

Army Aviation: Preparing for Large-Scale Combat

A Monograph

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Abstract

Army Aviation: Preparing for Large-Scale Combat, by MAJ Wyatt A. Britten, US Army, 41 pages.

Army Aviation: Preparing for Large-Scale Combat explores how Army Aviation's method of preparation affects its readiness for large-scale combat operations (LSCO). This study traces history and doctrine from World War II through current day. Next, this work uses a case study of Operation Desert Shield and Operation Desert Storm to understand the employment of Army Aviation in a LSCO. Then, current Army Aviation readiness is assessed using reports from the National Training Center (NTC). Last, this text suggests five areas of preparation that need improvement or regeneration to prepare Army Aviation for a LSCO.

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Acronyms

AHB	Assault Helicopter Battalion
ARB	Attack Reconnaissance Battalion
ARS	Attack Reconnaissance Squadron
AVIM	Aviation Intermediate Maintenance
BCT	Brigade Combat Team
CAB	Combat Aviation Brigade
CENTCOM	Central Command
CAS	Close Air Support
COIN	Counter-insurgency
CTC	Combat Training Center
FARP	Forward Arming and Refueling Point
FOB	Forward Operating Base
FLIR	Forward Looking Infrared
FLOT	Forward Line of Troops
FM	Field Manual
GSAB	General Support Aviation Battalion
HQ	Headquarters
IADS	Integrated Air Defense System
ID	Infantry Division
LSCO	Large-Scale Combat Operation
NTC	National Training Center
OC/T	Observer Coach Trainer
OPFOR	Opposing Force
RSOI	Reception Staging and Onward Integration
SEAD	Suppression of Enemy Air Defense

TRADOC	US Army Training and Doctrine Command
UAV	Unmanned Aerial Vehicle

Illustrations

Figure 1. Organization of a CAB. US Department of the Army, FM 3-04, *Army Aviation*
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Chapter I: Introduction

We've developed high levels of skill ... but the cost of developing those skills and the cost of having to fight that war for a decade and a half is that our skills at fighting a higher-end threat, a near-peer competitor, a nation state, and the bread and butter tasks of conducting combined arms operations atrophied because we didn't practice it for fifteen years.

—General Mark Milley, 2016 AUSA Conference

In early October 2016, Chief of Staff of the Army, General Mark Milley, declared that the invasion of Iraq in 2003 was the last time the Army conducted a legitimate brigade air assault and a battalion sized attack aviation mission. Milley acknowledged that the wars in Afghanistan and Iraq in part developed a “training gap in our skill set” in the ability of the Army to fight higher-end threats.¹ Following the Japanese attack on Pearl Harbor that pulled the United States into World War II, the United States had time to mobilize and train its Army for war. Over the past seventy-seven years, advances in technology increased the tempo of war. The implication is that the time to mobilize a modern army in a style harkening back to 1941 may not exist in future wars. Teaching humans to fly and fight with helicopters is a complicated and time intensive task. At the individual and crew level, the initial training of Army aviators ranges from one to two years. The hope that the initial and lengthy investment of time and resources into preparing Army Aviators for Large Scale Combat Operations (LSCO) is alluring, but the context of modern warfare tempers this sanguinity. Individual and crew training are fundamental, time consuming, and resource intensive. This large investment of time and treasure yields the question—how does Army Aviation’s method of preparation affect its readiness for future LSCOs?

Background and Significance

The global security situation heightens the significance of this question. Persistent challenges in Afghanistan, the Middle East, and the Korean Peninsula require force

¹ Michelle Tan, “Army Chief: Soldiers Must Be Ready To Fight in ‘Megacities,’” *Defense News*, last modified August 8, 2017, accessed December 8, 2017, <https://www.defensenews.com/digital-show-dailies/ausa/2016/10/05/army-chief-soldiers-must-be-ready-to-fight-in-megacities/>.

commitments. The emergent security threat of a resurgent Russia shakes stability in Europe and adds complexity to the Middle East and beyond in countries to include Syria and Egypt. In 2016, the top General at US Army Forces Command, General Robert Abrams, recognized that the high demand of Army Aviation assets overseas and inconsistent funding landed Army Aviation in a precarious position. He noted the dismal state of the Army's flying hour program and operational readiness rates. In response, General Abrams emplaced rules to ease the burden on the fighting organizations of his air wing, the combat aviation brigades (CAB). These rules placed constraints on Abrams' organization, Forces Command, to ease the overuse of CABs and enable them to conduct comprehensive training to gain proficiency against near-peer competitors.² The policy enacted by Abrams acknowledged the readiness challenge and provided time for CABs to focus on training to fight a near-peer competitor. Abrams' message addressed two critical audiences. First, internally to the Army that Aviation needs to prepare, and second to an external audience that the US Army will be ready to meet and defeat foreign armies.

Since the invasion of Iraq in 2003, Army Aviation units executed operations in an environment of relatively low threat compared to that of a high-end adversary. Since the inception of the Global War on Terror, the threats faced by Army aviators were largely void of an integrated air defense system (IADS). Air defense is specialized, expensive, and only a handful of states invest in maintaining or upgrading their systems.³ Army Aviation fielded aircraft countermeasures to make aircraft survivable against man portable air defense systems and aircrews adjusted their tactics to fly above the threat posed by small caliber direct fire weapons systems. Aircrews employed dynamic flight profiles, remaining in motion and varying altitude, to

² Todd South, "Five Rules for the Army's Combat Aviation Brigades," *Army Times*, last modified October 28, 2017, accessed October 29, 2017, <http://www.armytimes.com/news/your-army/2017/10/28/five-rules-for-the-armys-combat-aviation-brigades/>.

³ "OA-X Strikes Back: Eight Myths on Light Attack," *War on the Rocks*, last modified November 28, 2017, accessed November 30, 2017, <https://warontherocks.com/2017/11/oa-x-strikes-back-eight-myths-light-attack/>.

increase survivability, and to compensate for atmospheric conditions that placed performance limits on aircraft. A generation of Army aviators never gained significant proficiency at low altitude avoidance tactics, such as nap of the earth flight. The same aviators lack the threat awareness from sophisticated low altitude weapons. These areas of concern are individual and crew readiness weaknesses with impacts at the operational level of war.

Hypothesis and Criteria

The current method of preparing aviation task forces to fight LSCOs diverges from the historical, doctrinal, and practiced ways of employment. The criteria to test the validity of this position are: What historical events and doctrinal concepts led to Army Aviation employment in Operation Desert Shield and Desert Storm? How were Army Aviation units employed in Operation Desert Shield and Desert Storm? How are Army Aviation units preparing for LSCOs? Do the current methods of preparation align with lessons from history, doctrine, and application?

Key Terms

The organization of a CAB is a headquarters (HQs) and headquarters company, an attack reconnaissance squadron (ARS), an attack reconnaissance battalion (ARB), an assault helicopter battalion (AHB), a general support aviation battalion (GSAB), and an aviation support battalion. The fighting strength of a CAB is forty-eight AH-64 Apache attack helicopters, thirty UH-60 Black Hawk utility helicopters, eight UH-60 Black Hawk command and control helicopters, fifteen UH-60 Black Hawk medical evacuation helicopters, twelve CH-47 Chinook cargo helicopters, twelve MQ-1 Gray Eagle unmanned aerial vehicles (UAV), and twelve RQ-7 Shadow UAVs.

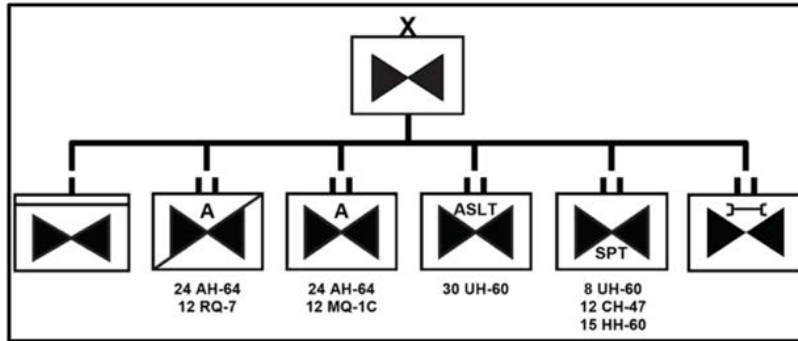


Figure 1. Organization of a CAB. US Department of the Army, FM 3-04, *Army Aviation* (Washington, DC: Government Printing Office, 2015) 2-2.

A LSCO is a massive military operation waged with broad capacity of people, material, and top-tier technology, across broad space. The object of a LSCO is the defeat of the enemy's armed forces and/or military capabilities.⁴

Combined arms operations incorporate the use of multiple branches of the Army, to include infantry, armor, artillery, engineers, and aviation in a coordinated fashion to achieve greater effect as a unified effort than if employed individually. Joint operations are those in which more than one military department participates and require the integration and synchronization across service cultures to accomplish mission objectives.

Organization and Methodology

Chapter two follows the history and doctrine that prepared Army Aviation for Operations Desert Shield and Storm. This provides the context for the condition of Army Aviation as it entered the first Gulf War. The chapter finishes with the progression of Army and aviation doctrine from 1993 through contingency operations in Iraq and Afghanistan, up to present day.

Chapter three uses a case study of Operations Desert Shield and Storm to provide an example of mass employment of Army Aviation in a LSCO. The case study examines aviation deployment, sustainment, and illustrates combined and joint combat actions in the war. Last, an analysis of the actions and the implications for preparation completes the chapter.

⁴ US Department of the Army, Field Manual (FM) 3-0, *Operations* (Washington, DC: Government Printing Office, 2017), 1-1.

Chapter four qualifies methods of preparations vis a vis combined arms and joint training at home station and at a combat training center. Next, it provides readiness metrics of eleven aviation task forces along ten major aviation tasks from January 2016 to September 2017. Then, insights from an aviation task force commander give understanding to strengths and weaknesses of the current method of preparation. Last, the chapter closes with analysis of current methods of preparation and the connection to readiness for LSCOs.

Chapter five highlights conclusions from the study. Next, it provides implications of current preparation strengths and weakness. Then, the chapter provides recommendations to improve preparation for LSCOs. Last, the chapter closes with an area for further study.

Chapter II: Army Aviation History and Doctrine

Chapter two follows the history and doctrine that prepared Army Aviation for Operations Desert Shield and Storm. This provides the context for the condition of Army Aviation as it entered the first Gulf War. From the mid-1970s, the global strategic situation yielded an emergent crisis in the form of a capable threat in the Soviet Union. This threat compelled the Army to create a new operating concept that forged combined arms relationships and necessitated joint integration. The chapter finishes with the progression of Army and aviation doctrine from 1993 through contingency operations in Iraq and Afghanistan, up to present day.

Helicopters and War

Leonardo da Vinci designed the first drawings of a vehicle capable of rotary wing flight in 1493.⁵ More than 400 years passed until in the 1930s the theory of rotary wing flight became a reality. The 1st Air Commando group formed in India in March of 1944. The outfit used the Sikorsky R-4 helicopter to perform casualty evacuation and personnel recovery during combat operations against Japanese forces in Burma.⁶ Following World War II, the US Marine Corps pioneered the concept of *Vertical Envelopment*, the doctrinal precursor to the US Army's *Airmobility*, and used helicopters to move troops and supplies.⁷ On September 20th, 1951, Marine aviators piloted helicopters to land 224 fully equipped Marines to Operation Summit's mission objective, Hill 884, along with nearly eighteen thousand pounds of cargo in the course of sixty-

⁵ "The Helicopter: Leonardo Da Vinci's Inventions," accessed October 12, 2017, <http://www.leonardodavincis inventions.com/inventions-for-flight/leonardo-da-vinci-helicopter/>.

⁶ "1st Air Commando Group (USAAF)," accessed February 1, 2018, http://www.historyofwar.org/air/units/USAAF/1st_Air_Commando_Group.html.

⁷ Simon Dunstan, *Vietnam Choppers: Helicopters in Battle, 1950 - 1975* (Oxford, UK: Osprey, 2003), 8.

five flights.⁸ Operation Summit was the first instance of using helicopters to land an assault force in combat.

The Korean War was the first large scale use of helicopters in combat with a sizeable casualty evacuation mission undertaken by the US Army. The Army flew an estimated 30,000 US casualties to Mobile Army Surgical Hospitals. The Air Force flew nearly 10,000 rescue missions to conduct personnel recovery operations. As the Korean War ended, the US Army deployed a helicopter transport squadron to emulate the Marines Corps in its application of moving troops and material.

The Algerian War of 1954-1962 advanced *Airmobile* doctrine as the French used helicopter technology to conduct opposed assaults. Air assault operations used helicopters to carry combat troops to contested landing zones. Armed helicopters delivered suppression fires as vulnerable assault helicopters delivered or retrieved troops. Commands adapted helicopters for airborne command and control through various operations. The US Army and Marines studied the Algerian campaign in detail and continued to develop their own doctrine.

In 1955, US Army Colonel Jay Vanderpool led an experimental outfit known as the Sky Cavalry.⁹ The Sky Cavalry tested helicopter tactics and doctrine in Louisiana during Exercise Sage Brush. Sage Brush tested the Army's combat response following a nuclear blast and the lessons learned by the Sky Cavalry manifested themselves in Ia Drang Valley of Vietnam by the 1st Cavalry Division a decade later.¹⁰

In 1960, the Rogers Board assessed the needs of the US Army for helicopters in the categories of observation, surveillance, and transport. A new generation of helicopters emerged

⁸ Major Rodney Propst, "The Marine Helicopter and the Korean War" (Monograph, Marine Corps University, 1989).

⁹ Dunstan, 16.

¹⁰ Rickey Robertson, "Exercise Sage Brush 1955" January 2013, accessed October 12, 2017, <http://www.sfasu.edu/heritagecenter/6820.asp>.

from the work of this body. Shortly following the Rogers Board came the Howze Board in 1962. The Howze Board examined the *Airmobility* concept and endorsed the formation of an air assault division to further test the concept. The Army created the 11th Air Assault Division (Test) in February of 1963 and exercises in 1964 proved the capability.¹¹

The Vietnam War tested the US Army's *Airmobility* doctrine. Helicopter units performed command and control, airmobile combat assault, resupply, artillery movement, air-to-air combat, reconnaissance, hunter-killer missions, night-fighting, direct fire support of ground troops, medical evacuation, and anti-tank attacks.¹²

The 1973 Arab-Israeli War revealed that current US technology was inadequate to handle masses of Soviet tank formations. US land forces needed new technology to win in combat against the rival Soviet Union. The US Army introduced five new pieces of equipment, colloquially dubbed "The Big Five." The M-1 Abrams Tank, the AH-64 Apache Attack Helicopter, the UH-60 Black Hawk Utility Helicopter, the Patriot Air Defense Battery, and the M2 Bradley emerged from US military industry to offset Soviet mass and weapons systems.¹³

Army leadership wanted new doctrine to employ the big five in a systematic way. 1973 heralded the establishment of the US Army Training and Doctrine Command (TRADOC) with General William E. DePuy as the first commander. From 1973 to 1976, DePuy oversaw the development of a new Field Manual (FM) 100-5 *Operations*. The new doctrine came to be known as *Active Defense*. By 1976, DePuy's team published FM 100-5, broadly promoted the new ideology, only to have it rejected by the force. To the resisters, FM 100-5 was an attack on the institution itself. Indeed, in some ways it was. The newly purchased and highly sophisticated weapons systems signaled a fundamental change to the Army. "DePuy believed that the Army's

¹¹ Dunstan, 16–17.

¹² *Ibid.*, 5–6.

¹³ Brian McAllister Linn, *The Echo of Battle: The Army's Way of War* (Cambridge, MA: London: Harvard University Press, 2007), 205–209.

increasing dependency on highly sophisticated weapons and equipment and the support services necessary to sustain them signaled the Army's evolution from an organization of people with weapons to an organization of weapons with crews."¹⁴ DePuy found that changing institutions is fundamentally difficult if not downright impossible.¹⁵

The strategic and social context of the world at the time naturally influenced the development of the new doctrine. The Army was on the heels of what seemed as neither a victory nor a defeat and it was changing from fighting a contingency operation to preparing to fight a LSCO for the defense of Europe. Some Army generals, following the withdrawal from Vietnam, thought that an intense focus on "how to fight" was necessary to reorient the force and regain confidence.¹⁶ TRADOC's writing of the 1976 version of FM 100-5 sought to rebuild and regain confidence within its ranks and wanted to show congress its plans to use the nation's resources.¹⁷

The cohort of officers tasked to formulate the content of FM 100-5 ranged mostly from Majors to Lieutenant Colonels and comprised, "The Boathouse Gang."¹⁸ The specially selected staff earned the title because they worked in the old yacht club at Fort Monroe, Virginia. Their goal was systematic integration of the Army's new weapons and to make the doctrine compatible

¹⁴ Major Paul H. Herbert, "Deciding What Has to Be Done: General William E. DePuy and the 1976 Edition of FM 100-5, Operations," *Leavenworth Papers*, no. 16 (July 1988): 95.

¹⁵ Berger and Luckman found that changing institutions is exceptionally difficult. DePuy found this phenomenon to be an obstacle to implementing Active Defense doctrine in 1976. Peter L. Berger and Thomas Luckmann, *The Social Construction of Reality: A Treatise in the Sociology of Knowledge* (New York: Anchor Books, 1990), 117.

¹⁶ Herbert, 101.

¹⁷ Robert Putnam's two-level game theory is applied to international relations in that diplomats negotiate with messages to domestic or internal audiences and messages to foreign or external audiences. DePuy's sends internal and external messages with the release of Active Defense. Internally, DePuy aims to rejuvenate the Army. Externally, he aims to message the congress that the Army deserves the resources and to the Soviet Union that it will meet a capable force should it invade further into Europe. Robert D. Putnam, "Diplomacy and Domestic Politics: The Logic of Two-Level Games," *International Organization* 42, no. 3 (1988): 427-460.

¹⁸ Herbert, 86.

with that of the West German Army and the Tactical Air Command.¹⁹ DePuy told his doctrine writers, “Don’t get too lofty or philosophical, wars are won by draftees and reservists.” DePuy aimed to keep the manual simple, focused, and usable. Upon the release of the manual in 1976, DePuy told The Boathouse Gang that their work, “is going to affect colonels, lieutenant colonels, majors, captains, lieutenants, and sergeants. The impact....will be a thousand fold. It will be more significant than anyone imagines. [It] will be *the* Army way and it will show up for decades.”²⁰

DePuy believed in the doctrine his team created under his watch. A robust rollout of the manual, catchy cover art, and simple writing made the manual widely read. The accessibility and simplicity of the 1976 version of FM 100-5 encouraged Army officers to read it, use it, discuss it, and ultimately to reject it.²¹ General Donn Starry succeeded DePuy as the TRADOC commander in 1977. His experience as the V Corps commander in Germany in 1976 presented an emergent view. Starry realized that *Active Defense* failed to address the operational and theater levels of war. Starry set out to build upon the work of DePuy. By 1982, the Army published a new FM 100-5 and its ideas came to be known as *AirLand Battle*. *Active Defense* contrasted from *AirLand Battle* in that *Active Defense* described “how the US Army destroys enemy forces” and *AirLand Battle* described “how the Army must conduct campaigns and battles in order to win.”²²

DePuy’s 1976 version of FM 100-5 revolved around a couple tenets. “Fight outnumbered” and “win the first battle” were the mantras of *Active Defense*. *AirLand Battle* gave greater attention to the offense and introduced the *operational level of war* into the Army’s vernacular. *AirLand Battle* demanded integration of the joint force and through operational art,

¹⁹ Ibid.

²⁰ Herbert, 93.

²¹ Ibid., 98.

²² Ibid.

and linked tactical action to strategic ends.²³ By 1986, TRADOC released another version of FM 100-5. This version again focused on the operational level of warfare, seizing and retaining the initiative, aggressiveness, and imposing the Army's will upon the enemy. By 1986, the influence of Peter Paret's 1976 release of Carl von Clausewitz's *On War* became evident in US Army thought. Carl von Clausewitz wrote, "War therefore is an act of violence to compel our opponent to fulfill our will."²⁴ This thought moved verbatim into the 1986 FM 100-5.

TRADOC created additional manuals to reinforce the theory presented by FM 100-5. Of note, and significant to all branches was a "hands-on training program designed to certify regularly each soldier's proficiency in the specific skills that defined his role in the larger Army system."²⁵ Both *Active Defense* and *AirLand Battle* needed a comprehensive training program to systematically integrate Army systems and the joint force. TRADOC developed a training program that advanced individual and unit proficiency. Sophisticated programs combined individual skills with those of the squad, platoon, company, and battalion.²⁶

One such sophisticated program was the Single-Station Unit Fielding and Training Program. The AH-64 Task Force HQs, part of the 6th Cavalry Brigade, formed on July 14th, 1984 with the responsibility to field AH-64 Attack Helicopter Battalions. On January 15th, 1985, AH-64 Task Force changed its name to the Apache Training Brigade. The Army tasked the Apache Training Brigade to receive, equip, train, evaluate, and deploy all the Army's attack helicopter battalions. On 1 January, 1992 this unit became the US Army Combat Aviation Training Brigade

²³ Bill Benson, "Unified Land Operations: The Evolution of Army Doctrine for Success in the 21st Century," *Military Review*, March-April (2012): 2.

²⁴ Carl von Clausewitz, *On War*, ed. and trans. Michael Howard and Peter Paret (Princeton, NJ: Princeton University Press, 1976), 75.

²⁵ Herbert, 96.

²⁶ Ibid.

with the mission to conduct collective aviation unit field training. This unit conducted initial and sustainment training for aviation units.²⁷

TRADOC created the Army Training and Evaluation Program to test units at combat training centers to include the National Training Center at Fort Irwin, California, the Combat Maneuver Training Center at Hohenfels, Germany, and Joint Readiness Training Center at Fort Chaffee, Arkansas, which later moved to Fort Polk, Louisiana.²⁸ These tough and realistic training events were brigade level exercises against a free thinking and acting enemy force designed to emulate Warsaw Pact forces.²⁹ The exercises stressed and tested units, forced commanders at all echelons to make decisions, and were the actualization of the ideas in *AirLand Battle*. Individuals, units, and commanders gained competence and confidence in the abilities of their organizations and gained understanding on how their organization fought within the larger system.³⁰

As the post-Vietnam Army gained its footing in the 1980s, a coup on the Caribbean island of Grenada prompted the United States to intervene. Operation Urgent Fury involved less than 8,000 soldiers in October of 1983. The fiercest fighting emerged on the landing and combat revealed serious fractures in communications amongst the joint forces. The results of Operation Urgent Fury, the failed attempt to rescue American hostages in Iran in 1980, and the necessity of for the joint force to act simultaneously across domains of air, land, sea, and space were catalysts for the Goldwater-Nichols Act in 1986. This legislation streamlined the military chain of command and aimed to correct interservice rivalry. The act aided the success of *AirLand Battle*.

²⁷ “21st Cavalry Brigade (Air Combat),” accessed April 9, 2018, <https://www.globalsecurity.org/military/agency/army/21cav-bde.htm>.

²⁸ Richard W. Stewart and Center of Military History, ed., *American Military History, Volume II: The United States Army in a Global Era, 1917-2008*. (Washington, DC: Government Printing Office, 2010), 391.

²⁹ Ibid.

³⁰ Ibid., 392.

The 1989-1990 US led invasion of Panama to depose dictator Manuel Noriega, named Operation Just Cause, proved the effectiveness of *AirLand Battle* and the Goldwater-Nichols Act. Services showed marked improvement in communication and coordination in the conduct of Operation Just Cause.³¹

Since the Korean War, cohorts discussed creating a branch within the Army for Aviation. Resisters of this movement believed that the US Army Air Corps did not provided adequate support to the ground force even though the fliers had the resources to do so. The creation of a separate aviation branch, would only encourage this behavior to repeat itself. However, resistance declined as Army Aviation proved its commitment to the ground force in the Vietnam War. The increase in size of aviation organizations, the sophistication of technology, the specialized maintenance requirements, and robust personnel requirements pointed to the necessity for the creation of a branch. The Secretary of the Army declared that US Army Aviation was its own branch on April 12th, 1983.³²

Army Aviation updated its fleet through the Army Aviation Modernization Plan in the late 1980's. Older aircraft were divested from the fleet and modern helicopters appeared in the Army. Army rotary wing aircraft played important roles in US military actions in Grenada, Panama, and fired the first shots of the First Gulf War.

Desert Storm to 2018

Just as the global strategic situation influenced doctrine in the 1970s and 1980s, so too did this apply with the 1993 release of FM 100-5. The Soviet Union no longer threatened the security of US allies in Europe and the success of Operation Desert Storm decreased the necessity for Congress to allocate resources to the military. The 1993 version of FM 100-5 created doctrine for the full dimensions of the battlefield. This was an acknowledgement that the Army

³¹ Stewart and Center of Military History, 395-397.

³² "Origins of Fort Rucker and Army Aviation," accessed October 19, 2017, <http://www.rucker.army.mil/history/history03.html>.

contributed to security across a broad range of military operations.³³ The 1993 FM 100-5 added emphasis to the Army's ability to project force and fight as a member of the joint and combined arms team.³⁴ The 1993 version of FM 100-5 fell short of providing a definitive operating concept; however, it laid the ground work for a future operating concept with the term *Full-dimension Operations*. *Full-dimension Operations* were, "the application of all capabilities available to an Army commander to accomplish his mission decisively and at the least cost across the full range of possible operations."³⁵

In 2001, FM 3-0 replaced FM 100-5 and with this publication established the doctrine for *Full Spectrum Operations* and defined it as "the range of operations Army Forces conduct in war and military operations other than war."³⁶ The 2008 version of FM 3-0 declared *Full Spectrum Operations* as the Army's operational concept and expanded its definition.

Army forces combine offensive, defensive, and stability, or civil support operations simultaneously as part of an interdependent joint force to seize, retain, and exploit the initiative, accepting prudent risk to create opportunities to achieve decisive results. They employ synchronized action—lethal and nonlethal—proportional to the mission and informed by a thorough understanding of all variables of the operational environment. Mission command that conveys intent and an appreciation of all aspects of the situation guides the adaptive use of Army forces.³⁷

The Army's experience in combat operations in Iraq and Afghanistan influenced this broad definition of the Army's operating concept. By 2012, the strategic situation evolved to reorient the US Army towards LSCOs. The doctrine followed and a new concept emerged: *Unified Land Operations*. Its definition: "how the Army seizes, retains, and exploits the initiative

³³ Benson, 4.

³⁴ Ibid., 5.

³⁵ US Department of the Army, FM 100-5, *Operations* (Washington, DC: Government Printing Office, 1993), Glossary-4.

³⁶ US Department of the Army, FM 3-0, *Operations* (Washington, DC: Government Printing Office, 2001), 1-4.

³⁷ US Department of the Army, FM 3-0, *Operations* (Washington, DC: Government Printing Office, 2008), 3-1.

to gain and maintain a position of relative advantage in sustained land operations through simultaneous offensive, defensive, and stability operations in order to prevent or deter conflict, prevail in war, and create the conditions for favorable conflict resolution.³⁸

In 2012, Lieutenant Colonel Richard Martin asserted in his monograph *Army Aviation and Unified Land Operations*, that FM 3-04.111 *Aviation Brigades* fell short of a usable purpose for Army Aviation. At the time FM 3-04.111 stated that the “[r]ole of the aviation brigade is to conduct and/or support ground maneuver through aviation operations.”³⁹ Martin’s thought was not an isolated incident, because the Army published FM 3-04, *Army Aviation*, in 2015 and defined the role of Army Aviation in Unified Land Operations.

Army Aviation integrates into unified land operations by conducting air-ground operations as the aviation maneuver force of the combined arms team. Air-ground operations are the simultaneous or synchronized employment of ground forces with aviation maneuver and fires to seize, retain, and exploit the initiative. Employing the combined and complimentary effects of air and ground maneuver and fires through air-ground operations presents the enemy with multiple dilemmas and ensures that Army Aviation is best positioned to support ground maneuver.⁴⁰

This explanation of the role of Army Aviation in unified land operations emphasizes a few points. First, the Army declares that Army Aviation is a maneuver force and separates itself from the fires warfighting function. Second, air ground operations explain how aviation is to integrate into the employment of ground forces. The method of employment is simultaneous or synchronized aviation operations with fires with the aim of taking the initiative from the enemy. This text distinguishes Army Aviation from fires and ground maneuver forces while uniting all arms in purpose against the enemy. The notion that Army Aviation is to attack deep as a lone actor is unfounded in doctrine. The theoretical employment of Army Aviation units envisions

³⁸ US Department of the Army, Army Doctrine Publication (ADP) 3-0, *Operations* (Washington, DC: Government Printing Office, 2012), 1.

³⁹ LTC Richard A. Martin, *Army Aviation and Unified Land Operations: Renewing Aviation’s Role and Doctrine to Dominate the Third Dimension of Land Warfare* (Monograph: School of Advanced Military Studies, 2012), 38.

⁴⁰ US Department of the Army, FM 3-04, *Army Aviation* (Washington, DC: Government Printing Office, 2015), 1–1.

operations with multiple branches of the combined arms team. This parcel of aviation doctrine affirms the importance of combined arms operations and therefore, has implications to the ways that aviation units should prepare for war.

The analysis of doctrine from 1993 until the present reveals the flexibility of Army Aviation. *Flexibility* speaks to the plethora of uses for aviation platforms. The diversity of capabilities ranging from maneuver to sustainment make it difficult to have a narrow focus for the aviation branch and is reflected in current Army Aviation doctrine. The desire to maintain flexibility is manifest within the Army Aviation Core Competencies and these competencies identify seven areas that are expectations of the Aviation branch:

1. Army Aviation provides accurate and timely information collection from a variety of rotary wing and unmanned aircraft.
2. Army Aviation with an economy of force provides reaction time and maneuver space to the combined arms team to protect friendly forces, civilian populations, and infrastructure.
3. Army Aviation conducts hasty or deliberate attacks to destroy, defeat, disrupt, divert, or delay enemy forces.
4. Army Aviation air assaults ground maneuver forces to destroy enemy forces or seize key terrain.
5. Army Aviation conducts air movement of personnel, equipment, and supplies in the offense, defense, stability, and defense support of civilian authorities.
6. Army Aviation evacuates wounded personnel and recovers isolated personnel.⁴¹
7. Army Aviation enables mission command over extended ranges and complex terrain.⁴²

Amid an ever evolving strategic and operational environment, to include increased competition in cyber and space, TRADOC released an updated operational concept in October of 2017. The revised definition of *Unified Land Operations* is “the simultaneous offensive, defensive, and stability or defense support of civil authorities tasks to seize, retain, and exploit the initiative to shape the operational environment, prevent conflict, consolidate gains, and win our

⁴¹ US Army, FM 3-04 (2015), 1–4.

⁴² *Ibid.*, 1–5.

Nation's wars as part of unified action."⁴³ The current Army purpose encourages unified action. The implication is that the Army should pursue ways to prepare its air wing to fight as a member of the combined and joint team.

Summary

This chapter followed the evolution of Army doctrine and Army Aviation history from World War II to the current day. From the Marines theory of *Vertical Envelopment* with rotary wing flight in Korea, to Exercise Sagebrush and the resultant US Army *Airmobility* concept applied in Vietnam, to the development, implementation, and application of *AirLand Battle* in Southwest Asia, and current employment of doctrine, instances of Army Aviation preparing and fighting as a member of the combined arms team line its history.

On the heels of the Vietnam War, the Army transformed from a contingency force to a formidable large-scale combat force. Investments in technology and the transformation of Army doctrine to systems thinking harkened an Army where units understood how they fit into the larger joint system. Sophisticated preparation processes emerged to integrate individual, crew, squad, platoon, company, and battalion actions into the larger force. Rigorous training scenarios tested units at combat training centers.

The methods of preparation had decisive results in Operations Just Cause, Desert Shield, and Desert Storm. The "peace dividend" that followed the Gulf War and the collapse of the Soviet Union broadened the scope and focus of the US Army and its doctrine. Only recently within the last five years, with emergent threats in Europe and Asia, has the Army returned to preparations for LSCOs.

Finally, in this analysis, the importance of combined arms preparation, joint preparation, and specialized training programs resonated as historical and doctrinal essentials for LSCOs. First, combined arms operations were evident at the first application of rotary wing aviation by

⁴³ US Department of the Army, ADP 3-0, *Operations* (Washington, DC: Government Printing Office, 2017), 1.

the Marines Corps and its concept of *Vertical Envelopment* in the Korean War. *Air-Ground Operations* affirms combined arms as a current doctrinal concept as described in FM 3-04. Second, General DePuy was correct in 1976 when he declared that *Active Defense* doctrine would be around the Army for decades. The thought that he and the Boathouse Gang produced in the 1976 version of FM 100-5 evolved into *AirLand Battle Doctrine*. Central to *AirLand Battle* was the interdependence of actors in every domain and service. That thread remains alive today in *Unified Land Operations* and the implication is an inherent necessity to train with the joint team. Third, is that concurrently with the release of *Active Defense*, a publicity campaign and implementation structure followed closely. It was through the widespread availability and use of doctrine through the 1980s that made the doctrine relevant. Sophisticated programs, such as the single station unit field training program, were necessary to fully implement the systematic vision made possible through investments in technology and thought.

Chapter III: Operations Desert Shield and Storm Case Study

This case study of Operations Desert Shield and Storm provides an example of mass employment of Army Aviation in a LSCO. It raises questions that are useful in visualizing the role of Army Aviation in future combat. From that visualization, general goals emerge that orient thought in the preparation for future war. Williamson Murray, a military historian wrote "Nothing can provide policymakers with the right answers to the challenges that confront them. But history suggests the questions they should ask."⁴⁴ The same is true in the attempt to predict the future of combat. The case study begins with the context of the First Gulf War. Then it examines how Army Aviation deployment and sustainment readiness leading into the conflict. Examples of combined and joint operations describe Army Aviation combat actions in combat. Last, an analysis of the actions and the implications for preparation completes the chapter.

Context

Iraq invaded its southern neighbor, Kuwait, on August 2nd, 1990. Disputes over oil production and pricing served as the casus belli. 120,000 Iraqi troops and 2,000 tanks attacked into Kuwait and gained control of the country in a matter of hours. Iraqi aggression continued in the manifestation of Iraqi forces massing on the border of Saudi Arabia. Iraqi troops breached the border in some places. The threat of Iraqi domination of the oil rich region threatened economic stability on a global scale. In early August, the government of Saudi Arabia invited US forces to enter and defend against an Iraqi incursion.⁴⁵

On the global stage, the collapse of the Soviet Union and the reduction of nuclear weapons left the United States with a large standing conventional military. The US force was highly trained and the collapse of the Soviet economy provided a surplus of shipping. Ships were

⁴⁴ Williamson Murray, MacGregor Knox, and Alvin H. Bernstein, *The Making of Strategy: Rulers, States, and War* (Cambridge: Cambridge University Press, 1996), 6.

⁴⁵ Walter J. Boyne, *How the Helicopter Changed Modern War* (Gretna, LA: Pelican Publishing, 2011), 251.

repurposed to provide transport of military equipment to Saudi Arabia. Iraq's decision to invade Kuwait and provoke Saudi Arabia was a miscalculation of the global strategic situation. The world order in the summer of 1990 listed the United States as the lone superpower and it refused to permit Iraq's breach of international law.⁴⁶

United Nations Resolution 678 gave Iraq until January 15th, 1991 to depart Kuwait. If the Iraqi army remained in Kuwait past January 15th, 1991, the United Nations authorized its forcible removal. Saddam Hussein refused to leave Kuwait and on January 17th, 1991 at 0300 in the morning an air campaign commenced. Army Aviation fired the first shots of the air campaign to disrupt Iraqi air defenses and it had significant impacts through the air campaign and one-hundred hours of ground combat.⁴⁷

The 12th Aviation Brigade received a deployment alert on the 14th of August 1990. US Central Command (CENTCOM) was in a hurry to get the 12th Aviation Brigade to Southwest Asia to provide security along the Saudi Arabian border with Kuwait. Logistics and personnel readiness stood in the way of the desired effect. 12th Aviation Brigade was void of deployment experience outside of the European theater of operations. The result was series of errors that consumed time. Soldiers were not ready to deploy in some of the most basic readiness metrics such as legal and medical markers. Disorderly movement of equipment on rail and at seaports slowed the deployment to Saudi Arabia.⁴⁸

More than 1900 Army aircraft entered the theater of operations for Operation Desert Shield. The sheer volume of aircraft was prohibitive of moving all aircraft, support equipment, and parts at the same time. While Army aircraft entered the theater by US Air Force strategic lift assets, the associated supporting units deployed over water. With the fighting end of Army

⁴⁶ James W. Williams, *A History of Army Aviation: From Its Beginnings to the War on Terror* (New York: iUniverse, 2005), 237.

⁴⁷ Ibid.

⁴⁸ Ibid., 238.

Aviation at the front of the deployment effort and the supporting end far in the back, there was no suitable way to commence combat operations.⁴⁹

The Air Force created a solution to the sustainment challenge with the implementation of the “Desert Express.” This service was like delivery systems in the United States. Aviation units requested low volume repair parts and the Desert Express executed the delivery. Contractors reinforced the Aviation logistical support structure and performed well.⁵⁰

Aviation units experienced labor shortages. These arose from taskings for duties outside of aviation. Miscellaneous duties pulled helicopter mechanics away from conducting aircraft maintenance. Full time maintenance test pilots were unavailable to conduct maintenance as the demand for them increased. The short supply of labor caused a decline in aircraft readiness.⁵¹

Aviation Intermediate Maintenance (AVIM) units experienced shortfalls during the operations. Some units had outdated equipment or simply did not have adequate quantities to perform. Units were not fully manned, lacked sufficient mobility to adequately support Aviation Unit Maintenance units, and lacked effective command and control equipment for responsive support. In spite of these organizational challenges, AVIM units were instrumental in producing a ninety percent operational readiness rate during Operation Desert Storm.⁵²

Maps were in short supply throughout Operation Desert Shield and Desert Storm and this caused navigation difficulties for aviators. Global positioning systems, while highly accurate, were neither suitable nor available for use in the aircraft. The shortcoming of navigation in Army

⁴⁹ Williams, 239.

⁵⁰ “Operation Desert Storm: 25 Years Later, AMC Doing More with Less,” US Air Force, accessed February 19, 2018, <http://www.af.mil/News/Article-Display/Article/643306/operation-desert-storm-25-years-later-amc-doing-more-with-less/>.

⁵¹ Williams, 242.

⁵² John R. Penman, *Army Aviation Logistics in the Gulf War: A Corps-Level Perspective*, (Monograph: National Defense University, 1993), 1.

aircraft cracked the theory of synchronization of fires as prescribed in *AirLand Battle* doctrine. Coordination of fires was unsure without knowing aircraft position.⁵³

1.2 million tons of material arrived to support Operation Desert Shield in the first ninety days of the campaign. Army Aviation simultaneously executed their own reception, staging, and onward integration (RSOI) operations, and assisted in the distribution of material. While Army Aviation was not the most effective or efficient means of moving large quantities of materiel, it was excellent at delivering critical capabilities across the area of operations.⁵⁴

The Iraqi Army allowed Army Aviation time to generate combat power, acclimatize to the local environment, and conduct rehearsals for the eventual war. While the US Army and coalition forces were building up in Saudi Arabia, Iraqi forces remained hunkered down in Kuwait. There was cause for concern that the Iraqi Army would attack into Saudi Arabia as the coalition bolstered its basing and prepared for an eventual attack to restore the sovereignty of Kuwait. Iraq simply did not have the operational reach to conduct the invasion and likely would have culminated prior to seizing objectives in the interior of the country.⁵⁵

Combined Arms and Joint Integration

In early September of 1990 amidst intelligence reports that Iraq was intent on seizing the northeastern oil field of Saudi Arabia, a battalion of attack helicopters provided the command and control element for a hasty defense. This force worked in tandem with the Joint Force Air Component Commander to establish a kill zone between its position and the Kuwaiti border. From this position Army Aviation played an important security role in the campaign.

⁵³ Williams, 239.

⁵⁴ *Ibid.*, 238–239.

⁵⁵ Robert Farley, “America’s Greatest Fear: What If Saddam Had Invaded Saudi Arabia?,” *The National Interest*, accessed January 30, 2018, <http://nationalinterest.org/feature/americas-greatest-fear-what-if-saddam-had-invaded-saudi-12589>.

Task Force Stalker carried out an insertion and extraction mission of a long-range surveillance team during Operation Desert Storm. The mission required the aviation unit to insert and later extract three teams about 150 miles behind enemy troops. Three Black Hawks took the teams to the objective with three Apaches flying as their armed escorts. Apache forward looking infrared (FLIR) sensors permitted the flight to avoid threats. This mission entailed detailed coordination with Air Force non-lethal suppression of enemy air defense (SEAD) systems, an Army Military Intelligence aircraft provided radio retransmission and assisted in signals intelligence and locating targets. HQs from the company through the corps synchronized route planning.⁵⁶ Task Force Stalker's long-range insertion crossed multiple intra and interservice boundaries in the planning and execution of the mission.

On the 16th of February 1991, Kiowa Warriors launched from the deck of the USS Jarrett to perform coastal reconnaissance and were dynamically retasked to examine the effects of a bomb on an Iraqi Silkworm antiship missile site. The Silkworm was an anti-ship weapon system that was obstructing a naval feint to initiate the ground campaign into Operation Desert Storm. The OH-58s found that the Silkworm was still intact. The aircrews returned to their naval base aboard the USS Jarrett, loaded hellfire missiles and returned to destroy the Silkworm. This attack by Army Aviation reconnaissance helicopters based aboard a Navy ship removed the threat to the naval operation.⁵⁷

Army Aviation fired the first shots of the air campaign that disrupted the Iraqi's IADS and opened the skies to coalition air attacks.⁵⁸ Russian and French equipment capable of launching long and medium range surface to air missiles composed the Iraqi IADS. Air defense artillery strengthened the weaponry of the system. A critical requirement to the detection and

⁵⁶ Williams, 244.

⁵⁷ Ibid., 245.

⁵⁸ John Pimlott and Stephen Badsey, eds., *The Gulf War Assessed* (London: Arms and Armour, 1992), 113.

coordination of the anti-air system was the sector operations control. The control center coordinated the response to enemy aircraft as early warning radars detected the size and direction of attack of aircraft. Vast distance protected the sector operations control location as it was located deep behind the Iraqi forward line of troops (FLOT). Coalition forces understood that the destruction of the control center would cripple the Iraqi anti-air system.⁵⁹

The air commander, US Air Force Lieutenant General Charles Horner, intended to establish air superiority over Iraq, destroy the Iraqi IADS, and the Iraqi command and control infrastructure. A combination of eight Army AH-64 Apaches aided with the navigation systems of two Air Force MH-53J Pave Low helicopters, and supported by one UH-60A Black Hawk, planned to fly below enemy radar, destroy the command center, cripple the Iraqi IADS, and open the airspace for the commencement of the air campaign to meet Horner's objectives.⁶⁰

The Pave Low's global positioning system solved the navigation challenge of locating the sector operations control and gave added assurance of the timing of the mission. Time was the mechanism of coordination for the air campaign; thus, the importance of an on-time mission. The next challenge was the depth of the attack into enemy territory. The Apache helicopters did not have enough internal fuel capacity to carry out the mission over the long distance. Planners considered the use of a forward arming and refueling point (FARP) too risky. The solution came in the form of an external fuel tank. The Apaches exchanged a rocket launcher for a non-combat approved external fuel tank. The mission was important enough that the leadership chose to accept the risk of using a non-ballistic fuel tank for the mission.

Army Apache and Air Force Pave Low units lacked experience in joint operations and faced an unexpected challenge of joint training in preparation for the mission. Prior to execution, wariness amongst the different services and platforms needed to transform into a trusting

⁵⁹ Pimlott and Badsey, 248.

⁶⁰ Boyne, 251-252.

relationship. Additionally, differences in equipment forced the aviators to consider how to operate together. A specific example of the differences in equipment was that the Apache aviators used FLIR to see at night. The Pave Low pilots required night vision goggles that require ambient light to function. This significant difference between the two platforms created a dependency on the lunar cycle for mission execution. The difference in equipment posed serious consequences of success or failure of the mission.

The Apache and Pave Low crews worked out their differences through the course of Fall 1990 and by December had formed two teams named Red and White. The final training flight was on January 10th, 1991. LTC Richard Cody commanded team White and his Air Force counterpart, Lt. Col. Richard Comer commanded team Red.⁶¹

The command decided to execute the mission on January 16th, and for the first time briefed the aircrews on the mission to preserve its operational security. On January 17th, team White departed at 0113 and team Red took off at 0120. The flights avoided ground lights to dodge possible enemy locations. Red team noticed small arms fire on their attack route and White team observed a missile. The radars of the IADS were searching high in the sky for threats and because the helicopters flew near the earth, they were undetected. The attack on the radar sites commenced at 0238 and the radars were immediately taken offline. The helicopters conducted a battle damage assessment of the site and proceeded on the return routes. As teams, Red and White crossed back over the Iraqi border, the first strike aircraft were already heading north to Baghdad.⁶²

Four days before the start of the ground campaign and what came to be known as “the 100 hours war,” the 3rd Battalion, 227th Attack Helicopter Regiment executed two attacks deep in enemy territory. These attacks used various joint platforms for target location and cueing of the

⁶¹ Boyne, 254.

⁶² Williams, 250–251.

attack helicopter formations across the battlefield. Airborne signal intelligence aided location, electronic warfare provided non-lethal suppression of enemy air defense, and three artillery battalions were standing by for lethal SEAD.⁶³ In the course of these deep attacks, 3rd Battalion, 227th Attack Helicopter Regiment encountered a dug-in Iraqi battalion. In a bizarre event that unfolded, the Iraqi battalion surrendered to two Apaches and two Kiowas. Cargo helicopters loaded up 400 prisoners of war and moved them behind friendly lines.⁶⁴

The early morning hours of February 24th, 1991 marked the beginning of the ground war against the Iraqi Army. The operational plan to defeat Saddam Hussein's army placed the XVIII Corps as a blocking force and VII Corps as the attacking force. To accomplish this end, 300 helicopters air assaulted 1st Brigade of the 101st Airborne Division (Air Assault) 110 miles into Iraq to seize its initial objective, Forward Operating Base (FOB) Cobra. From FOB Cobra the 101st Airborne Division used its helicopters to move another sixty miles inside of Iraq and cut Highway 8. The position blocked one of the escape routes of Iraqi units.⁶⁵

Army Aviation and the Air Force paired up to execute joint air-ground operations. On the 25th of February, the Iraqi 26th Infantry Division dug itself into fortified positions. The Coalition ground force, the US 1st Armored Division, was on the attack but most of its combat power was thirty-five to forty miles away from the Iraqi 26th Infantry Division. The Air Force executed close air support (CAS) attacks. Apache helicopters from 2nd Battalion, 1st Aviation Regiment followed close behind. The combination of CAS and Army Attack aviation devastated the 26th Infantry Division.⁶⁶

⁶³ Williams, 253.

⁶⁴ Pimlott and Badsey, 158.

⁶⁵ Williams, 254.

⁶⁶ Ibid.

The attack on the Iraqi 26th Infantry Division occurred over broad space and created a command and control challenge as the distance exceeded the transmission range of the radios aboard the Apaches. A Black Hawk helicopter served as an airborne tactical command post to coordinate the action of the air mission. The Black Hawk, lacking forward looking infrared and relying on night vision goggles that require ambient light to fly at night, could not keep up with the Apaches. Kiowas solved this problem and became communication relays between attack aircraft and the airborne tactical command post.⁶⁷

The next day, attack aviation pursued and exploited the Iraqi army. Army Aviation units relied upon verbal orders in lieu of formal orders to operate in the fast-paced battle. The degradation of the formal planning and orders process led to a decreased cooperation amongst Army attack helicopters, artillery, and the Air Force CAS platforms. Airspace deconfliction between Apaches and artillery caused the Apaches to stay out of some fights altogether. In these instances, the ground commanders were not willing to shut down artillery firing long enough to sequence Apaches into the fight.⁶⁸ The rapid advance challenged XVIII Corps' ability to provide aviation fuel to maintain operational tempo on the Attack. The 101st Airborne Division (Air Assault) supplied fuel to continue the attack and a later push from the Corps replenished its stocks.⁶⁹

In the Battle of the Causeway on the 27th of February, Apache helicopters destroyed almost two divisions of vehicles from the Republican Guard. These were the same vehicles that escaped along the "Highway of Death" on the 26th of February. Air Force aircraft successfully engaged many of the vehicles along the so called "Highway of Death" but battlefield obscurants prevented their observation and final prosecution of these targets. Apache helicopters, from a

⁶⁷ Williams, 255.

⁶⁸ Ibid., 256.

⁶⁹ Richard M. Swain, *"Lucky War" Third Army in Desert Storm* (Fort Leavenworth: US Army Command and General Staff College Press, 1997), 258.

different sensor to target angle, and with FLIR that penetrated the obscurants, provided another means to destroy the Republican Guard Forces.⁷⁰

Army Aviation proved to be flexible in the execution of mission orders during the Battle of the Causeway. The flight received the barest of instructions. Fly north to the Euphrates, then turn east for about fifty kilometers. The Republican Guard is located at a causeway. Intercept the forces that are attempting to escape. The intelligence brief was that there was enemy on a causeway and the friendly information indicated that there were friendly forces south of the highway. With minimal instructions, the aviators of the 229th Aviation Regiment sallied out on the attack.⁷¹

Sustainment challenged operations once again. Helicopters were well ahead of the FLOT and were entirely dependent upon air FARPs. Though constrained by capacity, air-supported FARPs were advantageous for their range and mobility. Fuel and munitions were in limited quantity and placed a constraint upon the attack.

Summary

Attack and air assault operations displayed the speed, flexibility, and destructive power of Army Aviation and the interdependent action of Army Aviation with the combined and joint team. The operations also describe a space where Army Aviation formations worked closely with a joint force partner well ahead of the FLOT. To these ends, Army Aviation units in the anticipation for LSCOs should prepare by planning and executing with the joint force beyond the FLOT.

Army Aviation executed a variety of operations in Operation Desert Shield and Operation Desert Storm and achieved operational effects. Black Hawks and Chinooks moved personnel, materiel, and firepower, conducted air assault operations, and infiltrated long range surveillance

⁷⁰ Williams, 258.

⁷¹ Ibid.

teams. Apaches performed security tasks, provided a command and control structure, and conducted deep attacks against armor formations. The combined force destroyed an estimated 2400 Iraqi tanks. Apaches took credit for 500 of those tanks or roughly twenty percent of the armor battle damage in the campaign. B Company, 4th Battalion, 229th Aviation Regiment, in a series of two deep attacks destroyed an armored brigade.⁷² Kiowa Warriors conducted reconnaissance and attack missions. Kiowa Warrior aviators demonstrated their ability to conduct joint operations and sea basing. The complexity of some of these missions required detailed planning and execution from professional aviators. The synchronization of these operations within the area of operations required aviation professionals at echelons above the battalion to conduct coordination of electromagnetic warfare systems, joint fires, and command and control assets.⁷³ All of these tactical operations were made possible by the advances in technology, doctrine, and interservice coordination that occurred following the 1973 Arab-Israeli war that sparked a crisis that was solved by new thought in military science. The new military science came about in the form of *AirLand Battle* and created a new paradigm that is inclusive of the joint force and systematic integration and application of force in the combined arms fight.

Case Study Analysis

The friction that slowed the 12th Aviation Brigade's deployment revealed that it did not anticipate an imminent deployment. The unexpected demand shined light on faults within the units' readiness process. Personnel readiness for deployment is routine process. A leadership mantra with respect to good organizations is that "routine units do routine things routinely."⁷⁴ Secondly, though it is now known, the fact that the Iraqi Army would remain in Kuwait and not invade Saudi Arabia was far from predetermined in the summer of 1990. The slowed deployment

⁷² Williams, 257.

⁷³ Ibid., 246.

⁷⁴ John Chapman, *Muddy Boots Leadership: Real-Life Stories and Personal Examples of Good, Bad, and Unexpected Results* (Mechanicsbug, PA: Stackpole Books, 2006), 58.

of the 12th Aviation Brigade over uncontested land and sea could have had operational impacts. The implications are that aviation units should inculcate individual soldier readiness and deployment systems into organizational culture.

Organization and movement of aircraft support equipment and parts will challenge the logistical system upon opening a new theater in a LSCO. The effects on aviation maintenance will affect the operational readiness of the fleet. The consequence is the necessity for thoughtful and detailed planning on aviation force flow into theater. Additionally, the concept of intra-theater parts distribution should be understood in preparation for a LSCO. In the absence of reorganization, aviation units must be prepared to balance force protection and additional duty requirements against routine maintenance and operations. Finally, sufficient allocation of cargo vehicles is necessary for the efficient movement of battalions in LSCOs. Army Aviation should verify that adequate ground transportation is on hand to execute aviation operations on a dynamic battlefield.

Advances in technology provided solutions to shortcomings in availability and accuracy of navigation systems. The challenge that remains, is the technical proficiency to understand and integrate Army Aviation mission command information systems into combined, joint, and multi-national systems. This problem is an institutional challenge that has the attention of the appropriate force managers; however, the solution is complicated as it involves integrating vast amounts of equipment and organizations. In the current operational environment, processes and procedures must bridge technological gaps. Aviation units should prepare with the combined and joint force to develop familiarity with the processes and procedures necessary to overcome technological shortcomings.

Army Aviation units should arrive to LSCOs with the proficiency to rapidly generate combat power with well-maintained equipment. The implication is that Army Aviation supports a maintenance program that promotes operational and equipment readiness. Inherent to preparing for combat power generation is formulating, testing, and proving deployment systems.

Helicopters will move to an area of operations by air or sea cargo, and thus demand joint coordination and exercise.

The effects of interservice integration, an aim of *AirLand Battle* and the Goldwater-Nichols Act, were evident in the operations of Operations Desert Shield and Desert Storm.⁷⁵ The concept of Task Force Stalker's long-range insertion may seem quite familiar to a contemporary aviator of the counter-insurgency wars; however, the depth and rarity of interservice operations at the time made it unique. This type of joint operation is becoming less common in the current environment as the frequency of deployments declines. The implication is a need to create opportunities for joint preparation.

The Kiowa Warriors that sea based from USS Jarrett and destroyed an Iraqi Silkworm played a discernable role in the execution of the deception operations. This capability to launch from the sea to conduct operations on land has tactical potential for operational maneuvers in future war. Consider that eighty percent of the world's countries border the sea, ninety-five percent of the world's population lives within six hundred miles of the coast, and eighty percent of the world's capitals are in the littorals.⁷⁶ Sutton's law states, "Bank robbers rob banks, because that is where the money is."⁷⁷ The same logic follows that: Armies fight where the people are. People are near the sea. The ability for Army Aviation to rapidly base from the sea to pursue lines of operation on land is useful and historically necessary.

With assistance from the Air Force, Army Aviation fired the first shots of the Gulf War. The success of this mission was not predetermined and the design of how to get the air campaign started did not exist before the problem challenged planners in the summer of 1990. The Iraqi Army remained planted in Kuwait as coalition forces built up and planners designed a way to

⁷⁵ Stewart and Center of Military History, 402.

⁷⁶ Milan Vego, "On Littoral Warfare," *Naval War College Review* 68, no. 2 (Spring 2015): 1.

⁷⁷ "Willie Sutton - 'That's Where the Money Is,'" *Snopes.Com*, last modified June 10, 2013, accessed February 1, 2018, <https://www.snopes.com/quotes/sutton.asp>.

fracture the Iraqi IADS. This gave coalition planners time to understand the Iraqi IADS, determine its vulnerabilities, and then allocate and train units to dismantle a critical vulnerability.⁷⁸ Military planners aim to anticipate failure and one of the ways that they do this is to estimate the enemy's actions and compare them to our own actions.⁷⁹ The air campaign could have failed without the destruction of the IADS.⁸⁰ Army Aviation needs to not only think, but also train units how to defeat air defense systems. Everett Dolman wrote, "We cannot say with certainty that a war will occur, much less precisely when, where and with whom such an event will transpire. But, with increasing reliability, we should be able to predict the exact likelihood a certain type of war, perhaps in a certain region and with specified foes, will occur within a given time, and prepare accordingly. We simply cannot know the specifics"⁸¹

⁷⁸ Critical requirements or components thereof which are deficient, or vulnerable to neutralization, interdiction or attack (moral/physical harm) in a manner achieving decisive results - the smaller the resources and effort applied and the smaller the risk and cost, the better. Joe Strange, "Centers of Gravity and Critical Vulnerabilities: Building on the Clausewitzian Foundation so That We Can All Speak the Same Language," *Marine Corps War College* (1996): ix.

⁷⁹ Eliot A. Cohen and John Gooch, *Military Misfortunes: The Anatomy of Failure in War*, 1st Free Press pbk. ed. (New York: Free Press, 2006), 121.

⁸⁰ A common topic as of late, but a challenge found within the history of the Greco-Persian War is that of anti-access area denial. It is reasonable to anticipate in coming conflicts that the US military could be challenged in the air domain. This means that Army Aviation needs training, plans, and equipment to meet these obstacles. "A2/AD - Anti-Access/Area Denial," accessed February 1, 2018, http://www.realcleardefense.com/articles/2016/09/13/a2ad_-_anti-accessarea_denial_110052.html.

⁸¹ Everett Dolman, *Pure Strategy: Power and Policy in the Space and Information Age* (London: Frank Cass, 2005), 100.

Chapter IV: Current Aviation Method of Preparation

This chapter uses a CAB training calendar to qualify methods of preparations vis a vis combined arms and joint training at home station and at a combat training center. Next, it presents the evaluated readiness of eleven aviation task forces from their performance at the National Training Center (NTC) from January 2016 to September 2017. Then, insights from an aviation task force commander give understanding to strengths and weaknesses of the current method of preparation. Last, the chapter closes with analysis of current methods of preparation and the connection to readiness for LSCOs.

CAB Training Calendar

At home station, individual, crew, and collective events dominate aviation training calendars. Upon analysis of one CAB training calendar for fiscal year 2018, the unit planned ten weeks for collective training, six weeks for combined arms training, and seven weeks for exercises at a combat training center (CTC).⁸² The training plan crescendos into a combined arms and joint training event at a CTC for one of the subordinate battalion HQs and piecemeal companies. The CTC training event rehearses and executes deployment processes, RSOI operations, simulated force on force maneuvers, and combined live fire training. The force on force portion matches a rotational Brigade Combat Team (BCT) against a unit that is permanently assigned to the training center to replicate an enemy opposing force (OPFOR). Observer, coach, trainers (OC/Ts) provide expertise to improve the unit's performance during the exercise and give an outside evaluation of readiness at the close of the event.

Combat Training Center

At the NTC, the tactical scenario of the rotations involves live combined arms maneuver while under operational control to the 52nd Infantry Division (ID), a fictional division that

⁸² Combat Aviation Brigade Training Calendar, the name of the unit is withheld to preserve operational security, October 6th, 2017.

replicates the functions of an Army division HQs. The aviation task force is in direct support or assigned tactical control to a live BCT.

This method of preparation is in keeping with the lessons learned from the years of experience in training and combat. Army Aviation battalion and squadron HQs command their forces in a synchronized fashion amongst other branches of the Army in a training area that is 900 square miles. The Air Force integrates into the training scenario with its Green Flag detachment. This element incorporates Air Force CAS into the simulated training environment and conducts Joint Air Attack Team missions with Army Aviation attack helicopters under live conditions. Further integration occurs as Army Attack helicopters fly strike coordination and reconnaissance missions with Air Force aircraft. OC/Ts replicate electronic warfare platforms in the mission scenario to simulate the capabilities necessary to disrupt the electromagnetic domain. Aviation units execute these missions with live ordinance to find targets, conduct joint coordination of their destruction, or report to higher HQs for reconnaissance.⁸³

Army Aviation units at the NTC conduct attacks against enemy forces not in close friendly contact as out of sector missions in the deep area away from friendly forces at a range of about fifty miles. 52nd ID orders these missions against live systems that stimulate the aircraft survivability equipment aboard the attack helicopters. This training scenario requires the aviation task force to coordinate for SEAD. A third scenario that challenges aviation units at the NTC is an attack against OPFOR command and control elements ahead of major ground operations in a simulated combat environment.⁸⁴

An analysis of eleven aviation units that attended NTC at Fort Irwin, California from January of 2016 to September of 2017 reveals that all were task organized. No purely organized ARB, ARS, AHB, or GSAB trained at the NTC. Each rotation had one HQs element. Of the

⁸³ US Department of the Army, Army Doctrine Reference Publication (ADRP) 1-02, *Terms and Military Symbols* (Washington, DC: Government Printing Office), 1-86.

⁸⁴ CPT James Antonides, e-mail message to author, March 8, 2018.

eleven task force HQs, three ARBs, four ARSs, two AHBs, and two GSAB HQs commanded the aviation task forces that rotated through the training scenario. The quantity of helicopters assigned to each task force varied from rotation to rotation, but all were generally composed of Attack, Assault, Lift, and Medical Evacuation platforms.

Table 1 displays the observations of the Eagle OC/T Team of the eleven aviation task forces. These observations evaluate the readiness of the units to perform tactical functions ranging from Aerial Reconnaissance to Aeromedical Evacuation. OC/Ts evaluated these tasks using a scale ranging from untrained, through marginally practiced (P-), Practiced (P), marginally trained (T-), to trained (T). The observations show only two instances of aviation units qualifying a task as trained. The predominance of the readiness metrics categorizes units as P or P-. This means that the preponderance of Army Aviation units under the current method of preparation score between a 51% to a 79% according to performance criteria, the number of leaders present, leader performance, or the number of soldiers present for training.

Table 1. NTC Aviation Task Force Readiness

Data from the National Training Center Executive Summaries from January 2016 to September of 2017. Total of eleven aviation task forces composed of three ARBs, four ARSs, two AHBs, and 2 GSABs. Ten active duty units and one National Guard unit.	Untrained	Marginally Practiced (P-)	Practiced (P)	Marginally Trained (T-)	Trained	Not Observed
Aerial Reconnaissance	27%	45%	0%	18%	0%	9%
Aerial Security	0%	45%	27%	0%	0%	27%
Aerial Movement to Contact	0%	36%	0%	9%	0%	55%
Aerial Attack	27%	27%	27%	18%	0%	0%
Expeditionary Deployment Operations	0%	36%	27%	27%	0%	9%
Air Assault	0%	27%	45%	18%	0%	9%
Air Casualty Evacuation	0%	9%	36%	18%	9%	27%
Personnel Recovery	0%	9%	18%	0%	0%	73%
Air Movement	0%	36%	55%	0%	0%	9%
Aeromedical Evacuation	0%	0%	45%	45%	9%	0%

Source: Table produced by author with rotational executive summary data from the National Training Center Aviation Trainers from January 2016 to September 2017.

Each of the ten tasks listed in Table 1 are relevant to LSCOs. An examination of the top three tasks in the table, reconnaissance, security, and movement to contact, finds the majority of evaluations at P- or below. While those readiness metrics appear abysmal, the high volume of Not Observed tasks is also stunning. Nearly a third of units evaluated did not perform aerial security and over half of the units did not perform movement to contact.

The next three tasks, attack, expeditionary deployment operations, and air assault, show a generally average performance with units distributed from T- to P-. One exception, attack, shows nearly a third of units as untrained. The last four tasks in Table 1 are familiar counter-insurgency (COIN) tasks and not surprisingly, are assessed at a generally average level of proficiency. The greatest outlier in this category is the ability of aviation units to conduct personnel recovery operations. Nearly three quarters of units evaluated were Not Observed conducting personnel recovery operations.

According to these measures, Army Aviation units are not prepared to fight LSCOs. The deficiency is widespread and not isolated in time as this period covers two years from 2016 through 2017. Army Aviation was decisive in Operations Desert Shield and Storm because it was trained and ready to fight. The potential to generate tempo, flexibility, and lethality from the Army's air wing is impressive; however, in its current state, the expectation of operational effects should be tempered by the reality of decreased readiness.

An Aviation Task Force Commander's Perspective

In the second quarter of fiscal year 2018, LTC Darin Gaub commanded an aviation task force at the NTC. In preparation for the rotation, he forced his aviators to gain proficiency flying low to avoid visual or electronic detection. His unit flew two air assaults per week under both hasty and deliberate conditions in preparation for the exercise. At the outset of the rotation, Gaub's task force flew four air assaults within seventy-two hours. His greatest challenge was not internal, but external. With Gaub's aviation task force based at Fort Carson, Colorado, and the

supported ground unit based at Fort Riley, Kansas, the units were not able to work together prior to the exercise. The ground force's unfamiliarity with the air assault planning process produced friction in the execution of air assault operations; the result of non-habitual relationships and sparse practice of combined arms operations. Additionally, joint coordination was nearly non-existent in Gaub's rotation. In the course of the exercise, the aviation task force, BCT, and 52nd ID did not adequately coordinate fires and SEAD.⁸⁵ The scenario included opportunities for joint operations to include Joint Air Attack Teams and Air Assaults. Unfortunately, these were missed chances because the involved headquarters' planning processes did not facilitate the appropriate measures to ensure synchronized employment of capabilities.

Much of these coordination faults point to the organization of the aviation task force HQs and the absence of the necessary expertise to function in a LSCO. The Army does not provide a fires officer with associated mission command information systems to the AHB. Nor is an AHB HQ organized to coordinate its maneuver into the airspace and it does not have imagery specialists or weather forecasters to predict flight weather. The CAB HQ, and various battalion and squadron HQs within the CAB, attach these personnel to the aviation task force HQ participating in the CTC scenario. The resultant aggregation is an ad hoc aviation HQ that attempts to coordinate aviation actions for a LSCO but is woefully unprepared for the task.

The evidence supports that the Army and Army Aviation value the preparation of combined and joint training at the CTCs; however, the readiness statistics from the NTC suggests that Army Aviation units are predominantly not trained to conduct LSCOs, in spite of the pivot to LSCOs circa 2012. The implication is that there is a systemic problem that is precluding readiness across the force. There are two differences that stand out from how Army Aviation prepared and fought in Operations Desert Shield and Storm to the current method of preparation. First, the Army fielded, trained, and equipped Army Attack Aviation Battalions to fight as cohesive,

⁸⁵ LTC Darin Gaub, telephone conversation with the author, March 9, 2018.

organic members of the combined and joint team. Aviators were well trained and understood the importance of aircraft survivability flight techniques and routinely employed them. Second, in the operational descriptions in the case study, the units were task organized according to their purpose. The 3rd Battalion, of the 227th Regiment conducted deep attacks beyond the FLOT with instructions from an attack HQs. 3rd Battalion, 227th's was focused and staffed with the expertise to conduct attack operations. The same was true of the 1st Battalion, of the 101st Aviation Regiment. An attack commander commanded an attack battalion to execute attack missions. This diverges from the way units at the NTC are preparing for LSCOs, as attack missions are commanded by assault and general support commanders. Non-organic companies receive general expertise from their battalion or squadron HQs, and in turn, execute company missions in a mediocre fashion. Seventeen years of COIN combat accustomed Army Aviation to sending battalion and squadron HQs to fight the nation's wars. That worked well in contingency operations, but as the data suggests, is inadequate for LSCOs. To seriously prepare for LSCOs, CAB HQs must take the field and perform its role to coordinate ARB, ARS, AHB, and GSAB missions in support of division and corps maneuver.

Chapter V: Conclusions, Implications, Recommendations

This monograph demonstrates how combined arms, joint, and specialized unit preparation affects the readiness of Army Aviation for LSCOs. Combined arms, joint, and specialized unit preparation emerged as consistencies through an examination of history and doctrine. From the origins of the Marine concept for *Vertical Envelopment*, rotary wing aviation acted as a member of the combined arms team. The logic that Army Aviation should train as a member of the combined arms team naturally follows. Army Aviation units did and today still conduct live exercises with other branches from the US Army at combat training centers for LSCOs. The implication is that combined arms training predominately occurs at CTCs. Division HQs should address the issue of combined arms preparation and develop processes to combine unit training events at home station.

Second, Army Aviation prepared and operated in conjunction with the joint force leading up to and in the execution of Operation Desert Shield and Operation Desert Storm. It follows that Army Aviation should prepare with the joint force. The scale and scope of Army Aviation preparation with the joint force under live conditions rarely approaches the scale or complexity of a LSCO. The implication is that a LSCO will be that catalyst for joint integration. A goal for the CAB should be preparing for a LSCO with a hybrid Red and Green Flag operation. This combination of the Air Force establishing air superiority, conducting air interdiction, and CAS paired with Army Aviation maneuvering with or ahead of ground units adds realism to an anticipated operational environment of a LSCO in a multi-domain fight.

Third, leading up to Operations Desert Shield and Desert Storm, the Apache Training Brigade provided branch expertise to prepare whole battalions to execute their role in the combined and joint fight. The specialized unit training program emerged from the ideas promulgated by *Active Defense* and *AirLand Battle* doctrine. Army Aviation lacks a dedicated organization that specializes in and routinely trains and evaluates Army Aviation units prior to combined arms integration at the CTCs. The implication is that Army Aviation units enter

combined and joint operations not fully understanding or exhibiting the proficiency to accomplish their role. The recommendation is to establish a program of instruction that provides initial and sustainment training to prepare units for the combined and joint fight.

Fourth, the Operation Desert Shield and Storm Case Study illustrated the importance of deployment processes, personnel and equipment readiness, and sustainment systems. These areas of preparation are background processes that are ignored until they fail. In the unfortunate event that timing and circumstances place these items in the spotlight in a moment of weakness, they have the potential to make disastrous headlines. The implication is the importance of these areas in the effectiveness of CABs. The recommendation is for institutional encouragement of objective and honest reporting to accurately convey the status of people and equipment.

Last, in some ways the current method of preparing aviation task forces to fight LSCOs remain consistent with lessons from history, doctrine, and combat experience. CABs conduct some combined arms and joint preparation at home station and more of both at CTCs. Theory and application diverge at the point of organization of HQs. Currently, the Army sends Army Aviation task forces to CTCs organized around a battalion or squadron HQ that is not permanently manned or equipped to coordinate and synchronize multiple platforms and functions. The results are shocking. In the past two years at the NTC, from a possible 110 task evaluations, OC/Ts rated only two tasks as trained. Evaluators graded most tasks between 51% to 79% proficient. The data suggests that across the force, Army Aviation units are not adequately prepared to conduct LSCOs. The recommendation is to focus institutional expertise to teach aviators and units how to fight a LSCO. This will require the establishment of a specialized training unit and the dedication of CAB HQs to CTC exercises. With consideration to resources available, this action may cause aviation to appear in less CTC exercises; however, the exercises that employ Army Aviation, will do so in an appropriate manner for LSCOs.

Area for Further Study

During this research, analysis of aviator production from flight school through integration into the operational force became a topic of study. Army Aviation is challenged with a demand for aviators that exceeds its current supply. The institution should ask—how can the generating force accelerate the movement of aviators to the operational force and improve Army Aviation’s ability to fight LSCOs? There should be further study to understand the costs and benefits of regenerating a specialized training unit such as the 21st CAB to assist the generating force in its challenge to meet quantity and quality requirements. A potential outcome of this study could be an intermediate field training program that delivers new aviators to the operational force at readiness level one. This might allow the operational force to maintain its focus on combined arms and joint integration.

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