# Ebb and Flow: Maintaining the Close Air Support Relationship through History

A Monograph

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Military historians have thoroughly documented the longstanding debate between American airmen and ground forces over Close Air Support (CAS). Discord between services, particularly during inter-war periods, has repeatedly resulted in poor CAS preparation and therefore poor performance in the early stages of America's conflicts. Measuring this CAS relationship both before and through conflict in terms of doctrine, training, and personal relationships reveals an additional trend. During World War II, the Korean War, and Operation Enduring Freedom, personal relationships improved and shared objectives emerged as a result of daily interaction between airmen and ground forces. The changes enabled those involved to rebuild the CAS relationship and improve performance in the later years of these conflicts. Regrettably, subsequent declines in the CAS relationship during interwar periods have created a consistent cycle of ineffectiveness and inefficiency. Both services must break this cycle of ebb and flow so that the US military arrives at its next conflict with a properly maintained CAS relationship. CAS performance is inextricably linked to integration, making relationships the essential foundation of combat results. Restoring the CAS relationship can be as simple as airmen and ground forces occupying the same mess tent, in training as well as in combat.

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**Abstract**

Ebb and Flow: Maintaining the Close Air Support Relationship through History, by Maj Russell B. Fette, 92 pages.

Military historians have thoroughly documented the longstanding debate between American airmen and ground forces over Close Air Support (CAS). Discord between services, particularly during inter-war periods, has repeatedly resulted in poor CAS preparation and therefore poor performance in the early stages of America's conflicts. Measuring this CAS relationship both before and through conflict in terms of doctrine, training, and personal relationships reveals an additional trend. During World War II, the Korean War, and Operation Enduring Freedom, personal relationships improved and shared objectives emerged as a result of daily interaction between airmen and ground forces. The changes enabled those involved to rebuild the CAS relationship and improve performance in the later years of these conflicts. Regrettably, subsequent declines in the CAS relationship during interwar periods have created a consistent cycle of ineffectiveness and inefficiency. Both services must break this cycle of ebb and flow so that the US military arrives at its next conflict with a properly maintained CAS relationship. CAS performance is inextricably linked to integration, making relationships the essential foundation of combat results. Restoring the CAS relationship can be as simple as airmen and ground forces occupying the same mess tent, in training as well as in combat.

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## Acronyms

| | |
|---|---|
| AAF | Army Air Forces |
| ADRP | Army Doctrine Reference Publication |
| AFDD | Air Force Doctrine Document |
| AGF | Army Ground Forces |
| ALO | Air Liaison Officer |
| AOR | Area of Responsibility |
| ASOC | Air Support Operations Center |
| BCD | Battlefield Coordination Detachment |
| C2 | Command and Control |
| CAS | Close Air Support |
| CFACC | Combined Forces Air Component Commander |
| CFLCC | Combined Forces Land Component Commander |
| CTC | Combat Training Center |
| FAC | Forward Air Controller |
| GLO | Ground Liaison Officer |
| JACCE | Joint Air Component Coordination Element |
| JRTC | Joint Readiness Training Center |
| JTAC | Joint Terminal Attack Controller |
| NTC | National Training Center |
| SAASS | School of Advanced Air and Space Studies |
| SAC | Strategic Air Command |
| TAC | Tactical Air Command |
| TACP | Tactical Air Control Party |
| TF | Task Force |
| UN | United Nations |

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## Introduction

> The basis of effective air support of ground forces is teamwork. The air and ground units in such operations, in fact, form a combat team.
>
> — Army Air Forces Field Manual 1-5, *Employment of Aviation of the Army, 1943*

Background

From World War I to the present day, American ground forces and airmen have argued over the ideal employment of scarce resources in training, equipment, and sorties. Their debate has often centered on one particularly contentious issue: Close Air Support (CAS). A series of formal agreements and doctrine revisions tells a familiar narrative of begrudging compromise between airmen searching for the most effective use of airpower across a range of mission types and troops who needed fixed wing CAS to maneuver—or even survive. Most commentators echo Major Patrick Gallogy's sentiment that "This rancorous debate and discourse regarding CAS has pervaded most of its history."[1] However, on closer examination, a definable ebb and flow emerged in the CAS relationship that exists between airmen and the ground troops that they support from the sky.[2]

American airmen and ground forces made great strides in CAS capability in World War II, only to forget these lessons until they struggled to relearn them during the Korean War.

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[1] Patrick C. Gallogly, Maj, USAF, "The Evolution of Integrated Close Air Support: World War II, Korea and the Future of Air-Ground Combined Arms Synergy" (master's thesis, School of Advanced Air and Space Studies, 2011), 2.

[2] To delineate the opposing sides of this contentious debate, the following definitions seek to address viewpoints rather than service stereotypes. The term "ground troops" and "ground forces" refers to those men and women who view the world with a unique appreciation for land warfare, and the requirements for its successful prosecution. The term "airmen" refers to those who view the world with a large degree of "airmindedness," a term coined by General Henry H. "Hap" Arnold to describe, "a unique appreciation of airpower's potential, as well as the threats and survival imperatives unique to Airmen." Air Force Doctrine Document (AFDD) 1, *Air Force Basic Doctrine, Organization, and Command* (Montgomery, AL: LeMay Center, 2011), 18.

Similar CAS struggles at the start of the Vietnam War and Operation Enduring freedom reveal the cyclical nature of this recurring fluctuation.[3] During times of war, troops in contact with the enemy required CAS, and both parties sought to improve the CAS relationship as they strove toward common goals. Close personal relationships between air and ground leaders often spurred this improvement in the CAS relationship. Between wars, however, resource constraints, internal service concerns, complacency, and physical separation caused the priorities of airmen and ground forces to diverge. They planned separately with their own worst-case scenarios and service priorities for an uncertain future.[4] This usually resulted in a lack of teamwork and low prioritization by Army and Air Force leaders for joint endeavors like CAS; evidenced by failures in doctrine, training, and personal relationships. As a result, the CAS relationship between airmen and ground troops fractured, forcing and both parties to waste time, money, and lives rebuilding that relationship during the next conflict. Unfortunately, that cycle persists today.

As the war in Afghanistan winds down and fewer American troops are at risk on the ground, a fissure appears to be reopening in what was only recently a constructive and amicable relationship. Air Force pilots and senior air leaders interviewed in Afghanistan during Operation Enduring Freedom had repeatedly stressed the importance of supporting ground troops. Likewise,

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[3] Thomas Alexander Hughes, *Over Lord: General Pete Quesada and the Triumph of Tactical Air Power in World War II* (New York: The Free Press, 1995), 313; Aldon E. Purdham, *America's First Air Battles: Lessons Learned or Lessons Lost?* (Maxwell Air Force Base: Air University Press, 2003), 72; David N. Spires, *Patton's Air Force: Forging a Legendary Air-Ground Team* (Washington DC: Smithsonian Institution Press, 2002), 315; David E. Johnson, *Learning Large Lessons: The Evolving Roles of Ground Power and Air Power in the Post-Cold War Era*, new updated ed. (Santa Monica: RAND, 2007), xi, 100-101; Jonathan M. House, *Toward Combined Arms Warfare: a Survey of 20th-Century Tactics, Doctrine, and Organization* (Fort Leavenworth: Combat Studies Institute, 1984), 189; Patrick Ryan Wilde, MAJ, USA, "Close Air Support versus Close Combat Attack" (master's thesis, Army Command and General Staff College, 2012), 26.

[4] Jennifer H. Hall, Maj, USAF. "Earth, Wind, and Fire: Elemental Properties of Army and Air Force Cooperation in Close Air Support, 1945-1991" (master's thesis, School of Advanced Air and Space Studies, 2014), v.

ground forces expressed their affinity for the airmen.[5] As combat operations slowed, however, teamwork faltered. Ground forces neglected CAS training at the CTCs.[6] Further controversy sprang up when Air Force leaders pursued a plan to retire the A-10 Warthog to save money for modernization. Ground troops voiced strong preferences for the A-10 over other platforms, and a 2015 US Army Command and General Staff College thesis concluded that the Army should acquire an organic fixed wing attack capability because of a perceived lack of adequate support from the Air Force. However, further examination of the preferences of ground troops by researchers at the George Washington University revealed that dedicated CAS relationships—not specific technological capabilities—lead to ground troops' affinity for the CAS aircraft.[7] CAS pilots also consider their relationship with ground forces more important than technology, training, or education.[8] As evident through history, relationships are the key to CAS success.

Some airmen and ground forces today have recognized the growing divide and a need to maintain the CAS relationship. For example, representatives from all services proposed new

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[5] Air Forces Central Command Combat Camera, "F-16 Fighter Pilot Documentary: Airmen from the 100th Fighter Squadron" (video), posted November 23, 2014, accessed September 24, 2015, http://youtu.be/8S-HeOrg98c; "Hawg" (video), posted September 4, 2015, accessed September 11, 2015, http://www.jqpublicblog.com/hawg-the-story-of-the-a-10-and-close-air-support-in-afghanistan/; Douglas Raaberg, MajGen, USAF (Ret), "The Shift from Iraq to Afghanistan," in *Airpower in Afghanistan 2005-10: The Air Commanders' Perspectives*, edited by Dag Henriksen (Maxwell Air Force Base: Air University Press, Air Force Research Institute, 2014), 152.

[6] Phillip B. Barks, LtCol, USAF, "Anything But: Joint Air-Ground Training at the U.S. Army Ground Combat Training Centers" (master's thesis, Joint Advanced Warfighting School, 2009), i.

[7] Jacquelyn Schneider and Julia MacDonald, "Views From the Ground on the A-10 Debate." *War on the Rocks*, March 16, 2016, accessed March 23, 2016, http://warontherocks.com/2016/03/views-from-the-ground-on-the-a-10-debate/; John Q. Bolton, CPT, USA, "Army Fixed-Wing Ground Attack Aircraft: A Historical Precedent and Contemporary Rationale" (master's thesis, Army Command and General Staff College, 2015), 118-123.

[8] Simon Sinek, *Leaders Eat Last: Why Some Teams Pull Together and Others Don't* (New York: Portfolio, 2014), 1.

measures for CAS improvement during a conference in 2015, including the creation of a joint unit dubbed the CAS Integration Group.[9] CAS is a complex and dangerous mission requiring continual practice.[10] Airmen and ground forces must foster strong relationships to implement these and other continuing initiatives in order to enter future conflicts prepared to execute close air support and minimize losses while ensuring battlefield dominance. Inefficiencies and costly mistakes are the result of the ebb and flow in the CAS relationship. An examination of this relationship through history, therefore, provides a vital resource to prevent the mistakes of the past and map a better path for the future.

[9] Marc V. Schanz, "CAS Integration Group to Stand up at Nellis," *Air Force Magazine*, March 9, 2015, accessed January 28, 2016, http://www.airforcemag.com/DRArchive/Pages/2015/March%202015/March%2009%202015/CAS-Integration-Group-to-Stand-up-at-Nellis.aspx.

[10] Donald W. Boose Jr., "The Army View of Close Air Support in the Korean War," in *Coalition Air Warfare in the Korean War 1950-1953*, U.S. Air Force History and Museums Program, edited by Jacob Neufeld and George M. Watson Jr (Washington, DC: Government Printing Office, 2005), 101.

Figure 1. Top Generals meet in April 1945. At a meeting of top air and ground officers in April 1945, as the European war was ending. From left to right: General George S. Patton, Commanding General of the Third U. S. Army, General Carl T. Spaatz, Commanding General of USSTAF, Lt. Gen. James Doolittle, Commanding General Eighth Air Force, Lt. Gen. Hoyt S. Vandenberg, Commanding General of Ninth Air Force (partially obscured), Maj. Gen. O. P. Weyland, Commanding General XIX Tactical Air Command, Col. Harkins, Deputy Chief of Staff for the Third Army.

*Source:* "Photo Archive," Air Force Historical Research Agency, accessed December 10, 2015, http://www.afhra.af.mil/shared/media/photodb/photos/080310-f-3927P-003.jpg.

## Purpose and Significance

Meetings between air and ground commanders were not always as amicable as the one captured at the end of World War II in figure 1. History shows that executing any joint operation is a difficult, though surmountable task. Further, as described in the Office of Air Force History publication, *Case Studies in the Development of Close Air Support,*

> Experience also shows that armed forces, not only of the United States but of other nations, have been slow to hammer out the necessary procedures. Often corrective steps have been achieved only after many failures in battle. In no area of interservice operations has this phenomenon been more pronounced than in the matter of CAS.[11]

While history does not repeat itself, certain continuities do emerge over time.[12] The ebb and flow of the CAS relationship appears to be one of these. The astute warrior, as the Air Force study highlighted, "cannot overlook what the historical record has to say about close air support of ground operations."[13]

Through history, both positive and negative forces acted on the CAS relationship. Interservice friction and a fundamental lack of trust between airmen and ground troops repeatedly emerge as pervasive factors that limit progress in developing CAS capability.[14] A strong argument for the fundamental tension behind this conflict is that the services have disparate theories, and thus separate planning, for their own ideas of a worst-case scenario.[15] Budgetary constraints apply more pressure to interservice relationships. As US Army Captain John Bolton recently noted, "No military cooperation issue creates more acrimony than CAS."[16] However, by focusing on the troubled first battles of America's wars, historians have tended to overlook the

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[11] I. B. Holley, Jr, "A Retrospect on Close Air Support," in *Case Studies in the Development of Close Air Support*, Special Studies, Office of Air Force History, edited by Benjamin Franklin Cooling (Washington, DC: Government Printing Office, 1990), 535.

[12] John Lewis Gaddis, *The Landscape of History: How Historians Map the Past* (Oxford: Oxford University Press, 2002), 30. Gaddis defined continuities as, "patterns that extend across time…phenomena that recur with sufficient regularity to become apparent to us."

[13] Benjamin Franklin Cooling, ed., *Case Studies in the Development of Close Air Support*, Special Studies, Office of Air Force History (Washington, DC: Government Printing Office, 1990), 11.

[14] Scott A. Hasken, MAJ, USA, "A Historical Look at Close Air Support" (master's thesis, Army Command and General Staff College, 2003), 63-65.

[15] Hall, "Earth, Wind, and Fire," v.

[16] Bolton, "Army Fixed-Wing Attack," 1. Captain Bolton was the top graduate from the US Army's Command and General Staff College class of 2015.

opposing force in this tense relationship—the relief of tension as the relationship improves during wartime.[17] In agreement on the battlefield demand for CAS, airmen and ground forces find a way to rebuild the CAS relationship, which improves steadily after a poor showing in the early days of a conflict. This suggests a fundamental truth that merits exploration.

The emotional debate over air-ground support typically fails to recognize, and in fact, runs directly at odds with an essential issue: *CAS is fundamentally based on relationships*. The efficacy of CAS has consistently relied on the positive effects of good relationships more than technological, theoretical, or procedural progress.[18] By its very definition, close air support requires detailed integration.[19] Such integration is only possible when and where a relationship exists, and too often the animosity between the services has severely damaged this critical relationship. As one frustrated airman noted about operation Anaconda, "All this planning for a 1,500-man operation and the Army couldn't pick up the phone and make a call."[20]

Some may note that while CAS performance in historical conflicts was not ideal, the American military was able to learn while operating and ultimately succeed. However, the time, lives, and equipment lost while climbing this steep learning curve in combat is not only distasteful, but also unacceptable as the pace of warfare accelerates in a complex global environment. As Bruce Menning of the Army's Command and General Staff College once noted, "The post–Cold War era brought force reductions, force projection, and a scarcity of resources, all of which argued that future conflict would leave little room for service parochialism and little

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[17] Charles E. Heller and William A. Stofft, eds., *America's First Battles, 1776-1965* (Lawrence: University Press of Kansas, 1986), ix-xii.

[18] Hughes, *Over Lord*, 314.

[19] Joint Publication (JP) 3-09.3, *Close Air Support* (Washington, DC: Government Printing Office, 2014), xi.

[20] Scott Fischer, LtCol, USAF, "Army and Air Force Subcultures Effects on Joint Operations" (master's thesis, US Army War College, 2006), 10.

time for World War II–style on-the-job training."[21] The repeatedly injured and repaired relationship between airmen and ground forces demands renewed attention before it encounters the next battlefield, and the first step is a better understanding of the nature and history of that relationship.

## Definition of Terms

The precise definition of CAS has varied over time, but the modern joint definition provides a suitable baseline for studying the CAS relationship. The term close air support did not exist in the 1940 Air Corps Field Manual (FM) 1-5, *Employment of Aviation of the Army*. In describing air operations in support of ground forces the 1940 edition of FM 1-5 simply noted, "Combined operations of air and ground forces must be closely coordinated by the commander of the combined force and all operations conducted in accordance with a well-defined plan."[22] Since that time, arguments between airmen and ground forces over the definition or qualification of individual terms persisted even after successful periods of support.[23] The introduction of rotary-wing aircraft into a definition of CAS is also a later development. Yet, for discussing the CAS relationship, two themes are consistent from 1940 to the 2014 version of Joint Publication (JP) 3-09.3, *Close Air Support*: CAS supports ground units, and CAS requires close coordination.[24] Because ground forces maintain closer control over rotary-wing attack aircraft attached to

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[21] Bruce Menning, "Operational Art's Origins," *Historical Perspectives on the Operational Art*, ed. Michael d. Krause and R. Cody Phillips (Washington, DC: Center of Military History, 2005), 17.

[22] Air Corps Field Manual (FM) 1-5, *Employment of Aviation of the Army* (Washington, DC: Government Printing Office, 1940), 22-23.

[23] Douglas Campbell, *The Warthog and the Close Air Support Debate* (Annapolis: Naval Institute Press, 2003), 2.

[24] John Schlight, *Help from Above: Air Force Close Air Support of the Army 1946-1973*, Air Force History & Museums Program (Washington, DC: Government Printing Office, 2003), xii.

maneuver units, a historical review of the tensions over CAS centers on the employment of fixed wing CAS in a supporting relationship to maneuver units. Therefore, with one modification, the modern JP definition is sufficient for a study of the CAS relationship through history: "Close air support (CAS) is air action by fixed-wing and rotary-wing aircraft against hostile targets that are in close proximity to friendly forces and requires detailed integration of each air mission with the fire and movement of those forces."[25] Despite the inclusion of rotary-wing aircraft in the modern definition, space limitations require focus in this study on fixed-wing CAS.

## Theory

A common debate amongst the joint forces is the historically low priority of CAS when compared to other missions such as strategic attack, interdiction, suppression of enemy air defenses, or air superiority. Often, airmen and ground forces have used the same words to discuss completely different issues. Airmen prioritize these missions in an effort to achieve a desirable level of integration between them. For example, an airman instinctively views some level of air superiority as a pre-condition to conduct CAS. These ideas date back to lessons learned in World War II. Written following experiences in North Africa, the 1943 Field Manual 100-20, *Command and Employment of Airpower* affirmed the priority for tactical airpower envisioned at the Air Corps Tactical School in the 1930s: air superiority first, air interdiction second, and then close air support. While its publication was controversial amongst ground commanders, it became the core

[25] JP 3-09.3, xi.

of tactical air doctrine.[26] The same concept of priorities persists today in Air Force Doctrine Document 1, *Air Force Basic Doctrine, Organization, and Command*, which emphasizes, "air, space, and cyberspace superiority are the essential first ingredients in any successfully modern military operation."[27] However, to ground forces who remove enemy from terrain in the *process* of occupying it, CAS mission priorities can appear as levels of relative importance rather than preconditions for mission execution.[28] Suspending this theoretical debate suggests that there is an underlying current of accord: CAS is important enough to be requisite in land warfare. Because the actual battlefield demand for CAS often brings airmen and ground troops into agreement, there is really no need to agree on either line of thinking in order to improve the CAS relationship.

Regardless of its relative level of priority, the Air Force and Army agree that the mission is important. The demand for CAS has remained consistent since the introduction of airplanes on the battlefield, and at all points along the spectrum of conflict. Examples are abundant in America's involvement in World War II, the wars in Korea, Vietnam, Iraq, and Afghanistan, and many smaller conflicts in between.[29] In 2015, the Chief of Staff of the United States Air Force,

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[26] Field Manual (FM) 100-20, *Command and Employment of Air Power* (Washington, DC: Government Printing Office, 1943), III–16; David MacIsaac, "Voices from the Central Blue: The Air Power Theorists." In *Makers of Modern Strategy from Machiavelli to the Nuclear Age*, ed. Peter Paret, Gordon A. Craig, and Felix Gilbert (Princeton: Princeton University Press, 1986), 638; David Syrett, "The Tunisian Campaign, 1942-43," in *Case Studies in the Development of Close Air Support*, Special Studies, Office of Air Force History, edited by Benjamin Franklin Cooling (Washington, DC: Government Printing Office, 1990), 184-85.

[27] AFDD 1, 17.

[28] Bolton, "Army Fixed-Wing Attack," 9; Schlight, *Help From Above*, 41; Barks "Anything But," 46.

[29] Hasken, "A Historical Look," 3.

General Mark Welsh, repeatedly stated that the Air Force cares about close air support.[30] The Air Force Future Operating Concept provides a vision of CAS in 2035, and Air Combat Command's 2015 Strategy hints at possibilities for a new CAS platform while demanding an initiative to maintain CAS culture.[31] The relevant question is not whether the CAS priority was correct or incorrect in a particular historical setting or whether it made the best use of resources. Historical fact demonstrates that ultimately, airmen and ground troops agreed to conduct a certain amount of CAS in every US war since World War I.[32] Some observe that resource constraints drive animosity in the CAS relationship.[33] However, a budget cap is a limit that airmen and ground forces both wish to lift. Instead, ground forces and airmen must ask how to improve the requisite CAS despite budgetary constraints or theoretical debates.

A recent RAND study on close air support highlighted the simple fact that between the extremes of airpower focused and land-power focused perspectives, the most fruitful perspective is a partnership.[34] Unsurprisingly—given the importance of the relationship between airmen and ground forces to the success of that partnership—this relationship often reappears through history as a significant factor in CAS performance. It also happens that airmen and ground forces can

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[30] Jeff Schogol, "Welsh: The Air Force cares about close-air support," *The Air Force Times*, September 17, 2015, accessed 24 September 2015. http://www.airforcetimes.com/story/military/afa/2015/09/15/welsh-air-force-cares-close-air-support/72331008/.

[31] US Air Force, *Air Force Future Operating Concept: A View of the Air Force in 2035*, 34, September 2015, accessed February 4, 2016, http://www.af.mil/Portals/1/images/airpower/AFFOC.pdf; Air Combat Command, *ACC Command Strategy 2015* (Langley Air Force Base: Air Combat Command, 2015), 11-12, September 4, 2015, accessed February 4, 2016. http://www.acc.af.mil/shared/media/document/AFD-150810-026.pdf.

[32] Hasken, "A Historical Look," 63.

[33] Boose, "The Army View," 100.

[34] Bruce Pirnie, Alan Vick, Adam Grissom, Karl P. Mueller, and David T. Orletsky, *Beyond Close Air Support: Forging a New Air-Ground Partnership* (Santa Monica: Rand, 2005), xiv.

work to sustain this relationship regardless of budget constraints or theoretical differences. Therefore, one should ask whether, all other things being equal, the CAS that airmen and ground troops agreed to conduct achieved the results they desired, and what effect the quality of the relationship between ground and air forces had in achieving that end.

The CAS relationship is a unique construct that merits explanation. The CAS relationship arises from the interaction between airmen and ground forces who work together to accomplish the mission of close air support. The level of agreement between services does not define a good CAS relationship. A positive CAS relationship increases constructive interaction, while a negative CAS relationship constitutes hostile interaction or a lack of interaction. In the same way that building personal relationships creates the trust and confidence required to enable synergy in any joint operation, building the CAS relationship takes work but generates rewards.[35] Joint Publication 3-0, *Joint Operations* warns that, "the perceived benefits of 'jointness' do not occur naturally."[36] Since the Army and Air Force have agreed that executing the joint mission of CAS is worth this difficult integration, airmen and ground forces are obligated to find ways to create a synergistic relationship that improves operational effectiveness. Amphibious operations in World War II sometimes required heroic levels of patience, but airmen, soldiers, sailors, and marines learned the importance of jointness in these large-scale operations.[37]

The US Marine Corps also advanced integrated operations concepts in small conflicts

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[35] Joint Publication (JP) 3-0, *Joint Operations* (Washington, DC: Government Printing Office, 2011), II-2.

[36] JP 3-0, III-5.

[37] Paul M. Kennedy, *Engineers of Victory: The Problem Solvers Who Turned the Tide in the Second World War* (New York: Random House, 2013), 235.

prior to World War II, including the use of marine aviation.[38] Many CAS-minded airmen and ground forces admire the relationship between US Marine aviators and Marine ground troops. The Marine Corps bases the existence of their aviation on supporting Marine ground troops, and they ingrain that mentality in all of their aviators.[39] While admirable for its simplicity and effectiveness, the Marine Corps model of service composition does not offer a viable method for the Air Force to support the Army with CAS. Having a separate Air Force to focus on missions such as air superiority, global mobility, and strategic strike enables Marine Corps aviation to exist primarily to support Marine Corps ground operations.[40] In addition, the Air Force's unique focus on aerial operations creates a distinctive airmen's perspective crucial to operating in and employing joint fires from the air domain. This is one of the detriments of the suggestion to move the fixed wing CAS role to the Army.

There are several reasons why the Army reclaiming the CAS mission represents a poor solution to improve CAS effectiveness. Airmen best understand how to support and employ fixed wing aircraft and create effects from the air. A good CAS relationship leverages that expertise, rather than trying to recreate it from a ground perspective. There are also a myriad of personnel, training, infrastructure, and logistical hurdles to relocating fixed wing CAS. Furthermore, a fixed wing CAS capability in the Army is a disincentive for the Air Force to prepare for the mission. Since Air Force multi-role platforms and bombers like the F-16 and B-1 also provide a large portion of CAS, transferring the mission to the Army would result is a net loss in CAS capability. Giving the Army the A-10, for instance, would simply give the airframes to a service unprepared

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[38] Richard R. Muller, "Close Air Support: The German, British, and American experiences, 1918-1941," in *Military Innovation in the Interwar Period*, edited by Williamson Murray and Alan R. Millet (Cambridge: Cambridge University Press, 1998), 175-78.

[39] Hasken, "A Historical Look," 4.

[40] Ibid.

to support them, while removing a large portion of the CAS expertise and culture from the Air Force. Ultimately, the key to success lies in the synergy created by melding an air-minded and ground-minded view of CAS in a healthy interservice relationship.[41] To facilitate that relationship, airmen and ground forces have created various interservice liaison programs.

As Major Phillip Wielhouwer explained in his thesis "Trial by Fire: Forging American Close Air Support Doctrine, World War I through September 1944," liaison efforts at all levels, from strategic planning down to tactical execution has proven critical to the success of CAS operations.[42] Since World War II, the US military has implemented a multitude of CAS liaison innovations intended to improve integration and build trust, including examples such as the Joint Air Component Coordination Element (JACCE), Air Liaison Officer (ALO), Battlefield Coordination Detachment (BCD), Ground Liaison Officer (GLO), Forward Air Controller (FAC), and Joint Terminal Attack Controller (JTAC).[43] Relationships also exist between the senior service leaders, between commanders and liaisons at the operational level, between JTACs and battalion commanders at the tactical level, and between individual pilots and soldiers on a battlefield. Each is an important part of the overall CAS relationship and trust is the key component of that relationship.

The most basic and critical element involved in establishing a good CAS relationship is trust, which translates through time and across all levels of the relationship. Major Jennifer Hall recently penned a thesis on the elemental properties of cooperation in Close Air Support for the School of Advanced Air and Space Studies (SAASS) in which she argued that in planning for

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[41] Gallogly, "Integrated Close Air Support," 3-4.

[42] Philip W. Wielhouwer, Maj, USAF, "Trial by Fire: Forging American Close Air Support Doctrine, World War I through September 1944" (master's thesis, Army Command and General Staff College, 2004), 77.

[43] JP 3-09.3, II-3-8.

their own separate version of the most dangerous scenario, the services degraded their ability to execute joint missions like CAS. Among her conclusions Major Hall wrote,

> Willful and deliberate cooperation is all based on trust. Trust is the sinew that holds joint relationships together; without it, the pressures of significant crises and even war can bend or break those relationships. The interwar years matter, not only to build and reconstitute the hardware necessary to fight, but to solidify the relationship vital to preserving American lives and national treasure when it comes time to fight.[44]

To build a strong CAS relationship that provides synergistic effects, this trust must be maintained during and between wars, and at all levels from the tactical executors to service leaders. While trust itself is hard to measure, other indicators of the level of trust provide an effective litmus test for the CAS relationship through history.

As further explained in the methodology section below, examining the doctrine, training, and personal relationships during and between wars reveals the strength of the CAS relationship. The lens of history further reveals where actual CAS performance was successful or found lacking in battle. As the CAS relationship continues to evolve, the themes drawn from historical case studies will provide insight to ground forces and airmen alike as they shape the future of air-ground combined arms operations.

## Methodology

Historical study offers distinct advantages in perspective, allowing the researcher to select focal points, compare otherwise disparate points, and move between micro and macro scales at will.[45] This proves especially useful when studying such a complicated and controversial subject as the CAS relationship, where emotions and exigencies can distort the vision of those nearest to the issues. Moving between the micro and macro level highlights cases that best

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[44] Hall, "Earth, Wind, and Fire," 176.

[45] Gaddis, *The Landscape of History*, 4, 22-25.

illuminate the CAS relationship and its performance. Spreading the cases out over time ensures coverage from the birth of CAS to the present.

Choice of Case Studies

World War II, the Korean War, and Operation Enduring Freedom provide useful micro level cases to study the CAS relationship. All of these conflicts involved a significant reliance on CAS and took place over a period long enough to allow for significant changes in the way it was executed. They also span the historical era ranging from the early days of CAS, through its evolution to the present day. While World War I offered a foreshadowing of the issues that airmen and ground troops would face in close air support, both the airplane and the air service were in their infancy and joint training and doctrine were virtually non-existent.[46] Therefore, World War II is especially significant as the first true test of CAS and the origins of current CAS doctrine.[47] Operation Enduring Freedom (OEF) in Afghanistan provides the most recent example of extensive CAS employment in support of American ground troops, while Operation Iraqi Freedom (OIF) ended earlier and Operation Inherent Resolve does not currently involve a large presence of American ground troops. Between these conflicts, the wars in Korea and Vietnam offer the most obvious periods for study. Wars in both of these countries offer unique opportunities for study as the confusion caused by a lack of air-ground partnership before the conflicts resulted in unnecessary loss of life.[48] However, insights into the fluctuating nature of the CAS relationship in Korea stand out in particularly stark contrast when compared to recently

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[46] Schlight, *Help From Above*, 1-2.

[47] Daniel R. Mortensen, *A Pattern for Joint Operations: World War II Close Air Support, North Africa*, Office of Air Force History and US Army Center of Military History (Washington, DC: Government Printing Office, 1987), iii; Hasken, "A Historical Look," 9.

[48] Hughes, *Over Lord*, 13.

concluded combat in World War II.[49] A broad summary of CAS in the Vietnam War and the years leading up to the OEF case study is still needed, and several excellent resources on CAS in Vietnam are available for further detail.[50] In addition to selecting appropriate cases, the study of the CAS relationship demands careful selection of the most illustrative factors that affect it.

## Choice of Factors in the CAS Relationship

While both internal and external factors affect close air support, factors internal to the military services are the focal point in studying the CAS relationship because of their strong influence and the ability of airmen and ground troops to change them. For example, after Operation Anaconda, authors from across the services argued for improved CAS training and doctrine.[51] Air Force historian John Schlight highlighted the importance of internal factors for CAS performance in summarizing air-ground support from World War II to Vietnam. He also identified three major external factors that influenced the fortunes of close air support in that period: the Cold War, rapid technological progress, and an economic boom. While these had fundamental and long-term effects, Schlight noted the special importance of internal factors, writing,

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[49] Hasken, "A Historical Look," 35.

[50] Donald J. Mrozek, *Airpower and the Ground War in Vietnam* (Maxwell Air Force Base: Air University Press, 1988), 118-19; John J. Sbrega, "Southeast Asia," in *Case Studies in the Development of Close Air Support*, Special Studies, Office of Air Force History, edited by Benjamin Franklin Cooling (Washington, DC: Government Printing Office, 1990), 411-90; Schlight, *Help From Above*, 299-364.

[51] Aaron J. Carlson, LCDR, USN, "Thinking About CAS Without Thinking About CAS Doctrine: Selected Interactions of Institutional Processes Within the Close Air Support Mission" (master's thesis, Army Command and General Staff College, 2013), 59-60; Michael H. Johnson, MAJ, USMC. "Cleared to Engage: Improving Joint Close Air Support Effectiveness" (Wright Flyer Paper No. 35, Air Command and Staff College, 2008), v; Barks, "Anything But," i; Pirnie et al., *Beyond Close Air Support*, 171; Hasken, "A Historical Look," 63-65.

> The relative influence on the controversy of such concerns as budget competition, service doctrine and tradition, pride in accomplishing the mission, interservice contention, careerism, territorialism, and, at times, just plane obtuseness was particularly strong in determining the progress, or lack thereof, of the many elements that combined to constitute the term close air support.[52]

Not only are these internal areas particularly strong in their effect, they are the only factors that are under the direct control of airmen and ground troops. Studying internal factors, therefore, not only defines the CAS relationship developed by the participants, but it suggests the best way to maintain and improve it in the future.

Five internal factors that characterize the CAS relationship are evident through history and consistently reappear in literature: formal agreements, doctrine, training, equipment, and personal relationships.[53] Of these, formal agreements and equipment are poorly suited for the study of the CAS relationship during a conflict simply because of the time required to change them. Joint forces must acknowledge the influence of formal interservice agreements in the same way as external factors such as nuclear weapons, but their inherently political nature makes them unresponsive to the period of each case study. In the same way, the ever-increasing timelines required for equipment development, especially aircraft development, make equipment a poor choice to study the changing nature of the CAS relationship. For example, the A-X program that created the US Air Force's only current attack aircraft, the A-10 Warthog, began in 1966.[54] This makes the limitations of this equipment a factor US military personnel must overcome rather than change to achieve CAS efficacy during a war. Therefore, while formal agreements and equipment

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[52] Schlight, *Help From Above*, 365-67.

[53] Conrad C. Crane, *American Airpower Strategy in Korea, 1950-1953*, Modern War Studies (Lawrence: University Press of Kansas, 2000), 171-84; Hasken, "A Historical Look," iii; Schlight, *Help From Above*, 365-84.

[54] Schlight, *Help From Above*, 358.

procurement are important to building and maintaining a strong CAS relationship, they are not the focus of study here.

An examination of the CAS relationship during World War II, the Korean War, and Operation Enduring Freedom can profitably focus on doctrine, training, and personal relationships.[55] However, the study of personal relationships proves especially challenging because of its subjective nature and the need to include prominent leaders, lower-ranking warfighters, and broad service culture. Still, it is important because rivalry and disagreements can create a working environment that impedes air-ground cooperation.[56] Despite the challenges, the study of relevant personal relationships deserves emphasis because, as noted by historian Conrad Crane, "one of the key lessons of any American joint operation, and especially recent air wars, is that doctrine is not as important as personalities in maximizing performance."[57] In his book *The Masks of War*, Carl Builder famously theorized that each of the US military services has a unique culture, or personality, that significantly colors its actions, including those in the joint arena.[58] Problems with the relationship between service sub-cultures remain important today and affect

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[55] Joint forces must consider doctrine, training, and personal relationships pertaining to CAS not only in a temporal sense of breadth using the lens of history, but also in sufficient depth to cover the strategic, operational, and tactical levels of war. This paper attempts to strike a compromise in both acknowledging the depth involved while limiting the scope of discussion. To do so, the study primarily focuses on the operational level of war—the realm of campaigns. For more on the levels of war and how the principles of joint operations apply across them, see: JP 3-0, I-12; Army Doctrine Reference Publication (ADRP) 3-0, *Unified Land Operations* (Washington, DC: Government Printing Office, 2012), 4-1.

[56] Steven G. Olive, LtCol, USAF, "Abdicating Close Air Support: How Interservice Rivalry Affects Roles and Missions" (research paper, Army War College, 2007), 21-22.

[57] Crane, *Airpower Strategy in Korea*, 183.

[58] Carl H. Builder, *The Masks of War: American Military Styles in Strategy and Analysis*, A RAND Corporation Research Study (Baltimore: Johns Hopkins University Press, 1989), 3.

even our seemingly successful operations, such as Operation Desert Storm.[59] Demands for greater flexibility in reacting to an adaptive enemy require increasingly integrated operations that blur the lines between services. Therefore, their cultures will collide ever more frequently and "measures to maintain that relationship are critical to future joint success."[60]

The following analysis illuminates the fluctuating nature of the CAS relationship in three case studies: World War II, Korea, and OEF; using three primary factors: doctrine, training, and personal relationships. Each case study begins with an assessment of significant external factors, formal agreements, and equipment issues that set the stage for the historical narrative, which provides a detailed examination of the vital factors of doctrine, training, and personal relationships. The case studies provide a means to analyze the battlefield performance of CAS in an opening campaign, examine mid-conflict changes through the lens of the three primary factors, and describe the effects of these changes in CAS performance during a subsequent campaign within the conflict. Cross-case analysis highlights both common factors and outliers amongst the case studies. The conclusion highlights the major findings, identifying unifying themes in the case study analysis to suggest how airmen and ground forces should shape the CAS relationship for the future.

Thesis

Since the appearance of aircraft on the battlefield, ground forces in combat have relied on fixed wing CAS from airmen as a crucial part of the combined arms team.[61] Between conflicts,

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[59] Joyce P. DiMarco, LtCol, USA, "Service Culture Effects on Joint Operations: The Masks of War Unveiled" (monograph, School of Advanced Military Studies, 2004), 59.

[60] Fischer, "Army Air Force Subcultures," 15.

[61] Bolton, "Army Fixed-Wing Attack," 5-6.

external constraints, internal service concerns, complacency, and physical separation skew the concerns of airmen and ground forces as they plan separately for their own worst-case scenarios in an uncertain future. Accordingly, the CAS relationship between airmen and ground forces suffers as evidenced by neglect in doctrine, training, and personal relationships. Once American troops enter a battle on land, CAS inevitably resurfaces as a prominent concern for both airmen and ground forces because of shared objectives and the personal relationships built by daily interaction. However, the lack of interwar preparation combined with the inherent difficulty of CAS typically lead to poor execution early in the conflict. Thus begins a scramble to reinvigorate the CAS relationship and improve while fighting. Historically, ineffectiveness and inefficiency result from the ebb and flow of the CAS relationship. Awareness of this phenomenon could help the US military avoid allowing the relationship to ebb again. Otherwise, airmen and ground forces will find themselves in another struggle to rebuild a relationship while American ground troops fight with a deficit of skilled close air support.

## World War II

### The CAS Relationship Prior to Hostilities

By 1918, experience in combat had clearly defined several aspects of military aviation, including fighter and bomber design characteristics—but the role of close air support remained a topic of debate, as did the requirements for attack aircraft.[62] The two decade-long interwar period leading up to American landings in North Africa in 1942 offered ample opportunity for doctrine and training development, if not wartime testing. Of the many external factors affecting CAS in the US Army, a growing debate over the value of strategic bombing proved far more significant

[62] Lee Kennett, "Developments to 1939," in *Case Studies in the Development of Close Air Support*, Special Studies, Office of Air Force History, edited by Benjamin Franklin Cooling (Washington, DC: Government Printing Office, 1990), 57.

than budgetary restraints or legislative inputs. Colorful personalities like Giulio Douhet and Billy Mitchell campaigned for the primacy of airpower in national defense, but ultimately air and ground leaders alike share the responsibility for the failure to prepare for the ground attack role that proved immediately necessary in World War II.[63] The debate over strategic bombing often stunted growth in other mission sets and damaged the juvenile CAS relationship, resulting in deficiencies in doctrine, training, and conflicts in personal relationships before World War II.

The CAS relationship entered its adolescence during the interwar period in a complex environment that included strategic airpower theory, American isolationism, the experiences of World War I, and rapid technological development. Americans vividly remembered the specter of trench warfare. The growing capabilities of aircraft offered a tempting alternative to sacrificing American lives in mud banks and gas clouds on foreign shores. Strategic bombing of the enemy's industrial base would theoretically reduce the carnage suffered by both belligerents in the next conflict, and the technological developments of the day put American bomber aircraft on the leading edge of aviation. Italian airpower theorist Giulio Douhet so forcibly advocated the primacy of bombardment aviation that he wrote, "…no aerial resources should under any circumstances be diverted to secondary purposes, such as auxiliary aviation..."[64] He defined auxiliary aviation as airpower that, "facilitates or integrates land and sea action."[65] The flamboyant American aviation advocate Billy Mitchell held similar views, writing in 1925, "Third, [and last] in order of importance, are the auxiliary air units assigned to military organizations in the air, on the water, and on the land…. Like all auxiliaries, it should be cut

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[63] Kennett, "Developments to 1939," 60.

[64] Giulio Douhet, "The Command of the Air," in *Roots of Strategy*: Book 4, ed. David Jablonsky (Mechanicsburg, PA: Stackpole Books, 1999), 375.

[65] Douhet, "The Command of the Air," 344.

down to the lowest point commensurate with efficiency."[66] Mitchell had met Douhet in 1922. Though his ideas were not originally as radical, Mitchell later became wedded to strategic bombing theory. In fact, he was so passionate in his love of airpower and disdain of the Navy that historian Philip Meilinger wrote, "Mitchell may have been the father of both naval aviation and interservice rivalry."[67]

Only five years after World War I, these bitter rivalries between branches in the US Army and between services destroyed the working relationships between airmen and ground forces. In 1925, President Calvin Coolidge commissioned a special board of retired officers, judges, and congressmen to address the heated debates over airpower. The board ultimately recommended the Army Air Service be elevated to a branch status like the infantry or artillery and designated the Army Air Corps, but it cautioned that airpower had not changed the ultimate character of war. Unfortunately, this did not stem the tide of contention. Further evidence of the terrible conditions for those trying to build positive working relationships comes from the 1925 court-martial of Billy Mitchell, which revealed how Mitchell and others willfully misrepresented the truth to further the interests of their branch or service. This antagonism only served to hamper the growth of a CAS relationship in an Army that continued to struggle with limited funding and the growing concept of combined arms.[68] Intellectually separated by such enmity, by the 1930s the Air Corps had become obsessed with the idea of strategic bombing, to the detriment of other

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[66] William Mitchell, "Winged Defense," in *Roots of Strategy*: Book 4, ed. David Jablonsky (Mechanicsburg, PA: Stackpole Books, 1999), 510.

[67] Phillip S. Meilinger, *The Paths of Heaven: The Evolution of Airpower Theory* (Maxwell AFB; Air University Press, 1997), xv-xvi, 33; Thomas H. Greer, *The Development of Air Doctrine in the Army Air Arm, 1917-1941*, Special Studies (Washington, DC: Office of Air Force History, 1985), 66.

[68] Mark T. Calhoun, *General Lesley J. McNair: Unsung Architect of the US Army*, Modern War Studies (Lawrence: University Press of Kansas, 2015), 70-77.

roles.[69] Additionally, the meteoric development of the heavy bomber had a retarding effect on the development of all other branches of aviation, from pursuit to attack.[70] Although the official mission of the air corps remained support of ground units, it paid little attention to development of ground support capability.[71]

The nearly complete dominance of strategic bombing theory led to serious neglect of attack aviation doctrine in the Army Air Corps until the threat of war intervened. At the Air Corps Tactical School, faculty included only one strong advocate for attack aviation—Captain George C. Kenney.[72] He laid some early groundwork in tactics and textbooks in the 1920s, but after his departure neglect for ground support aviation resulted in a lack of integration at all levels of training and education.[73] This neglect worried some Army leaders, who thought strategic bombing promised more than it could deliver and sought a balance in the service. Mark Calhoun described the impact of one such leader in his book *General Lesley J. McNair: Unsung Architect of the US Army*.[74] McNair told a group of airmen graduating at Kelly field in 1938 "I beg of you to know yourself and your weapons, and to be frank among yourselves and with the rest of the Army. The Army will believe what the Air Corps says it can do, and rely on it. If its prowess is exaggerated, through whatever cause, disillusionment surely will come with war."[75] McNair's would become a prominent voice in the debate when the War Department reorganization of

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[69] Syrett, "The Tunisian Campaign," 153.

[70] Greer, *Development of Air Doctrine*, 67.

[71] Syrett, "The Tunisian Campaign," 153.

[72] Greer, *Development of Air Doctrine*, 66-67.

[73] Muller, "Close Air Support," 174; Greer, *Development of Air Doctrine*, 66-67.

[74] Calhoun, *General Lesley J. McNair*, xiii.

[75] Kent R. Greenfield, "Army Ground Forces and the Air-Ground Battle Team Including Organic Light Aviation," (1945) in *Studies in the History of Army Ground Forces,* Study Number 35 (Fort Monroe: Historical Section, Army Ground Forces, 1948), 8.

March, 1942 put Lieutenant General Lesley McNair in charge of the organization, training, and equipment for the Army Ground Forces (AGF).[76] As he suspected the shock of Hitler's blitzkrieg through France and the crushing role of the *Luftwaffe* working in concert with armored formations spurred change in the Army Air Corps.[77]

In 1941, General Henry 'Hap' Arnold established the Directorate of Air Support with responsibility to create training circulars and distribute field manuals. Combining British experience and a program for doctrine development in the United States, the War Department produced two training circulars in 1941, but it was four months after a declaration of war before they issued the first attempt at close air support doctrine: Field Manual 31-35, *Aviation in Support of Ground Forces*.[78] Less than a third of the sixty page manual covered air to ground attack, and those pages that did were so general in nature that they provided no real guidance. For instance, rather than providing best practices, the section on identifying friendly troops provided only two techniques along with a warning regarding their limited success rate, concluding "Methods to identify friendly troops to friendly air units must constantly be sought and tested."[79] The rushed effort to develop CAS doctrine reflected the lack of a firm grounding in experience because of years of neglect in training, and there was precious little time remaining to solve that problem.

American planners had one final opportunity to refine effective CAS doctrine on the eve of their first serious test against German forces. The British were learning to employ CAS the hard way, while actually fighting in North Africa. Unfortunately, these lessons did not find their way into American CAS procedures. Dwight Eisenhower's headquarters issued a six page

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[76] Greenfield, "Air-Ground Battle Team," 7.

[77] Kennett, "Developments to 1939," 52.

[78] Ibid., 50-56.

[79] Field Manual (FM) 31-35, *Aviation in Support of Ground Forces* (Washington, DC: Government Printing Office, 1942), 18.

operations memorandum titled “Combat Aviation in Direct Support of Ground Units” a month before Operation Torch. The memo suggested that aircraft should not normally strike targets in reach of ground artillery, but did provide some guidance on CAS for use against a decisive objective. In that limited role, the memo relied on Field Manual 31-35 for guidance and failed to incorporate the difficult lessons the British had learned in coordinating close strikes in a featureless desert.[80] In an alternative argument, McNair opined to the Chief of Staff of the Army that the early problems with air-ground support were not the fault of doctrine, but a lack of effective and persistent training.[81] Both arguments had merit. Limited resources and fundamental disagreements in warfare theory between the air determinists and ground power advocates hampered efforts to synergize air and ground efforts before the war. If the doctrine was acceptable, the Army had not cemented it through training. If it represented a gaping void in doctrinal preparation for CAS, it likewise suffered from lack of joint training that might have generated it in the absence of combat.

Inter-branch training for Close Air Support was almost non-existent before operations in World War II. In the 1920s and 30s, combined exercises might have helped to fill the gaps in combat experience but the US Army executed almost no combined training.[82] In 1941 and 1942, attempts at air-ground training in anticipation of combat in North Africa and Europe fared no better. McNair, entering his role as the leader of the AGF, was jointly responsible with General Arnold, commander of the Army Air Forces (AAF) for the development of doctrine and training.

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[80] Christopher M. Rein, *The North African Air Campaign: U.S. Army Air Forces from El Alamein to Salerno* (Lawrence: University Press of Kansas, 2012), 110-11.

[81] Lesley J. McNair, "Memorandum for the Chief of Staff, U.S. Army, Subject: General Robinett's letter of December 8 re: Air Support of Ground Troops," 30 December 1942, National Archives and Records Administration, College Park, MD, RG 337, Box 666.

[82] Kennett, “Developments to 1939,” 46.

By April, he had issued a comprehensive guide for implementing FM 31-35 through air-ground training.[83] However, exercises at Fort Benning, and corps-level maneuvers in Carolina and Louisiana suffered greatly from a general lack of participating aircraft, and those air units that did arrive had inadequate training to support learning. The maneuvers did warm both air and ground leaders to the utility of air-ground support, but there were many problems. During the exercise, the air task force approved very few direct support requests, giving preference to interdiction missions. The missions they did approve typically took an hour and twenty minutes to get aircraft over the front lines, where they found no adequate system to communicate with the ground units, and had little fuel to remain overhead. Although participants identified these problems, they generated no solutions. The results were inconclusive and directly contributed to the initial failures in North Africa.[84] Air leaders frequently expressed regret that they could provide no aircraft, but the impetus for training began after the start of hostilities and the aircraft needed were literally scattered across the globe.[85]

In September of 1942, just two months before America's first major combat test in North Africa, Major General Jacob L. Devers, Chief of the Armored Force, wrote a personal letter to General Arnold, "to let you know that I still stick to my opinion that there is no air-ground support training. We are simply puttering. Cannot something be done?" Arnold defended himself, citing a lack of assets available to commit to training.[86] Nevertheless, by December of 1942, even McNair had to admit that the training program thus far had been a failure. Furthermore, according

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[83] Greenfield, "Air-Ground Battle Team," 7-9.

[84] Christopher R. Gabel, *The U.S. Army GHQ Maneuvers of 1941*, (Washington, DC: Government Printing Office, 1992), 119-20; Christopher A. Freeman, Maj, USAF, "Airpower: Allied Mistakes in North Africa" (research report, Air Command and Staff College, 2006), 7.

[85] Greenfield, "Air-Ground Battle Team," 15.

[86] Kennett, "Developments to 1939," 56; Gabel, *GHQ Maneuvers of 1941*, 121-24.

to historian Kent Greenfield, "It strengthened a fear that the Army Air Forces were being expanded, directed, and trained on the basis of a system of thought in which direct cooperation with ground forces was regarded as unimportant or unnecessary."[87] The exchange highlights not only the glaring discrepancies in the CAS relationship with air-ground training, but also the divides in personal relationships between airmen and ground troops before the war. Disagreement and ill-natured debate frustrated both attempts to agree on doctrine and the ability to test it in field exercises.[88]

Although the AAF operated as a functional command under the control of the War Department (and coequal to the AGF), a divide in the personal relationships between AAF and AGF personnel had emerged that impeded CAS development. During the 1930s, the faculty at the Air Corps Tactical School had shunned any joint interaction. Airpower discussions at the US Army Command and General Staff College were equally weak, constituting only two days of instruction.[89] Exchanges between airmen and ground troops became negative if not overtly hostile. As historian Lee Kennett described in his analysis of CAS development prior to 1939, this affected every aspect of CAS development. Kennett concluded, "The lack of dialogue between air and ground leaders had more serious effects on the evolution of close air support than any other aspect of air power. With no common interest in resolving the problems inherent in ground support, little effort was expended on air-ground exercises or maneuvers."[90]

As American operations in World War II began, these personal frictions reappeared. Brigadier General Paul M. Robinett of the 1st Armored Division penned his frustrations with the

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[87] Greenfield, "Air-Ground Battle Team," 20.

[88] Mortensen, *Pattern for Joint Operations*, 4-5.

[89] Hughes, *Over Lord*, 58-61.

[90] Kennett, "Developments to 1939," 58.

lack of air support and air-ground coordination in a direct message to General George Marshall. Robinett blamed poor communication infrastructure and a lack of air-ground training for failures in CAS support in the stalled drive of the First Armored Division through Tunisia.[91] General McNair tried to smooth relations, writing a letter to General Arnold stating that, "I hope devoutly that future reports from overseas may be more and more different from that by General Robinett."[92] Despite his efforts, personal relationship issues, a lack of unifying doctrine, and virtually non-existent training had made air-ground cooperation a battle in itself. As explained by George Howe in the US Army's official history of the North African campaign, "The endless conflict could not be resolved except by a more comprehensive approach to tactics than either ground or air officers were in the habit of employing."[93] It would take months of failure and struggle before enough time and resources were available to improve the issue, midstride in World War II.

The Tunisian Campaign

Because of a lack of prewar development, American air support in North Africa included very little CAS while an air-ground relationship formed in the heat of the desert. As explained by Stephen Olive in an Army War College research paper,

> The decision to invade North Africa in June, 1942, forced the issue of close air support onto the Army and Air Force. Air and ground units were brought together with little to no cooperative training, and the doctrinal issues that were problems before the war were exacerbated by combat. Immediately, friction arose between ground commanders and air

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[91] Rein, *North African Air Campaign*, 108-9; Greenfield, "Air-Ground Battle Team," 19.

[92] L. J. McNair, "Memorandum for the Commanding General, Army Air Forces, Subject: Aviation in Support of Ground Forces," 30 December 1942, National Archives and Records Administration, College Park, MD, RG 337, Box 666.

[93] George F. Howe, *Northwest Africa: Seizing the Initiative in the West*, 50th Anniversary Edition (Washington, DC: Government Printing Office, 1993), 673.

> commanders as poor coordination and poor execution hampered the Allied offensive against the Axis forces.[94]

Air support in the Tunisian campaign consisted primarily of interdiction missions far from embattled troops. In his 2012 book *The North African Air Campaign*, Christopher Rein concluded that air to ground support in North Africa was critical to the success of the campaign. Specifically he credits the interdiction attacks that isolated the German forces from resupply, and the command of the air that enabled those strikes.[95] While these interdiction missions were important, ground commanders like General Robinett were also clamoring for better direct support to their maneuver. After the largely unopposed rush across Algeria, the ground offense bogged down just a hundred miles short of Tunis, and ground forces suffered under attacks from an enemy whose CAS performance far outpaced American efforts.

Poor CAS performance and a lack of air superiority contributed to struggles for ground forces. The initial offensive culminated due to two factors: weather had slowed the supply trains and the troops had outpaced their air support. Poor runway conditions and a lack of air superiority over forward airfields meant allied air support based far away and could only spend a few minutes over the front lines.[96] The mere sight of friendly aircraft overhead had convinced many reluctant ground commanders of the utility of the air component during training.[97] However, the morale boost US Army personnel experienced in Tunisia when hearing aircraft approaching too often turned to a crushing blow when the friendly airplanes unknowingly engaged their own ground formations, or—more often—they proved to be German rather than American aircraft.

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[94] Olive, "Abdicating Close Air Support," 4.

[95] Rein, *North African Air Campaign*, 207-8.

[96] Headquarters, Army Air Forces, *The AAF in Northwest Africa*, Wings at War Series: Number 6 (Washington, DC: Center for Air Force History, 1992), 28.

[97] Gabel, *GHQ Maneuvers of 1941,* 119.

Gallows humor spread among troops living under the constant threat of both fratricide and enemy attack.[98] The Army Air Forces intelligence staff actually lauded German air-ground support in comparison, noting that better air positioning and the efficiency of the Luftwaffe air-ground liaison resulted in response times of less than ten minutes. Lacking trust in the airmen's plan to achieve air superiority, ground commanders demanded distribution of air assets to individual units. This mistrust further slowed the creation of air superiority, which ultimately required mass and a dedicated effort rather than umbrella operations over individual units. The lethargy in air responsiveness along with poorly codified doctrine, and therefore planning, for air-ground support failed to enable maneuver at a critical moment. It would take another six months to take Tunis.[99]

By the battle of Kasserine Pass in February of 1943, ground and air commanders still had no consensus on the doctrine, command and control, or air to ground communication procedures. The First Armored Division lost half of its tanks in a battle fought without air superiority.[100] In an interim report published shortly after operations in North Africa, the Army Air Force's intelligence staff codified their lessons learned from the campaign. Most revealing for CAS were the lessons air and ground troops might have learned in earlier air-ground training, such as the operation of ground to air signals, radio communication, and forward basing requirements.[101] Ground to air signaling still rested heavily on colored panels and ground-based smoke.[102] In the

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[98] Rick Atkinson, *An Army at Dawn: the War in North Africa, 1942-1943* (New York: Henry Holt and Company, 2002), 201-2, 316, 392; Howe, *Northwest Africa*, 470, 480-81, 673; Rein, *North African Air Campaign*, 108-9, 122; Syrett, "The Tunisian Campaign," 165-69.

[99] Army Air Forces, *AAF in Northwest Africa*, 28; Syrett, "The Tunisian Campaign," 167-69.

[100] Freeman, "Airpower: Allied Mistakes," 170.

[101] Army Air Forces, *The AAF in Northwest Africa*, 65-67.

[102] Mortensen, *Pattern for Joint Operations*, 85.

balance, Tunisia gave only fleeting opportunities to exercise true CAS and, when executed, the CAS relationship often suffered from poor performance and fratricide. German attacks further frustrated Allied efforts, and ground leaders like Lieutenant General George Patton railed against the "total lack of air cover for our units."[103] As operations in the Mediterranean moved to Italy, the infantry was taking casualties at an alarming rate. Although making up only 11 percent of Army personnel, they suffered 60 percent of the casualties.[104] Both airmen and ground forces saw the need for change. They were learning the hard way, but their performance would continue to improve throughout the war as allied air superiority increased and the CAS relationship improved with refined doctrine, training, and improving personal relationships.

## The CAS Relationship Renewed

Driven by the dismal performance of AAF units in Tunisia and the clear superiority of both British and German methods, The US Army began to create an air-ground system that would eventually attain great success in Northwest Europe.[105] The drastic nature of the changes required for growth in the CAS relationship comes across most clearly in the doctrinal treatment of the mission. The 1943 Field Manuel 1-5 *Employment of Aviation in the Army*, published in the same format as the 1940 version, is ten pages longer in total, but adds seventeen pages on Air Operations in Support of Ground Forces. Simply in terms of page count, it de-emphasized the chapters on Bombardment Aviation and Fighter Aviation, while elevating what was once a

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[103] Rein, *The North African Air Campaign*, 122.

[104] Calhoun, *General Lesley J. McNair*, 304.

[105] Muller, "Close Air Support," 186-87.

subsection on ground support to its own twenty-page chapter, making up fully a third of the entire 1943 FM 1-5.[106]

The first part of this chapter—the "General" section—begins with the same information as its 1940 predecessor, almost verbatim. New information appears soon, however, including guidance for establishing air support commands and exchanging liaisons between air and ground units.[107] The FM added a section on field orders and went into detailed procedures for requesting support aviation.[108] Finally, the section on combat aviation in ground support concluded with a discussion of seven considerations to prevent fratricide, presented in a more direct, less tentative manner than they appeared in the earlier FM 31-35.[109] All of this new material in FM 1-5, especially the inclusion of codified procedures to ensure detailed integration and prevent fratricide, serves as evidence of the growth in the CAS relationship.

Northwest Africa also provided many important lessons for airpower and the Army Air Force that, although not directly related to CAS mission tasks, nevertheless proved crucial to its success later in the war. Perhaps the most critical lesson was the centralization of air command, which allowed the mobility, flexibility, and concentration of airpower rather than its fragmentary dissolution to separate ground units.[110] Other critical lessons included the precondition of air

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[106] Army Air Forces Field Manual (FM) 1-5, *Employment of Aviation of the Army* (Washington, DC: Government Printing Office, 1943), II.

[107] FM 1-5, 1943, 39. For example, this page of the manual includes the requirement that, "An air support liaison officer is always at the command post of the supported unit."

[108] Ibid., 39-42.

[109] FM 31-35, 1942, 17-18; FM 1-5, 1943, 44.

[110] Wesley Frank Craven and James Lea Cate, eds., *The Army Air Forces in World War II: Volume 2, Europe: Torch to Pointblank, August 1942 to December 1943*, 1st ed. (Chicago: University of Chicago Press, 1949), 486-87.

superiority and the value of air interdiction.[111] The War Department codified these ideas in July of 1943 with the release of FM 100-20, *Command and Employment of Airpower*.[112] With this baseline of tactical airpower doctrine established, both airmen and ground troops needed training and experience to improve their cooperative capabilities and grow the CAS relationship.

The lack of prewar air-ground training apparatus and the massive increase in aircraft and pilots during World War II required in-theater training efforts. The official history, *The Army Air Forces in World War II* included the observation that, "In direct cooperation with ground troops—the most difficult of all air operations—achievements varied in direct proportion to the degree of coordination, timing, and training obtained."[113] For the Mediterranean Air Command the training responsibility fell to the Northwest African Training Command, led by Brigadier General John K. Cannon.[114] Primarily dedicated to training American units, he operated in Morocco and western Algeria.[115] The fact that Lieutenant General Carl 'Tooey' Spaatz assigned Cannon, ranked second out of twenty-seven generals that worked for Spaatz, to this position demonstrates the high priority Spaatz placed on the problem of inadequate air support.[116] In North Africa, Cannon also helped mentor and support General Elwood 'Pete' Quesada, who played a crucial role in developing the training, doctrine, and personal relationships that would make the

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[111] Syrett, "The Tunisian Campaign," 183.

[112] Matthew G. St. Clair, Maj, USAF, "The Twelfth US Air Force: Tactical and Operational Innovations in the Mediterranean Theater of Operations, 1943-1944" (master's thesis, School of Advanced Air and Space Studies, 2003), 13.

[113] Craven and Cate, *Army Air Forces: Volume 2*, 486.

[114] Howe, *Northwest Africa*, Chart 2.

[115] Craven and Cate, *Army Air Forces: Volume 2*, 163.

[116] John B. Wilboune, Maj, USAF, "Joint Air War: John K. Cannon and the Air War in the Mediterranean" (master's thesis, School of Advanced Air and Space Studies, 2007), 34.

air-ground cooperation in the European theater a resounding success.[117] Because of the efforts of such air and ground leaders in the field, CAS training continued to make slow, but persistent progress. General McNair expressed frustration at the speed of change, as he continued to work against an Air Staff at the Pentagon who were loath to divert assets from strategic bombing efforts for training.[118] Fortunately, front line airmen and ground forces bolstered McNair's efforts as they dedicated themselves to improving CAS performance.

During the Mediterranean campaigns, the Americans made significant progress in building the personal relationships required for the CAS element of the combined arms team to prosper. Spaatz commented in a letter to Arnold on the magnitude of effort required to build strong personal relationships between air and ground commanders. Material problems with communications persisted (the most effective CAS aircraft could not even carry the heavy radios of the period), but early liaison efforts with ground commanders made headway in creating understanding about airpower capabilities, requesting close support, and integrating the effects. While air and ground commands typically operated in physically separated locations before the war, the XII Air Support Commander reported his principal staff officers were now living and operating directly with the ground commanders.[119] Finally, in the winter of 1944, the Army implemented an official program to train Ground Liaison Officers and send them to air units with the goal of improving air support.[120] This was a monumental step forward in the CAS relationship. As described by historian Kent Greenfield, "In formalizing the exchange of liaison officers the US Army was for the first time recognizing development in its own air-ground

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[117] Wilboune, "Joint Air War," 36.

[118] Greenfield, "Air-Ground Battle Team," 42-43.

[119] Mortensen, *Pattern for Joint Operations*, 85-87.

[120] Greenfield, "Air-Ground Battle Team," 83-85.

relationships."[121] Of the many leaders that exemplified these improving relationships required for effective Close Air Support during World War II, General Pete Quesada stands out.

Quesada had a reputation for good relations with ground officers, and even managed to push his love of flying onto a few. On July 4, 1944, he took General Dwight Eisenhower on a tour of the front lines in a P-51, without parachutes. Marshall reprimanded them both for their risky behavior and they took no more joy rides, but they continued to work in support of each other while rebelling against their branch rhetoric. Strong personal relationships like these helped airmen and ground forces alike overcome the challenges inherent in air-ground operations. In command of IX Tactical Air Command for OVERLORD and subsequent operations in Europe, Quesada pursued better ways to support the infantry, despite the fact that friendly antiaircraft artillery destroyed nearly as many of his planes as the enemy. Although friendly air to ground fire incidents had some units turning down CAS altogether, Eisenhower advocated for perspective on mistakes made by both sides and refused to move the bomb line of deconfliction farther in front of ground forces.[122] Perhaps most significantly, Quesada's strong relationship with General Omar Bradley led to the installation of interoperable radio sets in some American tanks and airplanes, and the addition of a pilot to the crew of each of these radio-equipped tanks. An obvious solution today, this was a colossal leap forward for air-ground communication despite the fear that better communications would sacrifice too much control to ground commanders.[123] CAS performance was still far from perfect, but the CAS relationship had grown, the rate of improvement increased, and commanders began Operation Cobra ready to employ CAS to better effect.

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[121] Greenfield, "Air-Ground Battle Team," 85.

[122] Hughes, *Over Lord*, 173-79.

[123] Wesley Frank Craven and James Lea Cate, eds., *The Army Air Forces in World War II: Volume Three, Europe: Argument to V-E Day, January 1944 to May 1945* (1951; repr., Washington, DC: Office of Air Force History, 1983), 239; Hughes, *Over Lord*, 183-84.


Figure 2. P-47 in flight. A P-47 in flight with belly tank attached and fragmentation bombs on the wings.

*Source:* "Photo Archive," Air Force Historical Research Agency, accessed December 10, 2015, http://www.afhra.af.mil/shared/media/photodb/photos/080307-f-3927O-025.jpg.

Figure 3. Attack on German tank. A Thunderbolt comes in on the rear of a German tank counter-attack and starts one of the tanks smoking with a good concentration of armor-piercing incendiary hits.

*Source:* "Photo Archive," Air Force Historical Research Agency, accessed December 10, 2015, http://www.afhra.af.mil/shared/media/photodb/photos/080311-f-3927P-031.jpg.

Figure 4. Self-propelled gun destroyed. A self-propelled gun near Dasburg pushed off the road into the crater of the bomb, which destroyed it.

*Source:* "Photo Archive," Air Force Historical Research Agency, accessed December 10, 2015, http://www.afhra.af.mil/shared/media/photodb/photos/080311-f-3927P-028.jpg.

Despite success in gaining the Normandy beachhead, the Allied invasion slowed to a crawl in the complex hedgerow terrain of Normandy. General Omar Bradley described the situation before Operation Cobra:

> By 10 July, we faced a real danger of a World War I-type stalemate in Normandy. Montgomery's forces had taken the northern outskirts of Caen, but the city was not by any means in his control…My own breakout had failed. Despite enormous casualties and loss of equipment, the Germans were slavishly following Hitler's orders to hold every yard of ground. We, too, had suffered heavy casualties; about 22,000 in the British sector; over 30,000 in the American sector.[124]

[124] Leo J. Daugherty, *The Battle of the Hedgerows: Bradley's First Army in Normandy, June-July 1944* (St. Paul: MBI Publishing Company, 2001), 158.

Allied commanders had discussed committing massive airpower to support a breakout for some time.[125] Aircraft had recently dropped over 7,000 tons of bombs in support of Operation Goodwood to spearhead a charge of 2,650 British tanks, but they only advanced seven miles. Eisenhower was especially disappointed that the attack failed to break through more decisively. Now Bradley was pitching a plan for another 4,000 tons of bombs along a small area of the front. Like Goodwood, the plan for Operation Cobra involved a bold breakthrough of the German defenses, but Bradley anticipated better mobility in the roads and fields of the high prairies of France just beyond the German defenses. Eisenhower was betting heavily on Operation Cobra to break the stalemate, but the initial efforts of Quesada's airmen almost broke his faith.[126]

The initial plan presented Bradley's forces with the challenge of coordinating massed air effects with ground movement. As historian Martin Blumenson described it,

> To blast open a passageway on the ground, approximately 2,500 planes in a bombardment lasting two hours and twenty-five minutes were to strike a target area of six square miles with almost 5,000 tons of high explosive, jellied gasoline, and white phosphorus…. an error in computation or a failure to identify a landmark properly could easily result in disaster. The absence of direct radio communication between the troops on the ground and the heavy bombers in flight made reliance on visual signals necessary. To define the northern limit of the heavy bomber target area during the air attack, artillery was to place red smoke every two minutes on the narrow fighter-bomber strip…. Ground troops on the front were to withdraw one hour before the air attack…After the withdrawal, the ground troops were to mark their locations with fluorescent panels.[127]

Those plans proved inadequate to provide the necessary coordination. On July 24, poor weather forced Eisenhower to postpone Cobra, but not before much of the air support had already launched. Ground commanders were confused as to whether to hold or attack. Inadequate

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[125] Craven and Cate, *Army Air Forces: Volume 3*, 228.

[126] Martin Blumenson, *Breakout and Pursuit*, 50th Anniversary Edition, US Army Center of Military History Publication 7-5-1 (Washington, DC: Government Printing Office, 1993), 188-96; Hughes, *Over Lord*, 194-205.

[127] Blumenson, *Breakout and Pursuit*, 222.

coordination, combined with pilot error and the fog of war, resulted in bombing errors that killed between sixteen and twenty-five friendly troops, wounded at least four times as many, and sparked a wave of controversy. Allied bombers had attacked perpendicular rather than parallel to enemy lines despite Bradley's earlier protestations on this tactic. However, there was little point in pointing blame. The weather forecast showed improvement for the next day and the Allies had to iron out adjustments through a team effort to make Cobra a success. The air and ground leaders brushed aside their rancor and revised the plan.[128]

On July 25, the earth shook under the combined weight of more than 4,000 tons of Allied bombs. Sadly, pilot error again contributed to short bombs, which killed over 100 friendly troops and wounded more than 500; the personnel killed on the 25th included one of airpower's staunchest advocates outside of the AAF, Lieutenant General Lesley McNair. After more than 900 casualties in two days, Eisenhower vowed he would never again use heavy bombers for tactical support. Quesada and Bradley were despondent. By nightfall, the ground campaign had advanced only 1,000 yards, but the attack had inflicted greater damage to the German defenses than expected. At the front, General J. Lawton Collins sensed an opportunity that called for bold action, leading him to the plan to press the attack with his armored reserve: A full division of armor would attack at dawn. A flurry of activity began as airmen developed a plan to support the attack. This would put Quesada's innovations in tank to aircraft communication to the test.[129]

Despite the failures of July 24th and 25th, the rapid planning resulted in hundreds of medium bombers and fighters supporting Collins' attack. Improved communications with the

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[128] Craven and Cate, *Army Air Forces: Volume 3*, 228; Blumenson, *Breakout and Pursuit*, 229-33. Hughes, *Over Lord*, 205-8.

[129] Blumenson, *Breakout and Pursuit*, 233-46; Hughes, *Over Lord*, 215-19.

tanks drastically shortened response times and improved relations between airmen and ground forces.[130] The Air Force's official history of the war records some examples.

> "Is the road safe for us to proceed?" was the question radioed on one occasion from tank to plane. "Stand by and we'll find out," came the answer, and in their ensuing sweep the four P-47's spotted as many enemy tanks [four] on the road ahead and put them out of action. Returning to the air over their column, the planes radioed: "All clear. Proceed at will." When radio jammed, tanks used shells or machine-gun tracers to mark the target they desired attacked and got results. On another occasion a single Sherman was threatened with destruction at the hands of German panzers, but the covering planes observed its plight and managed to disperse the enemy. In response to a column commander's request, the road ahead of him was swept with fire. The planes then radioed, "Go ahead," but instantly recalled that direction. "There's one we missed. Tank at right side of road. Next building up. 200 yards." … The armor of VII Corps, together with escorting planes, had taken the lead in the breakout on 26 July.[131]

One German column even surrendered to a P-47, diving for a ditch and waving a white flag. Quesada and his airmen took heart at these improvements in the CAS relationship. They pressed the attack as it gained momentum in the following days, becoming the hoped for breakout from Normandy. In the last week of July, IX Tactical Air Command alone flew over 9,000 close air support sorties and took an impressive toll on the German defenses. Forgiveness came from Eisenhower and Bradley, even for the botched preparatory bombing of July 24th and 25th.[132]

Many historians have lauded the impact of the air-tank team in Operation Cobra. John Sullivan failed to mention the air-tank team in his critique of the air support in Cobra, claiming ground commanders like Collins succeeded in spite of the AAF's detrimental contribution of CAS.[133] However, Quesada's biographer, Thomas Hughes saw it differently; "In COBRA, the

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[130] Hughes, *Over Lord*, 220-21.

[131] Craven and Cate, *Army Air Forces: Volume 3*, 240-41.

[132] Hughes, *Over Lord*, 220-26.

[133] John J. Sullivan, "The Botched Air Support of Operation Cobra," *Parameters* 18, (March 1988): 109.

air-tank team, much more than the initial massive bombardment was the key to success."[134] The US Army Center of Military History account, *Breakout and Pursuit* puts forward a more balanced account. The success of the effort on July 26 depended on a breakout from Collins' VII Corps, and accordingly Bradley assigned him all of the air support for the day. The history goes on to chronicle the effects of tactical airstrikes in late July, from enabling ground maneuver to preventing a German escape.[135] As Gregory Kreuder described in his SAASS thesis, "Quesada's armored-column cover tactics may not have been decisive, but they were certainly instrumental in the Allied break-out from the stalemate."[136] The air-tank team provided the first demonstration of CAS as modern airmen and ground forces view it. Detailed integration took place at the operational and tactical level with better planning and communication. Operation Cobra had a rocky start, but it heralded a new era in the CAS relationship.

The air-ground relationships that developed between the tactical air commands in the European theater continued to pay dividends as the war in Europe progressed. Among the most storied relationships, Lieutenant General George S. Patton and Brigadier General Otto P. Weyland fused the US Third Army and the XIX Tactical Air Command into an impressively capable team.[137] An interim report on their drive across France described how the air command moved its combat headquarters five times in August of 1944 in order to stay close to Patton's forward command post.[138] Armored-column cover tactics like those pioneered by Quesada proved

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[134] Hughes, *Over Lord*, 226.

[135] Blumenson, *Breakout and Pursuit*, 253-55, 278.

[136] Gregory Kreuder, "Lieutenant General 'Pete' Quesada and Generalfeldmarschall Wolfram Von Richthofen: What Made Them Great?" (master's thesis, School of Advanced Air and Space Studies, 2009), 1.

[137] Spires, *Patton's Air Force*, vii.

[138] Headquarters, Army Air Forces, *Air-Ground Teamwork on the Western Front*, Wings at War Series: Number 5 (Washington, DC: Center for Air Force History, 1992), 1.

highly effective.[139] Far from the confrontational tenor of the relationship in North Africa, through campaigns in France, Lorraine, the Ardennes, and into Germany, cooperation in both personal and professional partnerships characterized the CAS relationship. Though Weyland had spoken up for air interests when necessary, Patton was so impressed with Weyland's dedication to ground operations that he was willing to offer him a corps command.[140] Unfortunately, after the war, both services relied on pre-existing doctrine rather than continuing personal relationships to sustain their CAS capability. Weyland would play a major role in the upcoming Korean War, and later remark in his official report about the shocking, "number of old lessons that had to be relearned."[141] As David Spires wrote, "When genuflecting before the altars of doctrine in peacetime, it seems the absolute importance of pairing military leaders of good will in wartime who respect, trust, and rely on their service counterparts as comrades in arms is easily forgotten."[142]

Analysis

World War II shows a clear example of a nearly non-existent CAS relationship resulting in unacceptable performance during the opening campaign of a war. The AAF executed scarcely any effective CAS in North Africa, and progress toward Tunisia slowed amid angst between ground and air commanders. As the personal relationships improved between airmen and ground troops under the demands of war, the efficacy of CAS grew. The air-tank team embodied these improvements during operation Cobra, acting as a truly integrated CAS team built on strong relationships and trust that opened the floodgates, enabling the Allies to engage in mobile warfare

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[139] Army Air Forces, *Air-Ground Teamwork*, 46.

[140] Spires, *Patton's Air Force*, 291-92, 310-13.

[141] Ibid., 315.

[142] Ibid., viii.

after weeks of near-stationary fighting in bocage terrain.[143] By the end of the war, most leaders praised the critical contribution of airpower to the land operations that ultimately caused the collapse of the Third Reich.[144] That relationship, however, proved to be short lived.

## The Korean War

### The CAS Relationship Prior to Hostilities

After World War II, several factors conspired to weaken the robust CAS relationship grown from the battlefields of Europe where air-ground cooperation decimated the German military. As historian Allan Millett wrote, "Five years later, that experience was but a memory."[145] Despite civilian casualties, many air leaders still espoused progressive ideas on airpower as a way to end war quickly.[146] External factors such as the Soviet development of nuclear weapons and the birth of a separate US Air Force radically changed the face of warfare, but formal agreements between the services in the aftermath of the war suggested that the CAS relationship would remain essentially unchanged. Most Air Force leaders focused on nuclear warfare and the strategic possibilities of airpower. The War Department saw the primary mission of US airpower as a counter to the Soviet Union's war making capacity. The Joint Chiefs of Staff, driving budget decisions and aircraft procurement for a newly independent air arm, ratified this priority.[147]

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[143] Gallogly, "Integrated Close Air Support," 129.

[144] Hughes, *Over Lord*, 13.

[145] Allan R. Millett, *The War for Korea, 1950-1951: They Came from the North* (Lawrence: University Press of Kansas, 2010), 129.

[146] Mark Clodfelter, *Beneficial Bombing: The Progressive Foundations of American Air Power, 1917-1945* (Lincoln: University of Nebraska Press, 2010), 5.

[147] Purdham, *America's First Air Battles*, 5; Crane, *Airpower Strategy in Korea*, 5, 17, 21.

On July 26, 1947, the National Security Act created a separate US Air Force.[148] Executive Order 9877, published that same day, laid out the functions of that Air Force and its four major mission areas.[149] Although the executive order specified air support to land forces as one of these four primary functions, incongruences in policy documents and disagreement among the services over their CAS function led to another formal agreement amongst the Joint Chiefs and Secretary of Defense Forrestal, which they negotiated at a conference in Key West, Florida.[150] Contrary to a common misconception, the Key West agreement did not clearly assign the CAS mission to the Air Force. The final language of the policy, the result of further discussion that took place in 1948 at a Newport, Rhode Island meeting did, however, rule out Army participation in building aircraft to provide CAS.[151] Thus, the Air Force's demand for independent control over all air assets led to its responsibility for CAS—a mission that required its airplanes perform a support function for another service. To accomplish this bifurcated role, the Air Force embraced a fighter-bomber concept, suggesting that F-80 and F-84 jets could perform effective ground support just as the P-47 had during World War II.[152] The Key West agreement's requirement for the Air Force to operate fixed wing CAS airplanes set the stage for interservice friction that remains a challenge today, simply because it created a requirement for joint interaction.

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[148] Richard Irving Wolf, ed., *The United States Air Force: Basic Documents On Roles and Missions*, Air Staff Historical Study (Washington, DC: Office of Air Force History, US Air Force, 1987), 61.

[149] Wolf, *Basic Documents On Roles and Missions*, 85.

[150] Ibid., 152.

[151] Schlight, *Help From Above,* 73.

[152] Campbell, *Warthog*, 33.

Although Key West determined that the CAS mission would endure, the Army and Air Force squabbled over or simply ignored the need to create the joint doctrine required to execute it. When the services finally began to develop doctrine, little time remained to prepare their personnel to employ it effectively during the Korean War.[153] The *Joint Training Directive for Air-Ground Operations* arrived three months after the war started. It contained only minor adjustments to earlier procedures, but the Air University commander objected to it on philosophical grounds, refusing to accept any implication that tactical air forces were primarily a supporting force for ground campaigns.[154] This disagreement was just as evident on the Army side, where general officers took objection to even the idea of a coequal status with airmen in shaping tactical air priorities. Without approved joint doctrine, the services prepared for future conflict under the 1946 FM 31-35 *Air-Ground Operations*, based on experiences in the European theater.[155] Making matters worse, neither airmen nor ground forces followed the World War II doctrine properly; as a result, ALO positions went unfilled, radio links became unreliable, and personnel from both services viewed the bomb line more like a strict line of demarcation between ground and air fires than a means to enable integration.[156] Critical disagreements over command and control remained unresolved, meaning the services would have to hammer them out under fire. In perhaps the most compelling doctrinal shortcoming of all, FM 31-35 made no mention of joint training.[157]

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[153] Schlight, *Help From Above,* 61.

[154] Ibid., 109.

[155] Allan R. Millett, "Korea 1950-1953," in *Case Studies in the Development of Close Air Support*, Special Studies, Office of Air Force History, edited by Benjamin Franklin Cooling (Washington, DC: Government Printing Office, 1990), 347-49.

[156] Campbell, *Warthog*, 31.

[157] Schlight, *Help From Above,* 60.

Both services neglected joint training before the Korean conflict. The forces in the Far East focused on occupation and defensive tasks. As a result, none of the four divisions of the US Army in Japan had executed air to ground training with the Air Force. Nor had any of the airmen executed joint training with a ground unit in the Far East. Tactical Air Control Party (TACP) training was unrealistic and there were few gunnery ranges for the pilots. Far from a local issue, the same lack of joint training was evident in the United States While the Army reported to Congress high levels of Army and Air Force cooperation in joint training, the training itself was poor in quality. Large exercises such as amphibious operations in the Caribbean and a 26,000-troop exercise called Swarmer consistently revealed the lack of training as a driving factor in poor air-ground support, especially in command and control. Exercise Tarheel in 1949 was a division-level exercise intended to stress air-ground support, but meager participation by the Air Force reduced its efficacy. Although the exercise offered the opportunity for lessons learned, especially in command and control, the Air Force delayed integration of these lessons into doctrine, citing a need for more testing. In fact, since the end of World War II, Tactical Air Command (TAC) had only participated in joint training exercises that conformed to its construct of command and control. This contributed to a growing perception that the new Air Force was unwilling to cooperate or compromise.[158] That perception led to fractured personal relationships that further exacerbated the divide over CAS.

Personalities and interservice rivalry contributed as much to destroying the CAS relationship as any other factors. The independent Air Force's commitment to its strategic mission fueled ground forces' fears that airmen would neglect their tactical CAS role. The newly minted Air Force was still so insecure in independence that when ground forces complained about

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[158] Schlight, *Help From Above*, 75, 76-77, 99-100, 105-7, 117-18; Purdham, *America's First Air Battles*, 12.

inadequate support, the Air Force reacted by clinging tighter to its resources rather than assuaging their fears.[159] Budgetary constraints drove the Air Force to cut back on programs primarily intended to support ground forces, like the helicopter. These decisions did not come across as exigencies of financial hardship to the Army. Army aviators instead viewed this decision as an example of the Air Force's indifferent attitude toward ground troops.[160] A lack of leadership in the tactical aviation community damaged the relationship even further.

TAC failed to provide air leadership for the CAS relationship. Pete Quesada, promoted to Lieutenant General after World War II, commanded the TAC in the newly independent Air Force. Unfortunately, he became so disillusioned with the continual repression of tactical air under the ascendency of Strategic Air Command (SAC) that he began telling pilots to leave TAC if they had any career ambitions. Quesada eventually requested reassignment when the Air Force emasculated TAC in 1948.[161] No other strong leader emerged within the TAC until General Hoyt S. Vandenberg handpicked Quesada's old friend Major General Otto P. Weyland to take the command in the early 1950s. Unfortunately, this gave him no time to effect change in decaying and neglected organization before crisis arrived. Only one week after selecting Weyland to command the TAC, Vandenberg reassigned him to support the Korean War.[162] Even when Tactical Air Command found doctrinal consensus with the Army, the strategically focused doctrinal leaders at the Air University crushed cooperation on philosophical principal.[163]

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[159] Crane, *Airpower Strategy in Korea*, 7-8.

[160] Schlight, *Help From Above,* 74.

[161] Hughes, *Over Lord*, 304-13.

[162] Michael J. Chandler, LtCol, USAF, "Gen Otto P. Weyland, CAS in the Korean War" (master's thesis, School of Advanced Air and Space Studies, 2007), 50-51.

[163] Schlight, *Help From Above,* 109.

Personal relationships between air and ground commanders became a determining facet of airpower during the conflict. As Conrad Crane explained in the introduction to *American Airpower Strategy in Korea, 1950-1953,* "American airpower played a major role in UN operations, and the way it was employed depended on the attitudes and experience of a number of key leaders."[164] The deleterious effect of years of neglect of tactical airpower and the CAS mission stood out quite prominently during the early stages of the Korean War.

Retreat to Pusan

When North Korean forces began their race south on June 25, 1950, they caught the US Air Force and Army completely unprepared to conduct close air support.[165] Divisions focused on the occupation of Japan had to adjust to the demands of fighting a rear guard action on the Korean Peninsula, and the air-to-air fighters and strategic bombers of the Far East squadrons suddenly had a ground support mission that they could no longer ignore.[166] The Far East Command enjoyed air superiority within a month of operations and started strategic bombing, but it relied on its ground units to halt the advance of the Korean People's Army and prevent the peninsula from falling under communist control.[167] Weak US and Korean artillery and the steady advance of North Korean troops required an emergency emphasis on close air support, supported by even the heavy B-29 bombers. In the first month, sixty-two percent of the Far East Air Forces' sorties were dedicated to CAS, compared to only thirteen percent performing interdiction.[168] The Army and Air Force agreed on the need to focus on ground support, and ground commanders initially

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[164] Crane, *Airpower Strategy in Korea*, 3.

[165] Schlight, *Help From Above,* 113.

[166] Ibid., 118.

[167] Millett, *The War for Korea*, 170-74.

[168] Schlight, *Help From Above,* 118-20.

praised Air Force efforts.[169] Unfortunately, turning good intentions into battlefield results proved more difficult.

Despite the massive effort, the prewar neglect of CAS produced disappointing results when it was suddenly and urgently required. Writing a study on CAS in Korea for the Air Force, historian Allan Millett noted, "Lack of preparedness for war ensured confusion, frustration, and inefficiency."[170] For example, the Air Force rushed B-29s to the peninsula to fill the urgent need for support, but twenty-two Korean civilians died when the heavy bombers engaged the wrong target.[171] However, the core problem was not the type of aircraft employed. Instead, the "effectiveness of close air support depended upon the Eight Army – Fifth Air Force organization to request and direct ground attack sorties."[172] First, their lack of practice before the war contributed to disappointing results.[173] In addition, the US Army had only ten TACPs in Korea, and by the end of July, eight of these were out of commission because of mechanical breakdowns or enemy action.[174] With no air-ground coordination system in place, the Fifth Air Force cobbled together an emergency measure to direct aircraft in support of the Army.[175] Existing doctrine called for a Joint Operations Center to coordinate and control air-ground efforts, but the Army provided no representation.[176] Worse still, the center's heavy communication equipment did not

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[169] Schlight, *Help From Above*, 122.

[170] Millett, "Korea 1950-1953," 353.

[171] Schlight, *Help From Above*, 120.

[172] Millett, "Korea 1950-1953," 363.

[173] Boose, "The Army View," 103.

[174] Millett, *The War for Korea*, 141.

[175] Millett, "Korea 1950-1953," 364.

[176] Robert F. Futrell, *The United States Air Force in Korea, 1950-1953*, Rev. ed. (Washington, DC: Government Printing Office, 1983), 79.

arrive until July 19th.[177] Pilots resorted to striking targets of opportunity and divisions relayed air support requests by word of mouth.[178] Ground forces soon noted stark comparisons between Air Force CAS and that provided by Marine and Naval aircraft, working with a different doctrinal model and extensive prewar training.[179] They began to elevate their concerns.

In October and November of 1950, the Air Force, along with the other services, began conducting inquiries on CAS performance in Korea. While the Air Force report was generally positive, it did concede a need for improvement in joint doctrine and communications. A report sent to Washington from the Far East Command Operations Research Office reflected a wholly different perspective. Compared to Marine aviation, Air Force CAS took four times as long to get to a target, stayed less than half as long, and employed effects an average of twice as far from the front lines.[180] Still, reports highlighting the problems caused by massive prewar neglect and a broken CAS relationship did not mean that CAS had no effect. Ground commanders often spoke positively of the effects of Fifth Air Force air support. General Walton H. Walker, commander of the Eighth Army, claimed that ground forces could not have maintained a foothold in Korea or subsequently taken the offensive without tactical air support.[181] However, he followed this comment with musings on the possibility of even closer teamwork.[182] Army ground forces could have accomplished much more with well-equipped, well-trained, responsive CAS from the Air

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[177] Roy E. Appleman, *South to the Naktong, North to the Yalu*, 50th Anniversary Edition, US Army Center of Military History Publication 20-2-1. (Washington, DC: Government Printing Office, 1992), 95.

[178] Schlight, *Help From Above,* 121.

[179] Anthony T. DeSmet, LCDR, USN, "Effects of Doctrine and Experience on Close Air Support Operations in Korea (1950-1951)" (research report, Air Command and Staff College, 2000), 26; Boose, “The Army View,” 102-104; Purdham, *America's First Air Battles*, 16-17.

[180] Crane, *Airpower Strategy in Korea,* 60-62.

[181] Appleman, *Naktong to the Yalu*, 476-77; Millett, “Korea 1950-1953,” 354.

[182] Boose, “The Army View,” 106-107.

Force, making the prewar lack of preparation for this mission unacceptable. The joint force had to learn in the heat of battle with American lives at risk. In a war that senior military leaders had expected to end by Christmas, airpower coordination did not mature in Korea until well after the new year.[183]

The CAS Relationship Renewed


Figure 5. A Stimson L-5 over Korea.

*Source:* John Schlight, *Help from Above: Air Force Close Air Support of the Army 1946-1973*, Air Force History & Museums Program (Washington, DC: Government Printing Office, 2003), 151-2.

As the Korean War continued, airmen pioneered many tactical changes, from improvements in air attack techniques, integration with artillery, and the use of unarmed

[183] Millett, "Korea 1950-1953," 353.

Mosquito tactical airborne coordinators, beginning with the L-5 Stimson Sentinel (see Figure 5). More durable and survivable aircraft soon replaced it and the concept spread rapidly from only two aircraft and four pilots into multiple Tactical Control Squadrons.[184] The Mosquitos formed a critical link between high-flying jets and fleeting targets that were outside of visual range from the ground.[185] Such tactical improvements speak to the pride and determination of airmen supporting ground troops, but the biggest changes manifested in the growth of the CAS relationship defined by doctrine, training, and personal relationships. By the end of the war the Joint Operations Center, once staffed with only airmen, now included full participation by all services. Representatives from the Air Force, Army, Navy, and Marines met in Seoul and recommended joint doctrine to cement the air-ground cooperation they had pioneered.[186] Fifth Air Force initiated training improvements for TACPs.[187] They began scheduling excess sorties for CAS, above the requested levels from ground troops, primarily for joint training.[188]

There were many examples of improved personal relationships. Lieutenant General Edward Almond, commander of X Corps was the most outspoken critic of Air Force doctrine.[189] He firmly believed in the primacy of CAS over interdiction and advocated that ground commanders maintain maximum control of that firepower.[190] While he remained critical of the

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[184] Futrell, *The United States Air Force in Korea*, 151-52.

[185] J. Farmer and M. J. Strumwasser, *The Evolution of the Airborne Forward Air Controller: An Analysis of Mosquito Operations in Korea* (Santa Monica: RAND, 1967), v.

[186] Futrell, *The United States Air Force in Korea*, 707.

[187] William T. Y'Blood, "Down in the Weeds: Close Air Support in Korea." *The U.S. Air Force in Korea* (Washington, DC: Air Force History and Museums Program, 2002), 26.

[188] Ibid., 39.

[189] Chandler, "General Otto P. Weyland," 88.

[190] Michael Lewis, Maj, USAF, "Lt Gen Ned Almond, USA: A Ground Commander's Conflicting View with Airmen over CAS Doctrine and Employment" (master's thesis, School of Advanced Air and Space Studies, 1997), 79.

CAS doctrine in place, his position finally began to soften as the CAS relationship improved. He went so far as to send a message to the Far East Air Force leadership that read, "Nothing is more heartening to the front-line soldier than to observe such striking power as was displayed in the X corps area during this period [Airstrikes east of Seoul at the end of February 1951]. Thanks to you and your command for this splendid cooperation."[191] As another example, General O. P. Weyland, commander of Far East Air Forces and described by Michael Chandler at the School of Advanced Air and Space Studies as "the ideal choice to lead the Air Force in the Korean War," championed the airmen's perspective on tactical air power.[192] Respected by the Army for his reputation with General George Patton in World War II and by the Air Force for his tactical expertise, he advocated adding the airman's perspective to ground focused viewpoints. His experiences in Korea confirmed his belief that teamwork and cooperation were the keys to success.[193] Major Charles Loring, perhaps the most stunning example of airmen's growing dedication to the troops they supported, received the Medal of Honor for sacrificing his life to silence a gun emplacement firing on ground troops. In his final effort, he flew his crippled F-80 into the enemy position.[194]

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[191] Chandler, "General Otto P. Weyland," 88.

[192] Ibid., 116.

[193] Charles B. McFarland, Maj, USAF. "A Sword for all Seasons: General O.P. 'Opie' Weyland and the Emergence of Tactical Air Command" (master's thesis, School of Advanced Air and Space Studies, 2006), 79; Chandler, "General Otto P. Weyland," 51.

[194] Wayne Thompson and Bernard C. Nalty, *Within Limits: The U.S. Air Force and the Korean War,* Air Force Fiftieth Anniversary ed. (Washington, DC: Government Printing Office, 1996), 50.

Figure 6. The results of close air support. A pair of North Korean T-34 tanks blasted off the road near Waegwan, South Korea.

*Source:* William T. Y'Blood, "Down in the Weeds: Close Air Support in Korea." *The U.S. Air Force in Korea* (Washington, DC: Air Force History and Museums Program, 2002), 17.

The burgeoning CAS relationship translated into battlefield success as the war in Korea progressed (see Figure 6). Improved command and control at the Joint Operations Center meant that Fifth Air Force assets responded more quickly than they had in the early months of the war and integrated radar to guide aircraft at night.[195] Training pushed by the Fifth Air Force resulted in evident improvements only a month after its policy implementation in February of 1942, and both airmen and ground forces applauded the improvements in CAS techniques.[196] Ground troops

[195] Thompson and Nalty, *Within Limits*, 50.

[196] Y'Blood, "Down in the Weeds," 39.

received both physical and morale boosts from the CAS provided, and if offensive operations had continued after 1951, tactical aviation would have been essential to their success.[197] Perhaps the biggest and most lasting improvement was the reinstatement of Tactical Air Command to the level of a major command, providing the emphasis needed to ensure effective support of the rapidly growing numbers of American troops in Korea.[198] Doctrinal struggles and imperfections in execution persisted throughout the conflict. The Air Force clearly focused on interdiction throughout the war in Korea, and exercises at home highlighted the same problems seen in the war zone.[199] Still, personnel in theater executed CAS in ways that the pre-war relationship could never have supported.

Senior Army leaders in Washington and Korea placed their disagreements over CAS in context with larger objectives and kept the issue from elevating interservice conflict, while air leaders concurrently improved the standing of tactical aviation. For example, in 1952 the top commander in Korea, General Matthew B. Ridgway, interceded to keep a bitter exchange between air and ground commanders from reaching Washington. He ordered them, instead, to meet face to face and discuss how to improve tactical air support.[200] Reminiscent of Eisenhower and Quesada in World War II, General Ridgeway flew with the commander of the Fifth Air Force, Major General Earle E. Partridge, to survey the objective for Operation Thunderbolt.[201] CAS was riding a relative high point of inter-service cooperation forced by the necessity of war.

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[197] Millett, "Korea 1950-1953," 396-97.

[198] Schlight, *Help From Above,* 176.

[199] Millett, "Korea 1950-1953," 397.

[200] Boose, "The Army View," 108-12.

[201] Billy C. Mossman, *Ebb and Flow: November 1950-July 1951*, 50th Anniversary Edition, US Army Center of Military History Publication 20-4 (Washington, DC: Government Printing Office, 1990), 36, 240-42.

Analysis

As William Y'Blood summarized in his analysis of Korean CAS for the Air Force History and Museums Program,

> Close air support of the ground forces as provided by Fifth Air Force came at some cost, and tempers flared in the process, but the air commanders in Korea never deprived the ground commanders of close air support if it was needed. Indeed, without the close air support provided by airmen, the ground campaign would have been a much more bloody and difficult affair than it was.[202]

The CAS relationship entered the Korean conflict in a feeble state because of neglect in doctrine, training, and leadership after World War II. Predictable results ensued as Air Force personnel struggled in their initial efforts to provide effective CAS. However, airmen and ground troops rose to the challenge and dedicated themselves to improving performance and healing the CAS relationship. Whether that relationship would persist until the next conflict depended on continued nurturing from the joint forces.

## Vietnam and the Gulf War

After the Korean War, the interest both services had shown in CAS rapidly evaporated as nuclear tensions heated up. President Eisenhower detested the thought of another limited war bankrupting America, and he promulgated the idea that the Korean War was an aberration. His concerns about the costs of large conventional forces refocused the military on nuclear weapons and led to the ascendency of strategic airpower through his "New Look" and "Massive Retaliation" policies.[203] While Air Force CAS capabilities grew in the early 1960s thanks to the strategy of Flexible Response, which required renewed effort on military operations below the

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[202] Y'Blood, "Down in the Weeds," abstract.

[203] Sean N. Kalic, "Dwight D. Eisenhower," in *Generals of the Army: Marshall, Macarthur, Eisenhower, Arnold, Bradley,* edited by James H. Willbanks (Lexington: The University Press of Kentucky, 2013), 136-38; Schlight, *Help From Above,* 179-82.

strategic nuclear level, overall the relationship remained fractured as America began its involvement in Vietnam. The Air Force and Army had developed separate ideas about air-mobility and the Air Force's CAS role before the war, and each service validated its own concepts for control of helicopters and the role of CAS in stateside testing. Since they did not coordinate their efforts, the services failed to build consensus. The issue remained unresolved in 1965, when the Army conducted its first airmobile deployment.[204]

Following the fluctuating pattern established during World War II and the Korean War, after a period of dysfunction the CAS relationship gradually healed during the Vietnam War. By the end of the war, many US Army commanders expressed satisfaction with CAS, but individual views often reflected when and in what capacity they served.[205] The war spawned many improvements in CAS capability. For instance, the evolution of the airborne FAC made it a large-scale contributor to the combined arms effort. Ultimately, the services reached a consensus over the doctrine of centralized control and the inclusion of attack helicopters in the ranks of Army aviation assets. Requirements from the Vietnam experience, the beginnings of AirLand Battle Doctrine, competition over air assets after the introduction of attack helicopters, and the need to save money through simpler aircraft development helped motivate the Air Force to build a special purpose CAS platform, which would eventually become the A-10 Warthog.[206] Spurred by the Vietnam War, the Army and Air Force had developed better CAS equipment and procedures, and had developed a high degree of trust. Unfortunately, budget constraints, technological development, and changing doctrine soon eroded the progress they had won in Southeast Asia.[207]

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[204] Schlight, *Help From Above,* 297-98.

[205] Mrozek, *Airpower and Ground War*, 118.

[206] Campbell, *Warthog*, 197; Schlight, *Help From Above,* 363.

[207] Hasken, "A Historical Look," 40-41.

In the years following the Vietnam War, familiar, but less distressing arguments between the airmen and ground troops resurfaced as the Army adopted AirLand Battle doctrine.[208] When the Army developed improved deep fire systems, disagreement over the concept of Battlefield Air Interdiction and the Fire Support Coordination Line threatened to derail the relationship. However, good rapport between senior service leaders encouraged cooperation in the ranks, and TAC fully supported the new doctrine.[209] Additionally, the Army was satisfied with the performance of CAS in the final years of the war in Vietnam, and they saw the existence of the A-10 as a promise that the Air Force would continue to support the CAS role.[210] In 1987, Richard Davis penned an Air Staff Historical Study, *The 31 Initiatives: A Study in Air Force - Army Cooperation*, documenting the plans of the Air Force and Army Chiefs of Staff to improve their joint preparation for war in air-ground cooperation.[211] The 1984 initiatives included improvements in Air Liaison Officer and FAC training and integration with ground maneuver units, including a doctrine review. Davis' comments on Initiative 24 ("Initiative on Close Air Support (CAS) The Army and Air Force reaffirm the Air Force mission of providing fixed-wing CAS to the Army.") are telling.[212]

> Initiative #24 reaffirmed the Air Force's mission of providing fixed-wing CAS to the Army. It required no implementation or development. That this mission required reaffirmation spoke to the traditional distrust the two services felt toward one another on this issue. Yet, its inclusion in a document advocating a comprehensive integration of the

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[208] Schlight, *Help From Above*, 384.

[209] John D. Hall, MAJ, USA, "Solving the Air-Ground Dilemma: An Examination of Air Power's Relationship to Ground Operations" (monograph, School of Advanced Military Studies, 2000), 9-13.

[210] Hasken, "A Historical Look," 43.

[211] Richard G. Davis, *The 31 Initiatives: A Study in Air Force - Army Cooperation*, Air Staff Historical Study (Washington, DC: Office of Air Force History, 1987), v-vi.

[212] Wolf, *Basic Documents On Roles and Missions*, 421-22.

> doctrine and means with which the Army and Air Force intended to conduct the next battle acknowledged its basic necessity to both.[213]

The 31 initiatives represented a major step forward in healing the icy relations between the Army and the Air Force and began a new era in CAS cooperation, though many years passed before they would put the initiatives to the test in combat.[214]

The Gulf War, while a showcase of many of airpower's attributes, provided limited insight into the state of CAS. Challenges to visibility for the pilots soon led ground commanders to push both fixed wing CAS and organic rotary wing aviation well forward of their irregular front lines.[215] On February 27, 1991—one of the biggest days for CAS during the war—VII Corps, the coalition main effort, made contact with the Republican Guard. The corps received all the support it asked for—128 sorties—but this still represented only ten percent of the day's total air sorties.[216] Advancing ground units were such an overmatch for their enemy and moved so quickly that many ground commanders did not feel CAS was necessary.[217] While there are certainly valuable lessons to learn from the war, including fratricide prevention and fire-support coordination measures, the CAS relationship fluctuated significantly less than it had during America's longer conflicts, largely because of an overabundance of sorties and the brevity and shocking success of the ground campaign.[218]

Still, the operations that did occur were highly successful, and illustrated the benefit of a good CAS relationship in the years after Vietnam. General Frederick Franks wrote of his

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[213] Davis, *The 31 Initiatives*, 60.

[214] Barks, "Anything But," 34.

[215] Tom Clancy and Fred Franks, *Into the Storm: A Study in Command* (New York: Berkley Books, 1998), 340.

[216] Ibid.,, 403.

[217] Campbell, *Warthog*, 181; Hasken, "A Historical Look," 43-44.

[218] Hasken, "A Historical Look," 43-45.

experience with an A-10 pilot who told him before the ground war, "we'll be there for you." He then added, "It was the same kind of air-ground team loyalty I had seen in Vietnam. It's powerful."[219] In the words of Phillip Barks, who served as ALO and ground FAC during Operation Desert Storm, "The success of the 1990-91 Persian Gulf War clearly illustrated the lethality brought about by the right combination of doctrine, training, equipment, and both Services focusing on joint air-ground integration."[220]

After the air-centric battles in Bosnia and Kosovo, the next major combat operation for American ground troops came after September 11, 2001. By that point, the CAS relationship again reflected years of neglect. During the preparations for OEF, Gulf War success and the tactical doctrine developed and refined through regular joint training at Air Warrior exercises created a false sense of security. This masked fractious personal relationships and deficiencies in joint planning doctrine.

## The War in Afghanistan

### The CAS Relationship Prior to Hostilities

The most positive aspect of the CAS relationship leading up to OEF and OIF was the tactical doctrine gleaned from previous conflicts and cemented through the relatively robust joint training conducted at the Combat Training Centers (CTCs).[221] AirLand Battle doctrine relied heavily on air-ground integration to interdict enemy forces approaching the fight and provide CAS to help defeat enemy forces already in contact with friendly ground units. In order to rehearse and refine these procedures through large-scale maneuvers, the US Army opened the National Training Center (NTC) at Fort Irwin, California, and the Air Force accepted an

[219] Clancy and Franks, *Into the Storm*, 340.

[220] Barks, "Anything But," 35.

[221] Ibid., 57-58.

invitation to formalize joint air to ground training there. Beginning with 900 sorties per year in 1982, TAC soon created an exercise plan named Air Warrior. By 1987 the Air Force flew 2,700 sorties in support of 14 exercises per year. When the Army created the Joint Readiness Training Center (JRTC) at Fort Chaffee, Arkansas, to provide light infantry units the same level of high fidelity training, the Air Force created Air Warrior II to support it. Air Warrior I and II remained tied to the NTC and JRTC despite location moves, the deactivation of TAC, and the end of the Cold War. These exercises trained the pilots that would fly in OEF.[222] Close personal relationships and trust were the basis for these high points in the CAS relationship. As Lieutenant Colonel Phillip Barks described in his thesis on Joint training at the CTCs, formalized air-ground training was, "the direct result of the personal relationships formed between senior leaders."[223] However, operational doctrine and practice stagnated in a false sense of security from improved tactical training and combat success.

In 2009, Major David Lyle wrote a thesis for the Command and General Staff College that examined the doctrinal backdrop of the planning for Operation Anaconda, the first large battle for US ground troops during OEF in Afghanistan. He concluded that significant problems with joint doctrine left it inadequate to the task of planning the operation.[224] Doctrine did not specify how the Joint Task Force commander should communicate requirements to the air component, or how operations and plans divisions communicated inside the air component.[225] On the Army side, the 2001 doctrine represented in Field Manual 3-0 *Operations* showed a

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[222] Barks, "Anything But," 32-35.

[223] Ibid., 33. Lieutenant Colonel Barks served as Commander, 549th Combat Training Squadron, Nellis AFB, NV, where he was responsible for the planning and execution of the GREEN FLAG-West exercise.

[224] David J. Lyle, Maj, USAF, "Operation Anaconda: Lessons Learned, or Lessons Observed?" (master's thesis, Army Command and General Staff College, 2009), 64.

[225] Ibid., 60.

significantly reduced emphasis on CAS, coinciding with a lack of CAS in recent operations over Bosnia and Serbia.[226] The 1993 version of FM 100-5 *Operations* had provided a detailed description of how CAS supported and enhanced ground operations.[227] Its replacement, FM 3-0, contained no mention of how CAS might aid ground operations.[228] Lyle went on to provide recommendations for better joint doctrine that would elucidate the collaboration required within the planning process.[229] Air Force Chief of Staff General John Jumper pointed out after Anaconda, "We know how to do close air support at the tactical level. At the operational level, the giant lesson learned [was that] we absolutely positively must have the right interfaces at the operational level of war." Expounding on General Jumper's comments, historian Rebecca Grant noted that, "Planning and execution depended directly on the relationships between the components."[230] A major contributor to the problems with the service component relationship was the failure in personal relationships leading up to Operation Anaconda.

Both airmen and ground forces allowed physical separation and personal disagreements to impede their relationships. From the Gulf War to the beginning of OEF, United States Central Command routinely excluded the Combined Forces Air Component Commander (CFACC) from the planning process, including the planning for the initial air strikes of OEF.[231] Conversely, some troops disliked the appointment of Lieutenant General T. Michael "Buzz" Moseley as the CFACC

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[226] Barks, "Anything But," 48-49.

[227] Field Manual (FM) 100-5, *Operations* (Washington, DC: Government Printing Office, 1993), 2-19.

[228] Field Manual (FM) 3-0, *Operations* (Washington, DC: Government Printing Office, 2001).

[229] Lyle, "Operation Anaconda," 65.

[230] Rebecca Grant, *The First 600 Days of Combat* (Washington, DC: IRIS Press, 2004), 82.

[231] Mark G. Davis, MAJ, USA, "Operation Anaconda: Command and Confusion in Joint Warfare" (master's thesis, School of Advanced Air and Space Studies, 2004), 36.

just prior to Operation Anaconda. Moseley was an F-15C fighter pilot, a platform with no air to ground mission.[232] Regardless, the CFACC and Combined Forces Land Component Commander (CFLCC) themselves were not only located far from Afghanistan, but also from each other.[233] Simply placing air and ground leaders in the same piece of physical space might have re-forged the relationships inside of the existing Theater Air Ground System, but distance and a lack of adherence to doctrine precluded this.[234] A National Defense University study on Operation Anaconda explains the doctrinal shortcomings.

> Equally important, assets, plans, and procedures for integration of growing ground operations with ongoing USAF and Navy air operations had not yet been fully established in accordance with U.S. military doctrine as described in JP 3–09. There were deficiencies in or malpositioning of assets critical for connectivity, such as ground liaison officers (GLOs) and an ASOC. There were no GLOs or Army liaisons for air component wing units. A skeleton ASOC—a unit typically collocated with the corps or highest-level ground unit to provide C2 over CAS requirements—was established just before the battle. There was no fully developed joint task force in or near Afghanistan that had been given the responsibility and authority to perform joint planning and guide joint operations there. A nascent joint command structure was beginning to take shape as Anaconda got under way, but it was not yet fully mature and functioning effectively. Hence, the Afghanistan command structure was fragmented and dispersed in ways that may have impeded effective planning and operations in Anaconda.[235]

A direct interface anywhere in the chain might have solved the problem, but this lack of personal interaction directly contributed to failures in joint planning which would heavily affect the first brigade-sized operation in Afghanistan.

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[232] Sean Naylor, *Not a Good Day to Die: The Untold Story of Operation Anaconda* (New York: Berkley Books, 2005), 136.

[233] Richard L. Kugler, Michael Baranick, and Hans Binnendijk, "Operation Anaconda: Lessons for Joint Operations" (Defense & Technology Paper, Center for Technology and National Security Policy, National Defense University, 2009), 8-9.

[234] Davis, “Operation Anaconda,” 77.

[235] Kugler, Baranick, and Binnendijk, “Operation Anaconda,” 9.

Operation Anaconda


Figure 7. U.S. Air Force Controller in Operation Anaconda.

*Source:* Headquarters, US Air Force, *Operation ANACONDA: An Air Power Perspective* (Washington, DC: US Department of the Air Force/Office of Lessons Learned (XOL), 2005), 39.

Operation Anaconda took place in the Shahikot Valley of Afghanistan in March 2002, the third of three initial phases of OEF. The first phase consisted of special operations troops and air support integrated with Northern Alliance forces attacking Taliban and Al Qaida. After that fighting died down, the second phase was largely an intelligence gathering operation with very little ground-to-ground engagement. Anaconda, the first operation including a large-scale commitment of ground forces in Afghanistan, was also the largest battle American troops had

conducted since Operation Desert Storm twelve years earlier.[236] Inaccurately revised intelligence estimates led to friendly forces encountering an enemy ten times larger than expected, surprising air and ground commanders alike.[237] All of this occurred in isolated and rugged, high-altitude terrain (see figure 7), pocked with caves for enemy caches and lacking roads for friendly maneuver and logistics.[238]

The plan for Operation Anaconda included the establishment of concentric rings around the Shahikot Valley to seal off and then destroy the al Qaeda fighters there. The mission was successful, although it cost eight American lives and fifty more wounded in the process. Many of the consternation and subsequent lessons learned came from complications in the early stages of the operation. Friendly Afghan forces withdrew early in the battle, leaving Task Force (TF) Mountain, led by Major General Franklin Hagenbeck, with half of its combat forces. Reinforcements arrived for al Qaeda, which put up stiff resistance while bad weather, the steep terrain, and thin mountain air slowed TF Mountain's troop deployment. Close air support became a critical requirement when ground forces, relying solely on mortars for organic indirect fire support, began to suffer mounting casualties and the battle—planned for three days—dragged on for two weeks.[239]

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[236] Naylor, *Not a Good Day to Die*, 133-35; Kugler, Baranick, and Binnendijk, "Operation Anaconda," v.

[237] Headquarters, US Air Force, *Operation ANACONDA: An Air Power Perspective* (Washington, DC: US Department of the Air Force/Office of Lessons Learned (XOL), 2005), 41-66; Elaine Grossman, "Was Operation Anaconda Ill-Fated From Start?: Army Analyst Blames Afghan Battle Failings On Bad Command Setup," *Inside The Pentagon*, July 29, 2004, accessed November 19, 2015, http://www.dnipogo.org/grossman/army_analyst_blames.htm; Johnson, *Learning Large Lessons*, 98;

[238] Robert H. McElroy, "Fire Support in Operation Anaconda," *Field Artillery Magazine*, September-October 2002, 5.

[239] Kugler, Baranick, and Binnendijk, "Operation Anaconda," v-viii; Davis, "Operation Anaconda," 110-15; McElroy, "Fire Support in Operation Anaconda," 6-7.

What made Anaconda especially vivid as a failing of air-ground coordination was the isolation of the troops on the ground. This was the first time since 1942 that a brigade-sized element of infantry went into combat without field artillery. Decision makers at the highest levels wanted to keep the amount of force on the ground minimal, and that meant nothing bigger than mortars. Although Hagenbeck stated he always wanted organic fire support, he noted that the rough terrain and poor roads would have precluded using his 105-mm howitzers at the start of the operation. Heavy fire support therefore existed only in the form of fixed and rotary wing support from the air.[240] Furthermore, the task proved more difficult than either group imagined. The steep terrain and hidden caves in the Shahikot Valley made enemy fighters exceedingly difficult to target from the air.[241] In this challenging situation, the splintered CAS relationship had led to a lack of pre-battle planning and subsequently poor results in combat.

When American troops engaged enemy forces on the ground and called for more CAS, it was slow to arrive and diluted in effectiveness.[242] A report from the National Defense University documented twenty-five joint lessons from Operation Anaconda, many of which airmen and ground forces could have solved with better joint planning and preparation. The Air Force rapidly re-tasked AC-130s from within Afghanistan and A-10s from the Persian Gulf to Shahikot Valley, but they encountered a lack of controlling infrastructure, such as FACs or airborne battlefield command and control to direct them to supported units and targets.[243] The first A-10 flight lead to arrive in Afghanistan, Lieutenant Colonel Scott 'Soup' Campbell, described how he first learned

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[240] Naylor, *Not a Good Day to Die*, 130-33; US Air Force, *Operation ANACONDA*, 41; McElroy, "Fire Support in Operation Anaconda," 6.

[241] Stephen D. Biddle, *Military Power: Explaining Victory and Defeat in Modern Battle* (Princeton: Princeton University Press, 2006), 56-58.

[242] Kugler, Baranick, and Binnendijk, "Operation Anaconda," viii.

[243] Ibid., 50.

of the operation only hours before launching on the mission. He was airborne with no clear idea where he would land while the US State Department scrambled to coordinate for an airfield in Pakistan. Recalling his arrival in the confused airspace over the battle, Lieutenant Colonel Campbell said, “It quickly dawned on us that this is a mess” and that the operation demonstrated an “atrophy in the whole command and control system and how we employed and did command and control of CAS.”[244]

A large part of the problem was that the joint force still lacked an Air Support Operations Center (ASOC) in Afghanistan. Earlier small-scale operations in had relied on small Air Control Elements embedded with special operations forces rather than a full support center. Furthermore, poor working relationships between the new CFLCC and his supporting airmen had not been sufficient to prepare an ASOC.[245] Adding to the problem, while ground FACs embedded with special operations units were well equipped, the ground FACs with regular Army units were less prepared. There were not enough teams to go around and they were short on critical equipment from laser designators to detailed maps. Army units without embedded Air Force FACs found they did not have the right radios to talk to the aircraft overhead. Many USAF airplanes did not have FM radios to communicate with Army units, and some had crews who were unprepared for the CAS mission they were given.[246] Major Mike Adderley, a B-52 aircraft commander who flew missions in support of Operation Anaconda noted that prior to OEF, “B-52 guys didn’t know how

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[244] Scott Campbell, LtCol, USAF, interview by Laurence Lessard, Operational Leadership Experiences interview collection, Combat Studies Institute, Fort Leavenworth, KS, May 15, 2009, accessed December 16, 2015, http://cgsc.contentdm.oclc.org/cdm/singleitem /collection/p4013coll13/id/1543/rec/7.

[245] US Air Force, *Operation ANACONDA*, 41-54.

[246] Kugler, Baranick, and Binnendijk, “Operation Anaconda,” 50.

to spell CAS. We just didn't do it."[247] Also compounding the situation, inadequate pre-planned integration measures made the congested airspace dangerous for fixed and rotary wing aircraft supporting the mission.[248] Despite these many failings, there were some important highpoints in the air support for TF Mountain.

Dedication by air commanders and impressive tactical skill by the many pilots rushing to the aid of troops Shahikot Valley offer an important counter to the often-negative story of air support in Operation Anaconda. With less than a day's notice, air commanders tripled the number of jets available for Anaconda. The 74th Expeditionary Fighter Squadron moved a contingent of A-10s to a forward location 1400 miles away in twenty-seven hours. They temporarily filled the missing links in theater air control. Air Force pilots showed expert tactical abilities with sustained attacks inside 100 meters of friendly troops after the shoot down of a helicopter on Roberts Ridge. Terminal air controllers imbedded with ground forces coordinated strikes while under fire.[249] While rules of engagement and approval processes slowed some strikes excessively, the average CAS response times were relatively quick, as fast as 5 minutes in some areas according to the Air Force.[250] Much of this can be attributed to the solid tactical CAS doctrine and training accomplished at the CTCs, and to the dedication of airmen to their brothers in arms.[251]

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[247] Mike Adderley, Maj, USAF, interview by Maj Pete Lugar, Operational Leadership Experiences interview collection, Combat Studies Institute, Fort Leavenworth, KS, March 11, 2005, accessed December 9, 2015, http://cgsc.cdmhost.com/cdm/ref/collection/p4013 coll13/id/114.

[248] US Air Force, *Operation ANACONDA*, 3-4.

[249] Matthew D. Neuenswander, "JCAS in Operation Anaconda- It's Not All Bad News," *Field Artillery Magazine*, May-June 2003, 2-4.

[250] Pirnie et al., *Beyond Close Air Support*, 60. Kugler, Baranick, and Binnendijk, "Operation Anaconda," 50.

[251] US Air Force, *Operation ANACONDA*, 113.

At its conclusion, Operation Anaconda was a success militarily but the mad scramble to get air support in place made the operation a point of contention.[252] As described by Army and Air Force analysts alike, the main lesson learned from Operation Anaconda is that better air and ground coordination during the time available for planning could have prevented or at least alleviated many of the problems the task force encountered.[253] General Moseley later reflected, "Had we known this was going to go on we would have stood up a full ASOC and moved [the people] to Bagram a week or two weeks ahead of this and then conducted a set or rehearsals with carriers, with the bombers, with the whole thing. And I would have forward deployed the A-10s, so you would have had indigenous quick reactions."[254] As the war in Afghanistan progressed, both airmen and ground forces worked to heal the CAS relationship.

## The CAS Relationship Renewed

Operation Anaconda spurred changes in the CAS relationship. After the operation, General Hagenbeck called for changes in doctrine and training for CAS.[255] Anaconda was a major topic of conversation among senior air and ground leaders at both joint and internal conferences including a December 2002 doctrine summit.[256] Authors from across the services advocated for better training and doctrine for CAS.[257] A study by the National Defense University on lessons from Operation Anaconda recommended continued emphasis on developing joint

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[252] Johnson, *Learning Large Lessons*, 158.

[253] Neuenswander, "JCAS in Operation Anaconda," 2; Grossman. "Was Operation Anaconda Ill-Fated?"; Lyle, "Operation Anaconda," 13; Grant, *The First 600 Days*, 82-83.

[254] US Air Force, *Operation ANACONDA*, 54.

[255] McElroy, "Fire Support in Operation Anaconda," 9.

[256] US Air Force, *Operation ANACONDA*, 120.

[257] Carlson, "Thinking about CAS," 59-60; Hasken, "A Historical Look," 63-65. Johnson, "Cleared to Engage," v; Barks, "Anything But," i; Pirnie et al., *Beyond Close Air Support*, 171.

doctrine and the training and exercises needed to implement it, including air-ground systems for command staffs.[258] It also demanded a thorough review of the joint ground and air planning cycle doctrine, practices, and programs in order to anticipate CAS requirements and provide sufficient time for planning and resourcing: Specifically the Joint Doctrine Publications for *Command and Control of Joint Air Operations* (JP 3-56, 1/3-30), and *Command and Control of Joint Land Operations* (JP 3-31).[259] The services revised the joint publication for CAS procedures, JP 3-09.3 *Close Air Support*, in 2003, with another change published in 2005, as they worked to correct confusion over procedures and platforms for terminal control.[260] Furthermore, experienced CAS pilots advocated for improved integration and planning with ideas that went beyond the basics of doctrine: better FAC integration and better liaison, education, and training.[261] The services also signed a JTAC Memorandum of Agreement in 2004 to standardize training for JTACs, paving a way to match the demands of refined doctrine.[262]

While the official Headquarters USAF report on Operation Anaconda generally praised the training in place for CAS, the joint forces did take some positive steps forward in improving it.[263] Red Flag is the US Air Force's premier air exercise, representing the full spectrum of combat operations. During this time, the Red Flag planners began to involve Army units on a

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[258] Kugler, Baranick, and Binnendijk, "Operation Anaconda," 12-13.

[259] Ibid., 35-44.

[260] Johnson, "Cleared to Engage," 4-8.

[261] Michael D. Millen, Maj, USAF, "Improving Detailed Integration in Close Air Support Planning and Execution" (master's thesis, Army Command and General Staff College, 2004), 60; David S. Chadsey, Maj, USAF, "Rebuilding the Joint Airborne Forward Air Controller: Analyzing Joint Air Tasking Doctrine's Ability to Facilitate Effective Air-Ground Integration" (master's thesis, Army Command and General Staff College, 2013), 112-14; David G. Shoemaker, Maj, USAF, "Close Air Support Command and Control at the Operational Level" (master's thesis, Army Command and General Staff College, 2007), 76-77.

[262] Johnson, "Cleared to Engage," 10.

[263] US Air Force, *Operation ANACONDA*, 112-13.

much larger scale than before OEF.[264] Additionally, in 2006 Air Combat Command elevated Air Warrior I and II to Flag-level exercises with the names Green Flag West and East, respectively. In 2009, the Army and Air Force conducted seventeen joint exercises.[265] Even the B-52s got involved with the CTC training. Major Adderley described the change:

> Literally everything focused on close air support. Our annual training program came to a screeching halt and we started doing CAS, every sortie, every day. The big Air Force was great because they also realized that they needed to get us spun up… as a matter of fact, we got involved in Air Warrior.[266]

When the Army revised its force generation concept in 2005, the Air Force flexed to provide enough JTACs for all deployed maneuver companies by training more JTACs. Sometimes those efforts fell short and made strong personal relationships between JTACs and ground commanders inconsistent.[267] As always, personal relationships played a large factor in the CAS relationship, but the generally positive effects of good personal relationships between ground troops and airmen dedicated to improving CAS performance would pay dividends in the later years of the Afghanistan war.

As described in the Headquarters USAF Office of Lessons Learned report, "Operation ANACONDA acted like shock therapy that motivated air and land components, and Special Forces, to tighten up their working relationships."[268] Renewed attention to liaison operations invigorated the CAS relationship between the air and ground components, starting at the highest levels. General Mosely was still the CFACC for Operation Iraqi Freedom a year later, but he had affected major changes in the relationships. He sent a two-star general as his personal

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[264] Freeman, "Airpower: Allied Mistakes," 23.

[265] Barks, "Anything But," 38-39.

[266] Adderley, Operational Leadership Experiences interview collection.

[267] Barks, "Anything But," 50-57.

[268] US Air Force, *Operation ANACONDA*, 121.

representative to work directly with the senior ground commander as part of a new Air Component Coordinating Element, along with six other such teams that were well received by the ground forces..[269] Elaine Grossman writing for *Inside the Pentagon* in 2004 eloquently captured the fracturing and subsequent healing of the interservice relationships.

> One of the enduring casualties from Operation Anaconda has been trust between the services, with Air Force and Army officers most seriously divided over how the battle was planned and waged, evidenced in extensive interviews on the topic. But the two services also have made some high-level efforts to repair their fractured relations, setting up new channels of communication between ground and air commanders during last year's war in Iraq.[270]

The lessons learned from Anaconda had a direct impact on the effective air-ground partnership in major combat operations in Iraq.[271] Historian Charles Kirkpatrick described an example of a highly functioning CAS relationship between V Corps and the 4th Air Support Operations Group this way: "It was not merely the parallel functioning of two armed services; it was the almost flawless operation of a thoroughly integrated combined-arms team. Army officers of the V Corps staff described the result in superlatives: it was the best, most efficient, most effective and most responsive air support the Air Force has ever provided any US Army unit."[272] Those efforts would pay dividends in the later years of the war in Afghanistan, as major combat operations ended but the demand for CAS increased almost exponentially.

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[269] Benjamin S. Lambeth, *The Unseen War: Allied Air Power and the Takedown of Saddam Hussein* (Annapolis: Naval Institute Press, 2013), 39-40; US Air Force, *Operation ANACONDA*, 121.

[270] Grossman, "Was Operation Anaconda Ill-Fated?"

[271] Lambeth, *The Unseen War*, 5.

[272] Charles E. Kirkpatrick, *Joint Fires as They Were Meant to Be: V Corps and The 4th Air Support Operations Group During Operation Iraqi Freedom* (Arlington, VA: Association of the United States Army, 2004), 1.

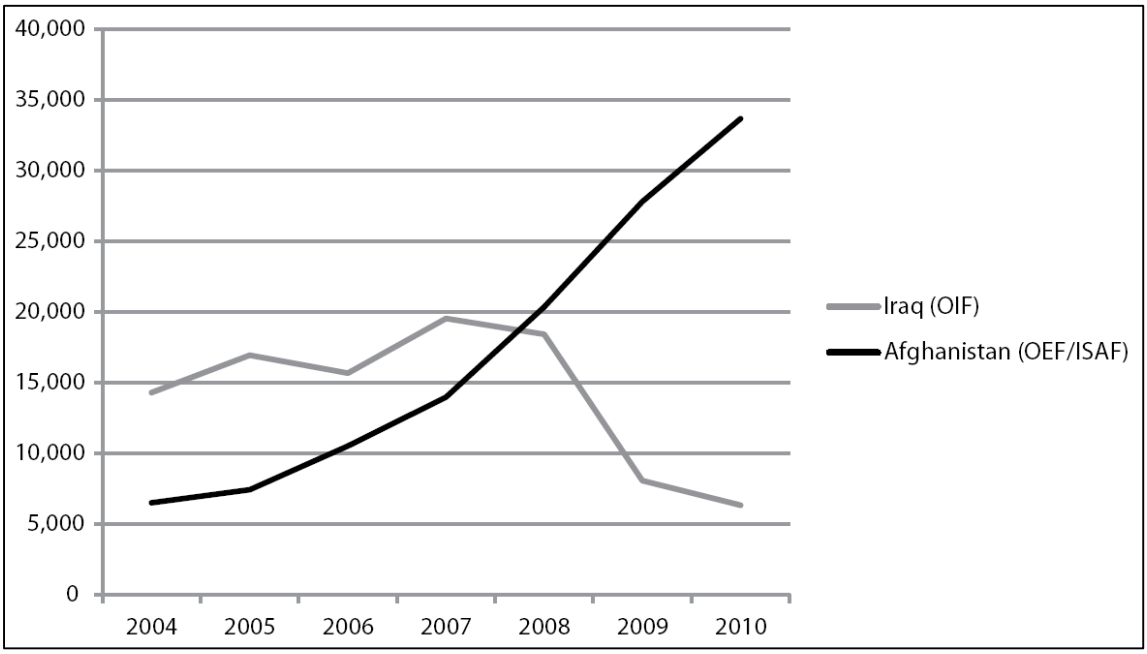


Figure 8. US close air support sorties, Afghanistan and Iraq, 2004–10.

*Source:* Dag Henriksen, ed., *Airpower in Afghanistan 2005-10: The Air Commanders' Perspectives* (Maxwell Air Force Base: Air University Press, Air Force Research Institute, 2014), 287.

As the war in Afghanistan continued, the ground demand for CAS increased and airmen readily supplied it, as shown in Figure 8. Strategy in Afghanistan required little in the way of major combat operations with brigade-sized commitments of ground forces after Anaconda. Instead, air operations began to normalize as they supported smaller actions.[273] While having enough CAS to support every unit in Afghanistan was never possible, the ground forces and airmen worked concurrently to maximize the amount of support and get it to the right place. This meant CAS often became an emergency response tool. Still, airmen were dedicated to the support function. Major General Douglas Raaberg, the Deputy CFACC from 2008 to 2009, said, "In

[273] Bolton, "Army Fixed-Wing Attack," 89.

terms of strike capability, it was obvious that supporting troops in contact was of paramount importance."[274] As a result, leaders like Colonel Dominic Cariello, USA, could remark of his time leading an embedded training team in Afghanistan, "We were never denied, for the most part, a CAS mission."[275]

In 2006, Colonel Cariello expected CAS support to arrive in thirty to forty-five minutes in an Area Of Responsibility (AOR) the size of Texas, but by 2009, the average response time was less than ten minutes. While response time is only one dimension in CAS effectiveness, it is a testament to the improvements occurring in the CAS relationship.[276] Air leaders were even willing to challenge the long-standing dogma of centralized control and decentralized execution to achieve better effects for a counterinsurgency fight. For instance, Lieutenant General Stephen Hoog, Deputy CFACC from 2009 to 2010, wrote, "We have learned in Afghanistan, through ever-increasing efforts to provide maximum effects, that centralized control and decentralized execution do not always provide the flexibility air commanders need. Today we talk in terms of centralized command, distributed control, and decentralized execution across the vast AORs…" Other improvements also showed the growth of the CAS relationship.

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[274] Raaberg, "The Shift to Afghanistan," 153.

[275] Dominic Cariello, COL, USA, interview by John H. McCool, Operational Leadership Experiences interview collection, Combat Studies Institute, Fort Leavenworth, KS, February 16, 2007, accessed December 16, 2015, http://cgsc.cdmhost.com/cdm/ref/collection/p4013 coll13/id/720.

[276] Stephen L. Hoog, LtGen, USAF, "Airpower over Afghanistan: Observation and Adaptation for the COIN Fight," in *Airpower in Afghanistan 2005-10: The Air Commanders' Perspectives*, edited by Dag Henriksen (Maxwell Air Force Base: Air University Press, Air Force Research Institute, 2014), 237; Raaberg, "The Shift to Afghanistan," 153; Cariello, Operational Leadership Experiences interview collection.

In contrast to 2001 when some bomber pilots could not spell CAS, a B-1 pilot deployed to OEF in 2007 praised his pre-deployment training and JTAC integration in theater.[277] Technological advances enabled some of these improvements, such as targeting pods that gave pilots a better view of the ground, and data links to shared that picture with the JTAC.[278] Ground troops also received improved pre-deployment CAS training. For instance, Major Mark Wells, USA, described his training and the decision to call for CAS as key factors in turning the tide in the July 2005 battle of Siah Chow. "I didn't have a joint tactical air controller (JTAC) to control my air, so I was doing all the controls. Fortunately, we had done some CAS training before we left so I was brushed up on it. The pilots are very good at doing just a simple talk on. 'This is where the enemy is, this is his grid, and I need you to drop something there.'"[279] F-15E Pilot Major Robert Lee, USAF, also stated that he felt well prepared for his 2009 deployment, and further lauded the efforts of a GLO assigned to his squadron.[280] The enemy frequently disengaged when they heard aircraft overhead, so effective CAS support was often non-kinetic and

[277] Jasen Beckman, Maj, USAF, interview by Jenna Fike, Operational Leadership Experiences interview collection, Combat Studies Institute, Fort Leavenworth, KS, February 23, 2010, accessed December 16, 2015, http://cgsc.contentdm.oclc.org/cdm/singleitem/collection/p4013coll13/id/1819/rec/22.

[278] Allen G. Peck, LtGen, USAF (Ret), "Airpower: The Theater Perspective," in *Airpower in Afghanistan 2005-10: The Air Commanders' Perspectives*, edited by Dag Henriksen (Maxwell Air Force Base: Air University Press, Air Force Research Institute, 2014), 26; Beckman, Operational Leadership Experiences interview collection.

[279] Chris Wells, MAJ, USA, interview by Pete Boisson, Operational Leadership Experiences interview collection, Combat Studies Institute, Fort Leavenworth, KS, July 24, 2006, accessed December 16, 2015, http://cgsc.cdmhost.com/cdm/ref/collection/p4013coll13/id/317.

[280] Robert Lee, MAJ, USAF, interview by Jenna Fike, Operational Leadership Experiences interview collection, Combat Studies Institute, Fort Leavenworth, KS, March 21, 2011, accessed December 16, 2015, http://cgsc.contentdm.oclc.org/cdm/singleitem/collection/p4013coll13/id/2271/rec/28.

un-glorious. Still, airmen were happy to oblige.[281] Major John Cornett, USAF, describes one of his most memorable missions as simply orbiting over a unit that had been in heavy fighting. They remained on station for four hours just to give the soldiers a chance to eat and rest.[282] Such strong personal relationships were even more vital to CAS success.

Soldiers would seek out CAS pilots at Bagram Air Base to express appreciation for their support in combat. Air leadership briefed new pilots upon arrival in theater that the purpose of airpower in Afghanistan was primarily to enable the ground-based objectives. Pilots attended fallen comrade ceremonies for soldiers killed in combat, and visited the wounded arriving at the hospital on the air base. They departed on missions by exiting under a sign that read, "The mission is an 18 year old with a rifle." Relationships forged in combat between ground forces and airmen translated to lasting friendships at home. Teamwork was at the heart of a flourishing CAS relationship. Major Andrew Stone, USAF, reflected on his 2006 deployment, saying, "The biggest thing I took away, especially on a couple of sorties, is that nobody can do it by themselves. No service can do it by themselves, no platform, no unit; no one particular country can do it by themselves. It took all of us."[283] Even the senior air leaders who lamented that they were still improperly included in planning remained focused on better integration,

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[281] Michael Threatt, MSG, USA, interview by John H. McCool, Operational Leadership Experiences interview collection, Combat Studies Institute, Fort Leavenworth, KS, September 20, 2006, accessed December 16, 2015, http://cgsc.cdmhost.com/cdm/ref/collection/p4013coll13/id/283.

[282] John Cornett, MAJ, USAF, interview by Angie Slattery Hundley, Operational Leadership Experiences interview collection, Combat Studies Institute, Fort Leavenworth, KS, November 2, 2012, accessed December 16, 2015, http://cgsc.contentdm.oclc.org/cdm/singleitem/collection/p4013coll13/id/2842/rec/29.

[283] Andrew Stone, Maj, USAF, interview by Angie Slatterly, Operational Leadership Experiences interview collection, Combat Studies Institute, Fort Leavenworth, KS, May 6, 2010, accessed December 16, 2015, http://cgsc.contentdm.oclc.org/cdm/singleitem/collection/p4013coll13/id/1937/rec/40.

education, and training.[284] However, as operations normalized and battlefield emergencies became less poignant, fissures in the CAS relationship reappeared.

The first hints of problems in the CAS relationship came when CAS operations became routine in the later years of OEF. When stability operations replaced major combat in Afghanistan and Iraq, training at the CTCs shifted to accommodate. As a result, air-ground training focused less on lethal firepower and more on intelligence, surveillance, and reconnaissance missions. Soon there was a training divide between airmen and ground troops. For a brigade preparing at the CTC for its rotation overseas to a stability operation, there was little incentive to focus on CAS integration. Furthermore, CAS performance was good enough and the relative danger low enough that ground commanders could afford to focus elsewhere. However, aircrews preparing to support an entire theater of operations and provide CAS for troops in contact situations pressured the Army for more integration during their Green Flag support exercises.[285] As former Green Flag director Phillip Barks described, "This results in two exercises that happen concurrently, but with little joint integration occurring."[286] Thus, as operations wound down in Afghanistan, the CAS relationship started to fracture again.

Analysis

The years leading up to Desert Storm contained some high points for the CAS relationship. Airmen and ground forces captured the doctrinal lessons from previous wars and embedded them in training through the initiative of their service chiefs. Yet those good personal

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[284] Hoog, "Airpower over Afghanistan," 248; Dag Henriksen, ed., *Airpower in Afghanistan 2005-10: The Air Commanders' Perspectives* (Maxwell Air Force Base: Air University Press, Air Force Research Institute, 2014), 269-270.

[285] Barks, "Anything But," 58-59.

[286] Ibid., 60.

relationships soon gave way to poor ones, and when the time came to plan Operation Anaconda, the services were again planning alone. Poor preparation led to the needless sacrifice of American lives while ground forces and airmen scrambled to mend their relationship. As described by Major Scott Hasken, USA, "Operation Anaconda not only brought the issue of CAS back into the forefront for ground forces but for the entire Air Force community as well."[287] Improvements came in the years after, driven by increased CAS demands and improving relationships, but as operations in Afghanistan have slowed, a divide in the CAS relationship is reopening.

## Cross Case Analysis

There are both positive and negative forces affecting the CAS relationship. The historical evidence shows that the CAS relationship is strongest when airmen and ground troops must work closely together on the same problems in war, but drifts apart when they return to their own realms in peacetime. Thus, the positive force of close relationships is supremely powerful for CAS performance, but airmen and ground forces often neglect it during peacetime.

When one reviews the historical data, a definable ebb and flow in the CAS relationship emerges. Prior to World War II, airmen and ground troops planned separately. Work at the Air Corps Tactical School focused on strategic bombing until wartime requirements forced airmen and ground troops to work together to develop CAS doctrine. A lack of prewar joint training further severed dialogue between air and ground leaders in the Army, resulting in a broken CAS relationship. Unsurprisingly, very little CAS was actually performed in North Africa as the airmen and ground forces struggled to build a CAS relationship while also learning wartime lessons about air superiority and integration. By Operation Cobra in World War II, CAS was far from perfect. However, improved doctrine, training, and especially the close personal

[287] Hasken, "A Historical Look," 59.

relationships exemplified by 'Pete' Quesada and 'Ike' Eisenhower resulted in CAS becoming a major contributor to the combined arms team. Unfortunately, those hard won lessons were short lived.

After World War II, airmen and ground troops returned to their own corners and communication dwindled toward nonexistence. The newly independent Air Force focused on consolidating its role and addressing the nuclear age while the Army was embroiled in occupation operations. As a result, neither airmen nor ground forces worked on integration in doctrine or training. The services brushed aside leaders who had focused on Army and Air Force integration, and the CAS relationship had no champions. When North Korea attacked, "Lack of preparedness for war ensured confusion, frustration, and inefficiency."[288] However, the common goal to hold and regain terrain on the Korean Peninsula demanded CAS innovation and re-integration. In the subsequent months and years, both sides worked diligently to rebuild the relationship. Leaders like General O. P. Weyland used the power of teamwork and cooperation to soften even the harshest of personal conflicts. By the end of the Korean War, ground forces and airmen alike lauded the contributions of CAS and the many improvements in techniques that would persist into the future.

Tactically, CAS after the Korean War showed the improvements of combat development. Operationally, however, airmen and ground forces continued to re-learn lessons from previous wars. Airmen and ground troops divided over the role of rotary wing aircraft and it took war in Vietnam to force a doctrinal solution and renew trust. The commonly perceived threat of war in Europe and excellent personal relationships between Army Chief of Staff John Wickham and Air Force Chief of Staff Charles Gabriel reinforced AirLand Battle Doctrine and joint training at the

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[288] Millett, "Korea 1950-1953," 353.

CTCs. These positive aspects of the CAS relationship aided joint performance in Desert Storm. However, service chief relationships soured after the war, while success in the Persian Gulf lulled lower echelon leaders into a false sense of security. When time came for the first brigade sized land battle since 1991, neither airmen nor ground troops found a way to plan it together. The failures in Operation Anaconda renewed commitment on both sides to the CAS relationship that paid dividends in the remaining years of the war in Afghanistan. However, as operations in Afghanistan are winding down and US troops are returning from years of living in a joint environment to their own service's home turf, the CAS relationship is again showing signs of decline.

As explained in the introduction, fixed wing CAS will continue to play a significant role in America's future wars. Airmen and ground troops alike must work together to ensure CAS performance meets its expectations. The historical record indicates that the CAS relationship between airmen and ground troops ebbs and flows through history. Airmen and ground troops seem to work best together when forced to co-locate during times of greatest stress: during wartime. Rather than breeding an inability to compromise over divisive issues, wartime stress often brings airmen and ground troops closer together, where they find consensus and shared goals. Thus, the shared tents and tensions of a wartime environment build powerful relationship between brothers in arms. In the balance, whether one believes that fundamental differences or a lack of consistent interaction between airmen and ground troops plague the CAS relationship, the underlying issue remains the same. The key insight is glaringly obvious yet often overlooked: *CAS is about relationships*.

## Conclusion

Good CAS requires more than good tactics, it requires relationships. The CAS relationship has a definable ebb and flow through history, when measured by deficiencies in doctrine, training, and personal relationships. Furthermore, the historical record shows that personal relationships are at the heart of the change. If there are any distinct lessons from this study, the importance of trust and personal relationships stand out. Yet this most fundamental part of the CAS relationship is the most often neglected. CAS relationships have always relied on effective communication, as evidenced by struggles from ground to air signals in Tunisia to modern day radio interoperability. Moreover, the most important communication challenges have arguably happened off the battlefield rather than on it. Major Mark Davis echoed this sentiment in his report on operation Anaconda, "No communications system in the world, no matter how advanced, replaces the interpersonal relationships that must exist among the component commanders."[289] The truth of this statement is obvious in the historical record.

Writing from the US Army perspective, Captain John Bolton, USA, also lamented relationship problems in the conclusion to his Command and General Staff College thesis,

> During WWII and in every conflict since, the Army-Air Force CAS relationship began poorly before ultimately devolving control of assets and strikes to lower echelons…. The result is a disjointed application of CAS, one that fails to develop close cooperation because air-ground teams never form because units rarely develop long-term working relationships. Mutual understanding is just as rare with vast distances and bureaucratic walls between ground and air.[290]

His solution is to have the Army develop its own fixed wing turboprop CAS aircraft to augment Air Force provided CAS. Others have suggested the Army could simply purchase and operate the popular A-10 'Warthog', but Captain Bolton acknowledges that such solutions only provide

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[289] Davis, "Operation Anaconda," 56.

[290] Bolton, "Army Fixed-Wing Attack," 130.

partial capabilities compared to the full weight of CAS support available from the US Air Force.[291] In the fiscally constrained realities of the world, the joint forces must learn to combine their capabilities rather than developing them separately. A positive and constructive CAS relationship, more than any specific technology will be key to the process. Unfortunately, that relationship is in danger.

Ground forces and airmen share responsibility for the erosion of the CAS relationship in history, as well as today. In 2009, Phillip Barks, a former commander at Green Flag West, wrote, "with the shift from medium intensity conflict to counter-insurgency and stability operations, pre-deployment CAS training at the CTC's has nearly ceased."[292] Regardless of the practical justification for this shift, ground forces allow the CAS relationship to falter when they focus too narrowly on one mission or fail to demand support in training. Similar examples exist for airmen. For example, the US Air Force recently declared its intent to retire the A-10 'Warthog.' While valid considerations exist on both sides of this debate, overall the CAS relationship suffered. As historian Douglas Campbell wrote, "The CAS plane was the 'winged covenant' whose existence promised air support to American ground troops."[293] However, dedicated relationships matter even more than dedicated technology. The debate should refocus upon the importance of maintaining a dedicated community of airmen that will build and sustain the CAS relationship in doctrine, training, and personal relationships.

Joint forces forge trust on the battlefield where airmen and ground forces fight as a combat team, but they must maintain those relationships after the conflict. Trust must also form between new ground forces and airmen who prepare to enter the next war. Therefore, between

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[291] Bolton, "Army Fixed-Wing Attack," 129.

[292] Barks, "Anything But," i.

[293] Campbell, *Warthog*, xii.

conflicts, airmen and ground troops at all levels must work to build strong relationships to ensure the success of CAS, or any joint endeavor. A recent article by an Air Force officer in *Military Review* supported this conclusion, noting that the relationship between Bradley and Quesada provides an admirable example for air and ground leaders who need strong relationships as a baseline from which to build joint solutions.[294] One specific solution—enabling direct interaction between air and ground commanders at joint exercises—might help align the competing service objectives that are turning Green Flag and NTC rotations into separate exercises without true joint training.[295] Air leaders in the Green Flag exercise work, eat, and sleep hours away from ground leaders at NTC. Co-locating their headquarters would represent a major step in creating a truly joint exercise, and allowing trust and mutual understanding to develop in peacetime. There are logistical challenges to such a move, but the dividends of such interwar preparation are manifold.

As Major Jennifer Hall pointed out in her 2014 SAASS thesis on Army and Air Force CAS cooperation, "The interwar years matter, not only to build and reconstitute the hardware necessary to fight, but to solidify the relationship vital to preserving American lives and national treasure when it comes time to fight."[296] CAS has been important throughout history, but mission performance has often suffered because of fractures in the CAS relationship. CAS will continue to be a vital mission of the joint forces in future wars. Airmen and ground forces alike must build and maintain a more positive and synergistic relationship for the future. The solution has historically been as simple as occupying the same mess tent.

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[294] Jason Earley, "Air Force Leaders Take Note: The Army is Changing," *Military Review* 95, no. 6 (November–December 2015): 84.

[295] Barks, "Anything But," 58-60.

[296] Hall, "Earth, Wind, and Fire," v.

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