

IMPROVING DETAILED INTEGRATION IN CLOSE AIR  
SUPPORT PLANNING AND EXECUTION

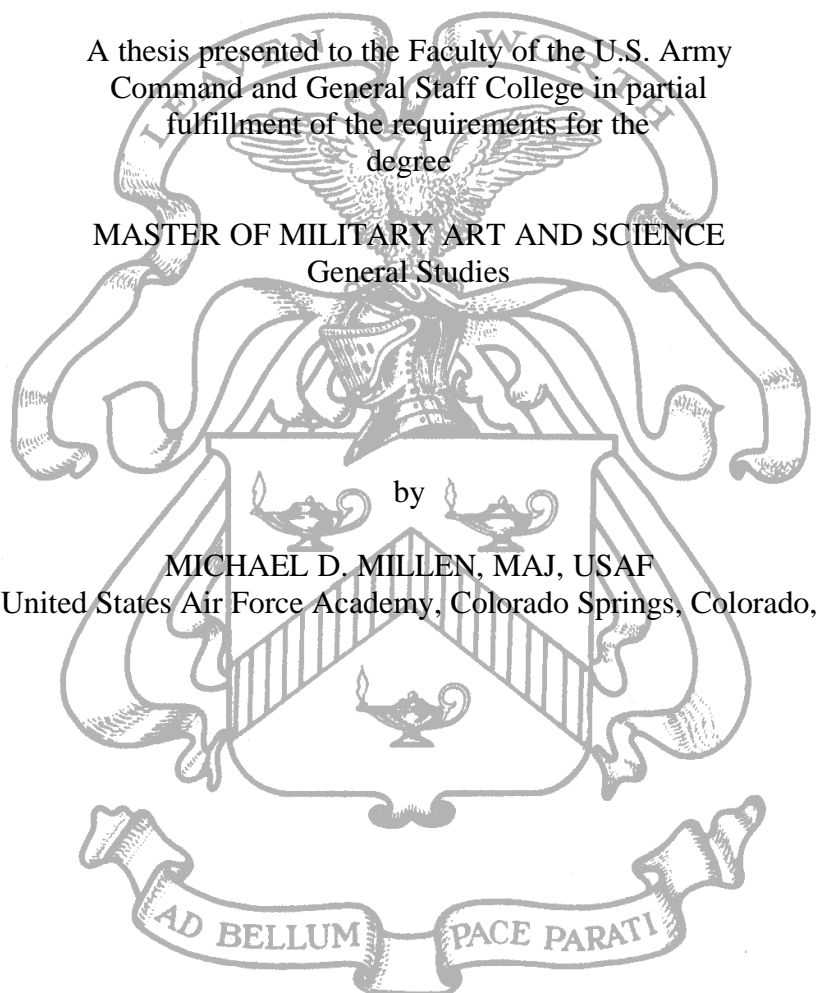
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General Studies

by

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The opinions and conclusions expressed herein are those of the student author and do not necessarily represent the views of the U.S. Army Command and General Staff College or any other governmental agency. (References to this study should include the foregoing statement.)

## ABSTRACT

IMPROVING DETAILED INTEGRATION IN CLOSE AIR SUPPORT PLANNING AND EXECUTION, by Major Michael D. Millen, USAF, 83 pages.

This study examines the current level of detailed integration in close air support (CAS) planning, with the focus on air component support of Army conventional forces, to determine if changes should be made to the current concept of operations for CAS. The results are based on interviews with numerous experienced CAS aviators with experience in Operations Iraqi Freedom and Enduring Freedom. Analyses of these interviews and current doctrine were compared with the CAS Concept of Operations (CONOPS) from recent combat operations in Iraq to determine needed changes.

Results demonstrate that a theater CAS CONOPS should include assigning forward air controller (airborne) (FAC(A)) missions to ground maneuver units early enough for liaison with the unit; that CAS planners should create a communications architecture to facilitate direct liaison between FAC(A) wings and supported ground units; and that assignment and distribution of FAC(A) missions could be decentralized to the wing level. All of these changes are in accordance with current joint and Air Force doctrine and would improve detailed integration in joint CAS.

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## ACRONYMS

AFDD	Air Force Doctrine Document
ALO	Air Liaison Officer
AO	Area of Operations
ASOC	Air Support Operations Center
ATO	Air Tasking Order
C2	Command and Control
CAOC	Combined Air Operations Center.
CAS	Close Air Support
CONOPS	Concept of Operations
FAC	Forward Air Controllers
FAC(A)	Forward Air Controller (Airborne)
FSCL	Fire Support Coordination Line
GLO	Ground Liaison Officer
JFACC	Joint Forces Air Component Commander
JP	Joint Publication
JTAC	Joint Terminal Attack Controller
KI	Killbox Interdiction
KI/CAS	Killbox Interdiction/Close Air Support
OEF-A	Operations Enduring Freedom-Afghanistan
OIF	Operation Iraqi Freedom
SPINS	Special Instructions
TACP	Tactical Air Control Party

## CHAPTER 1

### INTRODUCTION

Misty 25: Advance 10, this is Misty 25, two A-10s checking in as fragged with 30 minutes of playtime.

Advance 10 Joint Terminal Attack Controller (JTAC): Misty 25, this is Advance 10, roger. Call ready to copy Area of Operations (AO) update, and confirm that you are Forward Air Controller (FAC) qualified.

Misty 25: Misty 25 is FAC qualified, ready to copy update.

Advance 10: Friendly forces are currently approaching phase line REDS on MSR 6. We anticipate enemy forces vicinity PL 425 128. Are you able to go secure on this frequency, so I can pass you our game plan and artillery locations?

Misty 25: Affirmative, going secure.

Advance 10 (secure): Okay, Misty, we have two companies advancing along a 2-lane hardball road vicinity PL 422 113. Our artillery is currently located at PK 411 865, firing into targets vicinity PL 421 122, but they are planning to move in approximately 10 minutes to PK 428 873, and the two companies are going to split at an intersection at PL 422115, and the overall game plan is for them to.

The above fictitious exchange between the JTAC and close air support (CAS) pilot is not unusual to anyone involved in the business of CAS. A solid battlefield picture is essential to effective CAS. However, the situation update from the JTAC often takes up 10 to 20 minutes of a CAS asset's limited playtime, and the more complex the situation on the ground, the longer the situation update could take. The situation update is an essential part of CAS coordination and is critical for successful execution. However, it often takes far too long, burning precious fuel and valuable playtime that should be utilized to kill the enemy. And too often it still delivers the pilot far less information than

he would like to have in order to effectively support the ground unit assigned. This occurs for the following reasons.

The battlefield update--delivered by the JTAC--is designed to build on a pilot's knowledge of the battlefield. He gains this knowledge (in chronological order) from his wing's ground liaison officer (GLO) in his premission preparation. Once airborne, the pilot contacts the air support operations center (ASOC). The ASOC assigns the pilot to a ground maneuver unit, and gives the pilot updated--or more unit-specific--information while he is en route to the battlefield. Accordingly, the pilot should have a pretty good idea as to the ground situation in his assigned area of responsibility prior to contacting the JTAC. The situation update from the JTAC should require only minor additions or updates to the information already possessed by the CAS pilot, and should not take an inordinate amount of time. However, it has become more common than not, both in exercises and contingencies, for the CAS pilot to arrive on station having received minimal information from both the GLO and the ASOC and to rely on the situation update for the bulk of his tactical situation knowledge. This has, in fact, become the standard expectation of many CAS pilots, and is the result of a number of factors.

CAS aviators are limited in their opportunity to plan, due in part to the manner in which they are tasked for their mission. In recent operations, the distribution decision--that which determines what unit a given CAS aircraft will support--was not made until the aircraft was airborne and within radio range of the ASOC. While this late decision certainly lessened the ability to effect integrated planning with the supported unit, it was a conscious decision made with increased flexibility in mind.

An additional impediment to planning has been the method in which forward air controllers (airborne) (FAC(A)s) are perceived and tasked. In recent operations, FAC(A) missions were tasked by the ASOC no differently than CAS designated missions. Often, the first question asked to a CAS flight at check-in is, Are you FAC(A) qualified? The term FAC(A) is now too often seen as a qualification rather than a mission. Doctrinally, he is an extension of the tactical air control party (TACP) and hence the army maneuver unit commander. However, in practice, he is too often viewed as an enabler, a pilot qualified to clear other aircraft to drop ordnance, rather than the truly integrated force multiplier that doctrine depicts. This demonstrates either an inability or an unwillingness to conduct detailed integrated CAS planning.

CAS aviators--both attack pilots and forward air controllers (FACs)--take great pride in their ability to arrive on station with less than perfect or no information, receive a briefing on the ground scheme of maneuver, and employ airpower in support of friendly troops. It is a tremendous capability, and it is the benchmark for all CAS training and the standard that all CAS pilots must achieve to be effective on the battlefield. The nature of CAS requires that it be flexible and agile. Unfortunately, many CAS pilots have taken this capability and made it their standard, using the flawed reasoning that since they are able to execute the “pickup game,” there is nothing to be gained by planning. Nothing could be further from the truth.

Joint Publication (JP) 3-09.3, *Joint Tactics, Techniques and Procedures for Close Air Support (CAS)*, states: “Effective CAS relies on thorough, coherent planning and detailed integration of air support into ground operations. The ability to mass joint fire support at a decisive point and to provide the supporting fires needed to achieve the

commander's objectives is made possible through detailed integration with ground forces. From a planner's perspective, the preferred use of a CAS asset is to have it pre-planned and pre-briefed" (Chairman of the Joint Chiefs of Staff, 2003a, I-6). However, the current operational CAS architecture does not enable integrated, in-depth joint CAS planning. In many instances in CAS concepts, doctrine, and execution, the desire for flexibility has led to a CAS architecture that is very agile and responsive, but in which detailed planning is virtually impossible. Agility and responsiveness are necessary attributes for any effective CAS system, but the optimum system is one that maintains those capabilities and enables as much planning as is feasible.

This is not a new concept, and the level of detailed integrated planning between the Army and Air Force has varied from conflict to conflict, often dependant on the CAS viewpoints, current force structure, the need for integrated planning, and the prevailing attitudes within the two services.

It is crucial to determine the need for and impact of an architecture that facilitates detailed, integrated CAS planning for several reasons. As noted above, the preferred employment of CAS is for it to be preplanned and prebriefed. While it is a rare luxury to plan and brief CAS in minute detail with the supported ground forces, a pilot should make every effort to do as much planning and preparing as possible before he steps out the door to his aircraft. It is unreasonable to expect him to effectively plan if he does not have the means by which to do so.

The nature of CAS requires that it be flexible and agile. One of the great strengths of CAS is its ability to respond to a request for fire support from any unit anywhere on the battlefield with little advance notice. The goal of this research is to determine if there

is a way to increase detailed, integrated CAS planning while maintaining the advantages inherent in the US joint CAS doctrine.

### Proposed Research Question

Primary Research Question: Should the Air Force modify its current CAS concept of operations (CONOPS) at the operational level to better facilitate detailed integrated CAS planning at the tactical level?

The CAS CONOPS refers to the tool by which the joint forces air component commander (JFACC) executes doctrine at the operational level. An official document created for a campaign or operation, the CAS CONOPS describes how CAS sorties will be tasked by the air component, distributed by the land component, and employed by the JTAC. It provides detailed information on the CAS architecture in a given theater; tells attack pilots, FACs, and JTACs what to expect on a CAS sortie; and helps tailor planning for CAS players at all levels. It is, in effect, the operational-level CAS plan. Since each operation's CAS CONOPS is tailored to that operation, no two are alike, and the CONOPS is adaptable and may change several times during a campaign. However, while CONOPS change over time, the overarching concepts reflect the current conventional wisdom in command and control (C2) of CAS. In discussions of current CONOPS, this research will utilize the concepts from the CONOPS from recent operations in Iraq.

In this examination of CAS concepts, it is critical to thoroughly understand current joint doctrine at the operational and tactical levels of war and to compare it to the implementation as directed by the CONOPS. This comparison leads directly to several issues that will frame the primary research question and enable that question to be answered.

First, since the primary research question and current CAS doctrine discuss “detailed integrated CAS planning” at the tactical level, what defines sufficient detail and integration in planning? A case could certainly be made that the mere existence of the Army and Air Force agencies involved in CAS fulfills this requirement. This answer will be pursued by examining doctrine for both direction and intent, by examining various degrees of integrated planning in Air Force history and the results, and by interviewing CAS experts and customers.

Second, what are the potential pros and cons to increasing the level of integration in CAS planning? While, at first glance, increased integration and more thorough planning may seem to have only positive impacts, it would be shortsighted and foolish to ignore the potential costs of this approach. Integrated planning takes time and effort, and if the anticipated results do not justify the energy spent, then the proposal is doomed to failure. If increasing integrated planning results in an objectionable loss of flexibility (or some other measure of effectiveness) in air operations, such a solution is unacceptable. Only an in-depth analysis of the pros and cons will lead to a result that is balanced and suitable.

Finally, once the desired product is determined and the pros and cons of changing the level of integration, is there a method of implementation that will increase the level of integration with minimum impact on other positive characteristics of CAS? If changes are determined to be necessary, those changes must be quantified, either by redefining the CAS architecture or by making changes to CAS doctrine or CONOPS. Once changes are quantified, the result must be scrutinized to determine if it will be effective in practice and if it is realistic in view of current and anticipated near-term future CAS operations.

## Key Terms and Definitions

Air Liaison Officer (ALO). The senior TACP member attached to a ground unit who functions as the primary advisor to the ground commander on air power. An ALO is usually an aeronautically rated officer (Chairman of the Joint Chiefs of Staff 2001, 21).

Allocation (Air). The translation of the air apportionment decision into total numbers of sorties by aircraft type available for each operation or task (Chairman of the Joint Chiefs of Staff 2001, 31).

Apportionment (Air). The determination and assignment of the total expected effort by percentage and or by priority that should be devoted to the various air operations for a given period of time (Chairman of the Joint Chiefs of Staff 2001, 41).

Close Air Support (CAS). Air action by fixed-wing or rotary-wing aircraft against hostile targets that are in close proximity to friendly forces and that require detailed integration of each air mission with the fire and movement of those forces (Chairman of the Joint Chiefs of Staff 2001, 90).

Distribution. The arrangement of troops for any purpose, such as a battle, march, or maneuver. When referring to CAS distribution, refers to how allocated sorties are distributed to Army units (Chairman of the Joint Chiefs of Staff 2001, 163).

Fire Support Coordination Line (FSCL). A fire support coordination measure that is developed to enable the expeditious attack of targets beyond the measure. Short of the FSCL, air-to-surface and surface-to-surface fires are controlled by the appropriate land commander. Forces attacking long of the FSCL must inform all affected commanders in order to avoid fratricide (Chairman of the Joint Chiefs of Staff 2001, 199).

Forward Air Controller (Airborne) or FAC(A). A specifically trained and qualified aviation officer who exercises control from the air of aircraft engaged in CAS of ground troops. The FAC is normally an airborne extension of the TACP (Chairman of the Joint Chiefs of Staff 2001, 211).

Ground Liaison Officer (GLO). An officer trained in offensive air support activities. The GLOs are normally organized into parties under the control of the appropriate Army commander to provide liaison to Air Force and naval units engaged in training and combat operations (Chairman of the Joint Chiefs of Staff 2001, 226).

Joint Terminal Attack Controller (JTAC). A qualified (certified) Service member who, from a forward position, directs the action of combat aircraft engaged in CAS and other offensive air operation. A qualified and current JTAC will be recognized across the Department of Defense as capable and authorized to perform terminal attack control (Chairman of the Joint Chiefs of Staff 2001, 290-1).

Tactical Air Control Party (TACP). A subordinate operation component of a tactical air control system designed to provide air liaison to land forces and for the control of aircraft (Chairman of the Joint Chiefs of Staff 2001, 317).

#### Limitations

The research products and conclusions will be kept at the unclassified level, since a classified paper requires specific controls that limit its dissemination, as contingency operations classify their CONOPS at the secret level, this would appear to present a problem. However, the concepts behind the CONOPS are unclassified, and this research will work with the concepts themselves, and not the operation-specific details, which are classified.

The conclusions will attempt to avoid recommendations to make major changes to doctrine. This is mainly for two reasons. The primary CAS doctrine document, JP 3-09.3, applies to support of conventional and unconventional forces belonging to all services, while the focus of this research is support of Army land forces. Additionally, this research is being conducted immediately after the release of a revised version of JP 3-09.3. Changes, even minor ones, are unlikely to be made to this document in the next two years. Therefore, the conclusions will focus more on how the Air Force implements its doctrine rather than the doctrine itself, and will focus on what aspects can be fixed today within the current joint framework.

#### Delimitations

This research will focus only on possible changes that are within the control of the Air Force. CAS experts often bring up the duties of the GLO in discussions of increased integration and planning in CAS. The GLO is an Army officer assigned to provide liaison to Air Force and naval units engaged in training and combat operations. However, despite the fact that the GLO plays a part in CAS planning and integration, he is not an Air Force (or air component) asset and neither JP 3-09 nor JP 3-09.3 delineates his responsibilities. Therefore, this research will include him, and the role he plays in joint CAS, but it will assume that his role will not change significantly in the near future.

While the term “joint CAS” represents air forces from any component in the US Armed Forces supporting land forces from any component, this research is much more limited in scope. It centers on Air Force CAS in support of the Army conventional land forces, and assumes the use of either the doctrinal air request architecture and procedures, or a similar derivative. The research was approached from the viewpoint that any

conclusions drawn must apply similarly to all services' aircraft supporting conventional Army land forces within the Army and Air Force C2 architecture.

Finally, this research focuses on present operations, and potential operations in the very near future, five to ten years. It focuses on legacy aircraft and only systems that are currently in production. It must be noted, however, that in most cases the concepts addressed are not aircraft-dependant, and the conclusions reached should remain valid until such time as US CAS doctrine changes significantly.

### Significance

This research is important for several reasons. The primary reason is that the latest version of joint CAS doctrine, JP 3-09.3 dated 3 September 2003, describes a desired level of integration in planning that the current Army and Air Force architecture does not enable, or even permit, under the current CONOPS. Thorough research must determine whether or not the level described in CAS doctrine is possible and, if so, what methods are worth pursuing in an attempt to match CONOPS to doctrine.

Anecdotal evidence from CAS aircrews from multiple services flying in support of Army conventional forces in Operations Enduring Freedom-Afghanistan (OEF-A) and Operation Iraqi Freedom (OIF) shows frustration with the amount of information available for premission planning. While these pilots understood the fluid nature of CAS, all seemed to think it was possible to better effect integrated planning at the tactical level.

Prior to conducting research to determine the extent of the problem and the possible solutions, it is critical to first determine what has already been researched and written about this topic. This will be accomplished in the form of a literature review, examining CAS doctrine, books, published papers, periodical articles, and interviews on

improving CAS capability and the subject of integration in CAS. This review will be accomplished in chapter 2.

## CHAPTER 2

### LITERATURE REVIEW

The war of words between the Army and Air Force about CAS has its roots in World War I and has continued almost unabated until the present. The argument is often very emotional and the perceived problems range from priorities to capabilities to training to technology to doctrine. Hence, much has been written over the years about CAS effectiveness, challenges, and shortcomings. Many writers offer various approaches to improving CAS capability, and all of the reasonable solutions would fall under the heading “improve detailed integration.” Since this research looks at the validity of changing the operational-level construct of CAS to better facilitate detailed integration at the tactical level, it is important to look at the variety of proposed improvements found in various media.

This review will include current CAS doctrine, books on CAS, and numerous periodicals that suggest improvements to CAS capability. CAS doctrine will provide a background for later reviews and will also serve to define for the reader the delimitation from chapter 1 that any conclusion or recommendation in this thesis will remain within the bounds of current CAS doctrine. More importantly, however, is the fact that the current CAS joint publication JP 3-09.3 was published in September 2003. Hence, the changes instituted in the new publication reflect the most current CAS conventional wisdom. Numerous books on CAS are included, primarily to get a slightly detached view of how CAS pilots viewed “detailed integration” in Southeast Asia. Southeast Asia was selected because it was the first conflict in which the US effectively and extensively

employed “detailed integration” including ALOs, a FAC(A)s and techniques resembling current CAS doctrine. Additionally, this conflict is sufficiently removed from the present that it can be seen as a different generation’s interpretation of current doctrine, as it applies to integration of air and ground assets. Finally, several academic papers and a representative sampling of various articles from military periodicals are included. The review, in its totality, should give the reader a sufficient view of the opinions of experts with respect to improving CAS integration.

### CAS Doctrine

CAS is discussed in numerous joint and Air Force doctrine manuals, including JP 3-09, *Doctrine for Joint Fire Support*, and Air Force Doctrine Document (AFDD) 2-1.3, *Counterland*. However, only one, the former, addresses detailed tactical integration in CAS and is therefore appropriate for literary review.

JP 3-09.3, *Joint Tactics, Techniques, and Procedures for Close Air Support (CAS)*, is dated 3 September 2003, and reflects the most current views of the joint CAS community. It reflects some of the lessons learned from OEF-A, but was submitted for coordination prior to OIF. While the new publication has been noticeably overhauled from the previous edition dated, December 1995, many concepts remain unchanged, and are merely better delineated in the new edition.

Among the concepts that exist in the 1 December 1995 publication and were transferred, almost word for word, into the new version are the definition of CAS, the concepts of preplanned and immediate CAS, and the purpose of the FAC(A). CAS is defined in both publications as action against targets in close proximity to friendly forces and requiring detailed integration with those forces (Chairman of the Joint Chiefs of Staff

2003a, I-1). Additionally, it is defined as a tactical level mission with operational level linkage through the allocation and apportionment process. The concepts and definitions of preplanned and immediate CAS are unchanged from the last edition to the current, preplanned as those requirements foreseen early enough to be included in the Air Tasking Order (ATO), immediate as those requirements that occur too late to be included in the ATO (Chairman of the Joint Chiefs of Staff 2003a, xii). Finally, the role of the FAC(A) remains unchanged, that of an extension of the TACP, and ultimately an extension of the ground commander (Chairman of the Joint Chiefs of Staff 2003a, II-10).

Major changes in the new JP pertinent to this research include the inclusion and definition of JTAC, update to the conditions for effective CAS, extensive expansion of the CAS planning section, and detailed delineation of FAC(A) responsibilities (Chairman of the Joint Chiefs of Staff 2003a, iii-iv).

The delineation of the JTAC is an attempt to ensure that each service's terminal attack controllers have the same baseline of training and current experience. The JTAC is defined as a qualified service member recognized by the Department of Defense as capable and authorized to perform terminal attack control. This is the beginning of an attempt to standardize, across all four services, the requirements and currencies of personnel qualified to control air attacks (Chairman of the Joint Chiefs of Staff 2003a, ix).

The conditions for effective CAS contain one major change, the addition of the condition of "planning and integration" in the list of seven items. Included in the addition is the assertion that "effective CAS relies on thorough, coherent planning and detailed integration of air support into ground operations. The ability to . . . provide the supporting

fires needed to achieve the commander's objectives is made possible through detailed integration with ground forces. From a planner's perspective the preferred use of a CAS asset is to have it pre-planned and pre-briefed" (Chairman of the Joint Chiefs of Staff 2003a, I-6). The new edition of JP 3-09.3 goes into much greater detail with regard to CAS planning. It includes a CAS decision-making process to assist planners, ALOs, and JTACs, in ensuring they address all aspects of air support when developing a plan to support the maneuver unit commander (Chairman of the Joint Chiefs of Staff 2003a, xiii). Additionally, this edition makes clear the roles and responsibilities of the FAC(A), that he is not only an extension of the TACP, but that he must ensure that he makes every effort to contact the unit he will support to conduct detailed pre-mission planning (Chairman of the Joint Chiefs of Staff 2003a, III-30).

Overall, the changes in the new edition of JP 3-09.3 with reference to effecting "detailed integration" in CAS planning reflect a desire to improve integration at the tactical level by giving the TACP a detailed planning tool similar to the Army's military decision making process and opening the door for the Army to train its controllers under the JTAC umbrella. More importantly, the September 2003 edition makes it very clear that the responsibility for ensuring detailed integration in the planning process falls to the lowest level, with the ALO and the FAC(A) accountable for knowing in great detail the ground scheme of maneuver and commander's plan for CAS (Chairman of the Joint Chiefs of Staff 2003a, III-1).

### Books

The war in Southeast Asia affords a unique opportunity to look at CAS for several reasons. The Air Force's CAS doctrine and Army and Air Force procedures utilized in

Southeast Asia are nearly identical to those in use today. The war took place over a relatively long period, allowing tactics, techniques, and procedures to be tested by a “trial and error” process, a “luxury” that has not been afforded since. Additionally, the modern-day version of the TACP, the ground forward air control and the FAC(A) all came of age during this conflict (Schlight 1988, 293-4). Finally, and most importantly with regard to this research, the Air Force’s methods of detailed integration in planning and Air Force and Army interaction were significantly different at the tactical level than they have been since. Also noteworthy is the fact that nearly twenty to thirty years lapsed between the end of American CAS in Southeast Asia and the start of the next significant major CAS experience campaign, Operation Desert Storm Iraqi Freedom.

In *Case Studies in the Development of Close Air Support*, John J. Sbrega’s chapter “Southeast Asia” discusses the creation of the modern-day Tactical Air Control System and the rebirth of the airborne FAC. In Southeast Asia, unlike conflicts since, the FAC(A) was assigned to a flying squadron, a Tactical Air Support Squadron, but attached to an Army maneuver unit as part of the TACP. In this era, the FAC(A) truly was an extension of the ground commander, and since he planned alongside, and lived with, the supported unit, his planning was quite detailed and wholly integrated (Cooling 1990, 390-430). As to what made CAS successful in Southeast Asia, Sbrega describes the FAC(A)s in Southeast Asia under these arrangements as being “at the heart of the close air support system in South Vietnam” (Cooling 1990, 433). In the final chapter, “Retrospect” by I. B. Holley, Jr., the author makes some recommendations, but does not really hammer focus on any central point home. He notes that the solution lies not in interservice squabbles but in getting the assets organized and procedures perfected. He notes the importance of

CAS-specific aircraft, but puts forth arguments both pro and con. He talks about the need for positive identification of friendlies in order to prevent fratricide, but states that overt measures are not likely the answer in future conflicts. His only mention of tactical-level integration in this chapter of conclusions consists of two paragraphs. In one he notes the importance of camaraderie between CAS pilots and supported troops, and in the other he advocates a look into avoiding the use of trained pilots in the ground FAC and ALO role (and using, instead, “less expensive” non pilot officers) (Cooling 1990, 535-552).

While there are many other books on CAS in Southeast Asia, the assessment of CAS success does not change significantly from book to book. The five books examined here in depth--*Case Studies in the Development of Close Air Support* by Cooling; *Thunder From Above* by John Morocco; *The War in South Vietnam: The Years of the Offensive 1965-1968* by Schlight; *Hit My Smoke* by Jan Churchill; and *Mosquitos to Wolves: The Evolution of the Airborne Forward Air Controller*--varied vary little in their evaluation of CAS in Southeast Asia. All made it clear that the FAC(A), and more specifically the slow FAC, with his integral knowledge of the ground commander’s plan and force array, was the linchpin of CAS in South Vietnam. They attribute the FAC’s success primarily to his ability to maintain an integral knowledge of the ground commander’s plan and force array, and to translate that knowledge and understanding into fire support in the form of CAS. While they also acknowledge the importance of well-trained CAS personnel and dedicated CAS aircraft in the form of the A-1 Skyraider, the bulk of the credit goes to the FAC.

## Papers

In “The Close-Air-Support Imperative,” a host of Air Force and Army writers led by Brigadier General David L. Grange claim that the US military is severely lacking in effective CAS for a number of reasons. The aircraft performing the mission are deficient in their capability to perform the FAC and attack role. Additionally, the numbers of trained and equipped FAC(A)s and ground FACs (JTACs) are not sufficient for the requirements. Finally, training in CAS tactics, techniques, and procedures is lacking in today’s Air Force. The root cause of all of these problems, they say, is that CAS has taken a back seat to precision-guided munitions and preplanned aerial fires. These precision munitions do not work well in CAS and are incapable of hitting moving targets, according to the authors. They offer as a solution the conversion of all OA-10As to two-seat OA-10Bs to enhance FAC(A) capability, and transforming the ALO career field from qualified aviators to career non-flying ground controllers. Fix these key pieces of the CAS puzzle, they claimstate, and you will fix CAS (Grange et al. 2002, 14-15).

A group of Air Force, Navy, and Marine Corps pilots discuss current (prior to OIF) joint CAS shortfalls in their article “The Tower of Babel: Joint Close Air Support Performance at the Operational Level” about the CAS fight in Afghanistan. They point to a lack of information on the ground fight, poor C2, lack of adherence to joint CAS doctrine, and a general confusion and lack of cohesion in the CAS fight.

Recommendations from this group include ensuring that all CAS operators fully understand the ground commander’s intent and the ground scheme of maneuver; ensure operational planners design airspace control measures with the ground component commander’s intent in mind; improve C2 plan and execution; and adhere to joint

doctrine. While they do not prioritize their recommendations, it appears from the tone of the article that C2 issues rank first, improved integration ranks second, and adherence to joint doctrine third in priority of things which would have the most impact when fixed (Jansen et al. 2003, 36-39).

Lieutenant Colonel William Napolitano, in his research project “Diverging Trends in Close Air Support,” notes that while the future visions of all the services point to greater reliance and interdependence of all ground forces on joint fires, including CAS, while the Air Force is allowing shortages of manning and equipment in career fields critical to CAS, including enlisted JTACs, ALOs, combat controllers, and the number of FAC(A)s. His solutions are twofold. For ground controllers, he advocates increasing the numbers of all Air Force JTAC career fields, qualifying Army enlisted fire supporters as JTACs, filling battalion ALO positions with enlisted battalion ALOs, and filling brigade and above ALO positions with rated fighter and bomber personnel only. On the flying side he supports increasing FAC(A) training across the board, and increasing the number of OA-10 FAC(A) qualified pilots in A-10 squadrons (Napolitano 2003, 19-21).

An article from *Armed Forces Journal International* titled “Rethinking Close Air Support” provides an executive summary of the results of a five-year-long Joint Test and Evaluation of CAS. The results noted several problems with the current performance of CAS in all services, and found the primary cause to be an inability or unwillingness to effectively plan CAS and a lack of detailed integration in the process. The lack of proper integration in CAS planning by all services often resulted in extensive coordination time, fewer attacks, and (when attacks were successful) a failure to impact the overall battle.

These findings drove many of the changes in the new JP 3-09.3 with respect to planning and integration (Brown 2002, 20-22).

Comments from several Army field artillerymen reflect opinions on CAS from Operation Enduring Freedom, specifically Operation Anaconda, to include Major General Franklin Hagenbeck, Commanding General for Anaconda; Lieutenant Colonel Christopher Bentley, Assistant Fire Support Coordinator for Anaconda; and Colonel Frank Wiercinski, Task Force Rakkasan Commander for Anaconda. The comments, when compared, contain a fairly consistent theme about the conduct of CAS in OEF-A, and about the state of CAS overall. They felt that CAS was less responsive than it should have been, that precision-guided munitions were ineffective against moving targets, that ATO timing requirements hindered effective CAS, and that there were not enough qualified controllers on the battlefield (McElroy 2002; and Bentley 2002, 13-14). Their combined recommendations were to expand the pool of available controllers by training Army forward observers as JTACs and making the ATO flexible enough to respond to the modern operating environment (McElroy 2002; and Bentley 2002, 13). Of note is the Air Force's response, which said that the responsibility for CAS failings in Anaconda was a lack of integrated planning. According to combined air operations center (CAOC) personnel interviewed by Rebecca Grant in *Air Force Magazine*, the Army planners did not notify the Air Force of the operation until twenty-four hours prior to the execution. They point to a lack of planning for CAS on the part of an Army that was looking for a battle victory without external help and place the blame squarely on Army planners (Grant 2003). Given all of those viewpoints, it appears that there is a noted lack of interservice cooperation where CAS is concerned.

In his thesis “From Desert Storm to 2025: Close Air Support in the 21st Century,” Major Leon Elsarelli concludes that the key to CAS in the twenty-first century is flexibility. His version of flexibility, however, is not one of a multirole fighter capable of many missions, but excelling at none (Elsarelli 1998, 30). Flexibility, he says, is maintaining a variety of specialized aircraft, each excelling at one portion of the spectrum, thereby giving commanders the ability to employ the appropriate aircraft in its designated mission. CAS is the perfect example, and the A-10, while unmatched in the CAS arena, is also capable of capably performing interdiction, combat search and rescue, and offensive counterair, if required. In his view, the Air Force must maintain a designated CAS platform to be viable in the CAS world of the twenty-first century, either with major upgrades to the A-10 or by building an entirely new aircraft for CAS (Elsarelli 1998, 34-5).

Articles and interviews involving personnel at the tactical level of warfare tend to indicate that the problems with CAS should be solved by better and more integrated planning, training emphasis, force structure changes or better C2 at the operational level. Interviews with and articles by more senior officers reflect a different tone.

A 1998 article by retired Air Force General Mike Hall, Theater ALO for Central Command in Desert Storm and CAS pilot, states, “Technology has provided solutions for many traditional CAS challenges, reducing the requirement for mission specialists. Cumbersome voice transmissions are being replaced by the beep of the secure data link modem. . . . Advanced avionics depict target location more accurately than the traditional ‘smoke’ mark. . . . The challenge now is to recognize that technology has made traditional [CAS] organization obsolete” (Hall 1998, 94). His viewpoint is that the digital

battlefield will increase situational awareness to the point that the detailed planning and integration once required is not as important as it once was, and that dedicated CAS assets will no longer be required in an era of precise targeting and digital communications (Hall 1998, 94).

An interview with Air Force Chief of Staff, General John Jumper, mirrors these viewpoints, that one of the keys to success in future CAS and interdiction is the ability to quickly acquire targets, digitally pass the location to an attack aircraft, and digitally approves the aircraft to employ ordnance on the target. The aircraft then has all the information it needs to service the target. The goal is to minimize the time for those things to happen by having all services interacting via a common operating picture, whereby all commanders on the battlefield have access to the actions of every other player present (Roos 2002, 44-46). According to these senior officers, these advances are the best way to enable successful CAS operations in the future.

### Conclusions

Many different viewpoints exist on the best way to improve CAS capabilities at the tactical level. At the tactical level of warfare, most conclude that the answer lies in the training, the lack of integrated planning, force structure inadequacies, or C2 shortfalls. Some Army officers point to operational-level problems, ATO inflexibility, and inadequate JTACs on the battlefield. At the senior leader Air Force level, the focus is on technological improvements to increase situational awareness across the battlefield, decrease the time from target acquisition to destruction, and thereby make CAS simpler to plan, safer to employ, and more responsive in execution.

Having determined what has been written on this subject, it is necessary to focus the research desired and define the methods that are to be utilized to find the answers to the research questions. That methodology will be defined and described in chapter 3.

## CHAPTER 3

### RESEARCH METHODOLOGY

#### Introduction

The primary research question of this thesis is: Should the Air Force modify its current CAS CONOPS at the operational level to better facilitate detailed integration at the tactical level? In determining the answer to this question, and in conjunction with the secondary research questions in chapter 1, the author will utilize the following methodology: (1) determine the users' desired effects of detailed integration; (2) research the doctrinal intent of detailed integration; (3) determine which user-desired effects match both current CAS doctrine and doctrinal intent; (4) compare those desired effects that fall within the bounds of current doctrine to the current operational-level CAS CONOPS; (5) determine solutions to this shortfall, and weigh the costs versus the benefits; and (6) develop logical conclusions to the primary research question and present recommendations.

Prior to starting the research, the term "user" must be defined. Due to the delimitation of finding solutions that are within the control of the Air Force and to the fact that the primary users of this doctrine are from the air component, the users are defined here as aircrews and ALOs with the responsibility for executing CAS doctrine and CONOPS.

#### Research Desired Level of Integration

The first task in this research is to determine what defines sufficient detail and integration in CAS operations. This research will be accomplished by interviewing CAS players at various levels in the US's most recent operations, OIF and OEF-A. The

interviewees will consist of CAS pilots--attack pilots and FAC[A]), JTACs, and ALOs. The purpose of these interviews is to determine: (1) how these players define the doctrinal concept of detailed integration, (2) what they think about the level of detailed integration in OIF and OEF-A, and (3) what, if any, changes they think should be made to the way the US conducts CAS operations to facilitate detailed, integrated operations. Phone and personal interviews were conducted with aircrews and ALOs with recent combat experience. The interview questions are found in appendix A. The author will utilize the interviews not to gain percentages of support for various opinions or recommended changes, but to get a general consensus from these experts as to problems with the current CAS CONOPS and its implementation. The product of this research will be defined as the aircrew and ALO recommendations.

#### Defining CAS Doctrinal Intent for Detailed Integration

Determining doctrinal intent is not a simple matter. Numerous joint and service publications have portions that are can be considered CAS doctrine. Because of this fact, an in-depth assessment of these doctrine publications must be performed, and the results compiled in order to determine exactly what doctrine expects from aircrews and ALOs with respect to detailed integration.

To determine the expectations of doctrine, the research will first examine CAS tactical-level doctrine, found in several joint and Air Force publications, to determine what CAS aircrews and ALOs should expect in the arena of detailed integration in planning and execution. Next, CAS operational-level doctrine will be examined in the same way, as well as to determine what operational-level organizations should do to enable detailed integration to occur at the tactical level. Finally, the OIF CAS CONOPS

will be examined in depth, to determine if this, the most current, CONOPS is complete and whether it sufficiently supports US doctrine for CAS. The product of this research will be referred to as doctrinal intent of CAS doctrine.

### Comparing Aircrew and ALO

#### Recommendations with CAS Doctrine

Since this research focuses on how to implement current doctrine, rather than the doctrine itself, the aircrew and ALO recommendations developed from the previous sections must be compared with current doctrine to determine if the effect is possible without a doctrinal change. Recommendations determined to be incompatible with current doctrine will be noted but not further explored in this thesis. Recommendations determined to be compatible with the current doctrine will be explored and will also be contrasted, for information purposes, to the doctrinal intent of detailed integration. Additionally, any facets of doctrinal intent of CAS doctrine that are not found in current concepts of operation--and that have not been brought out by user-desired effects--will also be explored by further research. The product of this portion of research will be deemed “recommendations within doctrinal limits.”

#### Recommendations Versus Current CAS CONOPS

This research will take the recommendations within doctrinal limits and compare those effects with a recent theater CAS CONOPS. The portions of this CAS CONOPS utilized will be unclassified and will cover only the operational concepts that define the modern CAS system. It will not be a complete CONOPS, but will include the concepts of the operational and tactical-level CAS system that relate directly or indirectly to detailed

integration. This is the descriptive CONOPS that will be contrasted with the recommendations.

Each recommendation developed in previous research will be compared with the CONOPS to determine if the current CONOPS supports the desired effect. If so, the desired effect will be noted, but not further explored. Only cases in which the desired change is not supported by the current CONOPS will be forwarded for further research. The product(s) of this research will be deemed desired changes to CONOPS.

#### Developing Recommended Changes to CONOPS

This research will focus on developing potential changes to the current CONOPS to produce the desired effects established in earlier research. This will involve developing one or two simple solutions that will produce the desired effect(s), determining the pros and cons of each option, comparing, and contrasting them. This will determine the advantages, disadvantages, and costs for each of the potential solutions.

The end product of this research in its entirety will be potential changes, with pros and cons, to the current CAS CONOPS to gain effects desired by CAS participants. As noted, all potential changes will fall within current doctrine. Using a qualitative evaluation, the author will then make recommendations in the final chapter of this thesis as to whether or not the Air Force should modify the current CAS CONOPS at the operational level to better facilitate detailed integrated CAS planning at the tactical level.

## CHAPTER 4

### ANALYSIS

This chapter will conduct analysis according to the methodology described in chapter 3. Using interviews, the author will determine what CAS aircrews and ALOs view as the desired level of integration in CAS planning and execution.

Next an in-depth analysis of CAS doctrine is required, to determine how joint and Air Force doctrine view the concept of detailed integration and what precepts and guidelines that doctrine directs in CAS planning and also to determine if the integration desired by the CAS pilots and ALOs interviewed is supported by doctrine.

Finally, the current CAS CONOPS will be examined to determine if it supports the CAS pilots' and ALOs' recommendations as to the desired level of integration for CAS planning and execution.

#### Aircrew and ALO Desired

##### Level of Integration

While the ultimate user of CAS is the supported ground unit commander--in the context of this thesis, the Army maneuver unit commander--of equal importance is the pilot or aircrew executing CAS within the constraints of joint and Air Force doctrine and the theater CONOPS. Some might argue that the aircrews are the most important user of CAS doctrine because, while the ground unit commander knows very clearly the effects he wants from CAS, it is the aircrew that must ensure that the effect happens, and it is the doctrine that enables him to gain those effects. While the type of CAS effects desired rarely change over time, and are not significantly affected by joint CAS doctrine, the ability to best achieve these effects does change. Thus, the user, as defined in chapter 2, is

defined here as aircrews and ALOs with the responsibility for executing CAS doctrine and CONOPS.

Numerous interviews conducted with CAS aircrews with OIF experience revealed varying opinions on detailed integration in recent conflicts, but there was consensus on several important items as they relate to CAS doctrine, the CONOPS and detailed integration (US Air Force 2004a, 2004b, 2004c, Walton 2004). The first was related to opinions on detailed integration and how the concept relates to CAS versus FAC(A) sorties. The second was what type of information is reasonable to expect on those type sorties. The final was the aircrew consensus on how well that was set up and executed in OIF.

CAS aircrew opinions were very consistent when responding to how detailed integration in planning relates to different types of sorties. While CAS pilots would prefer to walk out the door on a CAS sortie with extensive and detailed information about the supported ground unit, they also realize that that is an unrealistic expectation. They note that CAS is a flexible mission, and that to be agile and flexible they must be prepared to employ anywhere on the battlefield, for any number of ground maneuver units, and in multiple roles. In OIF, many pilots took off on CAS missions knowing they must be ready to perform CAS, killbox interdiction (KI), strike control and reconnaissance, and combat search and rescue in either the V Corps or First Marine Expeditionary Force AO. They agreed that the size of the AO, the need for inherent flexibility, and the possibility of various roles on a single sortie limits the amount of detailed integration an aircrew can perform or needs to perform. However, they also noted that the requirements change

significantly when tasked with a FAC(A) mission (US Air Force 2004a, 2004b, 2004c, Walton 2004).

All the FAC(A)s interviewed were in agreement that the FAC(A) requirements for detailed integration, both in planning and execution, are significantly different than for a simple CAS sortie. While a CAS or counterland campaign gains much of its strength and efficiency by maximizing flexibility and agility, this does not relieve the air component of its responsibility to perform detailed integration in planning and execution for CAS. The FAC(A) is the conduit by which this detailed integration takes place. On a modern battlefield, nearly any strike mission can be re-tasked airborne and sent to perform CAS. The FAC(A) must understand enough about the supported ground unit's current situation, plan, and intent for CAS that he can utilize CAS aircraft in an expeditious fashion. While the FAC(A) may have extensive amounts of detailed information about his ground forces, he need only pass enough information to CAS aircraft so that they can employ their ordnance safely and effectively in order to support the ground commander. As a general rule, the more detailed the FAC(A)'s knowledge, the less information he will have to pass to the CAS aircraft for them to employ effectively. This enables him to utilize more aircraft in a given time period, thereby striking more targets and increasing CAS efficiency and effectiveness. At the end of the day, the ability to maximize the flexibility and agility currently needed in the counterland battle relies on the detailed knowledge of the FAC(A) for the CAS portion to be successful and efficient (US Air Force 2004a, 2004b, 2004c, Walton 2004).

The second issue involved specifically what type of information, and how much, is reasonable to expect to have prior to departing on a CAS or FAC(A) sortie. Most pilots

stated that while more detail is better, they were more than willing to launch on a CAS mission with minimal friendly GOB information; for example, FSCL, standard communications information and approximate forward line of own troops. Most had done so on numerous occasions in OIF. However, the information requirements were completely different for a FAC(A) sortie. Nearly all thought it appropriate and reasonable to expect to have the following information about the supported ground unit during the mission planning prior to the sortie: supported division; friendly GOB (locations, direction of movement, plan, objective, priority targets) down to brigade; friendly GOB (location, objectives) down to battalion (as applicable) for the brigade with CAS priority for the FAC(A)'s time-on-target; and callsigns and frequencies for TACPs down to brigade level (US Air Force 2004a, 2004b, 2004c, Walton 2004). While this might seem like a lot of information, the information should be available and--with currently available communications technology--communicable to the FAC(A)'s location during his mission planning. This does presume that the ASOC makes a decision as to what unit that the FAC(A) will support prior to the FAC(A)'s mission planning, and communicates that information to him. This did not happen in OIF, but the feasibility of doing so will be addressed in the analysis of current CAS doctrine (US Air Force 2004a, 2004b, 2004c, Walton 2004).

Numerous OIF ALOs from V Corps were also interviewed for their opinions on the subject of detailed integration, for example, what would help ALOs improve detailed integration in CAS planning and execution. The ALOs' biggest complaints in this arena involved passing information up the chain so that fighters and FACs would be more prepared when they arrived on-station in their AO. As CAS pilots themselves, the ALOs

knew, as stated in the previous paragraph, that the more information they could get to the FAC(A)s and fighters before they arrived on station, the more effective the CAS would be. They want the same thing CAS aircrews want: the ability to know, when their maneuver unit is to be supported by a FAC(A), to know that FAC(A)'s callsign in advance, and to be able to get information about the maneuver unit to that FAC(A) as early as possible, preferably before the FAC(A) takes off. The information the ALOs would like to get to the FAC(A) is the same information that the FAC(A)s spoke of wanting to receive from the maneuver unit. The ALOs noted that, while this is probably the responsibility of the Army and the GLO, it was well within their capabilities if there was a system in place to allow it to happen. ALOs would prefer to send information directly to the supporting FAC(A), but would find any method that gets the information where it needs to go acceptable, whether it was via the ASOC or another agency to the FAC(A). The ALOs noted that the capability to electronically transfer data--digital maps, plans, and others--would be preferable, but that voice would certainly be acceptable. The bottom line is that they want exactly what the CAS pilots want: information transfer at the tactical level, from the maneuver unit to the FAC(A) (US Air Force 2004a, 2004b, 2004c, Walton 2004).

Numerous CAS aircrews and ALOs were interviewed about their experiences in OIF, and asked for their opinions as to how well the Army and Air Force team performed its task of detailed integration in CAS planning and execution. While many things about the CAS campaign went well and should be seen as positives, the level of detailed integration in planning was seen by most pilots and ALOs as having gone poorly in this conflict. One interviewee described the ability to get information from the maneuver unit

to the supporting CAS players in this manner: “It’s broke. The whole system is broke. We don’t get the right information or enough information through Army (GLO) channels, and we don’t get any information through Air Force channels” (Milam 2004). Many aircrews and ALOs noted that had there been a desire to get information from the maneuver units to the aircrews, there was no architecture set up that would allow that to happen (US Air Force 2004a, 2004b, 2004c, Walton 2004). The CONOPS did not address this requirement at all, and did leave the FAC(A) with any ability to liaise directly with the supported unit. In fact, the way the CONOPS was written and executed, there was normally no way for the FAC(A) to even know what unit he would be supporting prior to arriving in the AO and establishing radio contact with the ASOC (US Air Force 2004a, 2004b, 2004c, Walton 2004). Even then, the information from the ASOC was often unsatisfactory. Not only did FAC(A)s step out the door to fly missions with no information from the supported ground unit, most could remember only one or two sorties in which the ASOC passed them any useful information prior to handing them off to the ground FAC. Most also noted that the ASOC treated all missions equally, not interested in whether their ATO-assigned mission was CAS, FAC(A), or KI, but asking only type aircraft and, Are you FAC(A) qualified? (US Air Force 2004a, 2004b, 2004c, Walton 2004). This question alone shows a basic lack of knowledge of both the concepts of CAS and the mission of the FAC(A). The term FAC(A) refers to the mission, not the qualifications of the pilot, a mission with much more complex requirements than just the participation by a FAC(A) qualified pilot. While there will always be exceptions, contingencies that require a FAC(A) qualified pilot, this should be the exception rather than the rule. In OIF, since there was no coherent plan for FAC(A) usage anyway, this

method was not overly harmful. However, if--in the future--the air component effectively plans its FAC(A) sorties, and utilizes them in the manner desired by CAS pilots and CAS doctrine, there will, and should, be a significant difference in a FAC(A) on a FAC(A) mission and a FAC(A) qualified pilot. The aircrews interviewed would like to see CAS planning evolve to that level, and do not think it is an unreasonable request (US Air Force 2004a, 2004b, 2004c, Walton 2004).

Finally, CAS pilots note that, all things being equal, it is beneficial to support the same unit repeatedly, rather than supporting maneuver unit X on the first portion of a sortie, returning to the AO and being to support maneuver unit Y in a different AO during the second portion of the sortie. As with all the other comments, this was primarily directed at distribution of FAC(A) sorties, understanding that many times the C2 agencies will not have that luxury with CAS sorties (US Air Force 2004a, 2004b, 2004c, Walton 2004).

The users of the CAS CONOPS and theater architecture, CAS pilots and ALOs, agree as to how to enable detailed integration in planning and execution. First, detailed integration revolves around the FAC(A), pilots assigned the CAS mission do not expect the fidelity of information that a FAC(A) requires. The theater CAS CONOPS must enable the FAC(A)s to know during mission planning which maneuver unit they will likely support. It must also create a system that enables the FAC(A) to perform the required liaison with the maneuver unit's TACP, either by data or by voice, to get him the information he needs to be effective before he takes off. The CONOPS, and CAS C2 agencies must have a plan for CAS, and must understand the important difference between the FAC(A) qualification and a FAC(A) mission, and treat it as such. Finally,

the operational-level CAS planners and C2 agencies must understand the value of decentralized execution and familiarity with the battlefield, and assign sorties in such a manner that reflects that realization (US Air Force 2004a, 2004b, 2004c, Walton 2004).

### CAS Doctrine and Detailed Integration

The guidelines, techniques, and interservice interaction for conducting joint combat operations are found in the US Armed Forces' joint doctrine documents. AFDDs cover Air Force (and Air Component) specific doctrine, and contains more detailed information about how the Air Force executes joint doctrine. This is not different for CAS operations. This section will concentrate on joint and Air Force doctrine that deals with detailed integration in CAS planning, regardless of whether the doctrine at hand facilitates or hampers such integration. The overall goal is to determine the doctrinal definition and desired means of accomplishing detailed integration in CAS planning. Because doctrine at all levels can impact integration and planning at the tactical level, some portions of strategic, operational, and tactical level doctrine will be covered here. The requirements of tactical level doctrine will be addressed first, with the appropriate higher-level doctrine documents addressed as necessary.

#### Tactical-Level CAS Doctrine

JP 3-09.3, *Joint Tactics, Techniques, and Procedures for Close Air Support (CAS)*, is the US Armed Forces' principle doctrine document on CAS. It provides detailed information on planning, requesting, preparing, and executing CAS missions at the tactical level, and focuses primarily on CAS operators (CAS aircrews, ALOs, TACPs) at that level. The publication contains some operational level information, but that information consists mostly of definitions and functions of operational level

agencies, and the operational-level CAS architecture. It does not constitute guidance to operational-level CAS planners as to how to develop a theater CAS CONOPS to meet the requirements for integration called for in the tactical portions of this document. The requirements themselves, however, are well spelled out. Important to note is the fact that the latest version of JP 3-09.3 was released 3 September 2003, and much of chapters 3, 4, and 5 were completely rewritten based on inputs by CAS operators and expert observers over the course of numerous joint CAS exercises and operations including Operation Enduring Freedom. The inputs were compiled by the Joint Close Air Support division within the Office of the Secretary of Defense, created by the Defense Department to increase the US's joint CAS capability (Lyles 2003).

CAS is defined in JP 3-09.3 as “air action by fixed- and rotary-wing aircraft against hostile targets that are in close proximity to friendly forces and that require detailed integration of each air mission with the fire and movement of ground forces” (Chairman of the Joint Chiefs of Staff 2003a, I-1). Chapter 1, titled “Introduction, Organization and Fundamentals,” notes the following: “CAS can be conducted at any place and time friendly forces are in close proximity to enemy forces. The word close does not imply a specific distance; rather it is situational. The requirement for detailed integration because of proximity, fires, or movement is the determining factor” (Chairman of the Joint Chiefs of Staff 2003a, I-2). Under its listing of the eight conditions for effective CAS, the second condition mentioned is planning and integration, and notes, “Effective CAS relies on thorough, coherent planning and detailed integration of air support into ground operations. . . . From a planner's perspective the preferred use of a CAS asset is to have it pre-planned and pre-briefed” (Chairman of the Joint Chiefs of

Staff 2003a, I-6). The overall tone of chapter 1, as related to detailed integration, is that detailed integration is critical to CAS effectiveness, and the greater the detailed integration in planning, the more likely the CAS mission will be successful.

The bulk of tactical doctrinal guidance for conducting detailed integration in planning is found in chapter 3, “Planning and Requesting [CAS].” This chapter focuses on planning CAS operations at the maneuver brigade level and below. The first thirty pages concentrate on ALO techniques for planning CAS, to include integration with other fires, responsibilities of the TACP, and roles of the maneuver unit commander and his staff--specifically, how the CAS planning process fits into the Army’s planning process. The final six pages of chapter 3 cover FAC(A), planning. The information contained in chapter 3 is quite comprehensive, and results from after action reviews from numerous joint exercises and contingency operations. While the information and techniques are quite complete and up-to-date, the chapter leaves several questions unanswered.

The first eight sections of chapter 3, describing the TACP interaction with the maneuver unit’s staff during CAS planning, provides the user with extensive guidance. As the ALO and his staff are collocated with the maneuver brigade, all required coordination can be accomplished face to face. Thus, the ALO has both guidance, and due to his location, the means by which to carry out the integration during the planning process. The ALO and the brigade staff all work from the same sheet of music with respect to verbal and written guidance, maps, graphics, and control measures (Chairman of the Joint Chiefs of Staff 2003a, III-1, III-30). The ALO and his staff should be intimately familiar with the brigade’s operations. There is no doubt that this type of

integration--direct, face-to-face liaison in planning--is effective when accomplished correctly.

The final section in chapter 3, "Forward Air Controller (Airborne) Planning," provides potential FAC(A)s with thorough guidance for his pre-mission planning and responsibilities. It also speaks to the importance of the FAC(A), and of his required capabilities, in the first paragraph.

The FAC(A) is an airborne extension of the TACP. The FAC(A) extends the range that the TACP can detect, identify, and destroy targets. He can serve as an additional controller for the TACP, support a maneuver element without a TACP, or supplement the capability of a TACP. A FAC(A) must be able to coordinate supporting arms missions in conjunction with CAS missions, without assistance from the TACP. The FAC(A) must be capable of executing the desires of the ground commander in day, night, and adverse weather conditions. To accomplish this, the FAC(A)s must conduct detailed planning and integrate with the maneuver element. (Chairman of the Joint Chiefs of Staff 2003a, III-30)

It goes on to state that the FAC(A) must be familiar with the appropriate operations order and operations plan, and should conduct liaison with the supported unit's ALO and fire support coordinator. The liaison should include--but is not limited to--clarification of any operations order or operations plan, particular requirements of the supported ground unit, details of the fire support plan, engagement areas, and control measures (Chairman of the Joint Chiefs of Staff 2003a, II-31). These responsibilities are significantly different than the responsibilities of aircrews flying attack sorties. Most important to note in this publication is the fact that the FAC(A) is seen as an extension of the ground maneuver unit's TACP---the key link between the supported unit (and its TACP) and the aircrews performing the CAS mission in support of that unit (Chairman of the Joint Chiefs of Staff 2003a, III-30).

Overall, the keys to successful detailed integration in CAS planning and execution rest primarily in two areas. The first is successful TACP integration into the ground maneuver unit commander's staff during planning and execution, including all facets of air support. This is extremely involved, but the difficulty is mitigated somewhat by the fact that, although the TACP is an Air Force entity, they are assigned as part of the commander's staff, and are collocated with the unit during CAS planning and execution. Because of the TACP's location, it is almost inconceivable that any doctrine or CONOPS could prevent him from performing the above described duties within the maneuver unit. The second key area is the FAC(A)'s ability to execute the mission as an extension of the TACP, which includes the requirement of extensive and detailed knowledge of the supported unit. While less complex than the integration requirements for the TACP, the FAC(A)'s responsibilities are made more difficult by his location--often tens or hundreds of miles from the supported unit. For the purposes of this research, this will be the litmus test by which operational-level doctrine and CONOPS will be measured. Operational-level doctrine and the CONOPS must either enable this type of tactical level integration to take place, inhibit it, or do neither.

#### Operational-Level CAS Doctrine

Elements of operational-level doctrine for CAS are found in several different doctrine documents, in various levels of detail. JP 3-09, *Doctrine for Joint Fire Support*, is the operational level, joint doctrine document for all types of fire support. JP 3-09.3, *Joint Tactics, Techniques, and Procedures for Close Air Support (CAS)*, contains both operational-level and tactical-level CAS doctrine. AFDD 2-1.3, *Counterland*, contains

Air Force-specific operational-level CAS doctrine. This section will briefly examine the operational-level doctrinal guidance found in these documents.

JP 3-09 discusses CAS as one of many forms of joint fires, but does not go into detail on its employment or management at the operational level. It does define the C2 agencies involved in CAS, the CAS request architecture utilized by the Army and Air Force, and various deconfliction and airspace control measures. However, the reader is referred to JP 3-09.3 for any CAS information beyond basic architecture and definitions. For example, it defines the ASOC as “the key Air Force TACS [Tactical Air Control System] agency involved in coordinating CAS for ground forces. It performs coordination, direction, and control of the air effort to support land forces’ maneuver objectives, usually at Army corps level and below” (Chairman of the Joint Chiefs of Staff, JP 3-09 1998, II-12). It further notes that the ASOC is the operational component of the Tactical Air Control System, is normally located at the Corps Tactical Operations Center, and processes requests for immediate CAS. It refers the reader to JP 3-09.3 for more information on the ASOC (Chairman of the Joint Chiefs of Staff, JP 3-09 1998, II-12). This is true in every instance that CAS is mentioned in JP 3-09--this publication discusses CAS only in very broad terms, and refers the reader to JP 3-09.3 for details for both the operational and tactical level.

JP 3-09.3, *Joint Tactics, Techniques, and Procedures for Close Air Support*, is authoritative US doctrine for fire support and aviation planning, execution and control agencies, and CAS aircrews. While it does contain limited operational-level CAS information, it is almost entirely focused at the tactical level. It has one chapter, “Command, Control, Communications, Computers, Intelligence, Surveillance, and

Reconnaissance,” that addresses operational-level issues. This chapter is almost entirely descriptive in nature, explaining command relationships, the operational-level CAS architecture, agencies and capabilities, and the CAS communications structure. While this document does contain some information that can be useful to an operational-level CAS planner, it contains no guidance or techniques for how to plan a CAS campaign or CONOPS that will set the conditions for effective CAS at the tactical level. It devotes an entire chapter to planning and requesting CAS, yet offers no assistance to the operational-level CAS planners at the ASOC or the AOC (Chairman of the Joint Chiefs of Staff 2003a, II, 1-24).

The AFDD 2-1.3, *Counterland*, “is an operational-level view of two traditional missions that airmen have performed since the first air combat sorties--air interdiction and close air support” (US Air Force, AFDD 2-1.3 1999, v). AFDD 2-1.3 is not joint doctrine. However, in most large-scale joint operations, the Commander, Air Force Forces will be designated the JFACC (US Air Force, AFDD 2-1.3 1999, 7). Therefore, this doctrine will be used in conjunction with joint doctrine to guide operational-level planning and execution of interdiction and CAS by joint and coalition air forces. Since this document will shape each theater’s CAS CONOPS, it is essential to look at the portions that could impact the level of detailed integration in planning and execution of CAS. The four areas examined below are how the tenets of aerospace power as they should affect the CAS CONOPS, characteristics of CAS operations, and conditions for effective CAS.

The tenets of airpower that directly impact how the theater CONOPS will impact the ability to perform the necessary level of detailed integration in planning and

execution are centralized control and decentralized execution, flexibility and versatility, and concentration. The Air Force position on centralized control and decentralized execution in CAS is best taken directly from *Counterland*.

Since counterland operations effect the enemy across the entire theater, they must be centrally planned with theater-level priorities involved. The flexible nature of aerospace power allows it to be concentrated wherever counterland effects are needed, and it can shift as needed by air, ground, or overall campaign requirements. Decentralized execution is also essential, so that air support operations centers (ASOCs) . . . as well as individual mission and flight leads have the flexibility to accomplish their tasks. Decentralized coordination between air and ground units for CAS execution, once the centralized apportionment and allocation process has been accomplished, is also required for timeliness. Once CAS missions have been allocated to support the ground force, the ASOC should have the authority to distribute and task allocated CAS mission based on the ground commander's guidance and intent. (US Air Force, AFDD 2-1.3 1999, 19)

This document very clearly intends for the centralized command agency, the AOC, to create a CONOPS for CAS that ensures the achievement of the Joint Forces Commander's intent for CAS while allowing maximum flexibility at the tactical level to carry out the assigned missions realtime.

Flexibility and versatility combine to allow counterland assets to focus effects where and when required to achieve results, and to do so in various roles, including CAS and interdiction. This allows the JFACC to "continually adjust the weight of effort as required" to fulfill the Joint Forces Commander's intent on a rapidly changing battlefield. The JFACC does so by directing and coordinating with a variety of agencies, including joint surveillance, target attack radar system, airborne warning and control system, the joint force land component commander, and the ASOC. Where CAS missions are concerned, flexibility in distribution and employment is best exercised by the ASOC, due to their knowledge of the ground situation and the fluid nature of ground battle (US Air

Force, AFDD 2-1.3 1999, 19-20). How the Air Force attempts to advance flexibility and versatility will be addressed in more detail in the section discussing the theater CONOPS.

The final tenet of airpower that impacts CAS is concentration of airpower effects. As noted in AFDD 2-1.3, “failure to concentrate typically occurs when commanders attempt to spread air component assets too thinly, and lose sight of the theater perspective on where the main effort needs to remain focused” (1999, 22). Thus, while it may be possible to provide CAS assets and effects to every unit on the battlefield, such “penny-packeting” of airpower is inherently inefficient. Similar to the principle of war of mass, it is critical to concentrate CAS effects on the decisive operation, in order to guarantee overwhelming success in the overall campaign.

Throughout the section on characteristics of effective CAS, AFDD 2-1.3 repeatedly refers to integration between ground and air forces in very strong terms. “CAS provides direct support through integrated planning and integrated execution.” It refers to CAS as requiring “the highest level of integration between air and ground maneuver,” and notes that it requires “detailed planning, coordination, and training for effective and safe execution” (US Air Force, AFDD 2-1.3 1999, 37). In all of these references, it is clear that in its emphasis on detailed integration in planning and execution, this document refers not just to the ground-based planning for air (conducted by ALOs, ASOCs, and the AOC), but also to planning by aircrews preparing to fly CAS missions. All players involved are presumed to perform as much integrated planning as it is possible for them to perform.

There are many conditions for effective CAS noted in AFDD 2-1.3, but the only two that are germane to this discussion are flexible and responsive C2 and familiarity

with the local battlefield situation. The condition flexible and responsive C2 refers to the ability to scramble, re-role, re-task or divert missions throughout the battlespace. Within the confines of counterland, it refers to the ability to quickly perform this action with CAS and air interdiction assets to refocus effects as they are needed real time to support the ground commander's needs. The C2 for this type action short of the FSCL rest with the ASOC, which must balance the need for immediate support with the long-term desire for effects from limited assets. Additionally, the AOC may shift assets from other missions in other locations to either CAS or air interdiction. The overall goal is to give the ground commander--through the use of his ASOC--a responsive ability to refocus assets from CAS to air interdiction or vice versa as the situation dictates, to maintain the most efficient use of air assets (US Air Force, AFDD 2-1.3 1999, 44-45). This desire for flexibility appears at first glance to run counter to another condition for effective CAS, that of familiarity with the local battlefield situation.

AFDD 2-1.3 describes the importance of familiarity with the local battlefield situation to CAS: "When extended periods of close air support are expected, typically due to prolonged heavy ground fighting, combat effectiveness is increased when the same squadrons remain tasked to provide CAS over the same portions of the battlefield. This allows the pilots and intelligence personnel to become very familiar with the local terrain and enemy operations, as well as develop closer ties with the ground units being supported" (US Air Force, AFDD 2-1.3 1999, 45).

#### Synopsis of CAS Doctrine

Detailed integration between CAS pilots and maneuver units in both planning and execution is critical for CAS success. At the tactical level, the more directly involved the

CAS pilots are in the planning, the greater the success (Chairman of the Joint Chiefs of Staff 2003a, I-6). The FAC(A) is the focal point for this integration, and must have in-depth knowledge of the supported maneuver unit's plan, objectives, and scheme of maneuver (Chairman of the Joint Chiefs of Staff 2003a, III-30). To be successful, he must have the capability to perform this tactical-level coordination. It is critical that CAS planners at the operational level set up a system that allows this critical coordination to take place in a specified AO.

Operational-level CAS planners must also take into account several other doctrinal tenets when designing a theater CAS plan. Centralized control and decentralized execution states that, while the CAOC may design the overall CAS plan, the execution must be left to the tactical level--ASOCs, fighter wings, mission and flight leads--to ensure effective sortie distribution and task allocation (US Air Force, AFDD 2-1.3 1999, 19). Flexibility and versatility allow the JFACC and ASOC to adjust to a rapidly changing battlefield, and any theater CAS construct must be inherently flexible and versatile in order to be efficient (US Air Force, AFDD 2-1.3 1999, 19-20). Enabling the rapid re-tasking of other mission types to CAS and from CAS to other missions types is one method of maximizing flexibility and versatility in CAS. Finally, CAS planning must involve the concentration of airpower effects. CAS must be focused on the main effort, not thinly spread throughout the battlefield, to be effective. Assigning a limited asset, such as the FAC(A), and continuous CAS coverage, to the main effort is one method by which CAS planners and ASOC personnel can take advantage of concentration of effects.

The conditions for effective CAS are also important. Flexible and responsive C2 is addressed under the tenet of flexibility and versatility above. Familiarity with the local

battlefield situation involves ensuring that the same squadrons are assigned to the same supported unit during an extended battle. While difficult to achieve at all times without losses in flexibility and versatility, this condition must be pursued to the extent that it is necessary and practical.

Since US joint doctrine contains very little operational level guidance for CAS planning and execution, theater CAS planners must build a CAS plan that takes into account the tenets of airpower and builds a system that enables the conditions of effective CAS both at the operational and tactical level. This plan is formulated into the theater CONOPS for CAS, or the CAS CONOPS. The theater CAS CONOPS must take into account not only the tenets and conditions, but the theater CAS objectives set forth by the joint forces commander.

#### CAS CONOPS and Detailed Integration

A theater CONOPS delineates a commander's intent in regard to an operation. A CONOPS "is designed to give an overall picture of the operation. It is included primarily for additional clarity of purpose" (Chairman of the Joint Chiefs of Staff 2001, 111). The CAS CONOPS is used exactly as such: it describes in detail how the joint forces commander and the JFACC will conduct CAS operations. In recent operations this CONOPS has been expanded to include all counterland operations, and was titled the Killbox Interdiction and Close Air Support (KI/CAS) CONOPS in OIF. While the document is classified, most of the portions applicable to this study are unclassified. The OIF KI/CAS CONOPS is the US military's most recent complete CAS CONOPS, and represents conventional wisdom for counterland operations.

Since OIF saw counterland operations in support of the Army, V Corps, Marine Corps, First Marine Expeditionary Force, and SOF, it is critical to note again that this research is limited in scope to air support for conventional Army forces, and for that reason will examine only the V Corps portion of the operation. The CONOPS divided V Corps mission types into two groups, KI and CAS. Additionally, the C2 was further divided at the FSCL. All CAS missions and KI missions engaging short of the FSCL were controlled by the ASOC. KI missions targeted long of the FSCL were under the order of an airborne warning and control system aircraft, with joint surveillance, target attack radar system support (KI/CAS CONOPS, 2003).

It is clear from reading the CONOPS that the objective was to maximize flexibility. The CONOPS goes into great detail on the C2 relationships, what agency has the authority to re-role missions from KI to CAS, and who has ability to authorize weapons release in both KI and CAS. Moreover, it makes it very clear that aircrews with an ATO-assigned mission of CAS must be prepared to re-role to an interdiction role, and vice versa. The overall goal behind the flexibility was efficiency. If there are, at any given time, more CAS sorties than the demand for CAS will support, the excess sorties will be re-rolled into the KI role and assigned interdiction targets. These sorties, if not re-rolled, would otherwise return to base without employing at all. At the same time, if the real-time demand for CAS exceeds the number of CAS missions at hand, sorties can be re-rolled from KI to CAS to supply the extra mission requirement (KI/CAS CONOPS, 2003). The net result is increased overall efficiency in sorties utilized in the counterland portion of the air campaign.

While this CONOPS maximizes flexibility, it provides no guidance from the perspective of detailed integration. There is no discussion of how the CAOC and the ASOC will enable CAS players to achieve detailed integration with the supported ground forces. The CONOPS contains no guidance to the operational level planners in the CAOC CAS cell or the ASOC as to how to best plan the CAS campaign to not only maximize flexibility but to enhance or even enable detailed integration. The CONOPS discusses the missions of CAS, KI, and strike control and reconnaissance at length, to include their responsibilities, but mentions the FAC(A) only in passing. Additionally, when looking at the CAS CONOPS and the CAS portion of the special instructions (SPINS), one does not find a method for performing detailed integration in planning with the supported ground forces (KI/CAS CONOPS, 2003).

It is important to get a feel for what the aircrews that executed this campaign thought about the CAS CONOPS for OIF. Most thought that the CONOPS provided good information on the administrative portions of KI and CAS, but that the CONOPS left a lot of tactical information out that could have been very beneficial in planning and execution (US Air Force 2004a, 2004b, 2004c, Walton 2004). These post-conflict interviews have the benefit of hindsight, and many pilots noted planning failures in the CONOPS during execution. While many issues were brought up by pilots, only those that fit within the delimitations of this research are included here.

Most pilots felt that CAS planning was limited by the amount of information they had about the friendly GOB, the friendly scheme of maneuver, and expected enemy locations and strengths. The Air Force intelligence personnel felt that this information was the duty of the GLO, and while joint doctrine does not address the GLO in any

depth, this is a reasonable assumption. While the GLO agreed that this was his function, he did not have much information to offer, and rarely below the division level. The GLO relied almost entirely on the C2 Personal Computer system for his information. The limitations experienced by pilots on nearly every mission at the GLO briefing were:

1. there was no reliable information on the enemy, either from C2 personal computer or from Army channels to the GLO;
2. the C2 personal computer showed pilots where lots of friendly vehicles were, but it was difficult (and prohibitively time consuming) to sort through the raw data to figure out where actual units were located and where they were headed. Most stated that location and movement information to maneuver brigade would have been extremely useful; and
3. there was no information on the friendly scheme of maneuver. Pilots were sometimes briefed division objectives, but nothing below that level. Very little useful information about ground forces was available to the pilots during planning (US Air Force 2004a, 2004b, 2004c, Walton 2004).

Whose responsibility it is to get the information mentioned above is not addressed in joint CAS doctrine, nor is it addressed in the OIF CAS CONOPS, nor in the OIF SPINS CAS section. It is reasonable to assume that it is the GLO's responsibility, but since it is not addressed in the CAS CONOPS, it is a subject that will be addressed again later in this study.

Many pilots had complaints about the way sorties were distributed in V Corps' sector in OIF. The overarching complaint was that there was no effective plan for the distribution of CAS assets throughout the Corps battlespace. This problem manifested

itself in various ways, from an inability to effectively plan for an AO, to inefficient utilization of assets, to the use of non-FAC(A) missions as FAC(A)s (US Air Force 2004a, 2004b, 2004c, Walton 2004). While none of these issues has a massive negative impact on the CAS battle, together they show a lack of adherence to doctrine and an unwillingness to plan at the operational level.

Because the KI/CAS CONOPS was clear in directing flexibility into the counterland plan, the planners created a CAS distribution system that maximized flexibility. As noted above, CAS and KI missions were prepared to re-role into the other type mission in order to maximize flexibility in this campaign. Streamlined and flexible procedures is a condition for effective CAS, and is one of the great strengths of air power, and the CONOPS' and CAS planners' emphasis on flexibility led to an incredibly flexible system. However, this flexibility was achieved at the expense of important aspects of CAS doctrine.

CAS pilots state that they very rarely knew what unit they were supporting during their mission planning, brief, or even at takeoff. Most CAS pilots noted that, if necessary to increase flexibility, this is acceptable for CAS missions. However, for FAC(A) missions, the CAOC and ASOC should make every effort to get them information on the supported unit. This did not happen. Because there was not a coherent distribution plan for CAS players, the ASOC was forced into a reactive mode, assigning FAC(A)s and CAS missions to maneuver units as they showed up. Thus, the distribution decisions were made real-time, with whatever mission showed up next filling one of the roles that needed filling at that time (US Air Force 2004a, 2004b, 2004c, Walton 2004). Obviously,

if distribution decisions are not made until missions check in at the ASOC, effective planning and detailed integration with the supported unit become impossible.

The fact that distribution decisions were made reactively instead of proactively led to a number of issues, all with the same net result. Pilots (either CAS missions or FAC(A)s) would work in a certain ground unit's AO for a specified period of time, normally 30 to 45 minutes. If that pilot proceeded to a tanker and returned to the V Corps AO, it was very rare that he was sent back to the same ground unit. The same was true of pilots that left a ground unit's AO, returned to base for refueling and rearming, and then flew a second sortie to the V Corps AO. Because the distribution system was not proactive, the pilots with high situational awareness in a certain maneuver unit's AO, were often sent to support a new unit, with which they were unfamiliar (US Air Force 2004a, 2004b, 2004c, Walton 2004). Since this requires the pilot to "start over" and learn a new AO, this practice repeated over time is quite inefficient.

The third issue involved the FAC(A), and how he was tasked and distributed. The pilots flying FAC(A) missions are responsible for significantly more information than their CAS counterparts. As noted in the discussion of JP 3-09.3 in the above doctrine section, the FAC(A) is required to gather as much knowledge as possible about his supported unit prior to launch. Additionally, he should "conduct liaison with the supported unit's ALO and FSC [Fire Support Coordinator]" (Chairman of the Joint Chiefs of Staff 2003a, III-31). Both of these requirements and many others in this section of JP 3-09.3, are virtually impossible if the FAC(A) does not know what unit he is supporting until he arrives in the AO. As a result, most FAC(A)s arrived in the AO with no more information about the supported unit than the CAS flights arriving with them.

This was unsatisfactory to the FAC(A)s interviewed, and runs contrary to joint CAS doctrine (US Air Force 2004a, 2004b, 2004c, Walton 2004).

Additionally, even if FAC(A) missions had been distributed in time to coordinate with the supported unit, there was no way to perform this important coordination. Neither the CAS CONOPS nor the CAS portion of the SPINS establishes a construct for the FAC(A) to contact his supported unit or vice versa. This was true of the ASOC as well: the operational CAS construct did not encourage FAC(A)s to contact the ASOC during mission planning, nor did they tell him how to go about it if he took the initiative to do so (US Air Force 2004a, 2004b, 2004c, Walton 2004). Pilots of FAC(A), CAS, and KI missions were encouraged to contact the CAOC duty officer, but the pilots interviewed could not recall a time when that was productive (US Air Force 2004a, 2004b, 2004c, Walton 2004). Thus, a FAC(A) took off with no more information than pilots on other missions, contrary to both doctrine and FAC(A) training.

Finally, in execution, pilots often reported that when they checked in with the ASOC, it did not matter to the ASOC whether they were assigned a CAS, FAC(A), or KI mission, the ASOC utilized them for whatever was the most pressing requirement at hand (US Air Force 2004a, 2004b, 2004c, Walton 2004). Re-rolling assets from CAS to KI or vice versa is a very valid method of asset management, as discussed previously in this thesis. However, if used as the sole method of asset management--utilizing whatever mission type checks in next in whatever role is next needed--demonstrates the lack of an asset management plan. It also negates any potential positive effects of having missions ATO-designated as CAS, FAC(A), and KI to begin with. Often the first question from the ASOC was, Are you FAC(A) qualified? This can be, at times, a valid question when an

unanticipated need for a FAC(A) arises. However, that should happen by exception. The frequency with which this occurred demonstrates both a lack of an asset management plan and a misunderstanding of the FAC(A) role. As discussed earlier, the responsibilities of the FAC(A) mission are far more involved than that of the CAS or KI mission regarding detailed integration with the supported force. FAC(A), as delineated in doctrine, is a mission, and not just a qualification. The term FAC(A) was treated as a qualification during OIF by the CAS planners and the ASOC (US Air Force 2004a, 2004b, 2004c, Walton 2004).

### Conclusions

Interviews with CAS pilots--both FAC(A)s and attack pilots--and ALOs revealed four major effects related to detailed integration in CAS planning and execution that those users desire (US Air Force 2004a, 2004b, 2004c, Walton 2004). Each effect is endorsed by current CAS doctrine, either in joint or Air Force publications. None of these were effectively addressed in the most recent theater CAS operation, OIF, in the SPINS, the KI/CAS CONOPS, or in the plan communicated to C2 agencies in theater, and observed in execution by CAS pilots and ALOs (US Air Force 2004a, 2004b, 2004c, Walton 2004). The four areas are noted below, with references to the supporting doctrine, and how that area was addressed in recent operations at the operational level, either by the SPINS, the CONOPS, or by users observing the end product.

The FAC(A) is the key to detailed integration in CAS, and must be given the opportunity to prepare for his mission. The FAC(A) has much greater requirements for preparation, and most of it is predicated on the FAC(A) knowing during mission planning which ground maneuver unit will be supporting on that mission. CAS doctrine

specifically states that FAC(A)s should attempt to contact the supported unit, and has a list of required information to obtain from the supported unit, all of which would be impossible unless the FAC(A) knew the supported unit prior to the mission (Chairman of the Joint Chiefs of Staff 2003a, III: 30-36). This requires CAS planners and C2 agencies to actively plan which unit(s) will be given the limited FAC(A) assets at specified times. Obviously, the C2 agencies could redistribute these assets as late as 2 to 3 hours prior to aircraft launch with minimal planning impact on the FAC(A)s. This type of planning supports the tenet of airpower of concentration, by forcing planners to decide in advance what unit is the priority for air support, and allocate limited resources to that unit. There is no loss of flexibility, since a FAC(A) could still be re-tasked if circumstances direct such. However, C2 agencies would (and should) likely be hesitant to do so, understanding the decrease in efficiency and effectiveness that would result by re-tasking a FAC(A) from his assigned AO to one with which he is comparatively unfamiliar. While requested by users and supported by doctrine, this issue can only be effective if it is supported at the operational level by CAS planners and understood by the various levels of operational and tactical C2. The only way to ensure that all players understand how distribution will be accomplished--and what agency is responsible at any given time--is to spell it out clearly in the CAS CONOPS. The OIF KI/CAS CONOPS made few references to FAC(A)s, and did not address distribution in any way that would imply or direct that distribution decisions about any players would be made in time to impact mission planning. In execution, it was almost unheard of for an aircrew to be given, prior to launch, supported ground unit information below division level (US Air Force 2004a, 2004b, 2004c, Walton 2004), and when it did happen the information given was little

more than a location and the existence of a “troops in contact” situation (Drowley 2004). It was apparent that OIF CAS planners had no plan for distribution of any CAS assets, either in theory or in practice (US Air Force 2004a, 2004b, 2004c, Walton 2004).

CAS pilots’ and ALOs’ second desired effect was that the theater architecture and CAS CONOPS enable FAC(A)s to perform liaison with their supported unit’s TACP in order to get the doctrinally required information from the supported ground maneuver unit. JP 3-09.3 provides detailed guidance to FAC(A)s as to the type of information that should be gathered from the supported unit, and the information desired by the FAC(A)s interviewed, while more specific in its content, is certainly included in the doctrinal guidance provided (Chairman of the Joint Chiefs of Staff 2003a, III: 30-36). In this aspect, the OIF CAS plan, SPINS, and CONOPS made no attempt to enable this type of coordination, or to ensure that it could be accomplished. As previously stated, this was likely due to an incorrect assumption that Army channels would supply this coordination via the GLO channels. In any case, the FAC(A) is an extension of the TACP, and the FAC(A) should have some method of establishing communications via air component channels to his supported unit (at some level--division, brigade, or battalion) to perform the liaison expected of him (US Air Force 2004a, 2004b, 2004c, Walton 2004).

Third, in any campaign or contingency operation, the commander and his CAS planners must have a true plan for CAS, and must communicate that plan to the users at the operational and tactical levels via the CONOPS. The plan should be more than a communications and C2 structure that simply allows CAS to happen. While the US’s most recent operation, OIF, did have a counterland plan, and did have a CAS architecture in place to enable flexible and responsive CAS, it did not have a coherent plan for CAS,

as envisioned in Air Force and joint doctrine. The CONOPS did not provide present operational level C2 agencies--primarily the ASOC--with adequate guidance for how CAS was to be directed at the operational level to gain the maximum effects at the tactical level. The CONOPS must contain clear guidance, in broad terms, as to how C2 agencies should manage the CAS battle. As an example, the CONOPS could tell the appropriate C2 agencies--again, primarily the ASOC(s)--the extent of FAC(A) coverage to expect, an approximate amount of CAS sorties per day, and that continuous FAC(A) support should be given to the unit designated as the priority for CAS during that period, taking advantage of concentration at a slight cost in flexibility. CAS planners must understand the pros and cons of each tenet of airpower, condition of effective CAS, and how emphasizing certain tenets and conditions will affect the overall effectiveness of CAS. Emphasis on flexibility and versatility may exact a price in concentration, and impair some aspects of detailed integration. Emphasis on centralized control may have a cost in flexibility and versatility. Regardless of the pros and cons of each tenet and condition, the CAS planners must take them into account, and make a conscious decision on the overall style of employment in the campaign. Once this is complete, the guidance must be effectively communicated in the CAS CONOPS. Absence this guidance, the ASOC and other C2 agencies are left fighting a plan without the information and intent that went into writing the plan. Without a coherent and well communicated CAS CONOPS, none of the tenets or conditions for effective CAS will be attained.

The final effect addressed by CAS operators and supported by doctrine was a desire to take advantage of pilot familiarity with the battlefield (US Air Force 2004a, 2004b, 2004c, Walton 2004). The issue of familiarity describes not only familiarity with

the geography, but also with the supported unit. It is relatively simple to direct in the CONOPS, but may be difficult to attain in practice. Since the ASOC distributes missions to supported units by mission number and callsign rather than by pilot name, it requires more intensive planning for the C2 agencies, and a dedicated focus to ensure that it is executed properly. In a campaign with random generated mission callsigns, it also requires intensive coordination with other C2 agencies and tactical-level schedulers to ensure that it is attained. While trying to take advantage of this condition for every mission may be impractical, it may be possible to take advantage on a limited scale. For instance, planners may decide that certain units with high-risk missions will be supported by the same aircrews each day. Planners may decide that a certain squadron will provide all of the FAC(A)s for a specific division in a campaign, and will have readily identifiable callsigns each day. Or they may decide that the planning and coordination involved is not worth the advantage gained, and make no effort to advance this particular condition for effective CAS. Many options are available to the planner, and he must choose the option that provides the best effects in the current campaign. However, regardless of the option the planners choose, they must communicate their intent to the CAS players in the theater using the CAS CONOPS.

The four areas addressed above indicate CAS users' desired effects relating to improving detailed integration in CAS planning and execution. All four areas: recognition of the differing requirements of the FAC(A) in planning and execution; creation of a system that allows liaison between FAC(A)s and supported TACPs; operational-level planning and CONOPS that reflects the plan; and CAS planners and C2 agencies taking advantage of aircrew familiarity of the battlefield are strongly supported

by CAS doctrine. All were noted as areas for improvement with respect to CAS CONOPS in recent combat operations in Afghanistan and Iraq. These areas must be addressed by CAS planners in future exercises and combat operations, and must be included in any campaign's CAS CONOPS to ensure the effective application of the tenets of airpower and the conditions for effective CAS.

## CHAPTER 5

### CONCLUSIONS AND RECOMMENDATIONS

#### Conclusions

The CAS experts understand the importance of detailed integration in CAS planning and execution, and aircrews with CAS experience in recent conflicts have identified several shortcomings in the Air Force's current CONOPS for CAS, defined by the KI/CAS CONOPS for OIF. According to these aircrews, a worthwhile CAS CONOPS must do the following: understand the additional requirements of a FAC(A) during planning and execution, and have a plan that ensures he can meet those requirements; create a system that allows true realtime liaison between FAC(A)s and supported TACPs; communicate to the users in the field the method by which CAS will be executed in the campaign; and, when practical, plan to take advantage of aircrew familiarity with the battlefield. All of these positions are supported by current US joint and Air Force doctrine. Based on these analyses, it becomes apparent that the US CAS community, and specifically the Air Component's CAS planners, should modify the US's CONOPS for ongoing and future conflicts to minimize or eliminate the current shortfalls and increase overall CAS capability.

Based on the analysis in the previous chapter, it is obvious that there is no single solution in developing a CAS plan for a theater. Doctrine provides tenets and desirable conditions for CAS, but stops short of a "one size fits all" CAS campaign plan, leaving that responsibility to the joint task force commanders and campaign planners. Doctrine clearly expects planners to tailor each campaign CAS plan to the specific desired effects of the overall campaign. While there is no recommended construct for a CAS campaign

in joint or Air Force doctrine, it is critical that planners create a well thought out CAS plan and communicate it effectively via the CONOPS to the operational-level and tactical-level executors of the plan. A CAS CONOPS that merely provides continuous CAS coverage and doctrinal CAS C2 architecture does not meet the intent of a true CAS plan. Such a CONOPS allows CAS to happen, but does not show the type of forethought that takes advantage of the tenets and conditions of effective CAS.

While this thesis does not recommend a cookie-cutter approach to CAS campaign planning, it will recommend improvements to the current CONOPS that resolve several of the issues addressed above with regard to detailed integration in CAS planning and execution. Each of the recommendations below falls within the bounds of current doctrine, and require minimal changes to the current CAS C2 architecture. These recommendations by no means constitute a CAS plan, but merely techniques to improve on the current CONOPS and to consider when writing future plans and CONOPS. The focus here was narrowed to solutions within the air component's span of control and only those that comply with current CAS doctrine.

### Recommendations

#### Early Distribution of FAC(A) Assets

The FAC(A), as the critical link between the air component and the land component, must be more effectively utilized. This starts with the CAS plan. In OIF, the CAS plan was normally able to provide V Corps continuous FAC(A) coverage of either A-10s or F-14s. In other words, at any given time, there was one flight of FAC(A) A-10s or F-14s available somewhere in the Corps battlespace. Additionally, there were, in any given 24-hour period, another 100 to 150 sorties available for CAS. Assuming that in

future operations the air component will again be able to provide similar FAC(A) and CAS coverage, a CAS plan must take advantage of the relatively small number of FAC(A) sorties available. To do this, the AOC and ASOC must take several actions in planning.

First, the ASOC must determine its supported unit's priority for CAS for a given period of time. This will likely be the decisive operation, but the supported unit may decide that for a period of time it wants CAS focused on a critical shaping operation. Once the priority for CAS is established, the ASOC can then distribute FAC(A) sorties for the established time period. With the likelihood of only one FAC(A) mission available in the AO at any given time, the initial distribution decision is relatively easy: the mission is assigned to the unit with the priority for CAS. Once the FAC(A) mission(s) for a specific time period are assigned to individual units, the ASOC can notify the wing operations center of the mission(s) it has just distributed. This gives the FAC(A) the ability to plan his mission to a much greater level of detail and, if possible, to contact the supported ground unit to greater enhance the detailed integration of his planning.

This type of early distribution has several advantages. First, the ability of the FAC(A) to perform early mission planning and liaison will greatly enhance detailed integration. Second, assigning the limited numbers of FAC(A)s to the unit with priority for CAS takes advantage of the principle of mass and the airpower tenet of concentration, thereby gaining maximum effects with the number of missions available. Third, the maneuver unit will know that it can count on having a FAC(A) available during the entire mission, and can plan to utilize that FAC(A) for not only controlling CAS missions, but for tactical and armed reconnaissance, artillery control, or other FAC(A) capable tasks.

The drawbacks to early distribution are fairly obvious. The ASOC must educate its supported unit as to how and why FAC(A) sorties are distributed, so the maneuver units can plan appropriately. The ASOC must continuously assess the situation and update its plan for FAC(A) distribution to ensure that FAC(A)s are assigned to the correct unit in time to plan appropriately. Obviously on a rapidly changing battlefield, the priority for CAS will be event-driven rather than time-driven. This will lead to cases in which the priority for CAS changes before or after the time that was assessed in planning. Thus, a FAC(A) will arrive on station expecting to support unit A and will be assigned to support unit B. This can be attenuated by ensuring that FAC(A)s know of that possibility during mission planning, and plan with as much information as possible. Direct communication with the supported maneuver unit should give the FAC(A) a feel for the conditions of the battlefield and the timeline for the current mission. Finally, early distribution leaves the remaining units on the battlefield with no FAC(A). The ASOC does have the ability to re-task a FAC(A) to a different unit, should that be necessary. However, that should be the exception to the rule, as the net loss of an integrated FAC(A) is much greater than the benefit achieved by the arrival of an unfamiliar FAC(A). The CAS missions will be distributed by the ASOC as they arrive, and can fill taskings for CAS outside the unit with priority. While this may be perceived as a loss of flexibility, the ability to flow CAS sorties to requesting units, as well as the ability to re-task other sorties to CAS makes this effect negligible.

Early distribution enables more effective FAC(A) mission planning. The FAC(A) will have direct contact with the ASOC to gather critical details about the supported unit and its plan. If the theater has a robust communications capability, it will also enable

direct liaison with the supported unit. The overall result of this type of early distribution is a much more effective, integrated FAC(A).

#### Establish Architecture to Enable Detailed Integration at the Tactical Level

While early distribution will significantly enhance the detailed integration in CAS planning and execution, it does not solve all of the issues identified. Since the FAC(A) is doctrinally an extension of his supported maneuver unit's TACP, he must have the ability to perform his assigned liaison duties with that unit. The current CAS CONOPS does not provide for this sort of direct liaison, and has no communications architecture to support it. However, such liaison is technologically feasible, and even in its simplest form would greatly enhance the FAC(A)'s ability to successfully perform his mission. Early distribution is a requirement, as it is impossible to perform liaison with an unknown unit.

Given the technological capability that exists today, there are limitless options for establishing communications between TACPs and FAC(A)s. This thesis addresses only the simplest capabilities, and only that which is available to units today. The optimum system would enable TACPs to communicate with their supporting FAC(A) via both voice and data, thereby allowing the TACPs to send graphics, explain them, and answer questions. While that would be optimum, a capability available right now to all TACPs is satellite communication secure voice. This is the option that will be addressed here, with the knowledge that improved capability can be applied to the system described below.

Three things must happen to ensure reliable coordination and TACP and FAC(A) integration in CAS planning. First, each wing operations center or service equivalent with FAC(A)s must establish a joint air-ground cell within the mission planning cell, consisting of the entire GLO shop and selected mission planning cell personnel, led by

either a weapons officer or an experienced instructor pilot. The air-ground cell would have, as part of the mission planning cell, communications with the AOC and the ASOC. An additional satellite communication radio would be added to enable direct communications with TACPs, and this radio would remain on a constant wing operations center frequency dedicated to TACP coordination. The purpose of the air-ground cell would be to receive and process ground unit information from both Army and Air Force channels and distribute that information to both FAC(A)s and CAS players. Additionally, this system would allow TACPs to communicate with their supporting FAC(A)s.

On the ASOC and TACP side of the house, this system must enable TACPs to both know what unit will support them with FAC(A)s, and give TACPs the capability to communicate directly with that unit. With early distribution of FAC(A) missions, the ASOC will know in advance which missions will support which TACPs. The ASOC could pass the mission number, supporting unit, callsign and vulnerability time to the appropriate level TACP, along with that unit's wing operations center satellite communication frequency. While the TACP at any level below corps would have the capacity to conduct the desired liaison, the lowest level would be preferred, ensuring the most detailed information and direct integration. Since the air-ground cell mans the wing operations center satellite communication frequency at all times, the TACP can pick the time and detail of the required liaison. Regardless of his timing, he is guaranteed to speak with a FAC(A), who can conduct the coordination for the assigned FAC(A). If the TACP desires, he can coordinate directly with the assigned FAC(A). In any case, this system would improve detailed integration in two ways. First, it would enable parallel information flow from both Army and Air Force channels, maximizing integration, and

providing a backup flow of information should one system come up short. Second, it would enable the establishment of a critical link between the supported ground maneuver unit TACP and the supporting FAC(A). With the establishment of this link, the FAC(A) truly becomes an extension of the maneuver unit's TACP, as directed in doctrine and desired by FAC(A)s and ALOs.

#### Enable FAC(A) Familiarity with the Battlefield

Familiarity with the local battlefield is a condition for effective CAS which, while it greatly enhances combat effectiveness, is consistently overlooked. Sending the same aircrews to the same geographic area--or supported ground unit--consistently over time is unrealistic and unattainable, given a very fluid modern battlefield and a desire for flexibility in CAS. However, it is possible to take limited advantage of aircrew familiarity, with negligible impact on flexibility and greater simplicity in managing the CAS fight. To do so, some changes must take place in both planning and execution.

In planning, the AOC's CAS planners should examine how they allocate FAC(A) missions to various fighter wings. Since FAC(A)s are a limited asset, and a corps can only expect one FAC(A) mission airborne at a time, the AOC should greater decentralize execution by assigning FAC(A) coverage to specific fighter wings, either for a block of time, 6, 12, or 24 hours, or constant coverage. This would have two advantages. First, it would allow fighter wings and squadrons to manage their assets to gain the desired effect--constant FAC coverage--a much simpler task for a wing than for an air component. Second, it allows the same personnel to fly in support of the same units each day, gaining familiarity with the geography and the supported unit TACP. As important to the overall CAS battle is the ability for the FAC(A)s to assess the situation in

execution, and make decisions regarding extending station time if a replacement FAC(A) is late or aborts. Additionally, familiarity with other FAC(A)s in the unit would allow shorter FAC(A) changeover times and more efficient AO briefings, along with the intangible effect of all of the FAC(A)s being collocated at a specific airbase. The decentralization of FAC(A) coverage would greatly enhance CAS integration and effectiveness.

During execution of the CAS campaign, familiarity with the battlefield is attained by sending the same FAC(A)s and fighters to the same AO or unit as much as practical. In practice, this can be achieved only within the span of one day, and should be attempted under the following conditions. Missions flying multiple sorties in a single day should be sent to the same AO on both sorties, when possible. A mission that must leave the AO to perform aerial refueling and return should be sent to the same AO when it returns. Both of these are especially important for FAC(A) sorties. A FAC(A) or CAS mission returning to the same AO increases efficiency by familiarity with the area, increases credibility with the supported unit, and enhances integration. While it is not always possible to ensure this occurs, the planners should include in the CONOPS whether it is to be a priority and, if so, when it is to be expected.

The Air Force should make changes to its current and future CAS CONOPS in order to improve detailed integration in CAS planning and execution. First, CAS planners should adopt the concept of early distribution for FAC(A) missions to give FAC(A)s the opportunity to perform the type of integrated planning prescribed in doctrine and desired by operators. Second, the CONOPS should set up a communications system that enables TACPs to contact their supporting FAC(A) during the planning process to perform this

integrated planning. A CONOPS that includes just these two changes would solve three of the four issues noted by CAS pilots and ALOs as impediments to detailed integration. Third, the CONOPS should examine the possibility of assigning large blocks of FAC(A) vulnerability times by squadron, thereby decentralizing execution and gaining aircrew familiarity with the supported unit and the AO. Finally, the CONOPS should define for the CAS C2 agencies the importance of sending flights familiar with a portion of the AO back to the same AO on subsequent missions or after leaving the AO to refuel.

The first two recommendations will greatly enhance detailed integration, efficiency, and effectiveness at little or no cost, and no modification to current doctrine or CAS architecture. The third recommendation would require detailed coordination between the AOC, the ASOC, and those wings with a FAC(A) mission in order to be effective. It is largely dependent on how assets are positioned in the theater, but should be implemented when practical, given its simplicity and increase in efficiency. The final option should be considered, but its feasibility is largely campaign specific and its priority should be spelled out in the CAS CONOPS.

The CAS CONOPS changes recommended here will have several positive impacts on CAS. They will increase the ability of the air component to perform direct tactical-level liaison with the land component. They will enable true FAC(A) mission planning by assigning a FAC(A) to a supported unit early enough for the FAC(A) to perform the appropriate liaison and planning. They will improve the fidelity of information given to CAS aircrews prior to launching on a CAS or FAC(A) mission, by gathering information in parallel from both the land and air component, combining it and presenting it to CAS aircrews in mission planning. They will increase aircrew familiarity

with both supported units and the AO by ensuring that the same missions support the same units when practical. Overall, these CONOPS changes will greatly enhance detailed integration in both mission planning and execution in a theater CAS campaign.

APPENDIX A  
INTERVIEW QUESTIONNAIRE

Rank and name \_\_\_\_\_ Acft type \_\_\_\_\_ Hours \_\_\_\_\_

Qualifications:  wingman  2-ship  4-ship  IP  Sandy \_\_\_\_

Circle one: Pilot or BALO in OIF

The questions below apply ONLY to sorties flown in support of conventional Army forces in OIF (an example, V Corps)

What was your opinion of the CAS CONOPS? Was it enough? Detailed integration?

1. Were you satisfied with the level of detail you had about the friendly GOB/plan in your assigned AO prior to stepping for a V Corps CAS (Attack) sortie? Where did you get it?

2. Were you satisfied with the level of detail you had about the friendly GOB/plan in your assigned AO prior to stepping for a V Corps FAC sortie? Where did you get it?  
GLO?

3. At ASOC check-in, did there appear to be any difference in the way the ASOC treated/tasked CAS or FAC missions? How so?

Doctrine talks of "AO familiarity." Do you think that was in the ASOC's crosscheck?

4. (FACs only) As the FAC, what information about your assigned AO (friendly GOB, friendly plan, etc.) do you think it is reasonable to expect to have walking out the door to fly a mission?

5. In hindsight, what changes would you make to the OIF CAS CONOPS or SPINS (or anything else that could have been done beforehand) to facilitate better integration of FAC/CAS missions into the Army's plan and scheme of maneuver?

6. (FACs only) In its section on FAC(A) planning (pg. III-30), JP 3-09.3 states several responsibilities of the FAC(A). He is "an airborne extension of the TACP." On OIF FAC(A) sorties, did you feel like an airborne extension of the TACP or a FAC-qualified CAS pilot?

7. (FACs only) JP 3-09.3 also states that "...the FAC(A) must conduct detailed planning and integrate with the maneuver unit." 3-09.3 then has several sections on types of information the FAC(A) should try to acquire prior to his sortie. At the end of the FAC(A) section, the summary notes that the "FAC(A) may not have the opportunity to meet with the ground forces he is supporting. However, *every attempt should be made to establish liaison with the supported unit.*" Did this "detailed planning and integration" and "liaison with the supported unit" happen in OIF? If not, why not?

Did you ever know where you were going prior to launch?

8. What suggestions do you have as to how the USAF (not the GLO) could better enable effective coordination and liaison between the FAC(A) and his supported Army unit?

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