Enduring Characteristics of the Theater Air Control System

A Monograph

by

Lt Col Brooks M. Daniel
US Air Force

School of Advanced Military Studies
US Army Command and General Staff College
Fort Leavenworth, KS

2019

REPORT DOCUMENTATION PAGE

Form Approved
OMB No. 0704-0188

1. REPORT DATE *(DD-MM-YYYY)*	**2. REPORT TYPE**	**3. DATES COVERED** *(From - To)*
23-05-2019	Master's Thesis	JUNE 18-MAY 19

4. TITLE AND SUBTITLE
Enduring Characteristics of the Theater Air Control System

5a. CONTRACT NUMBER

5b. GRANT NUMBER

5c. PROGRAM ELEMENT NUMBER

6. AUTHOR(S)
Lt Col Brooks M. Daniel

5d. PROJECT NUMBER

5e. TASK NUMBER

5f. WORK UNIT NUMBER

7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES)
U.S. Army Command and General Staff College
ATTN: ATZL-SWD-GD
Fort Leavenworth, KS 66027-2301

8. PERFORMING ORG REPORT NUMBER

9. SPONSORING / MONITORING AGENCY NAME(S) AND ADDRESS(ES)
Advanced Military Studies Program

10. SPONSOR/MONITOR'S ACRONYM(S)

11. SPONSOR/MONITOR'S REPORT NUMBER(S)

12. DISTRIBUTION / AVAILABILITY STATEMENT
Approved for Public Release; Distribution is Unlimited

13. SUPPLEMENTARY NOTES

14. ABSTRACT

This monograph traces the evolution of the Theater Air Control System from World War One through the Vietnam War, searching for the enduring characteristics of successful Theater Air Control Systems in large-scale combat operations. Case studies of the Korean and Vietnam Wars provide examples for testing the structure and doctrine of the air control system in each conflict. More important than the structure and doctrine in use for each war was the training, equipping, and manning of the systems in the years and months leading to combat. Transitioning from almost two decades of lower intensity counter-terrorism and counter-insurgency operations to a focus on large-scale combat operations, US military leaders face the same issues and problems presented to leaders following World War Two, the Korean War, and the Vietnam War.

15. SUBJECT TERMS
Theater Air Control System; Air-Ground Operations; Close Air Support

16. SECURITY CLASSIFICATION OF:			**17. LIMITATION OF ABSTRACT**	**18. NUMBER OF PAGES**	**19a. NAME OF RESPONSIBLE PERSON**
a. REPORT	**b. ABSTRACT**	**c. THIS PAGE**			Lt Col Brooks M. Daniel
(U)	(U)	(U)	(U)	41	**19b. PHONE NUMBER** *(include area code)* 913 758-3300

Standard Form 298 (Rev. 8-98)
Prescribed by ANSI Std. Z39.18

Monograph Approval Page

Name of Candidate: Lt Col Brooks M. Daniel

Monograph Title: Enduring Characteristics of the Theater Air Control System

Approved by:

_____, Monograph Director
G. Scott Gorman, PhD

_____, Seminar Leader
Larry V. Geddings, Jr. COL

_____, Director, School of Advanced Military Studies
Kirk C. Dorr, COL

Accepted this 23rd day of May 2019 by:

_____, Director, Graduate Degree Programs
Robert F. Baumann, PhD

Abstract

Enduring Characteristics of the Theater Air Control System, by Lt Col Brooks M. Daniel, USAF, 39 pages.

This monograph traces the evolution of the Theater Air Control System from World War One through the Vietnam War, searching for the enduring characteristics of successful Theater Air Control Systems in large-scale combat operations. Case studies of the Korean and Vietnam Wars provide examples for testing the structure and doctrine of the air control system in each conflict. More important than the structure and doctrine in use for each war was the training, equipping, and manning of the systems in the years and months leading to combat. Transitioning from almost two decades of lower intensity counter-terrorism and counter-insurgency operations to a focus on large-scale combat operations, US military leaders face the same issues and problems presented to leaders following World War Two, the Korean War, and the Vietnam War.

Contents

Acknowledgements

First and foremost, I want to thank my loving wife, Jessica, for her unending understanding, motivation, and support throughout this year and especially with this monograph. I would not have finished without her kicking me out the door on some days to get to work. I owe a debt of gratitude to Dr. Gorman and COL Geddings for their endless patience and wisdom guiding me through this process. Lastly, thank you to all the members of SAMS and the Combined Arms Research Library for all the behind-the-scenes work that allows wayward, but energetic, students to reach the end of a difficult year.

Acronyms

AAGS	Army Air-Ground System
ASC	Air Service Command
ASOC	Air Support Operations Center
CAS	Close Air Support
DASC	Direct Air Support Center
FAC/FAC(A)	Forward Air Controller/Forward Air Controller (Airborne)
FM	Field Manual
JOC	Joint Operations Center
SAC	Strategic Air Command
TAC	Tactical Air Command
TACC	Tactical Air Control Center
TACP	Tactical Air Control Party
TACS	Theater Air Control System
USAF	United States Air Force
USMC	United States Marine Corp
VNAF	South Vietnam Air Force
WWI	World War One
WWII	World War Two

Illustrations

Introduction

With the US Army's change in focus to large-scale combat operations, as outlined in the 2017 edition of *Field Manual (FM) 3-0*, *Operations*, subsequent modifications to the Theater Air Control System (TACS) and how to integrate air component assets into a new warfighting paradigm are possible. As the primary command and control system for air operations directly supporting land forces, the TACS is vital for shaping both the close and deep fight for ground forces. The ability of the TACS to control and integrate air power with the land domain is critical for synchronizing efforts and ensuring effective combat power at the right time.

While the integration of air and land power began during World War One (WWI), the practice of providing dedicated air control integrated with the ground scheme of maneuver dates to World War Two (WWII). Several systems controlled and integrated air during WWII, most notably during the campaign in North Africa. The US military employed different systems for controlling air power in support of ground operations during WWII, the Korean War, and the Vietnam War. The experiences in these wars provide evolutions in command and control that highlight characteristics that either favorably or unfavorably impact the integration of air and land power.

A recent master's thesis from a student at the US Air Force's (USAF) Air Command and Staff College investigated the timeless principles of successful Air Support Operations Centers (ASOC). The author determined that flexibility, proximity, and communications were key principles required for optimal execution of air-ground operations.[1] While these principles are valid and important for the successful employment of the ASOC, the ASOC is merely one part of the entire TACS. The TACS as a holistic system must be analyzed to provide enduring characteristics for successful air support operations. This monograph seeks to provide actionable

[1] Seth D. Spidahl, "The Once and Future Air Support Operations Center: A Critical Reflection on Developments in Air-to-Ground Command and Control" (research report, US Air Command and Staff College, 2016), vii.

characteristics commanders can use to optimize the TACS for combat operations, regardless of the doctrinal framework in use or the type of conflict.

What, if any, are the enduring characteristics of a successful TACS? This monograph hypothesizes appropriate span of control, level of approval authority, and a high degree of air-ground integration are the enduring characteristics of successful TACS during large-scale combat operations. These three characteristics provide commanders a starting point for adapting the TACS based on the operational environment and scope of the conflict. Case studies of the Korean and Vietnam Wars test this hypothesis.

This monograph analyzes historical air-ground operations as a planning basis for future large-scale combat operations. Chapter One explains basic air-ground operations theory and provides the framework for analyzing historical case studies. Air-ground operations theory and practice began during WWI, but current doctrine traces its lineage to developments during and after WWII. Chapters Two and Three are studies of the Korean War and the Vietnam War. The case study research primarily focuses on the TACS structure used during each war and the effectiveness of air-ground integration and operations during large-scale combat operations. Each war provides a unique style of conflict with which to judge the effectiveness of different doctrinal air support frameworks. Chapter Four reviews current doctrine and applies characteristics from the previously studied conflicts to the current TACS construct.

Chapter 1: The Evolution of Air-Ground Theory and Doctrine

This chapter summarizes the evolution of air-ground theory through the end of WWII. The broad air-ground doctrine and TACS developed after WWII changed little through the Korean and Vietnam Wars and remains the basis for air-ground doctrine.

Evolution of Air-Ground Theory and Doctrine: 1914-1950

Beginning in WWI, debates swirled around the proper use of air power in support of ground units. Theorists generally debated two questions regarding the appropriate use of air

power in a ground support role. First, should air power be used primarily in a direct or indirect support role?[2] In a direct support role, air power is used directly against enemy ground forces like an auxiliary combat arm of the ground forces, whereas in the indirect role air power attacked targets beyond artillery range.[3] In general, US Army Ground Forces preferred using air power in the direct support role, while the US Army Air Forces preferred the indirect support role. The second question was who should control air power in support of ground forces, the ground or air commander?

William Sherman, an early air power theorist writing immediately after WWI, asserted attack aviation's primary objectives are determined by the needs of the ground forces, lending credence to ground commander control of air power. However, Sherman also wrote that attack aviation should not be used primarily as reinforcement for ground maneuvers, as merely an auxiliary combat arm.[4] Sherman highlighted the paradox of attack aviation that US Army and Air Corps leaders struggled to discern during the interwar period: how does attack aviation support ground forces without being controlled as an accompanying combat arm of those forces? As early as 1923, the Air Service identified the best use of air power in the ground support role was through an indirect support role, attacking enemy forces before they reach the range of friendly artillery and direct fire weapons.[5] US Army ground commanders wanted to use air power in a direct support role, treating aviation as another combat arm, similar to artillery; a view shared by some Air Corps officers into the 1930s.[6] Throughout the interwar period, the US Army conducted air-ground maneuvers, but they lacked realism and actual coordination between air and ground

---

[2] Gary C. Cox, *Beyond the Battle Line: US Air Attack Theory and Doctrine, 1919-1941* (Maxwell Air Force Base, AL: Air University Press, 1996), 39.

[3] Ibid., v.

[4] William C. Sherman, *Air Warfare* (Maxwell Air Force Base, AL: Air University Press, 2002), 156-157.

[5] Cox, *Beyond the Battle Line,* 10.

[6] Ibid., 7; Robert F. Futrell, *Ideas, Concepts, Doctrine: Basic Thinking in the United States Air Force, 1907-1960* (Maxwell AFB, AL: Air University Press, 1989), 86.

forces.[7] Training exercises and coordinated air-ground maneuvers did not resolve the argument over the best use of attack aviation.

While air and ground theorists debated the role of attack aviation, more debate and disagreement swirled around who should have ultimate command of air support during combat. Sherman wrote that attack aviation should not be parceled out to individual ground units but retained under an air commander to maximize mass and economy of force.[8] In the 1920s, air support was allocated to army corps under the immediate direction of the corps commanders for his use. Air power leaders and theorists fought for air support placed under a single air commander and saw their goal achieved with the January 1936 Air Corps Board. The Air Corps Board recommended attack aviation be placed under General Headquarters Air Force and not with individual ground commanders.[9] The adoption of the Air Corps Board recommendations, however, did not end the debate over control of air support aviation.

Before Operation Torch and the North Africa Campaign in 1942, the US War Department published *Field Manual 31-35, Aviation in Support of Ground Forces*. *Field Manual 31-35* attempted to settle the debates over attack aviation's role concerning the ground forces and who should command attack aviation.[10] As stated by *FM 31-35,* air power usually would not be used to attack targets within range of ground forces.[11] While supporting the use of air power in the indirect support role, *FM 31-35* also gave the ground commander, not the air commander, the authority to grant air support requests.[12] As the air support approval authority, ground commanders tended to use air power more often in a direct support role during the beginning

---

[7] John Schlight, *Help From Above: Air Force Close Air Support of the Army, 1946-1973* (Washington, DC: Government Printing Office, 2003), 28.

[8] Sherman, *Air Warfare*, 182, 21.

[9] Futrell, *Ideas 1907-1960*, 83.

[10] Schlight, *Help*, 33.

[11] US War Department, *Field Manual (FM) 31-35, Aviation in Support of Ground Forces* (Washington, DC: Government Printing Office, 1942), 10.

[12] Ibid., 13.

stages of the North Africa Campaign. While an improvement over previous doctrine, *FM 31-35* failed to address Sherman's air support paradox adequately. However, *FM 31-35* did establish an air control system, addressing an area lacking direction during the interwar period.

Before *FM 31-35*, no formal air control system existed in the US Army. The exercises and maneuvers of the 1930s failed to produce any useable system, mostly due to communication problems.[13] Radio technology of the day precluded consistent and useful communications between aircraft and ground commanders.[14] Figure 1 shows the tactical command of combat aviation outlined in *FM 31-35*. Important to note is the relationship between the air support command and the field army. The air control system in *FM 31-35* established an air support command as the senior air command element of, and advisor to, the ground force commander. Aircraft could be attached and allocated to subordinate ground commanders by the field army commander, negating the tactical command outlined in *FM 31-35.*[15] Under the air support command were air support parties and air support control aligned with subordinate ground units. The air support parties coordinated with ground forces and forwarded approved air support requests to the air support control. Air support control then approved air support requests based on the guidance of the supported ground commander. If the air support party and air support control resided at the same ground force headquarters, then air support control would approve all air support requests from the air control party and task assigned aviation units to those requests. Undermining the entire system was a small note stating air support command and its subordinate units could not control or task aircraft assigned in direct support of a ground unit.[16] As the United States entered WWII, *FM 31-35* established the command relationships between the air and

[13] Schlight, *Help*, 29.

[14] Maurer Maurer, *Aviation in the U.S. Army, 1919-1939* (Washington, DC: Government Printing Office, 1987), 231-234.

[15] US War Department, *FM 31-35* (1942), 3-4.

[16] Ibid., 3-5, 47-49.

ground forces, the role of air support, and provided a rudimentary air control system. As operations in North Africa demonstrated, *FM 31-35* was far from definitive and did not resolve the fundamental disagreements between the ground and air forces.

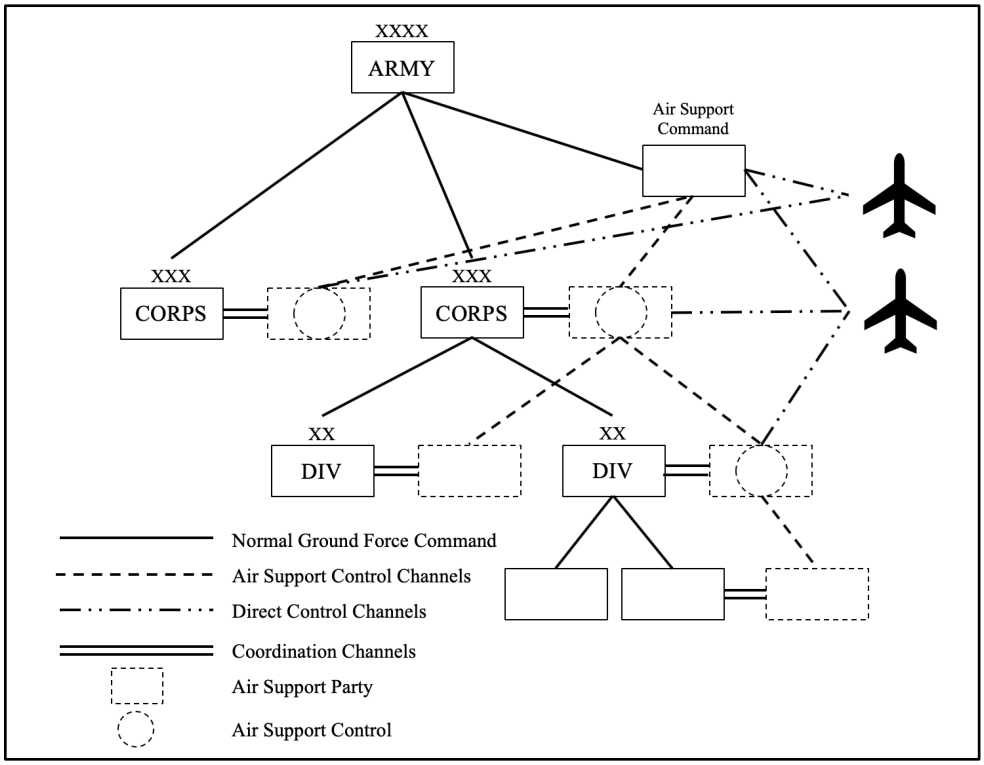

Figure 1. Tactical Control of Combat Aviation, 1942. US War Department, *Field Manual (FM) 31-35, Aviation in Support of Ground Forces* (Washington, DC: Government Printing Office, 1942), 4.

In October 1942, before the Operation Torch landings in North Africa, Allied Force Headquarters delegated command authority for air power to the Commander-in-Chief, Allied Forces. The Commander-in-Chief, Allied Forces could further delegated air power to lower commanders from brigades to task force levels.[17] These "penny packets" of air support led to inefficient and ineffective use of air power.[18] General Fredendall, commander of II Corps,

[17] Daniel R. Mortensen, *A Pattern for Joint Operations: World War II Close Air Support, North Africa* (Washington, DC: Government Printing Office, 1987), 50-51.

[18] Penny packets referred to small groups of aircraft given to lower echelon ground commanders for their use, without coordination among the entire air operation.

insisted on defensive air cover missions to protect his troops from enemy aircraft.[19] US airmen complained the US Army did not understand air power and how to employ it effectively. Airmen in North Africa understood air superiority and air interdiction as necessary missions before engaging aircraft in a close air support (CAS) role.[20] The limited effectiveness of air power in a defensive role harkened back to Giulio Douhet and his insistence the best defense against an enemy's air force is an offensive air force that destroys the enemy's aircraft before they even take off.[21] The organization of air support under *FM 31-35* did not allow the air commander to attack enemy air forces at their source if the ground commander prohibited it. Thus, the XII Air Service Command (ASC) in North Africa did not establish air superiority as a prerequisite for conducting CAS.[22]

Contributing to XII ASC's lack of effectiveness was the command structure supporting the North African campaign through February 1943. Established in 1942, Twelfth Air Force consisted of three primary subordinate commands: XII Bomber Command, XII Fighter Command, and XII Air Support Command.[23] These three commands were responsible for all air operations in the western theater of the North African Campaign. XII ASC was spread across Morocco and Algeria following the Operation Torch landings, leading to less available airpower at the front as operations moved to Tunisia. Additionally, it was unclear which command, XII Fighter Command or XII ASC, was responsible for attaining air superiority in the theater. XII Fighter Command had missions including fighter sweep and escort, but no clear air superiority

---

[19] Bernard C. Nalty, "The Defeat of Italy and Germany," in *Winged Shield, Winged Sword: A History of the United States Air Force, Volume I: 1907-1950*, ed. Bernard C. Nalty (Washington, DC: Air Force History and Museums Program, 1997), 274.

[20] Schlight, *Help*, 39-40.

[21] Giulio Douhet, *The Command of the Air*, in *Roots of Strategy, Book 4,* ed. David Jablonsky (Mechanicsburg, PA: Stackpole Books, 1999), 328.

[22] Richard P. Hallion, *Strike from the Sky: The History of Battlefield Air Attack, 1911-1945* (Washington, DC: Smithsonian Institution Press, 1989), 170.

[23] Wesley F. Craven and James Lea Cate, eds., *The Army Air Forces in World War II* (Chicago: The University of Chicago Press, 1949), 52-53.

task, while XII ASC mainly conducted patrols over ground troops but did not seek out active air combat.[24] Neither command had a primary mission of attaining air superiority in the theater. In February 1943, a reorganization placed command of air forces under the Northwest African Air Forces. The Northwest African Air Forces included the Northwest African Strategic Air Force, Northwest African Coastal Air Force, Northwest African Troop Carrier Command, and the Northwest African Tactical Air Force. Within the Northwest African Tactical Air Force, four separate commands, including XII ASC, supported operations in three different geographic areas.[25] The new structure simplified overall command and established one subordinate command responsible for the tactical missions of air superiority, interdiction, and CAS.

While the US Army grappled with the proper way to integrate air-ground operations, the British Army and Royal Air Force in Egypt worked under a system perfected since 1940. The Western Desert Air Force commanded by Air Vice Marshal Sir Arthur Coningham worked side by side with General Bernard Montgomery and British Eighth Army planning operations jointly. The British leaders maintained a joint headquarters and treated each other, and their respective services, as equals. Air liaison specialists existed at each Army echelon and a joint control center managed communications between units requesting, and aircraft providing, support. The British air-ground system worked so well Coningham claimed they were beyond just cooperating; they were acting as a single unit. The success of the British system led General Dwight Eisenhower, Supreme Commander Allied Expeditionary Force of the North African Theater of Operations, to reorganize the Allied Air Forces in North Africa, explicitly putting air support operations under the command of Coningham.[26] During the March-May 1943 advance on Tunis, Coningham's Northwest African Tactical Air Force gained air superiority during the first two months,

---

[24] Center for Air Force History, *The AAF in Northwest Africa* (Washington, DC: Center for Air Force History, 1992), 30, 12; Christopher M. Rein, *The North African Air Campaign* (Lawrence, KS: University Press of Kansas, 2012), 26.

[25] Ibid., 221-238, 120.

[26] Nalty, *Defeat*, 272-275.

conducted air interdiction sorties throughout the campaign, and focused on CAS during the final month of the campaign, free of any opposing Axis fighters.[27]

The success of British air-ground operations in Egypt and the Northwest African Tactical Air Force in Tunisia led to the development of *FM 100-20, Command and Employment of Air Power*, in July 1943.[28] As stated in *FM 100-20*, land and air power were equal, interdependent, and command of air power must be centralized. According to *FM 100-20*, a single air force commander was a requirement for the proper employment of flexible air power in a theater of operations. Additionally, *FM 100-20* outlined the missions and priorities of the tactical air force. The priorities for the tactical air forces, in order, were: gain and maintain the necessary degree of air superiority, prevent the movement of troops and supplies into and within the theater [interdiction], and, lastly, conduct combined operations in the battle area with ground forces [CAS].[29] *Field Manual 100-20* attempted to provide the final answer of who should command air power, and it remained the primary air power doctrine for the US Army through the end of WWII.

As preparations for Operation Overlord, the invasion of France, began in England in 1943, Brigadier General Pete Quesada assumed command of IX Fighter Command, responsible for the tactical air support of the operation. Quesada fought in North Africa and saw firsthand the challenges of tactical air support of ground forces and the solutions worked out by July 1943. He used his knowledge of tactical air support from North Africa and the newly published *FM 100-20* and built IX Fighter Command into a competent tactical air support command. Quesada used the structural and command improvements from North Africa and added new communications and radar capabilities to augment the air control system of IX Fighter Command. These improvements

---

[27] Schlight, *Help*, 41.

[28] Futrell, *Ideas 1907-1960*, 137-138.

[29] US War Department, *Field Manual (FM) 100-20, Command and Employment of Air Power* (Washington, DC: Government Printing Office, 1943), 1-2, 10-11.

increased the effectiveness of Quesada's fighters. IX Fighter Command improved the efficiency of the tactical control chain between forward ground units and aircraft, decreasing the response time of fighter support. Quesada also placed radio sets with forward tank units, allowing pilots and ground forces to talk directly.[30] The air control system Quesada implemented in Normandy, and the following advance through Europe, became the basis for the postwar tactical air control system. The effectiveness of Quesada's system was underlined by the approval and endorsement of General Omar Bradley after the war.[31]

Following WWII, the US War Department published *FM 31-35*, Air-Ground Operations, in August 1946. *Field Manual 31-35* solidified the independent nature of the air and ground forces and laid the foundation for the air-ground operations system and the tactical air control system in place at the outset of the Korean War.[32] Figure 2 displays the basic organization of the system from *FM 31-35.* A joint operations center (JOC) consisted of a combat operations section and an air-ground operations section. The combat operations section, operated by airmen, prepared air plans and supervised execution of those plans. Manned by soldiers, the air-ground operations section processed air requests from ground forces and exchanged intelligence and battle information with the combat operations section. The tactical air control center (TACC) was responsible for commanding and controlling all tactical aircraft in an operating area, including managing air operations, communicating with airfields and aircraft, and directing operations of the tactical air direction centers and tactical air control parties (TACP). The tactical air direction centers coordinated air operations in smaller areas, augmenting the abilities of the TACC in busy or remote areas. Tactical air control parties included a forward air controller (FAC) responsible

[30] Thomas A. Hughes, *Overlord: General Pete Quesada and the Triumph of Tactical Air Power in World War II* (New York: The Free Press, 1995), 113, 87-93, 294-294, 182-184.

[31] Hallion, *Strike*, 200.

[32] US War Department, *Field Manual (FM) 31-35, Air-Ground Operations* (Washington, DC: Government Printing Office, 1946), 1.

for directing aircraft against ground targets close to friendly lines.[33] Aircraft checked in with the tactical air control center, were directed to support specific TACPs based on either preplanned or on-call missions, and may have coordinated with a tactical air direction center in certain areas. The entire system was designed to expand and contract as necessary for different operations. A weakness in the 1946 tactical air control system was the need for all on-call ground support missions to be approved by the air force commander (or his representative) who was not present at the tactical air control center.[34] This flaw introduced lengthy delays in air support of ground operations. With no update to reflect the newly independent USAF, *FM 31-35* was the doctrine the US Army and the USAF employed when the Korean War began in June 1950.

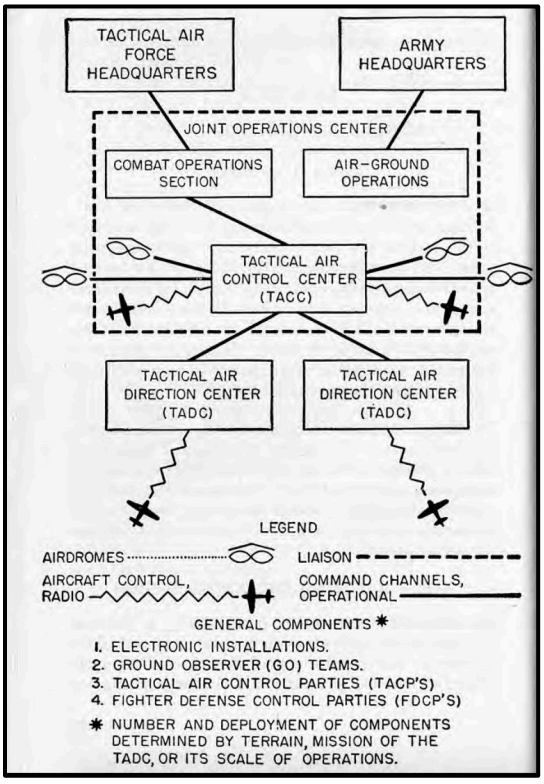

Figure 2. Tactical Air Control System, 1946. US War Department, *Field Manual (FM) 31-35, Air-Ground Operations* (Washington, DC: Government Printing Office, 1946), 46.

[33] Forward Air Controller (FAC) are ground-based controllers whereas Forward Air Controller-Airborne (FAC(A)) are aboard aircraft. Throughout this paper, FAC denotes controllers on the ground and FAC(A) indicates airborne controllers.

[34] US War Department, *FM 31-35* (1946), 2, 4, 45-65.

Case Study Methodology

Case studies of the Korean and Vietnam Wars provide examples of the theater air control system in different contexts and using different technologies. Both wars were long enough that the character of each war changed dramatically from beginning to end. Each war and the change in the conduct of those wars provide more opportunities to analyze the TACS and investigate if span of control, approval authority, and level of integration are enduring characteristics of successful TACS.

Chapter 2: Air-Ground Operations in the Korean War

Historical Context

US policy after WWII quickly shifted to countering the Soviet Union and the spread of communism. The strategy of containment, as outlined in George Kennan's article, "The Sources of Soviet Conduct," recommended US strategy focus on opposing the Soviet Union and preventing the spread of communism.[35] Increasing Soviet military strength and the attainment of atomic weapons fixated US leaders on the Soviet Union as the major, and only, threat to the United States.[36] The United States viewed Europe as the most likely battleground between the West and the Soviet Union, leaving Asia and the western Pacific with minimal focus before the Korean War. After removing forces from Korea in June 1949, General Douglas MacArthur stated his Far East Command's area of responsibility included the Philippines, Okinawa, Japan, and the Aleutian Islands.[37] Far East Command did not include Korea and no major US forces were on the

[35] George F. Kennan, "The Sources of Soviet Conduct," *Foreign Affairs* 25, no. 4 (July 1947): 867.

[36] US National Security Council, *A Report to the National Security Council,* National Security Council Document 68 (NSC-68), April 14, 1950, 60-65.

[37] Futrell, *Ideas, 1907-1960*, 292.

Korean peninsula. Forces left in Japan concentrated on post-war occupation duties and began light combat readiness training late in 1949.[38]

Following WWII, the War Department and military services experienced a manpower and budget reduction. In response to smaller budgets, the USAF prioritized strategic [nuclear] missions and long-range, nuclear-equipped bombers over tactical missions and aircraft.[39] The emphasis on Strategic Air Command (SAC) supported the containment strategy and the findings and recommendations of National Security Council report 68, providing the United States with a robust offensive nuclear capability. The emphasis on strategic nuclear mission depleted resources for Tactical Air Command (TAC). Tactical Air Command's mission was to work with land and sea forces and provide trained tactical air units for operations. Once the Soviet Union built its first nuclear weapon, the Joint Chiefs of Staff declared that offensive atomic delivery capability was vital to national defense. General Carl Spaatz, USAF Chief of Staff recognized SAC provided the best offensive nuclear-armed force for the nation, cementing SAC's place atop the USAF hierarchy and relegating TAC to a second-tier command.[40] With attention on a possible nuclear war and a tight fiscal environment, the USAF removed TAC's major command status in December 1948. As a subordinate command, TAC did not have the funding or priority necessary to maintain proficiency at tactical air-ground operations. Typical of the neglect TAC faced was the tactical control group. The tactical control group was the USAF organization responsible for manning, equipping, and operating the TACS. Before the Korean War, the USAF had only one tactical control group and it was stationed in North Carolina, far from the impending battlefields of Korea.[41] With strategic nuclear bombing as the priority mission for the USAF, there was no

[38] James F. Schnabel, *Policy and Direction-The First Year* (Washington, DC: Center of Military History, 1992), 55.

[39] Futrell, *Ideas, 1907-1960,* 241, 207.

[40] Ibid., 208, 215, 249.

[41] Schlight, *Help,* 83, 82.

need to spend money on supporting the tactical air forces. The beginning of the Korean War quickly highlighted the deficiencies of USAF tactical air power.

The USAF was not the only service facing fiscal constraints following WWII. The US Army made similar budgetary decisions relating to the prioritization of forces and where to concentrate defense efforts around the world. The US Army decreased from eight million soldiers at the end of WWII to less than one million before the Korean war, leading to woeful neglect of equipment maintenance and a loss of seasoned veterans.[42] In response to the US policy of containment, the US Army relied on a strategy of mobilization rather than maintaining a fully combat-ready organization. US Army divisions in 1950 were understrength and underequipped. Divisional equipment was mostly WWII leftovers, ill-maintained and unsuitable for major combat operations.[43] General MacArthur had four divisions in Japan after withdrawing all combat forces from Korea in 1949. Of these divisions, none had fully manned regiments, artillery units, or tank units. Eighth Army included the four understrength divisions in Japan but lacked all the corps-level enablers (specifically artillery and engineers) necessary for major combat operations.[44] The closest major ground unit to Korea, Eighth Army, was understrength, ill-equipped, and unprepared for the Democratic People's Republic of Korea's (North Korea) invasion in June 1950.

While the USAF and US Army faced fiscal challenges and a decrease in tactical focus, the two services did conduct several exercises following WWII. Only two of these exercises, Assembly and Tarheel, approached the level of a joint exercise with the other exercises closer to demonstrations of potential capabilities and not true tests of the readiness and integration of the

[42] Ingo Trauschweizer, *The Cold War U.S. Army* (Lawrence, KS: University Press of Kansas, 2008), 18.

[43] Schnabel, *Policy*, 43-45, 46.

[44] Ibid., 52-54.

USAF and US Army.[45] Both Assembly and Tarheel employed the air-ground system from *FM 31-35*, with the US Army raising familiar concerns about who should control tactical air power. Unfortunately, the exercises did not provide a realistic assessment of the air-ground system or the CAS capabilities of the USAF. During the Assembly exercise, tactical air supported only one division along a small front, instead of several divisions along a large front. Based on this experience, US Army participants expected more air support than they would receive during actual combat. During the 1949 Tarheel exercise, air assets from TAC operated as a separate task force, thus negating the opportunity to conduct joint planning ahead of the start of operations.[46] Because of the limited number of exercises and their limited realism, the US Army and USAF entered the Korean War with a false sense of the effectiveness of the air-ground system outlined in *FM 31-35*.

Conduct of the War

When North Korean forces invaded the Republic of Korea in June 1950, the only US forces in the country were advisors to the Republic of Korea military. The US military was unprepared for a limited war, especially one in Asia. To blunt the North Korean attack, President Harry Truman authorized General MacArthur to employ air and naval forces in support of the Republic of Korea Army.[47] From the start of the war, the United Nations and the United States relied on US air power to reach and shape the battlefield while ground forces deployed to Korea. Once land forces arrived in Korea, their lack of artillery and anti-armor capability required the use of tactical air power to halt the North Korean advance. The use of air power during the

[45] Assembly, conducted in 1948, combined the 82nd Airborne Division and Ninth Air Force in capturing an overrun post, Camp Campbell, Tennessee. Tarheel, conducted in 1949, consisted of the 82nd Airborne Division and an air task force from TAC attacking an enemy force near Fort Bragg, North Carolina. Schlight, *Help*, 77, 99.

[46] Ibid., 82, 77, 78, 99.

[47] Futrell, *Ideas, 1907-1960,* 293.

opening phase of the war provided the land forces time to deploy and establish a defense.[48] While Eighth Army defended the Pusan Perimeter, the preponderance of tactical aircraft conducted CAS, making up for the lack of artillery in the US Army.[49] Thus began the US Army's reliance on tactical air power throughout the Korean War.

In August 1950, with the Pusan Perimeter moderately stabilized, Fifth Air Force shifted some CAS sorties towards interdiction, attempting to stem the southern flow of North Korean men and material. The decrease in CAS sorties upset the ground forces, who only saw less CAS overhead and did not recognize the benefit of the unseen interdiction sorties.[50] In September 1950, US ground forces landed at Inchon and simultaneously broke out of the Pusan Perimeter, beginning an offensive that would ultimately culminate along the Yalu river. The attack moved north so quickly that tactical aircraft found it extremely difficult to conduct CAS because the situation on the ground changed so quickly. Chinese forces counterattacked in force at the end of November, catching UN forces off guard and driving them south.[51] A combination of interdiction and CAS allowed UN forces to establish a defensive line south of the thirty-eighth parallel and halt the communist advance.[52] Following a short UN offensive, the war stalemated in July 1951, with both sides digging into the terrain and fighting tenaciously for small advances.[53]

During the fast-moving retreats and advances, US tactical air power was effective in the CAS mission, with enemy forces moving in mass in the open. Once ground forces halted though, CAS against entrenched forces became much less potent, but interdiction effectiveness against

---

[48] Wayne Thompson, "The Air War Over Korea," in *Winged Shield, Winged Sword: A History of the United States Air Force, Volume II, 1950-1997,* ed. Bernard C. Nalty (Washington, DC: Air Force History and Museums Program, 1997), 16.

[49] Schlight, *Help*, 120, 135.

[50] Ibid., 126.

[51] Robert F. Futrell, *The United States Air Force in Korea, 1950-1953* (New York: Duell, Sloan, and Pearce, 1961), 157-158, 223.

[52] Futrell, *Ideas 1907-1960*, 302.

[53] Schlight, *Help*, 139.

enemy rear areas increased. While the air commanders understood the need to shift focus to interdiction, ground commanders only saw less air support and assumed the USAF was no longer willing to support ground forces.[54] This divergence in views led to arguments over command and control of tactical air support reminiscent of WWII arguments.

Throughout the Korean War*, FM 31-35* remained the doctrine of record for air-ground operations. Fifth Air Force set up a JOC at the numbered air force/field army level with the USAF establishing the combat operations section the TACC (see fig. 2). With the JOC at the numbered air force/field army level, TACPS routed all requests for air supported from the regimental level, through division, corps, and finally to Eighth Army for approval. While the USAF established its side of the JOC, the US Army failed to man and equip the air-ground operations section in accordance with *FM 31-35*. Without the air-ground operations section, the JOC did not have anyone to process the air requests coming in from subordinate ground forces. In addition to assigning planners to the JOC, the US Army was responsible for installing and maintaining the communications infrastructure of the JOC, a task it failed to accomplish after July 1951.[55] At the outset of the war, the USAF sent FACs with radio-equipped jeeps to find targets along the front lines and call in air strikes. These FACs took heavy casualties because they had to get extremely close to the enemy to find targets and the North Koreans quickly learned to target the jeeps.[56] Due to the mountainous terrain in Korea, the FACs embedded with the US Army had difficulty spotting targets and controlling air strikes, giving rise to the FAC(Airborne). The FAC(A)s, callsign Mosquito, found targets and controlled strikes, but with limited, if any, integration with the ground forces.[57]

---

[54] Schlight, *Help*, 139-140.

[55] Ibid., 144-146.

[56] Thompson, *Air War*, 18.

[57] Futrell, *Korea,* 78.

Span of Control

A single JOC controlled all USAF aircraft throughout the Korean peninsula as part of the Eighth Army/Fifth Air Force joint headquarters during the war.[58] The JOC did not control US Navy and US Marine Corps (USMC) aircraft until later in the war. The US Navy, USMC, and USAF were suspicious of each other's intentions with aircraft and were reluctant to relinquish control of aircraft and sorties to a different service. This distrust between the services hampered the effectiveness of CAS, but to a much smaller degree than other issues during the Korean War.[59] Initially, the TACC was responsible for directing CAS strikes as well as identifying and tracking friendly and hostile aircraft throughout the entire Korean theater. As the war progressed, tactical air direction centers assumed responsibility for monitoring and identifying aircraft and passing CAS aircraft to TACPs or FAC(A)s for strikes.[60] A tactical air direction center was established with each corps, allowing for some decentralization of air strike control still under USAF control.[61] The large area, number of aircraft, and mission sets of the TACC and the tactical air direction centers were too great to allow adequate control and coordination of all the air strikes occurring in the theater. Finally, in 1951, the USAF established three tactical air direction posts, one with each of the corps in Eighth Army, with the specific mission of controlling CAS strikes from fighters and bombers. Delegating some control down to the corps level coincided with corps commanders' reluctance to delegate heavy artillery and air control below the corps level. Now, corps commanders had some influence over the air operations in their areas and could integrate their heavy artillery, air power, and ground maneuver.[62] With the introduction of the tactical air

[58] Schlight, *Help*, 145.

[59] James A. Winnefeld and Dana J. Johnson, *Joint Air Operations: Pursuit of Unity in Command and Control, 1942-1991* (Annapolis, MD: RAND, 1993), 50-52.

[60] Schlight, *Help*, 147.

[61] Allan R. Millet, "Korea, 1950-1953," in *Case Studies in the Development of Close Air Support*, ed. Benjamin F. Cooling (Washington, DC: Government Printing Office, 1990), 376-77.

[62] Futrell, *Korea*, 429-30, 377-78.

direction posts, the span of control for CAS was adequate for the war at hand. The fact that no other agencies were established to control CAS through the end of the war reinforces the analysis that controlling CAS at the corps level was appropriate for the Korean War and contributed to successful CAS missions.

Approval Authority

As stated in *FM 31-35*, the JOC resided at the numbered air force/field army level, meaning all decisions on the use of air power in support of ground forces went through every higher echelon before being approved or denied. At the outset of the war, immediate air requests took four hours to get from the commander in the field to Fifth Air Force for approval.[63] This system was too slow and unresponsive to be useful for ground commanders in the heat of battle. By the time aircraft arrived on station, the battle was over or had changed drastically from when the ground forces made the request.[64] A significant roadblock to efficient request approval was the US Army's lack of personnel and equipment supporting their air-ground operations system.[65] The lack of training and proper manning and equipping of the TACS in Korea hampered the approval process more so than the approval level. The friction in the TACS during the entire Korean War precludes determining if the level of approval for CAS requests (Fifth Air Force) was effective or efficient.

Communications issues had a more substantial impact on the ability to request and approve air support than the approval level. The US Army lacked adequate communications systems for requesting immediate air support. All immediate air requests were routed from regiments through division and corps before Eighth Army sent requests to the JOC for Fifth Air Force approval. The nature of communications technology and the Korean terrain severely

[63] Schlight, *Help*, 144.

[64] Millet, "Korea," 394.

[65] Schlight, *Help*, 146.

hampered efficient communications between units and between Eighth Army and the JOC. Messengers, telephones, teletype, and radio relayed both requests and approvals for air support while competing with the other communication channels present in each unit headquarters.[66]

A unique aspect of the Korean War was the level of decision-making authority granted to lower echelons in the US Army. Based on experiences in WWII, US Army leaders were reluctant to allow initiative below the field army or corps level; especially regarding fire support. This high level of centralization aligned well with the doctrinal JOC concept of air support requests and coordination handled at the numbered air force/field army level, implying the approval authority level was adequate for the Korean War.[67]

Air-Ground Integration

TACPs at the regimental and company level had a high degree of integration with the ground forces, but the terrain limited their ability to target the enemy per the ground scheme of maneuver. Because of these limitations, the USAF limited the number of TACPs assigned to divisions, against the wishes of the US Army commanders, like Almond.[68] To better identify and strike targets, the USAF used Mosquito FAC(A)s, pilots in light, unarmed aircraft, who searched for enemy targets near the friendly line of troops. These Mosquito pilots had limited, if any, understanding of the ground plan and usually did not talk with any ground forces before asking for air support and directing fighters to targets.[69] The TACPs, who understood the ground scheme of maneuver, often were unable to communicate and coordinate with the FAC(A)s, who could see the enemy and direct strikes against targets. Ultimately, the FAC(A)s directed strikes against any enemy targets they saw, without knowing if these strikes supported the ground forces.

---

[66] Fifth Air Force, Joint Training Division, *Report on Joint Air-Ground Operations Conference* (Seoul: Headquarters Fifth Air Force, 1953), 11, 25-26.

[67] Millet, "Korea," 350.

[68] Ibid., 136-137, 151.

[69] William M. Momyer, *Airpower in Three Wars* (Maxwell Air Force Base, AL: Air University Press, 2003), 302; Schlight, *Help*, 151-153.

Hierarchical communication problems continued to hamper the degree of air-ground integration during the war. Friendly positions and bomb line information were not updated often enough or passed to aircraft. Like the air support request system, updates to friendly locations and the bomb line traveled up the Army chain to Eighth Army then to the JOC before going down the Fifth Air Force chain to the FAC(A) or tactical air direction posts. The lack of personnel in the air-ground operations section hampered the passing of friendly battle information and intelligence to the airmen of the combat operations section. After the war, a joint conference recommended allowing the US Army's fire support coordination cell to talk directly with the JOC to shorten the timeline and increase the integration of air and ground missions.[70]

Conclusions

While both US Army and USAF commanders generally praised air-ground operations in Korea, the system in place did not provide responsive and flexible air support to the ground forces.[71] The doctrine in place, *FM 31-35*, was adequate for the war, but the limitations in communications severely degraded the responsiveness of CAS aircraft. While the TACP, FAC(A), and JOC system in place during the Korean War fostered limited air-ground integration, the unique terrain of the peninsula and the lack of reliable and timely communications prevented a high level of integration between the USAF and the US Army during CAS missions. Based on the US Army command structure and level of decision-making authority, the approval and control of air support missions at the Fifth Air Force level was appropriate and enhanced overall air-ground operations.

Lack of training, equipment, and personnel was a more significant reason the TACS in Korea was only marginally effective, especially at the beginning of the war. The focus of US military strategy on nuclear war in an era of limited budgets forced both the US Army and USAF

[70] Fifth Air Force, *Report*, 19, 25-26.

[71] Mark W. Clark, *From the Danube to the Yalu* (New York: Harper and Brothers, 1954), 92.

to prioritize areas other than tactical air support. Neither service, especially the US Army, had enough trained personnel or the right equipment to control air support during the war. The doctrine in place was sufficient for the task at hand if both services had adequately trained and equipped the TACS between WWII and the Korean War. The minimal joint training did not stress the TACS to find weaknesses before the war, nor did it prepare either service for the demands and limitations of a large-scale, fast-moving operation. With the priority of effort preceding June 1950 focused on the Soviet Union and nuclear war, tactical air support did not have the budget, training, or equipment necessary to be effective at the outset of the Korean War.

Chapter 3: Air-Ground Operations in the Vietnam War

Historical Context

Following the Korean War, national security policy concentrated again on the Soviet Union as the greatest threat to the United States and the American way of life. Advances in Soviet nuclear capability and delivery made the United States vulnerable to a Soviet first strike. Nuclear retaliatory ability was the primary security deterrence outlined in *NSC-162/2* and formed the basis for President Eisenhower's strategy for counterbalancing growing Soviet power.[72] *National Security Council Report 162/2* emphasized fiscal responsibility and a robust US economy as a strategic weapon. In response, Eisenhower instituted his New Look policy which focused military efforts and funding on nuclear programs and weapons. Speaking in 1954, Secretary of State John Foster Dulles first announced the concept of Massive Retaliation. Massive Retaliation enhanced deterrence by promising an overwhelming military response, anywhere and at any time, to Soviet aggression.[73] The New Look and Massive Retaliation policies directed US strategy on nuclear

[72] US National Security Council, *A Report to the National Security Council,* National Security Council Document 162/2 (NSC-162/2), October 30, 1953, 1-5, 7-8.

[73] Futrell, *Ideas 1907-1960*, 428.

war and deterrence, leaving little funding for the more mundane tactical programs of the armed forces.[74]

The combination of the New Look and Massive Retaliation policies led to a pronounced emphasis on nuclear weapons and the services best postured to use those weapons, specifically the USAF and the US Navy. In a near repetition of the post-WWII years, the USAF TAC found itself fighting for life as a major command. To save TAC, General Otto Weyland, Commander of Far East Air Forces during the Korean War and Commander of TAC after the war, shifted the focus of the command in support of SAC and the use of nuclear weapons. This shift away from conventional tactical tasks decreased the number of joint operations training TAC conducted with the US Army. A result of the shift from tactical to strategic focus in TAC, and the USAF, in general, was a marked decrease in US Army attendance at the Air-Ground Operations School in Southern Pines, North Carolina throughout the 1950s. The Air-Ground Operations School started in 1951 training USAF and US Army officers on the proper use of air power in support of ground operations.[75] Lack of training was one of the primary weaknesses of the TACS during the Korean War and the services were on a similar track after the war ended. While the USAF grew and became the primary force to fight a nuclear war, the US Army struggled to find its identity and purpose under the New Look.

A lack of purpose and a lack of funding characterized the US Army under the New Look. Throughout the 1950s, the US Army reduced its manpower and reorganized in response to the new atomic era. Under General Maxwell Taylor's leadership as Chief of Staff, the US Army changed to a Pentomic division organized for fighting on an atomic battlefield.[76] At the same time, other US Army leaders saw a limited war, without the use of nuclear weapons, as highly

[74] Schlight, *Help*, 181-182.

[75] Ibid., 182-183, 186.

[76] Bart Howard, "Army Transformation 1953-1961: Lessons of the 'New Look' Army" (research report, US Army War College, 2004), 3, 11.

possible and much more probable than the unlimited war expected under Eisenhower's New Look.[77] The lack of direction and definite purpose for the US Army after the Korean War had lasting effects throughout the 1960s, even after President John F. Kennedy instituted his doctrine of Flexible Response.

Shortly before John F. Kennedy took the oath as President of the United States in January 1961, Soviet Premier Nikita Khrushchev spoke at a world Communist party conference. Khrushchev's speech outlined a change in Soviet strategy from a focus on purely thermonuclear war towards supporting subversion activities, guerrilla actions, and insurgency wars. This change in Soviet strategy prompted Kennedy to develop the Flexible Response strategy as he took over the Presidency.[78] The President's first defense policy outlined two key assumptions: the United States must prevent the erosion of the free world through limited wars and the defensive posture of the United States must be flexible enough to respond to both thermonuclear war and smaller, limited wars.[79]

In response to the new defense posture, the US Army again changed its division structure, adopting the Reorganization Objective Army Division as the basic structure of the force. Commanders could tailor the Reorganization Objective Army Division to their needs for limited or unlimited wars. Additionally, the Reorganization Objective Army Division provided better command and control and standardized the divisional structure across the entire US Army. At the same time as the division reorganization, an increased defense budget emphasized conventional capabilities, not just nuclear war. The US Army received a substantial increase in budget, manning, and training, especially in special forces.[80] Under Flexible Response, the US Army had

---

[77] Futrell, *Ideas 1907-1960*, 456.

[78] Robert F. Futrell, *Ideas, Concepts, Doctrine: Basic Thinking in the United States Air Force, 1961-1984* (Maxwell AFB, AL: Air University Press, 1989), 86.

[79] Ibid., 24-25.

[80] Trauschweizer, *Cold War U.S. Army*, 114-123.

a conventional war purpose and the funding necessary to increase readiness and tactical capabilities.

The USAF, under Flexible Response, still focused heavily on nuclear deterrence, but also began a shift towards more tactical and conventional missions, weapons, and training. The USAF activated a unit, the 1st Air Commando Group, specifically to support the US Army's special forces, train foreign air forces, and conduct counterinsurgency operations.[81] USAF training increased significantly from 1961-1963, improving tactical, non-nuclear proficiency in line with the tenets of Flexible Response. The increased emphasis on conventional war and the reemergence of the US Army as a vital part of the US military compelled the USAF to invest more time, money, and personnel in tactical air support of the US Army.[82] The significantly increased number of tactical air support training exercises, both joint and single-service, reflected the increased emphasis on air support of the US Army. In a single eighteen-month period, the US Strike Command conducted thirty-two joint exercises focusing on CAS and tactical air support of US Army operations.[83] Starting in 1963, US Strike Command conducted several field tests of the air-ground system to test the differing views of air support among the US Army and USAF.[84] The results of these tests were implemented in South Vietnam in April 1964 and finally agreed to through a joint "Concept for Improved Joint Air-Ground Coordination," signed by the USAF and US Army Chiefs of Staff in 1965.[85]

---

[81] Drue L. DeBerry, R. Cargill Hall, and Bernard C. Nalty, "Flexible Response: Evolution or Revolution?," in *Winged Shield, Winged Sword: A History of the United States Air Force, Volume II, 1950-1997,* ed. Bernard C. Nalty (Washington, DC: Air Force History and Museums Program, 1997), 199.

[82] Schlight, *Help*, 236-238.

[83] Secretary of Defense Robert McNamara activated US Strike Command as an emergency response command in 1961. The command consisted of composite air and ground forces designed to reinforce overseas commands or respond independently to emergencies around the world. DeBerry, Hall, and Nalty, "Flexible Response," 168; Schlight, *Help*, 238.

[84] Ibid., 279-298.

[85] Ibid., 305-306; Futrell, *Ideas 1961-1984*, 518.

Conduct of the War

The USAF TACS was used in Vietnam beginning in 1962, although until 1965 it was predominantly used to support Republic of Vietnam ground forces and advise the South Vietnamese Air Force (VNAF). While large-scale US forces did not enter Vietnam until 1965, the USAF had over three years of practice and experience with TACS before working with the US Army.[86] Issues and concerns from 1962-1964 led the USAF and US Army Chiefs of Staff to agree on doctrinal changes to the TACS as the US commitment in Vietnam shifted from counterinsurgency to large-scale combat operations.[87] The agreed-upon framework for the TACS would remain in place, with just a few minor changes, for the remainder of the war. Figure 3 shows the Joint Air-Ground Operations System used throughout the war.

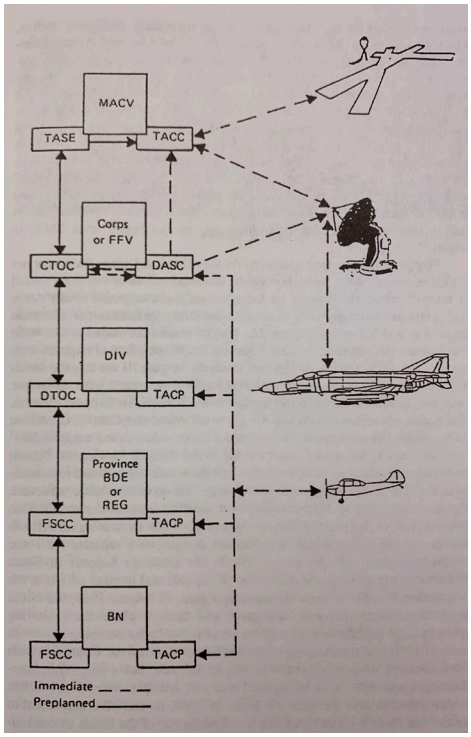

Figure 3. Vietnam Joint Air-Ground Operations System, 1966. John Schlight, *Help From Above: Air Force Close Air Support of the Army, 1946-1973* (Washington, DC: Government Printing Office, 2003), 307.

[86] Schlight, *Help*, 302-303.

[87] Riley Sunderland, *Evolution of Command and Control Doctrine for Close Air Support* (Washington, DC: Government Printing Office, 1973), 44.

The TACS in Vietnam was not radically different from the system used in Korea. The TACC was still the focal point of command for the USAF, controlling the allocation of air power throughout South Vietnam. One difference from Korea is that the USAF had five different TACCs controlling air power during the Vietnam War. Only one, the Seventh Air Force TACC controlled air within South Vietnam. The remaining TACCs controlled air in North Vietnam, Laos, and along the Chinese border.[88] This chapter focuses only on the Seventh Air Force TACC, as it was the only TACC controlling air in support of conventional US Army and USMC forces. The division of labor of the TACCs was a symptom of a more significant division of airpower in Vietnam.

Throughout the Southeast Asia Theater, air power was sub-divided among several commands, decreasing the efficiency and effectiveness of air power. Commander-in-Chief, Pacific Command, divided North Vietnam into six route packages. These route packages were used by the USAF and US Navy to coordinate air strikes in North Vietnam. Thirteenth Air Force was responsible for the USAF route packages and Carrier Task Force-77 was responsible for the US Navy route packages. Seventh Air Force controlled Route Package I, the closest to South Vietnam. Additionally, SAC retained control of aircraft, specifically B-52s, in both South and North Vietnam. USAF and US Navy aircraft within South Vietnam were under Seventh Air Force's operational control, but USMC aircraft remained under Marine command.[89] Where an aircraft flew, and for what service, dictated who commanded that aircraft. Seventh Air Force, Thirteenth Air Force, SAC, Carrier Task Force-77, and III Marine Amphibious Force commanded air power during the Vietnam War, contrary to the concept of a single air commander. Lack of a single air commander also manifested itself at the tactical level, with

[88] John J. Lane, *Command and Control and Communications Structures in Southeast Asia* (Maxwell Air Force Base, AL: Air University Press, 1981), 75-78.

[89] Ibid., 65-69, 52-53.

multiple Direct Air Support Centers (DASC) complicating command and control of air power in South Vietnam.

Subordinate to the TACC were the six Direct Air Support Centers (DASC) responsible for air strikes within their tactical areas of responsibility. Managing air strikes included providing frequencies, rendezvous points, callsigns, and targets to aircraft.[90] Doctrinally, each DASC aligned with a corps-sized element, but two of the DASCs in Vietnam, Horn DASC and DASC Alpha, were unique in their roles in South Vietnam. In the I Corps tactical area, both I Corps DASC and Horn DASC operated simultaneously. Horn DASC was a product of USMC commanders refusing to relinquish control of their organic aircraft to the USAF. A proposal to combine the I Corps and Horn DASCs was vetoed by the VNAF, who feared losing control of their organic aircraft. The solution was to maintain two DASCs in I Corps. However, the I Corps and Horn DASCs coordinated their efforts much better than the DASCs in II Corps. In II Corps, II Corps DASC controlled USAF/VNAF operations, while DASC Alpha controlled the US-only operations of I Field Force, Vietnam. The two DASCs did not coordinate operations and neither had a complete understanding of all the air operations in the II Corps tactical zone. This lack of understanding led to inefficient use of air power, including both DASCs scheduling air support in the same area.[91]

Like Korea, subordinate to the DASCs were TACPs aligned with each echelon from the corps down to battalion. These TACPs provided liaison services, radios, and maintenance personnel in support of the TACS. Additionally, the battalion TACPs included a FAC and radio operators. These battalion FACs had the same responsibilities as the FACs in Korea: find targets and control air strikes.[92] FAC(A)s played a significant role in the air support role as the

[90] John J. Sbrega, "Southeast Asia," in *Case Studies in the Development of Close Air Support*, ed. Benjamin F. Cooling (Washington, DC: Government Printing Office, 1990), 430-431.

[91] Lane, *Command*, 83-85.

[92] Ibid., 16, 85-86.

geography of Vietnam made finding targets and controlling strikes from the ground extremely difficult in the dense jungles and mountainous terrain.[93]

Two processes existed in Vietnam for requesting air support: pre-planned and immediate requests. Pre-planned requests came from battalions through each army echelon to the corps tactical operations center. The corps planners prioritized all the requests of corps units and sent those requests to Seventh Air Force TACC, who executed approved sorties.[94] For immediate requests (defined as any request not following the pre-planned timeline), TACPs directly contacted the DASC with their requests. After coordinating with the corps tactical operations center, the DASC would either retask aircraft on pre-planned missions under DASC control or request air support from the TACC. On the US Army side of the Joint Air-Ground Operations System, elements at each echelon listened to the direct air request net and would interject if a US Army asset could handle the request; otherwise, silence implied US Army consent for immediate requests. The TACC could scramble air or ground alert aircraft or reassign aircraft from another corps area.[95] This system provided the US Army a way to plan air support for upcoming missions while providing a process responsive to ongoing operations or changes in the battlefield.

Span of Control

Each DASC was responsible for a corps tactical zone or military region. Each of the four primary DASCs, by December 1965, controlled over one hundred aircraft per day, on average.[96] Despite such a high number of aircraft in their areas, there are no reports of the DASCs being overwhelmed or hindering air support operations consistently. This lack of evidence suggests the

[93] Schlight, *Help*, 316

[94] Ibid., 306; Lane, *Command*, 19.

[95] Seventh Air Force, *Seventh Air Force Pamphlet (7AFP) 55-1, Seventh Air Force In Country Tactical Air Operations Handbook* (San Francisco: Headquarters Seventh Air Force, 1968), 31-32; Lane, Command, 19.

[96] Schlight, *Help*, 309.

four primary DASCs had an appropriate span of control in terms of the number of aircraft controlled.

Of more significant concern to the control of air power in Vietnam was the convoluted command structure. The failure of the services and the different commands in the theater to consolidate their air power and settle their command differences led to overlapping command and control structures, in both North and South Vietnam. Two DASCs controlling aircraft in the same corps tactical zone was inefficient. Had the USAF and USMC combined their operations under a single command and control structure, air power in the I Corps Tactical Zone would have been more efficient. The USAF and USMC did not resolve their command and control differences during the war.[97] The command relationships, not the area or number of aircraft controlled by the DASC, was the contributing factor for the inefficient air-ground operations in South Vietnam.

Approval Authority

The improved TACS allowing TACPs to communicate directly with the DASC for immediate air support requests significantly improved the reaction time for air support in urgent situations. A general guideline used in Vietnam was the 20/40 rule. Airborne aircraft tasked to support an immediate air support request typically arrived overhead within twenty minutes while ground alert scrambles took forty minutes. In general, US Army commanders were satisfied with the time between making immediate air support requests and air support arriving on station.[98] Overall, the pre-planned and immediate request processes worked well in South Vietnam, providing the US Army air support when and where it was needed.

A unique characteristic of operations in South Vietnam was the need to acquire Vietnamese provincial chief approval for all air strikes. In most areas, however, the provincial chiefs delegated approval authority to US division commanders. Any air support requests

[97] Winnefeld and Johnson, *Joint Air Operations*, 66-74.

[98] Pacific Air Forces, CHECO Division, *Direct Air Support Centers in I Corps: July 1965-June 1969* (Hickam Air Force Base, HI: Headquarters, Pacific Air Forces, 1969), xi.

originating with Republic of Vietnam forces or using VNAF aircraft required explicit approval from the provincial chief, increasing the amount of time for air support to arrive.[99] Language problems, political and religious issues, and lack of knowledge severely hampered air support of Republic of Vietnam ground forces, sometimes precluding requests from even reaching the USAF.[100] Fortunately, most of these political and cultural problems did not impede US Army and USAF air-ground operations in South Vietnam.

Air-Ground Integration

The central point of integration in Vietnam between the air and ground forces was the FAC. The DASC merely provided information it received from corps to the flying units and other command and control agencies. The FACs, working with the ground commander, found targets, determined ordinance, passed friendly locations to the fighters, and advised ground forces.[101] FACs in Vietnam, both ground and airborne, took great pride in knowing their supported ground units and understanding how air support best enabled the ground forces' mission. The FACs conducted formal and informal briefings with their ground counterparts, building a rapport that strengthened the working environment of the two components.[102] The personal interactions of the FACs and ground forces increased trust, but integrating with artillery was a larger challenge.

The US Army never integrated artillery with air power during operations in Vietnam. Typically, units stopped or shifted artillery fire to allow air strikes. At Loc Ninh in October 1967, it took an inordinate amount of time to shut down artillery fire and allow air strikes and more time to resume artillery operations after the air strikes.[103] The FAC had to coordinate through the battalion operations centers for the fire support coordination center to adjust artillery fire, a

[99] Seventh Air Force, *7AFP 55-1*, 40, 49.

[100] Schlight, *Help*, 304-305.

[101] Ibid., 317.

[102] Sbrega, "Southeast Asia," 436.

[103] Ibid., 454.

process reliant on radio communications most likely overwhelmed with ground operations during high-intensity combat.[104] This arrangement did not support massing both artillery and air strikes on multiple targets in the same area, decreasing the efficiency of air support.

Making up for the decreased integration of air and ground forces was the large amount of air support available. More CAS was available than in previous wars and was relied on to a much larger extent as well. With an abundance of CAS, ground forces requested air support for any contact with the enemy.[105] The availability of aircraft smoothed out some of the friction caused by the multiple air commanders and sub-divisions of airpower present in Vietnam. Based on feedback from US ground commanders, air-ground operations in Vietnam met the requirements of the ground forces and ultimately was effective.[106]

Conclusions

Overall, the TACS system in Vietnam was effective, as judged by US ground commanders, but not efficient. The span of control for each DASC was appropriate for the size of each operating area and the number of aircraft controlled daily. One concern for span of control was the multiple different commanders controlling air power throughout the theater and the resultant lack of a single, unified command and control structure for air-ground operations. The approval process in place enabled quick and responsive air support, highlighted by the 20/40 rule of thumb for response times. The consistent and predictable response times allowed ground forces to plan appropriately for air support. The weakest area of the TACS in Vietnam was the overall air-ground integration. The overall TACS did not promote integration; instead, the system relied on the personal relationships of the TACPs, FACs, and ground forces to affect the integration

[104] Sunderland, *Evolution of C2,* 50.

[105] Sbrega, "Southeast Asia," 469-470.

[106] Ibid., 437.

needed to be effective. No process or mechanism existed to integrate and synchronize air and surface fires. Instead, ground forces could have air or surface fires at a given time, but not both.

The biggest reason for the success of the Vietnam TACS was the amount of time the system was in place before the escalation of combat operations and the experience gained during that time. The change in defense policy from the New Look to Flexible Response enabled joint training that occurred during the early 1960s as the war unfolded. Three years of US Strike Command field tests and three years in Vietnam prior to the start of large-scale combat operations allowed personnel and equipment to arrive in Vietnam, exercise the TACS on a small scale, and deliberately increase capacity as the war escalated. Unlike Korea, the TACS was in place and functioning before large-scale combat operations. Additionally, the system had room to grow as the amount of aircraft and the need for air support increased. USAF and US Army personnel were trained and fully equipped before operating the TACS in Vietnam.

Chapter 4: Implications for the Future

Current Context

Much like the periods after WWII and the Korean War, the United States is in a transition from years of combat into the unknown. After nearly two decades of sustained combat operations against terrorists and insurgents, the United States is changing focus to peer and near-peer threats. President Trump has identified China and Russia as the two biggest threats to continued US power, influence, security, and prosperity.[107] After WWII, the United States faced the looming Soviet threat in Eastern Europe and after the Korean War, the United States faced a rising Cold War against a Soviet Union armed with nuclear weapons capable of striking the US mainland. Today, US leaders perceive increased Russian and Chinese power as the driving force for military

[107] Donald J. Trump, *The National Security Strategy of the United States of America* (Washington, DC: The White House, 2017), 2.

modernization and readiness.[108] The *National Defense Strategy* echoes Kennedy's Flexible Response strategy, preparing for large-scale combat, while still able to respond to contingency and other operations short of large-scale combat. However, the priorities for modernization and recapitalization are postured solely around large-scale combat operations against peer or near-peer threats. The budgetary actions of the services do not match the President's words from the *National Security Strategy*. Revitalizing the nuclear force, increasing space capabilities, improving missile defense, and operating in contested environments are just a few of the priorities for force modernization in the 2018 *National Defense Strategy*.[109] The emphasis on programs that mainly support peer and near-peer conflict harkens back to the post-WWII era and Eisenhower's New Look. The single-minded focus on peer threats comes at the expense of conventional tactical capabilities.

Current Air-Ground System

The USAF TACS continued to evolve after Vietnam through Desert Storm and the wars in Iraq and Afghanistan. Joint Publication 3-30, *Command and Control of Joint Operations*, outlines approved, formal TACS and Army Air-Ground System (AAGS) responsibilities, authorities, and relationships. Figure 4 outlines these systems from the 2014 version of JP 3-30. The basic system is not very different from the one used in Vietnam. Some of the names are different (the Air Operations Center replaced the Theater Air Control Center used in Vietnam and the ASOC replaced the DASC), but the overall process is strikingly similar. Air operations remain controlled by a single air commander, designated the air component commander, who executes air operations in a decentralized manner.[110] The most notable change to the

[108] James Mattis, *Summary of the National Defense Strategy of the United States of America* (Washington, DC: Government Printing Office, 2018), 4.

[109] Ibid., 7, 6.

[110] US Department of Defense, Joint Staff, *Joint Publication (JP) 3-30, Command and Control of Joint Air Operations* (Washington, DC: Government Printing Office, 2014), II-2.

TACS/AAGS system is the location of the ASOC. As noted in figure 4, the ASOC resides with the US Army's senior tactical echelon, which has been at the division level since 2011.[111]

The span of control, approval authority, and level of integration of the current TACS is not significantly different from the system outlined in the 1946 version *FM 31-35*. There is no established maximum or minimum span of control in the current TACS/AAGS construct. The system is designed to adjust to the needs of the mission, providing flexibility and responsiveness for air-ground operations. The supporting elements of the TACS (TACPs, FAC(A)s, and other liaison elements) are allocated based on the needs of the ground commander and the forces available to the air component commander. A single air commander is still responsible for the execution of air support operations inside a theater of operations, maintaining approval authority at an appropriate level, but allowing for the proper economy of force and unity of effort of the entire air campaign. The ASOC has the authority to retask aircraft based on the needs of the ground forces, allowing for quick and effective use of air support aircraft. The current approval process is adequate for successful air-ground operations. Lastly, the degree of air-ground integration is comparable to that of Vietnam, based on where the TACS/AAGS organizations align. The addition of a Battlefield Coordination Detachment to the AOC increased the integration of the air and land forces by introducing a US Army liaison element into the primary air planning organization.[112] Unlike Vietnam, the current TACS provides the air component commander with command and control of all USAF, US Navy, and some USMC aircraft within a theater.[113] Beyond integrating with the US Army, the air component commander integrates air operations between all the services. Overall, the current TACS/AAGS construct has an

[111] Spidahl, "ASOC," 39-40.

[112] Joint Staff, *JP 3-30*, F-1.

[113] The USMC maintains control of its organic aircraft but will provide the Air Component excess sorties it does not need for its operations in a theater.

appropriate span of control, approval authority, and level of integration for successful and efficient air-ground operations.

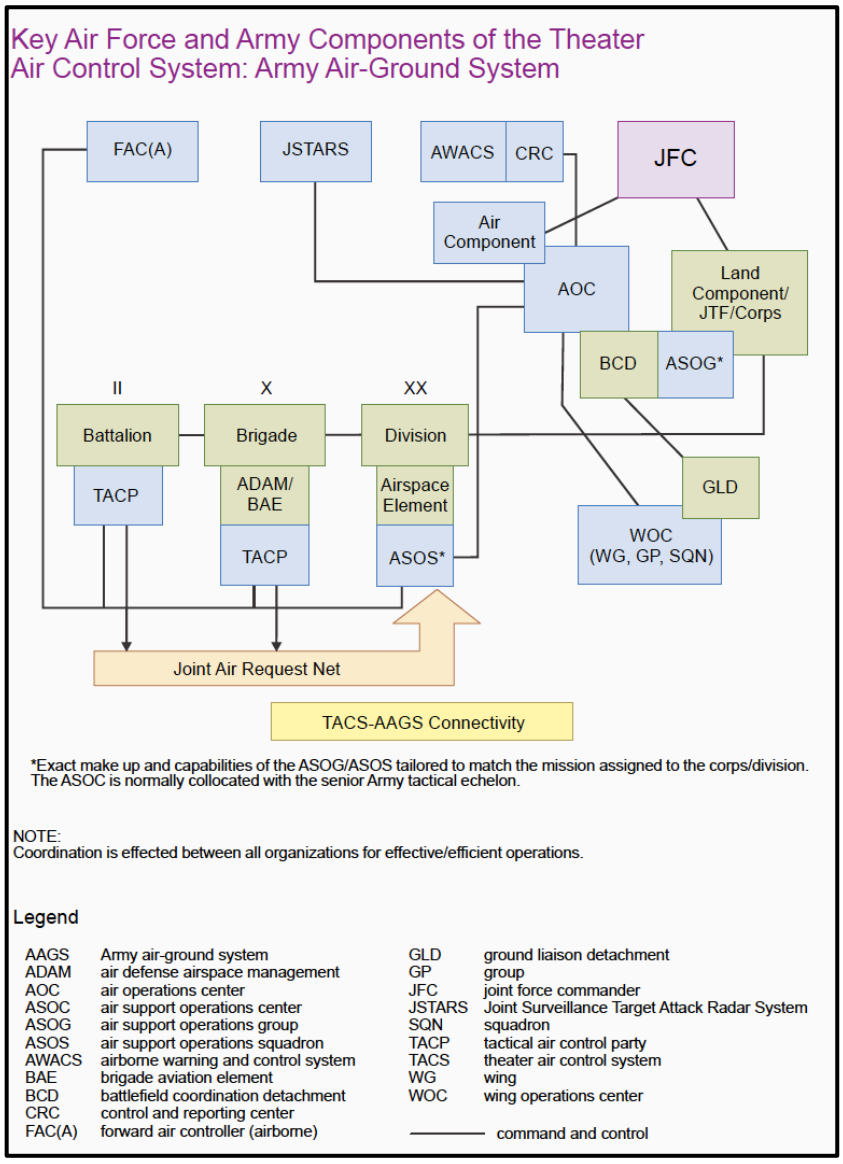

Figure 4. Theater Air Control System-Army Air-Ground System, 2014. US Department of Defense, Joint Staff, *Joint Publication (JP) 3-30, Command and Control of Joint Air Operations* (Washington, DC: Government Printing Office, 2014), II-10.

Conclusions

This monograph hypothesizes that there are three enduring characteristics of successful theater air control systems during large-scale combat operations: proper span of control, level of approval authority, and the level of air-ground integration during operations. This hypothesis is

only partially correct. While proper span of control, approval authority, and air-ground integration are essential requirements of the TACS, they are not the most critical factors in the effectiveness of air support operations. Training, manning, and equipping of the TACS before a conflict are vital to the effectiveness of air support operations because they build the flexibility necessary for the system to respond and adapt to the characteristics of the next war.

Ground commanders who fought in both the Korean and Vietnam Wars generally praised the air-ground operations, satisfied with the amount and responsiveness of air support. Considering this praise, the TACS in both wars was effective. However, neither TACS was efficient. In Korea, inadequate training and communications equipment, combined with undermanning, produced inefficiencies at the outset of the war. Once the war became mostly static, the TACS evolved to meet the basic needs of the ground forces. During Vietnam, cumbersome command and control structures at the major command level and a lack of detailed integration at the tactical level caused inefficient use of air power throughout the theater. As in Korea, the TACS in Vietnam adapted to the characteristics of the war, but at a faster rate. The training conducted before the war and the slow build up in Vietnam allowed the evolution of the TACS to occur much faster than in Korea.

The current shift in focus to large-scale combat operations against peer and near-peer threats looks remarkably like the post-WWII and post-Korea eras, with an emphasis on more strategic weapons and platforms. This shift does not bode well for tactical training and tactical equipment. Without a concerted effort to maintain the proficiency and experience gained in the last two decades of combat, the TACS is once again at risk of neglect. After both WWII and the Korean War, budget cuts forced the services to focus on specific missions at the cost of others. Where the money flowed is where the services concentrated their training, equipment, and manning. With today's military budgets focused on high-cost items like revitalizing the nuclear force and improving missile defense, TACS and air-ground operations will again be relegated to an afterthought without a concerted effort from service leaders.

Every conflict is unique, with different actors, technologies, and objectives, and each conflict will require certain adjustments to the TACS. The most important trait of successful TACS in combat is the amount of training before the fight. This training teaches the underlying strengths and weaknesses of the system, fostering the experience necessary to adapt the system to whatever conflict comes next. The United States must maintain tactical proficiency, joint training, and equipping of the TACS for it to be successful. The characteristics of the next war are uncertain, but history has shown that tactical missions and the integration of air and ground operations will occur, no matter who the enemy is or in what context the United States fights. The United States must prepare for the inevitable tactical fight.

Bibliography

Center for Air Force History. *The AAF in Northwest Africa*. Washington, DC: Center for Air Force History, 1992.

Clark, Mark, W. *From the Danube to the Yalu*. New York: Harper and Brothers, 1954.

Cox, Gary C. *Beyond the Battle Line: US Air Attack Theory and Doctrine, 1919-1941.* Maxwell Air Force Base, AL: Air University Press, 1996.

Craven, Wesley F., and James Lea Cate, eds. *The Army Air Forces in World War II.* Chicago: The University of Chicago Press, 1949.

Curtis E. LeMay Center for Doctrine Development and Education. *Annex 3-03, Counterland Operations*. Maxwell AFB, AL: Air University, 2017. Accessed October 11, 2018. https://www.doctrine.af.mil/Portals/61/documents/Annex_3-03/3-03-Annex-COUNTERLAND.pdf.

DeBerry, Drue L., R. Cargill Hill, and Bernard C. Nalty. "Flexible Response: Evolution or Revolution?" In *Winged Shield, Winged Sword: A History of the United States Air Force, Volume II 1950-1997,* edited by Bernard C. Nalty, 163-200. Washington, DC: Air Force History and Museums Program, 1997.

Douhet, Giulio. *The Command of the Air.* In *Roots of Strategy, Book 4,* edited by David Jablonsky, 263-407. Mechanicsburg, PA: Stackpole Books, 1999.

Fifth Air Force, Joint Training Division. *Report on Joint Air-Ground Operations Conference.* Seoul: Headquarters Fifth Air Force, 1953.

Futrell, Robert F. *Ideas, Concepts, Doctrine: Basic Thinking in the United States Air Force, 1907-1960.* Maxwell AFB, AL: Air University Press, 1989.

———. *Ideas, Concepts, Doctrine: Basic Thinking in the United States Air Force, 1961-1984.* Maxwell AFB, AL: Air University Press, 1989.

———. *The United States Air Force in Korea, 1950-1953*. New York: Duell, Sloan, and Pearce, 1961.

Hallion, Richard P. *Strike from the Sky: The History of Battlefield Air Attack, 1911-1945.* Washington, DC: Smithsonian Institution Press, 1989.

Howard, Bart. "Army Transformation 1953-1961: Lessons of the 'New Look' Army." Research Report, US Army War College, Carlisle Barracks, PA, 2004.

Hughes, Thomas A. *Overlord: General Pete Quesada and the Triumph of Tactical Air Power in World War II.* New York: The Free Press, 1995.

Kennan, George F. "The Sources of Soviet Conduct." *Foreign Affairs* 25, no. 4 (July 1947): 851-868.

Lane, John J. *Command and Control and Communications Structures in Southeast Asia.* Maxwell Air Force Base, AL: Air University Press, 1981.

Mattis, James. *Summary of the National Defense Strategy of the United States of America.* Washington, DC: Government Printing Office, 2018.

Maurer, Maurer. *Aviation in the U.S. Army, 1919-1939.* Washington, DC: Government Printing Office, 1987.

Millet, Allen R. "Korea, 1950-1953." In *Case Studies in the Development of Close Air Support,* edited by Benjamin F. Cooling, 345-410. Washington, DC: Government Printing Office, 1990.

Momyer, William M. *Airpower in Three Wars*. Maxwell Air Force Base, AL: Air University Press, 2003.

Mortensen, Daniel R. *A Pattern for Joint Operations: World War II Close Air Support, North Africa.* Washington, DC: Government Printing Office, 1987.

Nalty, Bernard C. "The Defeat of Italy and Germany." In *Winged Shield, Winged Sword: A History of the United States Air Force, Volume 1, 1907-1950,* edited by Bernard C. Nalty, 269-326. Washington, DC: Air Force History and Museums Program, 1997.

Pacific Air Forces, CHECO Division. *Direct Air Support Centers in I Corps: July 1965-June 1969.* Hickam Air Force Base, HI: Headquarters, Pacific Air Forces, 1969.

Sbrega, John J. "Southeast Asia." In *Case Studies in the Development of Close Air Support*, edited by Benjamin F. Cooling, 411-490. Washington, DC: Government Printing Office, 1990.

Schlight, John. *Help From Above: Air Force Close Air Support of the Army, 1946-1973.* Washington, DC: Government Printing Office, 2003.

Schnabel, James F. *Policy and Direction-The First Year.* Washington, DC: Center of Military History, 1992.

Seventh Air Force. *Seventh Air Force Pamphlet (7AFP) 55-1, Seventh Air Force In Country Tactical Air Operations Handbook.* San Francisco: Headquarters Seventh Air Force, 1968.

Sherman, William C. *Air Warfare*. Maxwell Air Force Base, AL: Air University Press, 2002.

Spidahl, Seth D. "The Once and Future Air Support Operations Center: A Critical Reflection on Developments in Air-to-Ground Command and Control." Research Report, US Air Command and Staff College, Maxwell Air Force Base, AL, 2016.

Sunderland, Riley. *Evolution of Command and Control Doctrine for Close Air Support.* Washington DC: Government Printing Office, 1973.

Thompson, Wayne. “The Air War Over Korea.” In *Winged Shield, Winged Sword: A History of the United States Air Force, Volume II 1950-1997,* edited by Bernard C. Nalty, 3-52. Washington, DC: Air Force History and Museums Program, 1997.

Trauschweizer, Ingo. *The Cold War U.S. Army.* Lawrence, KS: University Press of Kansas, 2008.

Trump, Donald J. *The National Security Strategy of the United States of America.* Washington, DC: The White House, 2017.

US Department of Defense, Joint Staff. *Joint Publication (JP) 3-09.3, Close Air Support.* Washington, DC: Government Printing Office, 2014.

———. *Joint Publication (JP) 3-30, Command and Control of Joint Air Operations.* Washington, DC: Government Printing Office, 2014.

US National Security Council. *A Report to the National Security Council.* National Security Council Document 68 (NSC-68), April 14, 1950.

———. *A Report to the National Security Council.* National Security Council Document 162/2 (NSC-162/2), October 30, 1953.

US War Department. *Field Manual (FM) 31-35, Air-Ground Operations*. Washington, DC: Government Printing Office, 1946.

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

———. *Field Manual (FM) 100-20, Command and Employment of Air Power.* Washington, DC: Government Printing Office, 1943.

Winnefeld, James A., and Dana J. Johnson. *Joint Air Operations: Pursuit of Unity in Command and Control, 1942-1991.* Annapolis, MD: RAND, 1993.