each echelon of the TACP/ASOC C2 architecture. At the ASOC level, TACP-CASS receives air support requests over the JARN via UHF SATCOM or HF radio transmissions. TACP-CASS then automatically passes these requests through TBMCS to the web-based air request processor (WARP) application that allows ASOC operators to pair CAS missions with the air support request.

A5.4.3. TACP-CASS is also a key component of the ASOC Gateway. TACP-CASS receives Target track information via UHF SATCOM from forward TACPs/JTACs, processes the information, and passes JTIDS formatted messages to the Gateway's JRE software for transmission on Link 16 and SADL networks. Then, when Link 16 and SADL aircraft tracks are received by the Gateway, JRE forwards this information back to TACP-CASS for display in the ASOC and forwarding via SATCOM to forward TACPs and JTACs.

A5.4.4. Finally, TACP-CASS provides LOS UHF/VMF digital communications with strike aircraft equipped with improved data modems using AFAPD message protocols (F-16C Block 40/50 aircraft and some attack helicopters), MTS protocols (AV-8B), and VMF protocols (F/A-18 now and A-10C, B-52, and F-35 in the future).

A5.5. Remotely Operated Video Enhanced Receiver (ROVER). The full motion video (FMV) downlink provides the ground user the ability to gain real-time intelligence/targeting video for use. FMV is passed to ground control stations and manpacks such as the ROVER III. The ROVER III receiver system is comprised of an omnidirectional antenna, receiver/decoder/control unit, and laptop utilized to receive the transmitter data and provide real-time video feed to the user. Although only a few downlink-capable targeting pods are currently fielded, all Litening AT and Sniper XR pods will be upgraded for downlink capability in the future. Platforms capable of transmitting FMV include unmanned aerial vehicles (UAV)/remotely piloted vehicles (RPV), SCATHEVIEW C-130, P-3, AC-130, and aircraft equipped with downlink-capable targeting pods, but future Litening AT and Sniper XR pods will be downlink capable.

Attachment 6

ASOC INTELLIGENCE OPERATIONS

A6.1. ASOG Senior Intelligence Officer (SIO) Responsibilities. The ASOC SIO will oversee and ensure effective and efficient intelligence integration to ASOC operations. The SIO will ensure intelligence personnel are prepared for ASOC intelligence duty position operations. The SIO will ensure ASOC Intelligence Operators are trained with and provide other operators with the best available intelligence information and materials to enhance readiness, facilitate planning and execute assigned air-ground missions. The ASOC SIO must maintain balanced focus of both operational and tactical mission support requirements.

A6.2. ASOC SIO Duties. The ASOC SIO will:

A6.2.1. Provide tailored intelligence support based on training requirements in AFI 13-114, Volume 1, *Air Support Operations Center (ASOC) Training Program*.

A6.2.2. Establish programs with active lines of communication to all supported units to publish tailored intelligence training products for intelligence and operations personnel, such as: Intelligence briefs; Internal/External training briefs; etc.

A6.2.3. Provide intelligence support to commanders and their staffs through current, relevant intelligence products and briefings, focusing on enemy capabilities, enemy tactics, enemy deployment/employment and the threat situation in the unit's area of responsibility.

A6.2.4. Monitor Intelligence Oversight training for all Intelligence personnel in the unit.

A6.2.5. Oversee career progression and training for all intelligence personnel in the unit, including any assigned or attached intelligence Individual Mobilization Augmentee (IMA). Review every intelligence officer and enlisted performance report (OPR/EPR) and decoration produced within the unit to ensure the duties of intelligence personnel are properly reflected.