THE NEED FOR BALANCE IN ATTACK AVIATION EMPLOYMENT AGAINST HYBRID THREATS

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Given that hybrid threats are characterized by their ability to engage US forces across a spectrum of conflict from the material to cognitive in nature, attack aviation must posture its doctrine, training, and focus to seamlessly counter both conventional and unconventional threats.

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

ABSTRACT

THE NEED FOR BALANCE IN ATTACK AVIATION EMPLOYMENT AGAINST HYBRID THREATS, by Major Joseph D. Swinney, 132 pages.

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ACRONYMS

AHR	Attack Helicopter Regiment
CAB	Combat Aviation Brigade
FLOT	Forward Line of Troops (in conventional operations, the point of contact with the enemy)
IDF	Israel Defense Forces
ODS	Operation Desert Storm (1991)
OEF	Operation Enduring Freedom, Afghanistan
OIF	Operation Iraqi Freedom
SEAD	Suppression of Enemy Air Defense
ULO	Unified Land Operations (capstone U.S. Army doctrine for conventional operations)
USAF	United States Air Force

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CHAPTER 1

INTRODUCTION

> One thing is for certain, in future operational environments; our Army must be operationally adaptable. We must possess agile and innovative leaders organized in versatile units capable of effectively operating across the range of military operations.[1]
>
> — Robert W. Cone, General, US Army
> "Operational Environments to 2028:
> The Strategic Environment for Unified Land Operations"

Attack aviation is an integral part of US Army combined arms doctrine. From its beginnings in the Vietnam Conflict, army aviation adapted into the specialized set of aircraft and employment techniques championed by today's Army Aviation Branch. Since 2001 the preponderance of the attack aviation effort has been in the deserts and mountains of Iraq and Afghanistan in support of the Global War on Terror, specifically Operation Iraqi Freedom (OIF) and Operation Enduring Freedom (OEF). The last 12 years, characterized by constant involvement in two conflicts, were also a time of great transformation and reorganization within the aviation branch. During this time army aviation underwent a transformation from a force structure conceived to counter the conventional threat of the late 1970s and 1980s to the more uniform and modular Combat Aviation Brigade (CAB). Furthermore army aviation adapted its employment techniques from those optimized to fight a conventional conflict with a near peer competitor to those optimized to counter an insurgent threat during stability operations. Attack aviation

[1]Department of the Army, "Operational Environments to 2028: The Strategic Environment for Unified Land Operations," August 2012, http://www.arcic.army.mil/app_Documents/TRADOC_Paper_Operational-Environments-to-2028-Strategic-Environment-for-Unified-Land-Operations_AUG2012.pdf (accessed 5 May 2014).

moved from an almost exclusive focus on the independent deep attacks envisaged in the AirLand Battle doctrine of the 1980s and 1990s to focusing almost exclusively upon supporting the ground commander in the close fight.[2]

Many scholarly works exist concerning aviation tactics, techniques, and procedures used during OIF and OEF. These articles often deal with a specific tactical problem or argue one technique over another. Furthermore, literature exists which investigates army aviation force structures. These articles provide excellent insight into individual tactical changes and the evolution of aviation force structures, but there remains a need for a comprehensive look at how attack aviation operations adapted during the recent operations in OIF and OEF and how those changes relate to current threats and those in the near future. Specifically, is the current attack aviation doctrine appropriate for the threats facing this country over the next generation, and what lessons can army aviation draw from the recent conflicts in order to prepare to meet future threats? In an era of reduced defense budgets and fiscal conservatism, where should attack aviation focus its doctrine and limited training resources to best support Army and joint commanders conducting unified operations. This thesis answers this need through an analysis of attack aviation doctrine, hybrid threats, and aviation operations in OIF. This following research questions guide this thesis.

[2]The term "deep attack" as defined in the 1997 version of FM 1-112, *Attack Helicopter Operations,* is now known as "interdiction attack" in the latest aviation doctrine FM 3-04.126, *Attack Reconnaissance Helicopter Operations.* Subtle differences in the two definitions exist, particularly that an interdiction attack can take place anywhere on the battlefield, but is far enough away from ground troops that detailed coordination is not required. A deep attack on the other hand was conducted forward of the forward line of troops (FLOT).

Research Question

Should army attack aviation adopt a balanced approach between focusing on the close fight in the form of close combat attacks supporting ground forces and the deep or interdiction attack to best prepare to support Unified Land Operations (ULO) against hybrid threats?

1. Is the deep, or interdiction attack, a viable operational approach for attack aviation employment against hybrid threats?

2. Are there aspects of hybrid threats that render a balanced approach to attack aviation employment more advantageous than focusing doctrine and training on employment in the close fight?

3. What conclusions can be drawn from attack aviation's experience against a hybrid threat in the beginning months of OIF to inform future attack aviation doctrine and training?

Thesis

This thesis makes the argument that in order to support unified operations against hybrid threats, attack aviation will have to maintain an approach balanced between the close combat attack and the interdiction attack. In doing this, attack aviation will maintain a capability to operate at multiple depths and locations within the operational environment. Retaining this capability is crucial in attack aviation's employment against hybrid threats that blend conventional with unconventional ways of conducting warfare.

This argument is couched within the doctrinal framework of ULO. Arguing for balance in the employment methodology of attack aviation is supported by the Army's capstone doctrine of ULO, in that ULO advocates gaining and maintaining a position of

relative advantage through simultaneous offensive, defensive, and stability operations.[3] Attack aviation can play a key role with respect to the simultaneity demanded in ULO because of its inherent mobility and flexibility to not only act as a reconnaissance and security asset or fire support platform in the close fight, but also an independent maneuver element that can attack enemy forces at any location on the battlefield. It is only through a balanced approach however, that attack aviation can properly nest within the framework of ULO. Because, as this thesis shows, if an operational approach or series of techniques is not covered in doctrine, or is marginalized as a secondary focus, attack aviation historically can not perform the mission without additional training or rehearsals. Furthermore, a key aspect of hybrid threats are their evolving and "custom built" nature, meaning that no two threats will be the same and the threat will likely evolve more quickly than the Army's ability to respond.[4] A balanced organization, with comprehensive doctrine and inherent flexibility, will be the most efficient manner in which to counter a hybrid threat and its many evolutions.

Given the complex nature of the operational environment and the potential threats within it, attack aviation must be adaptable and multi-faceted in its approach. Throughout its history attack aviation tended to focus either on interdiction (formerly known as deep) attacks or close combat attacks. Breaking from this traditional one-sided approach and developing an organization and doctrine enabling employment across the entire range of military operations is the only way to achieve balance within the attack aviation force.

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[3]Department of the Army, Army Doctrine Publication (ADP) 3-0, *Unified Land Operations* (Washington, DC: Government Printing Office, October 2011), 1.

[4]Frank J. Cilluffo and Joseph Clark, "Thinking about Strategic Hybrid Threats: In Theory and in Practice," *Prism* 28, no. 1 (2012): 47-63, 48-50.

Because the nature of hybrid threats is difficult to predict, and upon encountering the US military, a hybrid threat will likely evolve, attack aviation must be prepared to adapt to any evolution of the threat. The attack aviation community forgot many of the lessons learned in Vietnam about operations in the close fight during the decades of the 1980s and 1990s, and subsequently had to relearn those lessons in OIF and OEF. In the current environment, attack aviation should take care not to forget the lessons learned during the 1980s and 1990s about attack aviation's role in the deep fight.

Methodology

This study examines three elements from which conclusions and recommendations are drawn about future employment of attack aviation. First, attack aviation doctrine will be examined at it evolved from AirLand Battle doctrine and operations in Operation Desert Storm (ODS), through the aviation restructuring of the 1990s into the years just prior to OIF, and the subsequent counterinsurgency operations in OIF and OEF that inform the latest attack aviation doctrine. The final stages of this current transformation are ongoing with finalized plans for the current aviation restructuring initiative still in debate. Chapter 2 discusses this transformation and current attack aviation doctrine in detail as well as its strengths and weaknesses. The importance of this discussion is that it highlights current doctrine's focus on attack aviation's employment in the close fight that could result in the interdiction attack being removed from the attack aviation lexicon in the same manner as close fight employment techniques were not a primary component of the attack aviation doctrine of the late 1990s. This one-sided focus on the close fight was appropriate for OIF-OEF, but may not be optimal for future threats that attack aviation will face. This doctrinal discussion will

be nested within the context of ULO detailed as the Army's capstone doctrine in Army Doctrinal Publication 3-0.

Chapter 3 provides on a discussion of the hybrid threat expected in future conflicts. The methodology starts with a doctrinal definition and discussion of hybrid threats, and continues with short case studies of two hybrid threats from the preceding decade. A hybrid threat is one that will be a "diverse and dynamic combination of regular forces, irregular forces, and/or criminal elements all unified to achieve mutually benefitting effects."[5] Chapter 3 argues that hybrid threats and their effects on attack aviation can best be understood by understanding the ways in which they fight as opposed to the means which they employ. An analysis of what the hybrid threat means to attack aviation comprises a portion of this study because without an understanding of the threat, accurate conclusions and recommendations regarding future methods of employment would be short-sighted. Though it is difficult to completely predict the enemy the US Army will face in the next conflict, history shows from ODS in 1991 to the present the threat has increasingly looked to minimize the effects of attack aviation. For instance, during the air campaign in the Balkans in the mid 1990s, the Serbian Army's conventional armored formations dispersed and camouflaged their forces to counter the technological advantage of the US military. This trend of the dispersal of a threat and its intermingling with civilian non-combatants continued with similar tactics used by the Iraqi Army in 2003.[6] In Somalia the threat was interspersed within the population,

[5]Department of the Army, Training Circular (TC) 7-100, *Hybrid Threats* (Washington, DC: Government Printing Office, November 2010), v.

[6]James W. Williams, *A History of Army Aviation: From its Beginnings to the War on Terror* (Lincoln, NE: iUniverse, 2005), 394-397.

engaging US army aviation with rocket propelled grenades and small arms fire, foreshadowing what attack aviation would face in the opening engagements of OIF. While there will always be uncertainty when predicting the threat in the next war; what is certain is threats will be diverse and dynamic and will seek to asymmetrically target the vulnerabilities all army systems, particularly attack aviation.

Chapter 4 contains a historical analysis of US attack aviation in the opening months of OIF. This period of OIF pits the Army's attack aviation force against the Iraqi Army, which at the beginning of the conflict consisted of a robust irregular force capability to complement the divisions of the country's conventional force. Aviation operations during March through May of 2003 provide an interesting case study due to the presence of both independent attack helicopter attacks at operational depths of the battlefield as well as an extensive use of attack helicopters in the close fight. The presence of both types of attack aviation employment indicates the potential of an attack aviation force with the balance to seamlessly transition between employment techniques, especially if that aviation force is trained and ready to perform each type of mission. This same instance illustrates the dangers of an attack aviation force that is one sided in its employment and visualization of the threat.

Finally, conclusions and recommendations are provided in response to these three discussions. Conclusions are drawn linking the current organization and doctrine to an emerging and dynamic hybrid threat as informed by the examples in chapter 4. Recommendations are provided centering upon the doctrine, training, and leadership that will enable attack aviation to best counter the hybrid threats of the future. This study provides recommendations that inform how attack aviation should meet future threats,

and furthermore how attack aviation should prepare to meet the threat in the context of ULO. Unified Land Operations as the Army's capstone doctrine stresses simultaneous offensive, defensive, and stability operations, army attack aviation will have to be trained and organized to operate across this wide spectrum of operations to effectively support ground force commander's requirements.[7]

[7]Department of the Army, ADP 3-0, 1.

CHAPTER 2

ATTACK AVIATION DOCTRINE

This chapter is a contrasting analysis of US Army attack aviation doctrine as it stands currently, and as it existed just prior to OIF-OEF. A description of attack aviation organization and doctrine as it existed at the beginning of OIF-OEF provides the precursor to understanding its evolution to its current organization within the CAB.[8] This chapter reviews current aviation doctrinal publications to describe the current doctrinal focus of attack aviation, and contrasts those publications to the doctrine of the 1990s, spawned from AirLand battle and operations in ODS. A discussion of aviation force structures is present to describe the shift to the CAB structure, and how that force structure further draws the focus of attack aviation toward the close fight.

Attack aviation has been a part of every US Military action since its entry on the battlefield during the Vietnam War. During that conflict a dedicated aerial weapons platform was instrumental in fulfilling the fire support requirements of the newly developed air mobility doctrine. This operational need resulted in the creation and production of the AH-1 Cobra helicopter. The AH-1 Cobra was a purpose built attack helicopter that operated throughout the Vietnam War as a dedicated fire support platform for Army ground forces. The Cobra provided fire support or close air support to ground

[8]The acronym CAB is often used in US Army Doctrine and has different meanings. Throughout this thesis the acronym CAB refers to the combat aviation brigade as it exists currently.

forces in what is known in the army doctrine of today as the close combat attack.[9] FM 3-04.126 defines the close combat attack as:

> CCA is defined as a coordinated attack by Army aircraft against targets that are in close proximity to friendly forces. During CCA, the ARC/SWT engages enemy units with direct fires that impact near friendly forces. Targets may range from tens of meters to a few thousand meters from friendly forces. CCA is coordinated and directed by a team, platoon, or company-level ground unit using the standard CCA brief. Once the aircrews receive the mission from the ground commander, they develop a plan then engage the enemy force, while maintaining freedom to maneuver. Due to capabilities of the aircraft and the enhanced SA of the aircrews, terminal control from ground units or controllers is not necessary. CCA is not synonymous with CAS.[10]

Given the widely dispersed nature of operations encompassing the entire country of Vietnam heliborne assets were often the only means of fire support available. A similar environment existed in OIF and still exists in OEF, where ground units operate too far away from traditional indirect fire assets located on Forward Operating Bases. In this context, attack aviation returned to its initial role as a responsive fire support platform.

A short explanation of the role of the attack helicopter in the US Army's way of warfighting is appropriate here. Whereas the United States Air Force (USAF) conducts close air support in support of ground forces, army attack helicopters conduct close combat attacks. The enhanced situational understanding of the aircrews develops because army attack aviation either works in direct or general support of army ground forces, or at times even operationally controlled by the ground commander. Army aircrews have a more intimate familiarity with the ground force's operation. Habitual relationships often

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[9]James W. Bradin, *Hot Air to Hellfire: The Hisotry of Army Aviation* (Novato, CA: Presidio Press, 1994), 112-121.

[10]Department of the Army, FM 3-04.126, *Attack Reconnaissance Helicopter Operations* (Washington, DC: Government Printing Office, 2007), 3-59.

form between army aviators and their supported ground forces resulting in a very lethal combined arms team. Ultimately the close combat attack does not require a trained terminal controller as does USAF close air support. This generally makes the close combat attack more responsive to the needs of Army ground commanders than close air support provided by joint assets.

In the years following the end of Vietnam War the attack helicopter came of age. The Advanced Attack Helicopter Study began in 1972, resulting in a new and very different helicopter, the AH-64 Apache.[11] In addition to being a dedicated attack helicopter in the mold of the AH-1 Cobra, the AH-64 Apache was optimized as an aerial tank killing platform. Armed with 16 Hellfire Missiles and a 30mm cannon the AH-64's impressive armament became a central part of the Army's Air Land Battle doctrine.[12] Additionally, the AH-64 Apache allowed operations separate from supported ground forces. Its survivability, navigation and night vision systems, as well as robust armament allowed operations well ahead of the forward line of troops. The AH-64 was a helicopter that could defeat armored formations in depth, allowing operational level commanders to shape the fight prior to the close battle.

The deep attack soon became a primary component of attack aviation doctrine, and was most famously executed by TF Normandy in Operation Desert Storm.[13] The TF Normandy mission took place on 17 January 1991; it was the opening salvo in the air war against Sadaam Hussein's regime. The purpose of the mission was to create a radar free

[11]Williams, *A History of Army Aviation*, 210-211.

[12]Ibid.

[13]Bradin, *Hot Air to Hellfire*, 1-23.

corridor into Iraq through which subsequent air attacks could flow.[14] The task force itself consisted of a mixture of Army Apache helicopters from the 1st Battalion 101st Aviation Brigade and Pave Low helicopters from the USAF. The Apaches, with their extensive armament, provided the punch, but the plan required the Pave Lows and their global positioning system navigation equipment to guide the team of Apaches over the 150-mile route through featureless desert terrain.[15]

With the assistance of the Pave Lows and nap of the earth flight techniques, the crews of TF Normandy navigated to their targets and snuck undetected to within seven kilometers of the Iraqi forces. The attack commenced with the Apache crews using the laser guided Hellfire missile system to destroy command and control vehicles and other targets such as radar domes. The attack continued with the remaining armament carried by the Apache, the 30mm cannon and the 70mm rocket system. These latter two weapons are unguided and considered an area fire weapons system compared to the highly accurate Hellfire missile system, but the area weapons were crucial in engaging enemy personnel and destroying the equipment at the Iraqi radar site to a point where it could not easily be repaired.[16] Following the attack, the Apaches and crews returned to Saudi Arabia to refit and assess the operation. Some aircraft, such as the one piloted by Lieutenant Tom Drew, received fairly extensive damage, but returned to base, attesting to the survivability of the Apache. The TF Normandy deep attack proved extremely

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[14]Ibid., 3.

[15]Williams, *History of Army Aviation*, 250.

[16]Bradin, *Hot Air to Hellfire*, 14-20.

successful and enabled the subsequent air campaign that opened Desert Storm.[17] Though not the first combat employment of the new attack helicopter, TF Normandy represented the first combat deep attack at the battlefield depths envisioned in AirLand battle doctrine. Some consider the attack to be more of a raid than a pure deep attack, but it nevertheless proved the attack helicopters could operate against advanced air defense platforms at distances well forward of friendly troops.

Subsequent Apache Helicopter operations in the short ground war in Iraq, continued to prove the effectiveness of the attack helicopter. Furthermore, they proved the effectiveness of the Apache in operations separate from their supported ground troops. The Apaches often attacked forward of friendly troops interdicting Iraqi armed forces that were either waiting to defend against the oncoming US troops or attempting to escape the US onslaught. At the end of the conflict, the Apaches reportedly destroyed more than 500 tanks, plus hundreds of other vehicles.[18] One company of the 4-229th Aviation Regiment received credit for two deep attacks resulting in the destruction of an entire armored brigade of the Iraqi 10th Armor Division.[19] ODS not only proved the concept of AirLand battle, but also validated the doctrine and concepts of aviation employment in deep operations.

At the end of ODS, deep attacks remained the focus of attack aviation doctrine. The original intent of the attack helicopter as an aerial fire support platform for Army ground forces was not lost, but the CCA shifted to more of a supporting role to the AH-

[17]Williams, *History of Army Aviation*, 251.

[18]Ibid., 246.

[19]Ibid., 257.

64's use in the destruction of enemy armor formations located forward of the Forward Line of Troops (FLOT). Army Aviation and specifically the Apache provided the means to attack the enemy in depth. This capability was appreciated by Corps Commanders who could now shape the close fight with long range rocket artillery as well as with attack helicopters organic to their formations.

Given that ODS was relatively short in duration, and other operations in the 1980s and 1990s involving attack aviation tended toward small-scale contingency operations, OIF-OEF represents the only sustained conflict involving US Army attack helicopters since the end of the Vietnam era. OIF-OEF relied heavily on attack aviation, with attack aviation mostly performing its traditional role as an aerial fire support platform.[20] The 13 years of operations in Iraq and Afghanistan will have a profound effect on future attack aviation structure and doctrine, but as subsequent pages suggest, the role attack aviation can play in deep operations should not be forgotten or discarded.

Attack Aviation at the Start of OIF-OEF

The structure of the attack aviation force that went to war in OIF was based upon the Aviation Restructuring Initiative of 1993. Designed to defeat a conventional threat, attack aviation in 2003 was trained, manned, and equipped to fight a linear battle based loosely upon AirLand battle doctrine similar to what was experienced in ODS and what

[20]The author makes this assertion based on multiple sources. One of which is the author's personal experience as an air mission commander and Brigade Aviation Officer in OIF. This assertion is also informed by Center for Army Lessons Learned after action reports and multiple thesis and articles published by current army aviation professionals.

had been expected during the Cold War.[21] The doctrine guiding this force was *Attack Helicopter Operations* published in 1997. Attack aviation units were spread across multiple US Army formations at different levels of command such as Division, Corps, and Armored Cavalry Regiments. Furthermore, the Aviation Restructuring Initiative of 1993 began the removal of the AH-1 Cobra and unarmed OH-58 aircraft from active duty organizations, leaving the interim attack aviation force centered upon the OH-58D and the AH-64. In the planned restructuring, this interim attack aviation force would exist until the RAH-66 Comanche, then in the concept phase and planned for the attack, reconnaissance, and security role, entered service.[22]

As a result, attack aviation focused on specialization as well as habitual relationships formed through the integration of combined arms teams. Attack aviation formations existed within Division Aviation Brigades as well as reconnaissance and security organizations such as the Division Cavalry Squadrons and the Regimental Aviation Squadrons. These cavalry squadrons were battalion sized organizations combined aviation and ground forces in a single combined arms formation. The aviation force structure at the beginning of OIF-OEF also consisted of attack helicopter regiments assigned to the Corps Aviation Group. These organizations provided the Corps commander a capability with which to shape the impending close fight through the employment of attack aviation at operational depths. This was a holdover from the days of AirLand battle where a corps attack aviation regiment would attack second and third

[21]Terry J. Jamison, "Aviation Force Structure in Support of Counter Insurgency Operations" (Strategy Research Project, US Army War College, 2010), 5-8.

[22]The RAH-66 development program was cancelled in 2004 leaving the OH-58D in the reconnaissance role pending the acquisition of a new armed aerial scout aircraft.

echelons of enemy moving towards friendly forces. Thus, all the various attack aviation organization structures were specialized in both composition and focus.

Ultimately, attack aviation units at the beginning of OIF-OEF were specialized for employment in a certain type of mission or location within the battlefield framework. Perhaps the most prominent limitation to the pre-OIF-OEF army aviation structure was its dispersion. With specialized organizations spread across division and corps levels of command, the attack aviation force was not structured to support the Brigade Combat Team based force generation cycle, known as Army Force Generation that would characterize OIF and OEF. The attack battalions assigned to a Corps headquarters trained and focused on their primary tasks of deep attacks whereas attack aircraft assigned to cavalry formations focused on reconnaissance and security tasks as part of a combined arms team with their supported ground forces. This force structure with its specialization did not provide the modular, easily task organized brigade headquarters required in OIF and OEF. To illustrate this, examples of the different attack aviation organizations are provided, taken from aviation doctrine published in the decade prior to OIF-OEF.

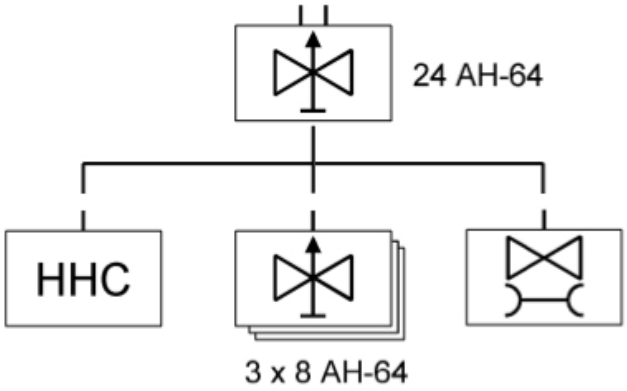

Figure 1. Heavy Division and Air Assault Division Attack Helicopter Battalion

Source: Department of the Army, Field Manual (FM) 1-112, *Attack Aviation Operations* (Washington, DC: Government Printing Office, October 1997), 1-9.

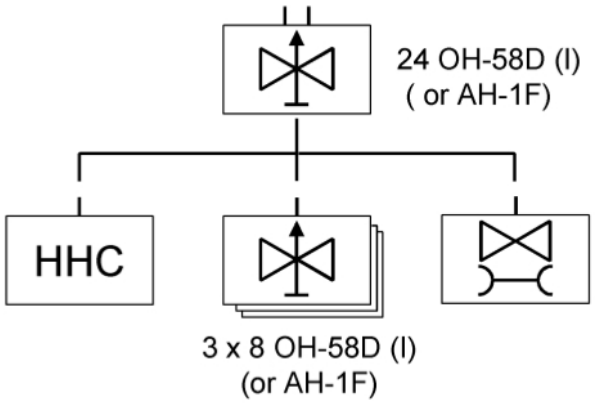

Figure 2. Light Division Attack Helicopter Battalion

Source: Department of the Army, Field Manual (FM) 1-112, *Attack Aviation Operations* (Washington, DC: Government Printing Office, October 1997), 1-10.

Figure 1 shows the structure of the heavy division (such as 1st Cavalry Division and 3rd Infantry Division) attack helicopter battalion as it existed at the outset of OEF-OIF. Each armored or mechanized infantry also known as “heavy,” divisions was

organized with two attack helicopter battalions in its aviation brigade. Each battalion consisted of 24 AH-64 Apache helicopters divided into three companies and an organic aviation maintenance company. The attack battalions in the light infantry divisions had a similar organization to the above figure, but were comprised of OH-58D Kiowa Warrior helicopters as shown in figure two. Each light division was organized with only one attack helicopter battalion. This was in keeping with the rapidly deployable nature of the light infantry divisions. An attack battalion consisting of OH-58D Kiowa Warriors could deploy more quickly via C-130 or C-17 aircraft than could an attack battalion comprised of the AH-64 Apache.

An exception to this was the 101st Airborne Division. Although the 101st carried the airborne moniker, it was in reality an organization designed for increased mobility using its massive arsenal of helicopters. Air assault divisions under the pre-2003 structure had AH-64s in their attack battalions, and were organized with three attack helicopter battalions. The structure of this division provided one attack helicopter battalion to support each of the division's three infantry brigades. Because of the habitual relationships and mutual interdependence between the infantry brigades and their aviation support in the Air Assault Division, the attack helicopter battalions of the 101st maintained a closer relationship to their supported ground forces and thus always maintained a training focus on aerial fire support.[23] The importance of this habitual relationship can not be over emphasized. It was the 101st Airborne Division that first rekindled the close combat attack in the opening months of OEF. Because the 101st never

[23]Russell Stinger, "Army Aviation back to its Roots" (Strategy Research Project, US Army War College, 2009), 22-25.

lost sight of their role as a fire support platform to the division's infantry brigades they were able to transition more quickly between deep attacks and close combat attacks than were other attack helicopter battalions at the start of OIF and OEF.

The 1997 version of FM 1-112 *Attack Aviation Operations* stated the mission of the attack helicopter battalion as follows:

> The primary mission of an ATKHB is to destroy enemy forces using fire, maneuver, and shock effect. To accomplish this mission the ATKHB attacks the enemy to destroy, attrit, disrupt, or delay. It may also conduct other offensive operations, as well as reconnaissance, security, and defensive operations.[24]

and goes on to state:

> The ATKHB mission is the same for all ATKHBs, regardless of the type of division or corps to which assigned. However, depending upon the type of division or level or assignment, employment criteria, mission priorities, and target priorities may vary greatly.[25]

Two important conclusions can be drawn from this mission and employment guideline. Firstly, the mission of the attack helicopter battalion as written in 1997 made no mention of the close combat attack or air support provided to ground forces already engaged with the enemy. The previous mission statement illustrates the mindset present in the attack aviation community going into OIF in that it saw the primary role of attack aviation as an independent maneuver force focused on independently attacking enemy formations as opposed to supporting ground forces in the close fight. The theme of this discussion is that by 1997, just prior to OEF-OIF the attack helicopter operations manual made no

[24]Department of the Army, FM 1-112, 1-12 and 1-13.

[25]Ibid.

mention of fire support to ground units in contact, precisely the mission for which the attack helicopter was initially developed.[26]

As previously stated, the obvious implication of specialization is that organizations focused on different missions do not easily nest within a modular force structure. The Corps attack helicopter regiment specifically illustrates this point. This regiment provided the Corps commander with an aviation force capable of, "shaping the battlefield and set the terms for close operations."[27] A corps attack helicopter regiment doctrinally consisted of two Attack Helicopter battalions of 24 AH-64s each.[28] The corps attack helicopter regiment's mission centered upon the deep attack or conducting a cover mission for the Corps if no Armored Cavalry Regiment was present.[29] The focus of attack aviation doctrine at this time is interesting, not because of the perceived importance of the deep attack planned at the Corps level, but rather the relative absence of emphasis on providing fire support to ground forces; a mission that would prove crucial beginning with OEF, just four years after the 1997 version of FM 1-112 was published. The result was a very specialized attack aviation force structure that lacked balance. While some aviation units such as the attack battalions from the 101st Airborne

[26]Ibid., Chapter 1. This conclusion is drawn from information taken from chapter one of the 1997 version of FM 1-112, and is provided here to show the marked difference between the doctrinal solution for the employment of attack aviation prior to OEF/OIF and the realities faced during those conflicts.

[27]Department of the Army, FM 1-112, 1-6.

[28]Ibid.

[29]Ibid., 1-6. FM 1-114 describes the AH-64 Attack Helicopter Troop contained in the armored RAS as the primary antiarmor force in the RAS, and would be employed the same as the attack helicopter companies described in previous paragraphs in this thesis as well as FM 1-112 dated 1997.

Division maintained a proficiency with close combat attack operations and operating in direct support to ground forces, much of the attack aviation force such as the Corps ATKHB maintained their training focus prior to OIF-OEF so wholly on deep operations that close combat attack techniques and procedures had to be relearned during the opening months of combat.[30]

Whereas the attack battalions consisted of aviation pure formations focused primarily on deep attacks, another side of attack aviation was the cavalry squadrons comprised of OH-58D Kiowa Warrior. Other than the Kiowa Warriors assigned to the light division attack battalions all Kiowa Warriors were a part of a cavalry organization. Figures three through eight illustrate the different manifestations of armored cavalry regiments and division cavalry squadrons that existed from 1993 to 2004. The graphics are taken from the 2000 version of FM 1-114, *Air Cavalry Squadron and Troop Operations*. The squadron level air cavalry organizations discussed in this thesis are as follows: Regimental Aviation Squadron (RAS) of the Armored Cavalry Regiment or Armored Cavalry Regiment/Light (ACR/L), the armored or heavy division cavalry squadron (DCS), the light infantry or airborne DCS, and the air cavalry squadron.

[30]Darren W. Buss, "Evolution of Army Attack Aviation: A Chaotic Coupled Pendulums Analogy" (Master's thesis, Command and General Staff College, 2013), 41-45.

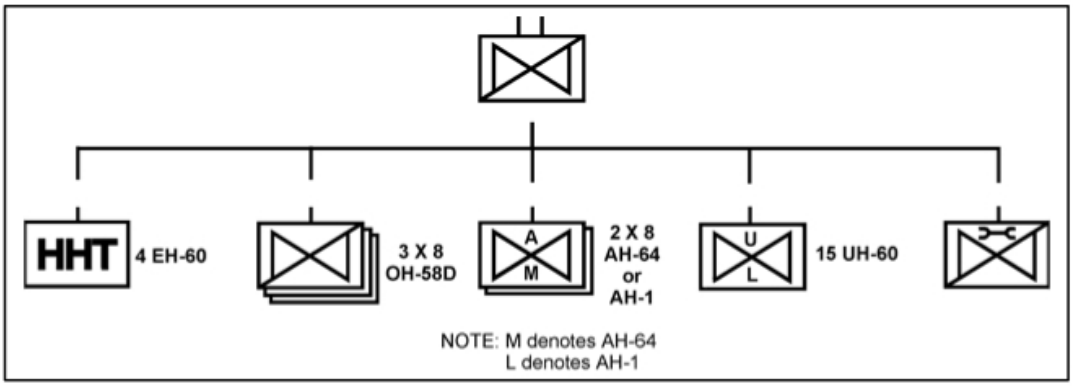

Figure 3. Armored RAS

Source: Department of the Army, Field Manual (FM) 1-114, *Air Cavalry Squadron and Troop Operations* (Washington, DC: Government Printing Office, February 2000), 1-4.

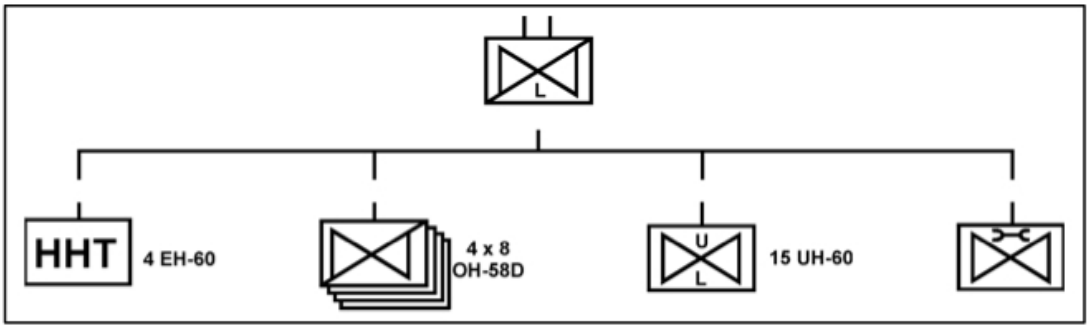

Figure 4. Light RAS

Source: Department of the Army, Field Manual (FM) 1-114, *Air Cavalry Squadron and Troop Operations* (Washington, DC: Government Printing Office, February 2000), 1-4.

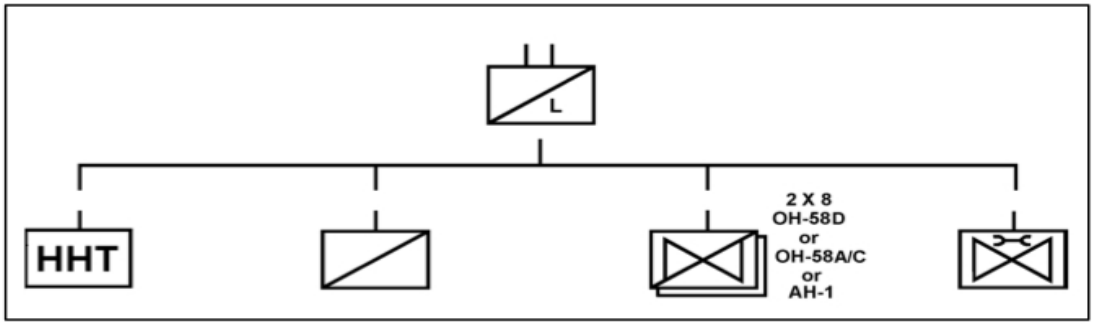

Figure 5. Light Infantry Division DCS

Source: Department of the Army, Field Manual (FM) 1-114, *Air Cavalry Squadron and Troop Operations* (Washington, DC: Government Printing Office, February 2000), 1-5.

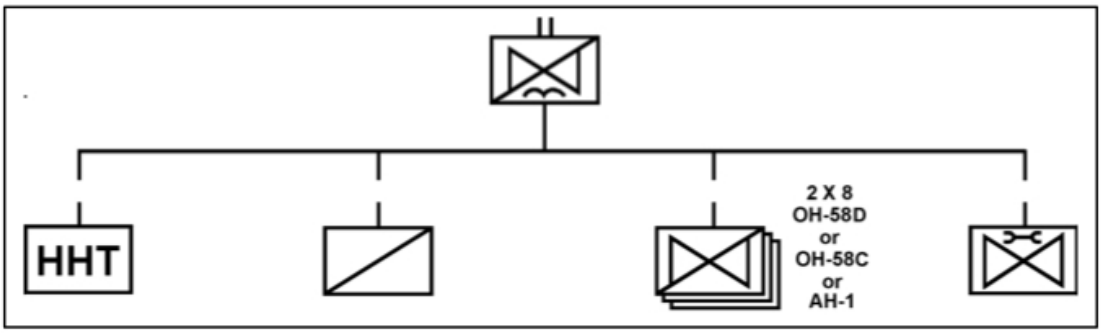

Figure 6. Airborne Division DCS

Source: Department of the Army, Field Manual (FM) 1-114, *Air Cavalry Squadron and Troop Operations* (Washington, DC: Government Printing Office, February 2000), 1-5.

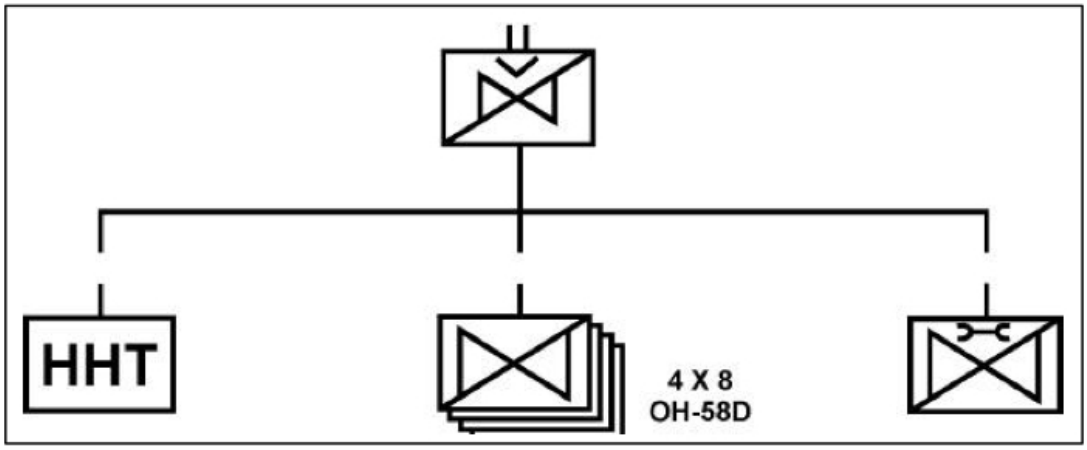

Figure 7. Air Cavalry Squadron (Air Assault Division)

Source: Department of the Army, Field Manual (FM) 1-114, *Air Cavalry Squadron and Troop Operations* (Washington, DC: Government Printing Office, February 2000), 1-6. The armored cavalry squadron described in FM 1-114 was a squadron specialized for the air assault division and not found in any other army organization.

While each of these squadrons were organized slightly differently depending on the assessed requirements of their parent division or regiment, the mission of each unit was the same, as stated in 1997 version of FM 1-114 *Air Cavalry Troop and Squadron*:

> The primary mission of the RAS, DCS (heavy, light, and airborne), and ACS is to conduct reconnaissance and screening operations. When appropriately task organized, the unit may participate in other security missions. The air cavalry performs air combat as part of the counter- reconnaissance effort, or to protect the overall force or organic units by providing local security. The air cavalry assists in C3I enhancement; in addition to reconnaissance and security. Through these missions, they provide timely intelligence concerning the enemy, terrain, and weather throughout the AO and early warning against enemy observation or attack. Today's cavalry regiments and squadrons must be able to conduct operations across a wide range (peace, conflict, and war) against threats ranging in size from Major regional powers, lesser powers, and terrorist groups to insurgents. Cavalry regiments and squadrons may be among the first units to initially deploy into an area to conduct stability operations, support operations or

> operations as part of the post conflict phase of some other contingency operation.[31]

Although a much broader mission statement when compared to the attack helicopter battalions, conclusions can be drawn. Firstly, the doctrinal mission that the air cavalry squadrons carried into OEF-OIF was tied directly to the supported ground unit, focusing on aviation's support to ground forces. Secondly the mission set of the cavalry organizations reflected the close combat reconnaissance, security, and attack missions experienced during OIF-OEF. Again however, the specialization of the attack aviation force going into OIF-OEF is prevalent. Each version of the air cavalry squadron, like the attack helicopter battalions, had a different structure depending upon its parent headquarters. The attack helicopter battalions all had a similar structure but differed more in their focus, whereas the air cavalry squadrons had very different organizational structures but a similar reconnaissance and security mission. Furthermore, the same conclusion can be drawn from the air cavalry force as can be drawn from the attack helicopter force; multiple organizations with differing structures and training focus is not conducive to an Army organized around modular BCTs.

Overall however, this was a valid if not ideal force structure for the conventional battle anticipated by Army aviation at the beginning of OIF. The attack aviation structure focused on habitual relationships and combined arms organizations with its air cavalry squadrons. It also allowed the division and corps commanders an aviation force with which to shape their respective battle space.

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[31]Department of the Army, Field Manual (FM) 1-114, *Air Cavalry Squadron and Troop Operations* (Washington, DC: Government Printing Office, February 2000), 1-2.

A weakness of this type of aviation force structure is that it is optimized for short duration missions. Tactically, an aviation force that is dispersed among different commands and echelons can not generate the same numbers of flight hours as one that is centralized under one command such as the current CAB structure. In a conventional fight on a linear battlefield the limited duration support provided by aviation can be synchronized, applied, and surged as needed. OIF and OEF, although very different in their local dynamics, came to be characterized by counterinsurgency operations that required a different approach from attack aviation.

Current Attack Aviation Doctrine and Organization

Current attack aviation organization and doctrine is significantly different from that present at the beginning of OIF in March of 2003. Army aviation is currently in the final stages of a transformation that consolidates all attack aviation in the CAB assigned at the Division level.[32] The transformation to the CAB began in 2004, and is the result of two major studies undertaken by Headquarters Department of the Army and the United States Army Aviation Center of Excellence. The CAB force structure is optimized for modularity, and was developed as aviation's answer to the Army's transformation from a division based Army to the Brigade Combat Team force structure.[33] The consolidation of

[32]The acronym "CAB" is used multiple times throughout army doctrine, sometimes referring to ground units such as the combined arms battalion. In historical aviation doctrine the acronym CAB referred to the command aviation battalion. In current aviation doctrine, CAB refers to the combat aviation brigade resident to each division headquarters.

[33]Jamison, "Aviation Force Structure in Support of Counter Insurgency Operations," 3.

aviation assets within the CAB provides a force that can be quickly task organized to meet the needs of the supported commander when compared to the pre-transformation aviation force that was difficult to task organize due to the nature of its smaller, more specialized battalions and brigades. Task organization into multi-functional task forces is easier in the CAB because all of the aircraft are contained within one brigade headquarters.

The CAB developed from the Army Aviation Task Force stood up on 19 September 2003.[34] Then Chief of Staff of the Army General Peter Schoomaker formed the Army Aviation Task Force with the intent that it would study ways to develop Army Aviation into, "a modular, capabilities-based maneuver arm that was optimized for the joint force with a shortened logistics tail."[35] The restructuring into a modular organization was part of a larger restructuring effort to a Brigade Combat Team based force and the Army Force Generation force management process. To be modular the aviation force structure had to consolidate to a more homogenous structure as opposed to the specialized structure that was present from the 1993 restructuring initiative until 2003.

The initial CAB force structure consisted of four variants. The Heavy CAB with two attack reconnaissance battalions (ARB) of 24 AH-64D. The Medium CAB consisted of one ARB and one attack reconnaissance squadron (ARS) of 30 OH-58D. The light CAB consisted of two ARS. Each variation of attack reconnaissance battalion was

[34]EJ Sinclair, "Army Aviation How Far Have we Come," *Army Aviation*, November 2004, http://www.quad-a.org/Archives/0411.htm (accessed 20 October 2013).

[35]Ibid.

organized with an internal Aviation Unit Maintenance Company and a forward support company giving the battalion an organic maintenance and sustainment company.[36] Reserve Component aviation forces were organized into the expeditionary CAB. Each CAB variant consisted of a standardized assault battalion and a General Support Aviation Battalion. The Aviation Support Battalion contained much of the CAB's support personnel and equipment to include an Aviation Support Company (ASC) formerly known as Aviation Intermediate Maintenance Company. The CAB structure nearly doubled the sized of the division's aviation brigade. With the additional aircraft, aircrew, and support personnel the CAB was an organization much more robust that any previous aviation formation.

While the transformation is not quite complete, army aviation structure will eventually consolidate into the full spectrum CAB. The full spectrum CAB integrates UAS into the structure of the Attack Reconnaissance Squadron resulting in 21 total OH-58D Kiowa Warriors and eight RQ-7B Shadow UAS, the aircraft are divided into three manned air cavalry troops and one unmanned air cavalry troop.[37] The full spectrum CAB also contains one company of MQ-1C Grey Eagle UAS providing the CAB with a long duration surveillance capability.[38]

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[36]Department of the Army, FM 3-04.126, 1-3 to 1-9.

[37]The structure described is the full spectrum CAB developed as a part of Aviation Study II. The structure is anticipated to change based on the aviation restructuring initiative that places AH-64 Apache helicopters in the attack reconnaissance squadron.

[38]At the time of this writing, Army Aviation is developing plans to divest the aviation force of the OH-58D Kiowa Warrior resulting in a similar CAB structure, but with AH-64E aircraft in the attack reconnaissance squadron. The strengths, weaknesses and functions of attack aviation will not change.

The CAB structure provides many benefits to army aviation. Primarily it provides a modular brigade headquarters that can easily task organize its subordinate battalions into multi-function aviation task forces as has often been the case in OIF-OEF, or the CAB can operate in its pure task organization to concentrate resources such as attack helicopters into battalion sized organizations. Given that each CAB will eventually transform to the same structure, each individual CAB provides the same capability to the joint force or theater army commander resulting in greater flexibility in employment when compared to the pre-transformation structure. Secondly, the amount of maintenance support organic to the CAB far surpasses the level present in the pre-transformation Aviation Brigades. Each battalion within the CAB has an organic Aviation Unit Maintenance Company in addition to the AVUM and Aviation Intermediate Maintenance support present in the Aviation Support Battalion. This change in maintenance support structure within the CAB dramatically increases the CAB's ability to sustain the increased numbers of flight hours required to maintain the aviation presence needed on the battlefield in stability operations. To highlight the difference in the robustness of the CAB compared to the pre-transformation Aviation Brigades, individual aircraft were flying nearly three times the amount of flight hours per month during OIF-OEF as the same aircraft were capable of flying prior to transformation.[39] This is due to the consolidation of all aircraft and associated support structure under a single Brigade headquarters in addition to the quantitative increase in numbers of aircraft present in the CAB.

[39]Jamison, "Aviation Force Structure in Support of Counter Insurgency Operations," 2.

The structure of the CAB allows the Brigade to quickly task organize battalion size aviation task forces. A task force is an organization consisting of various components of the CAB. For instance, the ARS could receive a company of assault aircraft to provide their supported commander with an air assault capability, or a company of attack or scout aircraft could be task organized to an assault battalion to provide a fire support capability.[40] These task forces were particularly suited to the geographically dispersed stability operations in OEF, but were also employed in OIF. By task organizing the CAB into task forces the CAB commander provides battalion sized forces optimized to provide the aviation support needed in a specific geographic location. By having all of the capabilities of army rotary wing aviation and its required support equipment and personnel organic to the CAB, the CAB commander enjoys substantially greater flexibility in employment of those forces.

Another result of the change in aviation, particularly attack aviation, to the CAB structure is a shift in focus to the tactical fight. Attack aviation assigned to the Corps headquarters inherently reflected the corps headquarters' focus on the operational level of war and could be employed anywhere throughout the Corps area of operations. Furthermore, attack aviation assigned to the regimental aviation squadrons and division cavalry squadrons focused on the reconnaissance and security missions the corps and division commanders used to shape their environments. It was only the division's aviation brigade that had the specific function of directly supporting the division's

[40]Ibid., 4.

scheme of maneuver.[41] This varied force structure meant that almost half of the attack aviation force was not focused on supporting tactical maneuver forces, but intended to operate separate from those forces in offensive or shaping missions. In contrast, the change to the CAB structure and the clustering of all attack aviation assets at the division level of command focuses those assets on supporting the maneuver brigades within the division.

The shift in attack aviation towards the close fight, signified by the changing force structure from 2001 to the present is amplified by a corresponding shift in doctrine. Conclusions can be drawn from an examination of doctrinal publications produced just before OIF-OEF and the latest doctrinal publication addressing the role of army aviation produced by the Aviation Branch in 2007. In the 2007 publication of FM 3-04.126 *Attack Reconnaissance Helicopter Operations* the approach to attack aviation was more balanced than prior to OIF-OEF.[42] Whereas the 1997 version of FM 1-112 displays a strong focus on aviation attack operations and primarily deep operations out of contact

[41]Department of the Army, Field Manual (FM) 1-100, *Army Aviation Operations* (Washington, DC: Government Printing Office, 1997), Appendix A.

[42]During this time the organization of all army doctrine changed with the publishing of "Doctrine 2015." Doctrine 2015 reduced the number of field manuals into a series of "Army Doctrinal Publications," Army Doctrinal Reference Publications," field manuals, and technical publications. As a part of this effort, aviation doctrine is reduced from multiple manuals each focusing on a specific topic to one field manual containing information on each facet of army aviation. Further specific information on attack aviation will be published in technical publications, but is not available at this time. The information contained in the technical publication will be detailed in nature and specific to tactics and procedures as opposed to operational level employment, and therefore is not included in this thesis. At the time of writing, FM 3-04 is still in draft form.

with friendly forces, the 2014 doctrine places a much greater emphasis on attack aviation's role in reconnaissance and security.[43]

Chapter 3 of the newly published FM 3-04.126 deals specifically with attack reconnaissance operations. The publication lists the tactical tasks of attack reconnaissance aviation as: reconnaissance, security, surveillance, movement to contact, attack.[44] This is a clear contrast to the 1997 FM 1-112 that lists reconnaissance and security tasks after fire support and attack related tasks. Additionally in FM 1-112 attacking "massed armored or light forces" is listed as the number one role of attack aviation in combat operations.[45] Similar conclusions are drawn from an examination of attack aviation doctrine published in 2007 during the height of OIF and OEF. In FM 3-04.126 (2007) reconnaissance and security are the first listed missions for attack aviation, and a great deal of time is spent on explaining air ground integration and the support attack aviation provides to the ground commander.

While the deep attack doctrine that so dominated attack aviation prior to OIF-OEF is still present it has evolved. FM 3-04.126 does not state that attack helicopters will conduct deep attacks, but rather describe the use of interdiction attacks.[46] FM 3-04.126 defines an interdiction attack:

> An IA is an attack by Army aircraft to divert, disrupt, delay, degrade, or destroy enemy combat power before it can be used effectively against friendly

[43]Department of the Army, FM 3-04.126, Chapter 3.

[44]Ibid., 4-1.

[45]Department of the Army, FM 1-112, 1-3.

[46]Todd Thornburg, "Army Attack Aviation Shift in Training and Doctrine to Win the War of Tomorrow Effectively" (Master's thesis, Marine Corps University, 2009), 3.

> forces. It can take place at any point in the operational environment and can be hasty or deliberate. IA is conducted at such a distance from friendly forces that detailed integration with ground forces is not needed. IA combines ground based fires, attack aviation, unmanned systems, and joint assets to mass effects, isolate and destroy key enemy forces and capabilities. Deliberate IAs are focused on key objectives and fleeting high value targets such as enemy C2 elements, AD systems, mobile, long-range surface missiles, surface-to-surface missiles (SSMs), artillery, and reinforcing ground forces. Hasty IAs are the result of sudden enemy contact or as a result of enemy attack. The purpose of an IA is to deny the enemy freedom of action, support friendly maneuver, and destroy key enemy forces and capabilities.[47]

Absent from the attack reconnaissance chapter of FM 3-04.126 is any mention of deep operations which were so prevalent in FM 1-112. Certainly the term interdiction attack is meant to replace deep attack, but the wording in the definition that allows for interdiction attacks to be either hasty or deliberate indicates a shift in the doctrine. Whereas an interdiction attack can be either hasty or deliberate, the deep attack that characterized attack aviation doctrine prior to 2003 was a detailed and deliberately planned operation.

Furthermore the interdiction attack and its description are listed only after discussions on reconnaissance, security, surveillance, and close combat attack.[48] Clearly attack aviation doctrine has shifted away from deep operations in favor of reconnaissance, security, and close combat attack. This change in doctrinal focus is certainly reflective of attack aviation's experience in OIF-OEF. With the exception of the deep attacks launched in the beginning stages of OIF the vast majority of attack aviation operations in OIF-OEF took place in close proximity to friendly forces, or were reconnaissance or security missions that often transitioned into a close combat attack.

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[47]Department of the Army, FM 3-04.126, 3-63.

[48]Ibid., 4-29–4-34.

Field Manual 3-04.126 provides further insight given the level of detail provided in its description of attack aviation employment methods. The manual more closely reflects techniques used by AH-1 pilots in the Vietnam era than AH-64 pilots during the Air Land battle era of the late 1980s and 1990s. Attack Aviation doctrine published in 2007 and later places an emphasis on moving fire techniques such as running and diving fire to supplement the focus on air-ground operations. Though static attacks by attack helicopters are mentioned, the amount of emphasis given that technique pales in comparison to the emphasis given the various running fire techniques.[49] The change in employment techniques is a result of the nature of the threat faced in OIF-OEF compared to the threat expected during the Cold War and faced in ODS. The result is that attack aviation has returned to its initial mission as an aerial fire support platform.[50] The attack helicopter, first designed in Vietnam to provide fire support during air mobile operations and protect Soldiers operating outside of indirect fire support range is once again operating primarily in that role.

Attack aviation doctrine and force structure shifted dramatically in the years from 2003 to the present. Both doctrine and force structure moved away from short duration operations conducted on a linear battlefield towards long duration operations in direct support of stability operations on a non-linear battlefield. The doctrinal shift is directly influenced by OIF-OEF and the threats faced in those conflicts. Following the initial invasion of Iraq, there was no massed armor or light force threat to necessitate the attack helicopter battalion attack en-mass envisaged in FM 1-112. There was however a cunning

[49]Ibid., 3-68.

[50]Stinger, "Attack Aviation back to its Roots," 29-31.

insurgent threat, intermixed with the population, that more resembled the threat in the Vietnam War or the warlord tribes in Somalia than the Army of Iraq faced in ODS.

Attack aviation adapted, and in doing so placed nearly the entirety of its emphasis on reconnaissance, security, close combat attacks, and how best to support the COIN operations in Iraq and Afghanistan. The force structure changed, consolidating all attack aviation within the Division CAB. This change removed the corps commander's ability to shape the deep fight with the abolishment of the Corps Attack Helicopter Regiment (AHR), but allowed the CAB Commander to provide nearly around the clock support to ground commanders in the close fight. The more robust maintenance structure of the CAB allowed single airframes to fly nearly three times the amount of flight hours per month compared to the force structure present prior to OIF-OEF. The doctrine also changed. Attack aviation stopped preparing to conduct deep attacks and began to train moving fire techniques and air ground operations. In the latest doctrinal publication concerning army aviation, deep operations are almost non-existent from the text. The deep attack is renamed the interdiction attack. While the two types of attack operations share in their definitions a separation from ground troops, the deep attack of FM 1-112 occurs well forward of friendly forces whereas the interdiction attack; first used in attack aviation doctrine in the 2007 version of FM 3-04.126, may occur at any place on the battlefield. While the current doctrine and force structure of attack aviation was appropriate for OIF-OEF, subsequent sections of this thesis will examine if the current doctrine and force structure are appropriate to execute the Army's current doctrine against ever changing hybrid threats.

CHAPTER 3

HYBRID THREATS

Just as recommendations for future employment of attack aviation must be viewed through the context of its current doctrine and force structure, predicted threat models must also inform those recommendations. It is without doubt that the threat currently faced by attack aviation is different than the threat faced during the Cold War when the AH-64 and OH-58D made their debut. Whereas the US Army of the late 1970s and 1980s found in the Soviet Union a peer competitor engaging in largely conventional tactics, threats in the post Cold-War world are more complex in nature. The last near peer competitor that attempted to decisively engage the US in land combat using purely conventional tactics was Iraq in 1991 during Operation Desert Storm. Although these threats may or may not possess technologically advanced weaponry, their de-centralized nature coupled with increased access to information technologies and weapons of mass destruction make them no less potent. Furthermore, the increase in numbers and abilities of non-state actors such as international terror groups or criminal organizations add to the complexity of the threat landscape.

This chapter discusses the nature of hybrid threats and how they affect attack aviation. While hybrid threats are certainly different from a purely conventional threat this thesis argues they are not a new phenomena of warfare, but rather a blending of the material based approach to warfare generally aligned with the European or American nation state warfare and the cognitive approach more commonly associated with insurgent or guerilla forces. Material warfare focuses on the destruction or capture of equipment, and the seizure or defense of terrain. Conversely, cognitive warfare focuses

on the manipulation of the enemy's will or political legitimacy. The US military is historically more at home in a material based campaign. The total wars of World War I and World War II are classic examples of wars where destruction of Armies and seizure of terrain were the measures of success. Limited wars can be material based as well. The Falklands campaign of the British Army and ODS represent limited objective wars oriented on the capture or destruction of material. The goal of the Falklands campaign was the recapture of British territory, whereas the goal of ODS was the expulsion of Iraqi forces from Kuwait, and the reduction of Iraq's military capacity. Cognitive warfare best explains insurgencies, guerilla warfare, and non-state actors such as terror groups. In cognitive warfare, the military objective is not destruction of material or seizure of terrain, but rather a manipulation of an opponent's will. In cognitive warfare the military objective often directly supports the political objective. Revolutionary guerilla warfare provides the prime example of this idea. In the type of guerilla warfare recorded by Mao and Che Guevara, and practiced in places such as the jungles of Vietnam and the deserts of Algeria, protracted war that decreases the political will of an occupying nation while legitimizing the political goals of the revolutionary are potentially successful without the decisive engagement preferred in material war.[51] Cognitive warfare does not imply the absence of battle and the destruction of armies and material, but implies that the primary objective is the will of the enemy as well as the will of the civil population in the operational environment.

[51]Mao Tse-Tung, *On Guerilla Warfare*, trans. by Samual B. Griffith (1961; repr., Champaign, IL: University of Illinois Press, 2000). 20-27; Che Guevara, *Guerilla Warfare* (New York, NY: Monthly Review Press), 7-21.

The US Army's capstone doctrine uses the term hybrid threat to "capture the seemingly increased complexity of operations, the multiplicity of actors involved, and the blurring between traditional elements of conflict."[52] Hybrid warfare is also defined as "incorporating conventional capabilities, irregular tactics and formation, terrorist acts including indiscriminate violence and coercion, and criminal disorder."[53] Regarding the threat force in a hybrid war, Dr. Russell Glenn states, "A hybrid threat may employ political, military, economic, social, and information means, as well as a combination of state and non-state actors."[54] Ultimately, to discuss a hybrid threat is to analyze a spectrum or range of actions and methods a threat force could employ, and to successfully counter hybrid threat attack aviation must be prepared to attack the hybrid threat at all points along this spectrum.

Army Doctrinal Publication 3-0 defines a hybrid threat as, "the diverse and dynamic combination of regular forces, irregular forces, and/or criminal elements all unified to achieve mutually benefitting effects."[55] The inherent strength of the hybrid threat lies in its diversity of force structure, methods of force application, and the relative ease with which the threat force can evolve to meet the operational and strategic

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[52]Department of the Army, Army Doctrine Reference Publication (ADRP) 3-0, *Unified Land Operations* (Washington, DC: Government Printing Office, May 2012), 1-3.

[53]Frank G. Hoffman, *Conflict in the 21st Century: The Rise of Hybrid Wars* (Arlington, VA: Potomac Institute for Policy Studies, 2007), 14.

[54]Russell W. Glenn, "Thoughts on Hybrid Conflict," *Small Wars Journal*, March 2, 2009, www.smallwarsjournal.com/journal/art/thoughts-on-hybrid-conflict (accessed 30 November 2013).

[55]Ibid.

situation. A hybrid threat may be the regular forces of a nation-state coupled with the irregular forces within that state of those of a terrorist group, or could be comprised of a nation-state and a criminal organization operating in a "marriage of convenience." The idea of a hybrid threat is the coordination of these multiple and different forces with one another against an opposing force to achieve mutually beneficial goals or "ends."

Certainly this type of threat is not new. The armies of the American Revolution employed a mixture of regular and irregular forces and tactics on both the American and British sides.[56] US forces faced a mixture of regular and irregular forces in the Vietnam War. The reason that hybrid threats deserve so much attention in the current environment is that following ODS many nations and non-state actors realized that employing hybrid tactics was an effective way to counter US advantages in technology. The hybrid threat is capable of employing technologically advanced weapons when it is to the threat's advantage, but the hybrid threat is just as likely to employ guerrilla tactics and terrorism when those tactics benefit political ends. In the ODS example cited earlier, after a four week air campaign which preceded ground combat operations lasting roughly one hundred hours, the Iraq Army was routed.[57] The US military used precision-guided weapons, stealth technology, and employed the most advanced ground vehicles in the world. The Iraq Army, while quantitatively similar to the US in numbers of Soldiers and vehicles, employed none of the advancements in precision targeting and weaponry as did the US. The results of the conflict were so lopsided in favor of the US that some

[56]Department of the Army, TC 7-100, 4.

[57]Williams, *A History of Army Aviation*, 253.

historians describe ODS as the start of a revolution in military affairs.[58] Perhaps the most revolutionary outcome of ODS is the rise of hybrid threats. Since ODS nations or non-state actors that oppose the US continually move away from conventional tactics in favor of a hybrid approach that counters the US strength in technology. Hybrid tactics and organization provides a threat force with ways to asymmetrically counter US military strengths.

A threat force includes all of the ways and means that force uses to accomplish its strategic ends. The regular forces in the "marriage of convenience" mentioned above are most likely a well-equipped national force possessing modern military equipment and a uniform fighting doctrine, in contrast the irregular forces could be a non-uniformed proxy force funded by the nation state, or could be an independent organization aligned with the enemy nation through a shared ideology. Further, criminal organizations may collaborate with the aforementioned regular and irregular forces to traffic currency or weaponry, or may simply be organized opportunists profiteering from the conflict scenario. The above scenario implies a hybrid threat is an actor or group of actors within an operational environment all aligned towards the same political or ideological endstate. As an instrument of war that straddles the line between land and air power, army attack aviation is affected by hybrid threats both in the ways they mitigate airpower as well as their ability to counter landpower.

Cilluffo and Clark offer a further explanation of hybrid threats. Although their definition focuses on the strategic goals of a hybrid threat rather than the tactical and

[58]Keith L. Shimko, *The Iraq Wars and America's Military Revolution* (New York, NY: Cambridge University Press, 2010), 76.

operational levels, their definition is useful because it aids in understanding the core characteristics of hybrid threats. “The composition of a strategic hybrid threat is characterized by the capabilities of the potential agent, goals of the agent, and the most exploitable vulnerabilities of the defender that align with the principal actors’ strategic goals."[59] Using this lens, a hybrid threat is shaped not only by the capabilities and capability gaps of the threat, but also the vulnerabilities of the defender, in the context of this study, the US. In the case of many regional powers, a principle capability gap is power projection against a global power such as the US. In their essay, Cilluffo and Clark use the hybrid threat construct to discuss how a regional threat such as Iran could leverage international criminal organizations such as Mexican drug cartels to gain access to the US.[60] The Mexican drug cartels might trade their established inroads into the US in exchange for Iranian advanced weaponry, thereby forming a “marriage of convenience.” The probability of such a scenario is outside the scope of this paper, but it provides a plausible and stark example of the potential asymmetric danger of hybrid threats. Understanding and thereby countering hybrid or “future” threats requires an opening of one’s aperture and the acknowledgement of the diversity of capabilities that could be leveraged by a hybrid threat.

Furthermore, asymmetric tactics are not new phenomena in warfare. Every successful military action has an element of asymmetry, where a military force seeks to pit their strengths against the enemy’s weakness. Hybrid threats elevate the idea of asymmetry from the tactical engagements of the battlefield to the operational level of

[59]Cilluffo and Clark, “Thinking about Strategic Hybrid Threats,” 49.

[60]Ibid., 49-52.

war. An explanation of this idea is present in Mao Tse-Tung's theory of, "unity of opposites," which he adapted from the ideas of Lenin. This dialectic logic of thesis versus antithesis, and the synthesis of the two relates to warfare in the idea of strength and weakness.[61] Although strength and weakness are polar opposites, they are an interwoven and inseparable part of the synthesis of the whole. In the case of the US military, the technology, firepower, and size of the force are obvious strengths, but with that strength comes the weakness of reliance on a sizable logistical tail, the need for sizable bases, and the expense of employing such an advanced force. Politically, the democratic and capitalist society is largely responsible for the strength and ingenuity of the American people and its military, but the democratic and therefore liberal nature of the American society indicates that the political will for protracted military campaigns can easily be undermined. It is these weaknesses that hybrid threats can exploit. In order to exploit these weaknesses however, the hybrid threat must employ a diverse array of methods of war making from attacks aimed at influencing the will of the American people to conventional attacks on the US military. The US military in turn must prepare to counter this diverse methodology. Attack aviation provides a solution to this operational problem because it can shift from its role in limited intervention or counter-insurgency operations to its role in a conventional battle more quickly than can other elements of the US military.

To understand hybrid threats on a deeper level requires exploration of the very nature of threats themselves. The previously stated definition of hybrid threats is "the diverse and dynamic combination of regular forces, irregular forces, and/or criminal

[61]Mao Tse-Tung, *On Guerilla Warfare*, 25.

elements all unified to achieve mutually benefitting effects," the same publication defines a threat as "any combination of actors, entities, or forces that have the capability and intent to harm US forces, US national interests, or the homeland."[62] Basic reasoning would have us believe that for an actor to be a hybrid threat it would have to meet not only the definition for a hybrid threat, but also the definition of a threat itself. It is only through the use of both of these definitions that hybrid threats can be understood. Using the definition of a threat, an actor, entity, or force is only considered a threat if it has the capability and intent to harm US forces, national interests, or homeland. This means that the former Soviet Union was not a threat simply because it existed. It was a threat because the former Soviet Union (as an actor, entity, or force) existed with both the capabilities and intent to do harm to the United States. In a similar manner, Al Qaeda (as an actor, entity, or force) is not a threat to the US simply because it exists, but because it has both the capability and stated intent to harm the US. So then it is not only the capability or "means" of an actor that makes that actor a threat. It is also the desired intent or "ends" to do harm to the US.

Every well-developed military strategy consists of ends, ways, and means.[63] Any actor, entity, or force that desires to exert its will upon another does so through some type

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[62]Department of the Army, ADP 3-0, glossary.

[63]In his essay, Arthur F. Lykke describes ends, ways, and means in the following manner: Ends: Military Objectives; Ways: The various methods of applying military force; Means: Military resources (manpower, material, money, forces, logistics, etc) required to accomplish the mission; Arthur F. Lykke, Jr, "Toward and Understanding of Military Strategy," in *U.S. Army War College Guide to Strategy*, ed. Joesph R. Cerami and James F. Holcomb, Jr (Carlisle Barracks, PA: Department of National Security and Strategy, Strategic Studies Institute, February 2001), 180.

of strategy; the use of ways to employ means to achieve desired ends.[64] Therefore, if the strategy of the actor has ends that are harmful to the US and has the means to pursue those ends, the actor is a threat. Since every threat has both the intent and capability to harm the US, then the capabilities (or means) alone cannot be used to classify and actor as a threat. Threats then can only be classified through the third component of strategy, that being the "ways" in which the threat employs its capabilities to achieve their desired endstate. It is the diverse and dynamic ways in which a hybrid threat applies military force that classifies it as hybrid. This idea is not to imply the Army's definition of a hybrid threat is incorrect, but rather that it is incomplete. By focusing on the force structure, or means, to characterize the threat as hybrid, conventional, or unconventional the Army's definition discounts the ways in which the threat forces operates; it is the ways that truly differentiate a hybrid threat from the other forms a threat can adopt.

The Importance of "Ways"

The US military's doctrine focuses on the means available to a threat when classifying and describing that threat. Material such as armored vehicles, aircraft, and an integrated command and control structure characterize one type of threat whereas improvised explosive devices, the use of primarily civilian vehicles, and a lack of aircraft armored vehicles generally characterizes another. Furthermore, a uniformed military comprises one type of threat whereas a threat comprised of non-uniformed or irregular fighters characterizes another. Consequently, an opposing force that combines any of

[64]Ibid.

these two seemingly opposed approaches to warfare is described as hybrid when using the doctrinal definition described above.

But to truly understand and characterize a hybrid threat requires a shift in paradigm, because a hybrid threat is more accurately characterized by the "ways" in which it fights as opposed to the "means" which it uses. For example a conventional army could use terror to shape an operational environment or could employ a very decentralized command structure similar to guerilla tactics to asymmetrically oppose the firepower advantage of the US. Normally these ways of force application are more associated with an unconventional or irregular threat. Specifically to counter attack aviation, hybrid threats may blend in with the populace and disperse the combat vehicles they possess to make targeting difficult, or could adapt parts of the civilian infrastructure as early warning devices against airborne attacks.[65] The Iraqi Army in 2003 is an example of a conventional army using unconventional and asymmetric tactics to counteract a US advantage in firepower. Conversely, a non-state actor could employ sophisticated weaponry such as surface to air missiles and unmanned aircraft, and could seek a decisive battle with US forces, which would be ways normally associated with a conventional threat. Applying the doctrinal definition of a hybrid threat to either of these threat forces would classify the threat as either conventional or unconventional due to the homogeneity of the means used by the force. In the first example, members of a conventional army are using unconventional tactics, and in the second an unconventional force is using conventional tactics to achieve its desired ends. This author argues both of

[65]Michael Gordon and Bernard E. Trainor, *Cobra II* (New York, NY: Pantheon Books, 2006), 270-273.

these hypothetical threats are in effect hybrid because of the ways in which they apply force. Finally, another lethal and distinguishing characteristic of a hybrid threat is their ability to operate on both sides of the laws of warfare. A hybrid threat has the unique ability to employ conventional forces that are both bound and protected by international laws of armed conflict, while at the same time employing irregular forces that are freer to engage in tactics counter to the laws of armed conflict.

All of these examples illustrate the fact that when discussing hybrid threats the ways in which the threat force will engage the friendly force and interact with the human dimension of the operational environment are just as important as the means that the threat will employ.[66] To characterize a threat based solely on its equipment and perceived force structure is folly. One must think in terms of a spectrum of the equipment that can be employed in a conflict from an advanced main battle tank to the IED, it is more useful to think in terms of a spectrum of ways from the purely material to the purely cognitive when characterizing a threat, especially a hybrid threat.

Characterizing the Threat

Sadowski and Becker provide a useful construct to explain the cognitive ways versus material ways approach to warfare in a 2010 essay published in *Small Wars Journal*. They describe two polar ideas of warfare; on one side is a purely material approach that focuses on the destruction or dislocation of enemy resources and material with the other pole being a purely cognitive approach that focuses on defeating the will of

[66]David Sadowski and Jeff Becker, "Beyond the Hybrid Threat: Asserting the Essential Unity of Warfare," *Small Wars Journal*, January 2010, http://smallwarsjournal.com/jrnl/art/beyond-the-hybrid-threat-asserting-the-essential-unity-of-warfare (accessed 3 January 2014).

the opposing force as the central goal in warfare.[67] Using this construct, the conventional army, state on state, approach to warfare tends more toward the material end of the continuum whereas the classic model of a guerilla threat tends more toward the cognitive end. Because of their disposition towards a conventional, predominately material approach to warfare, it could be argued that the US military will naturally tend to characterize a threat force through a lens focused on the material it employs. When characterizing a hybrid threat, the characterization should account for the threat force's ability to operate throughout the continuum, simultaneously targeting both the material of US forces as well as their will to fight. Biddle and Friedman offer a similar argument in their monograph on the implications of the 2006 Israeli Hezbollah conflict on future warfare in describing the continuum of conventional warfare to guerilla warfare as a continuum of brute force strategy to coercive strategy.[68] The effectiveness of hybrid threats lie in their ability to transition within this continuum between regular and irregular forces to counter the perceived vulnerabilities of their enemy or to asymmetrically counter an enemy's strength.[69]

The traditional methods of classification of conflict such as small war, counterinsurgency, and total war are not as applicable when countering hybrid threats. As stated in TC 7-100, "A hybrid threat sees war holistically and does not break it into

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[67]Ibid.

[68]Stephen Biddle and Jeffrey Friedman, *The 2006 Lebanon Campaign and the Future of Warfare: Implication for the Army and Defense Policy* (Carlisle Barracks, PA: Strategic Studies Institute, 2008), 17.

[69]Department of the Army, TC 7-100, Introduction vi.

convenient pieces."[70] This speaks to the underlying unity of warfare that must be at the forefront of the understanding of future threats.

All practitioners of warfare operate at a different point along this continuum to include the United States. While the US does not employ irregular forces in the same way that some states sponsor terrorist or criminal organizations, the keystone concept of US joint force operations is termed "unified action." Unified action is defined in Joint Publication 3-0 as "a comprehensive approach that synchronizes, coordinates, and when appropriate integrates military operations within the activities of other governmental and non-governmental organizations to achieve unity of effort."[71] Unified action as an approach to warfare integrates the efforts of the conventional uniformed armed forces with other instruments of national power such as the diplomatic service of the US State Department and other governmental agencies such as the Central Intelligence Agency or US Agency for International Development. This unified approach to warfare has not always been so prevalent in US doctrine, but is a further indicator of the movement of future warfare away from the poles of the aforementioned material vs. cognitive continuum of warfare towards the center. Such a move helps enable the US to counter a hybrid approach to warfare, because it enables US policy makers to counter hybrid threats with a whole of government approach. A hybrid threat likely contains some of the political influences of insurgencies and guerilla warfare, and to counter these, the US must use a combined political military strategy.

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[70]Ibid., 1-3.

[71]Department of Defense, Joint Publication (JP) 3-0, *Joint Operations* (Washington, DC: Government Printing Office, August 2011), 1-8.

If hybrid threats are more correctly characterized by the ways in which the threat operates as opposed to the means the threat applies, then it is useful to think of a hybrid threat and "hybrid warfare" as a theoretical approach to warfare that exists in the continuum between the material and cognitive approaches, or stated another way, the conventional versus guerilla approaches. In effect the material available to the threat force does not make them a hybrid threat, but rather the ways in which the threat force applies that material is enables the threat force to be hybrid in nature. Using this hybrid threat framework to analyze future threats helps detach the capabilities of the threat force from the size or nature of the threat force. Furthermore, it is unlikely that future threats, no matter how advanced, will engage US forces in a purely conventional manner. In every conflict since ODS, such as Somalia, Kosovo, OEF, and OIF, the threat has increasingly used asymmetrical means to counter US forces. Even a future peer competitor will likely mix a conventional approach with guerilla approaches directed at perceived critical vulnerabilities of the US.[72]

Using the construct of a continuum between cognitive versus material approaches to war is useful because future threats may potentially fall into one of two categories. In the first category, a future threat force will likely not possess the resources vis-à-vis US forces to compete along purely material lines, and the second category consists of a peer or near-peer competitor that would use a varied or "hybrid" approach to combat the US in the hopes of economizing the resources available to them or capitalizing on cultural predispositions such as the US desire to minimize civilian casualties. Both types of threat

[72]Department of the Army, TC 7-100, 2-2 to 2-6.

actors will use a mixture of material and cognitive approaches to combat US forces.[73] Assessing a threat according to the ways in which it will likely approach conflict with the US allows planners at all levels, including those within attack aviation, to analyze a threat based on the threat's approach to warfare. This type of analysis separates the threat's approach to conducting war from its material capabilities as the basis of the threat's taxononomy. Potentially allowing the warfighter to assume a more proactive, as opposed to reactive, stance when countering the threat. Through analysis of the threat's likely application of military force along the material vs. cognitive continuum planners break from the bonds of high versus low intensity conflict or symmetric vs. asymmetric threats, and focus upon where the threat fits into the nature of war and where along the range of military operations the US should apply force against the threat. An understanding of not only the "way" in which a threat will most likely engage US forces, but also an understanding of other possible methods of engagement along the material cognitive continuum opens the aperture of threat analysis. This focus on the ways in which a threat will engage US forces drives warfighters to a broader understanding of the threat force. As opposed to reacting to the means applied by the enemy such as aircraft ambushes or aerial improved explosive devices, warfighters who anticipate the threat will use asymmetric engagement techniques will be more prepared to foresee and counter newly developed techniques.

The preceding paragraphs focused largely the strategic characterization of hybrid threats. Army attack aviation operates primarily at the operational and tactical levels of war, and therefore is more focused on the anticipation of and reaction to a specific threat

[73]Sadowski and Becker, "Beyond the Hybrid Threat," 5.

rather than its formal characterization. The preceding discussion is important however because it brings two themes to the forefront that are useful in the development of attack aviation doctrine to counter a hybrid threat. The first being the evolving nature of a hybrid threat, and the second being the ability of a hybrid threat to simultaneously operate throughout the range of military operations from the guerilla war to conventional war, or the cognitive to material poles of the spectrum of warfare. As subsequent paragraphs show, warfare against a hybrid threat is not counter-insurgency, it is not low intensity conflict, and it is not comprised solely of combined arms maneuver indicative of a high intensity conflict. Conversely, warfare against a hybrid threat contains elements of all the aforementioned approaches to warfare.

This thesis uses two examples to highlight attack helicopter operations against hybrid threats. The first example is the often cited 2006 "Second Lebanon War," conducted by Israel against Hezbollah in Lebanon and the second is the US experience against the Iraqi Army in the opening weeks of OIF. In one example the threat is a non-state actor engaged in warfare against an established nation state. In the other, the threat is a nation state whose uniformed military fought alongside irregular forces operating under command of the political leaders of the state. Both Hezbollah and the Iraqi military blended sophisticated technology with an operational approach that embodied elements of both guerilla and conventional threats that placed them in the center of the material vs. cognitive continuum.

The defining characteristic of both of the hybrid threats discussed in this chapter is that both Hezbollah and the Iraqi army planned to use guerilla-type tactics and forces in conjunction with advanced technology and conventional tactics to attack the perceived

weaknesses of their enemy. In the case of Israel, Hezbollah perceived the Israeli society to be "weak as a spider web," and believed that the Israeli society itself was the true weakness of the Army and would not tolerate high numbers of military and civilian casualties.[74] The army of Iraq adapted after its defeat in ODS. Army leaders encouraged Sadaam Hussein to abandon Soviet style tactics and massed formations. Its generals sought to decentralize the force, and maximize the use of irregular forces in a defense in depth to attrite an invading force as it approached the capital in Baghdad.[75] Specifically to counter the US strength in attack aviation, the Iraqi Army developed an air defense system that asymmetrically targeted attack helicopters using a mixture of small arms, heavy machine guns, and helicopter ambush teams. The following paragraphs address these two hybrid threats by describing the ways in which they blended conventional and unconventional ways of warfare.

The 2006 Lebanon War

The Second Lebanon War began on July 12, 2006 when an Israeli patrol operating on the Israel-Lebanon border was attacked by Hezbollah operatives. The attack resulted in three dead and two kidnapped Israeli soldiers. In response, Israel embarked on its largest military operation since the First Lebanon War in 1982.[76] The Second Lebanon War marks a very recent and distinct example of a hybrid threat. Although a non-state

[74]Matt M. Matthews, *We Were Caught Unprepared: The 2006 Hezbollah-Israeli War* (Fort Leavenworth, KS: Combat Studies Institute Press, 2008), 17.

[75]Gregory Fontenot, E. J. Degen, and David Tohn, *On Point* (Fort Leavenworth, KS: Combat Studies Institute Press, 2004), 101-103.

[76]Ibid.

actor, Hezbollah did not fight a purely guerilla war against Israel. In contrast, this non-state actor had by 2006 developed a "well-trained, well-armed, highly motivated, and highly evolved war-fighting machine on Israel's northern border."[77] Hezbollah's approach blended centrally controlled firepower in the form of rocket artillery with decentralized ground fighting forces designed to defend the capability of Hezbollah to fire into Israel.[78]

In 2006 Hezbollah essentially operated as a "state within a state" Thanks largely to backing in the form of military resources and training from both Syria and Iran, as a non-state actor Hezbollah attained advanced weaponry and developed a relatively mature command structure and fighting doctrine.[79] A salient feature of an organization such as Hezbollah is although it possessed modern weaponry, organization, and fighting doctrine it was a non-state actor. Therefore Hezbollah cannot be characterized as part of the international community and is not compelled by international norms and laws. This freedom from the laws of the international community provides Hezbollah the flexibility to apply military power in a manner not unlike a purely insurgent or guerilla threat. This freedom coupled with modern technology and an organized structure, enable Hezbollah to blend conventional and unconventional ways of warfare, adopting a hybrid operational approach to conflict with Israel.

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[77]Matt Matthews, "Hard Lessons Learned: A Comparison of the 2006 Hezbollah-Israeli War and Operation Cast Lead, A Historical Overview," in *Back to Basics: A Study of the Second Lebanon War and Operation Cast Lead*, ed. Lieutenant Colonel Scott C. Farquhar (Fort Leavenworth, KS: Combat Studies Institute Press), 6.

[78]Ibid., 7.

[79]James Blanton, "Finding a Balance to Combat a Hybrid Threat" (Monograph, School of Advanced Military Studies, 2013), 20.

According to Ron Tira, a reserve IAF campaign planning officer,

> Hezbollah designed a war in which presumably Israel could only choose which soft underbelly to expose: the one whereby it avoids a ground operation and exposes its home front vulnerability, or the one whereby it enters Lebanon and sustains the loss of soldiers in ongoing ground-based attrition with a guerilla organization. Hezbollah's brilliant trap apparently left Israel with two undesirable options.[80]

A dominant characteristic of Hezbollah's strategy against Israel centered on the constant barrage of Kaytusha rockets fired on military and civilian targets from southern Lebanon. Hezbollah employed these rockets in a centrally controlled, but very decentrally executed manner. The rocket teams were dispersed throughout southern Lebanon, oftentimes buried into the terrain making them very difficult to target with airstrikes. When airstrikes failed to stop the rocket attacks, the Israel Defense Force invaded southern Lebanon with its ground forces, and subsequently exposed themselves to the increased casualties Hezbollah assumed the Israeli society would not tolerate. Though the Israel Defense Forces (IDF) expected to meet a largely insurgent or guerilla type adversary in Hezbollah, the conflict embodied many elements of high intensity conflict as well as the low intensity fight that the IDF expected. Hezbollah used planned engagements, defended terrain, and employed sophisticated technology such as encrypted communications and anti-tank guided missiles.[81] As opposed to a guerilla force using low-technology weapons and purely hit-and-run tactics, Hezbollah presented Israel with a largely conventionally

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[80]Benjamin S. Lambeth, "Air Operations in Israel's War Against Hezbollah" (Monograph, RAND Corporation, 2011), www.rand.org/pubs/monographs/MG835.html (accessed 3 March 2014), 115.

[81]Stephen Biddle and Jeffrey A. Friedman, "The 2006 Lebanon Campaign and the Future of Warfare: Implications for Army and Defense Policy" (Monograph, Strategic Studies Institute, 2008), www.strategicstudiesinstitute.army.mil/pubs/display.cfm?pubID=882 (accessed 30 March 2014), 5.

trained and uniformed force. Hezbollah used this advanced weaponry to withstand what were relatively disjointed attacks by the IDF ground forces.[82] The ensuing conflict led the Secretary General of the Israel Defense Force to comment, "the Hezbollah resistance withstood attacks and held, but it was not a guerilla war. It was not a regular army, but not a guerilla force, it was something new."[83]

The conflict ended decidedly in Hezbollah's favor. Multiple scholarly works have covered extensively the unpreparedness of the IDF to counter the hybrid nature of Hezbollah, as well as the ineffective nature of the IDF's doctrine of Systemic Operational Design used during the conflict. The purpose of this thesis is not to add to that discussion, but to comment on Hezbollah as a hybrid threat and its implications on the attack helicopters of the Israel Air Force (IAF).

Attack aviation played an important role in Israel's conduct of the second Lebanon War, flying over 2500 sorties during the 34-day war.[84] The preponderance of these sorties were close air support missions flown by AH-64 Apache helicopters. Certainly the repertoire of IAF attack helicopter doctrine included deep attacks as evidenced by the use of an AH-64 in a targeted assassination of a Hezbollah leader in 1992, but during the second Lebanon war deep attacks largely remained the purview of the IAF's fighter-bomber aircraft.[85] Additionally, many of the deep attacks conducted against Hezbollah medium and long range rocket launch sites were reportedly by armed

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[82]Matthews, *We Were Caught Unprepared*, 43-44.

[83]Ibid., 22.

[84]Lambeth, "Air Operations in Israels War Against Hezbollah," xix.

[85]Ibid., 54.

unmanned aircraft systems.[86] Interestingly, however, just as with US attack aviation, the IAF did not see CAS as the primary mission of their attack helicopters. Prior to 2006, both the fixed and rotary wing forces of the IAF were free to focus on the deep battle, and the ground forces of the IDF would largely be supported by artillery.[87]

The IAF controlled its attack helicopters from its air operations center as opposed to assigning a command relationship between the IDF ground brigade commanders and the supporting IAF attack helicopter formations. This resulted in less responsive close air support.[88] The centralized control of IAF attack helicopters during CAS operations was recognized as a shortcoming in the aftermath of the second Hezbollah war and the policy was subsequently changed providing the supported IDF commanders tactical control of attack helicopters.[89] The IAF chose the former control technique over the latter due to fears of tactical errors such as fratricide that could result from a more decentralized approach. The fear of IAF leadership was that even one such error would have a "disproportionate downside effect" on public opinion.[90] Just as the US discovered after the initial days of OIF, the IAF realized that current threats had learned not to present a massed target against technologically advanced countries that enjoyed command of the air. Therefore, Israel had to adapt its employment of attack aviation to focus primarily on supporting ground forces than operating independently in the deep fight.

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[86]Ibid., 124-126.

[87]Ibid., 225-666.

[88]Ibid., 191.

[89]Ibid., 221.

[90]Ibid., 228.

The Hybrid Threat at the Beginning of OIF

When the US led coalition invaded Iraq in 2003, it met an army that was wholly different than the one it faced in the 1991 Gulf War. The army of Iraq fought as a conventional force in 1991 whereas the 2003 Iraqi Army operated as a mixture of conventional forces and irregular forces intensely loyal to the Ba'ath regime.[91] Much literature exists that casts OIF as the first war of the information age, but little exists that discusses the hybrid nature of the threat in OIF. The fact that the Iraqi army at it existed in late March of 2003 performed poorly against the US should not make practitioners of war underestimate the importance of how a state based army adapted itself into a hybrid threat that asymmetrically targeted many of the technology and firepower advantages of the US Army. Had the fortunes of war gone differently, the Iraq Army's plan to employ a mix of regular and irregular forces in the southern portion of the country to attrite an invading army advancing on Baghdad while subsequently counterattacking with the crème of the Iraqi Army could have prolonged the US invasion and inflicted many more casualties.

In the days prior to OIF, US leadership understood that the Iraqi forces would consist of both the roughly 17 divisions of the regular army and Republican Guards as well as the irregular forces of the Saddam Fedayeen and other paramilitary forces.[92] What planners seemingly failed to realize, however, was just how important of a role the irregular forces of the Iraqi Army would play in countering the US drive towards Baghdad. As Marines of the 1st Marine Division and Soldiers of the 3rd Infantry

[91]Fontenot, Degen, and Tohn, *On Point*, 101.

[92]Ibid.

Division marched north, some of the first US casualties of the war came not from armored vehicles or even uniformed combatants, but rather from civilian clad Iraqis in the back of Toyota pickup trucks.[93]

Even in the first days of the war, the Iraqi Army was using a mixture of regular and irregular tactics including hasty minefields, camouflaging of their non-uniformed force amongst the civilian populace, and complex ambushes using a mix of uniformed and irregular forces.[94] Gordon and Trainor state in their book *Cobra II* that following the first few days of the war, "the Iraqis had yet to capitulate en masse, as the CIA kept insisting they would. Indeed there had been few engagements with organized, conventional forces. Many of the enemy fighters encountered in civilian clothes were determined fighters employing guerilla tactics."[95] While ground forces faced this enemy in direct combat, they also received accurate indirect fire from conventional Iraqi Army artillery units. Meanwhile a mixture of anti-aircraft artillery as well as shoulder-fired surface to air missiles engaged the first attack helicopters and USAF aircraft participating in the war. The threat in the opening days of OIF was certainly not the conventional force expected by the US led coalition, nor was it the insurgent threat that US forces would face in the following years of OIF. The threat force in Iraq in the spring of 2003 indicates a hybrid threat, blending conventional and unconventional ways of warfare.

Perhaps the starkest example of the hybrid threat in Iraq was the fight for As Samawah on 21 March 2003. As US forces entered the town they expected to encounter

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[93]Gordon and Trainor, *Cobra II*, 191-192.

[94]Ibid., 205-208.

[95]Ibid., 213.

light resistance and a sense of liberation from the citizens of the town.[96] What 3rd Infantry Division actually met was civilian clad personnel executing a mix of conventional and guerilla tactics. Special operations forces were already in the town when soldiers from 3-7 Cavalry entered the outskirts of town and reported that Republican Guard troops had infiltrated the town and paramilitary forces were present as well.[97] The enemy in Samawah formed a mixture of conventional and unconventional forces, and both types of combatants were using a mixture of regular and irregular tactics.

The account of the battle provided by Dillard Johnson in *On Point* provides insight into a threat force the US had not anticipated. Johnson describes a largely non-uniformed guerilla type force, but his description speaks of upwards of 200 fighters working in concert to engage the US forces in a decisive battle.[98] In another section of the same account Johnson describes, "an ambulance with a Red Crescent pulled up into the compound. About 10 soldiers in uniform jumped out and ran into the building."[99] Certainly a decisive battle is not a tactic generally pursued by a guerilla force just as a uniformed or conventional combatant does not generally use a protected vehicle such as an ambulance as a personnel carrier.

The battle in Samawah is important because it places the Iraqi Army of 2003 within the hybrid threat model. The largely irregular threat force in As Samawah fought in relatively organized formations with at least a rudimentary command structure. The

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[96]Fontenot, Degen, and Tohn, *On Point*, 127.

[97]Ibid.

[98]Ibid., 130.

[99]Ibid.

threat engaged US forces in the decisive battle characteristic of a conventional force, but also used civilians within Samawah as human shields often forcing the civilian population to engage US forces with small arms. Finally, as opposed to a purely conventional enemy that would theoretically follow international norms such as the laws of armed conflict, the Fedeyeen in Samawah used protected areas such as schools and mosques as command posts and fighting positions.[100] It is easy to overlook a threat force that was defeated quickly as was the Iraqi Army in 2003. Their quick defeat is inconsequential to the fact that the Hussein regime had built a hybrid defense force, using both conventional and unconventional ways to counter the technological and firepower advantage of the US military.

The Iraqi Army had adapted in the years following ODS, and developed asymmetric responses to the capabilities of advanced militaries such as the US. Perhaps the most useful adaptation taken following their defeat in 1991 was the decision to recruit irregular fighters. The most widely known of these were the Fedeyeen Sadaam. Sadaam's son Uday loosely rolled a group of Baath party loyalists, religious extremists and foreign fighters into an organization he named the Fedeyeen.[101] The Fedeyeen were not the only irregular forces in Sadaam's army. The list of irregular forces in the Iraqi Army in 2003 included: Sadaam Fedeyeen (who were fanatic but poorly trained paramilitary), Al Quds (a force of local militia connected to the Baath Party), various intelligence services and

[100]Ibid., 134.

[101]Williamson Murray and Robert H. Scales Jr., *The Iraq War* (Cambridge: Harvard University Press, 2003), 84-85.

special police, and the Lions of Sadaam (which were a Baath youth organization).[102] These disparate forces in the aggregate totaled around 18,000 personnel, most of which were used in the south as part of a defense in depth guarding the approaches to Baghdad.[103]

In addition to the paramilitary and irregular forces, the Iraqi Army consisted of approximately 17 divisions. Of these, six were the better trained and equipped Republican Guard and Special Republican Guard Divisions.[104] The disposition of these forces at the outset of OIF placed the bulk of the paramilitary forces in the south with approximately five regular army infantry and armored divisions. As stated earlier the strategy was a defense in depth designed to attrite coalition forces before they moved into the so-called "red zone" around Baghdad where the Republican and Special Republican Guard would defend the inner circle of the Hussein regime.[105] The Fedeyeen and other irregular forces prepared to fight unconventionally while the Republican Guard divisions would stand and fight as a conventional army.

The structure of the Iraqi Army presented US attack aviation with many of the same problems that the IDF confronted with Hezbollah three years later. The US in 2003, like Israel in 2006, placed the focus of its attack helicopter force on operational level deep attacks to shape the close fight. This tactic is well suited for a conventional army employing Soviet style tactics, but was less effective against an army that had adapted to

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[102]Fontenot, Degen, and Tohn, *On Point*, 101.

[103]Ibid.

[104]Ibid.

[105]Ibid., 102.

meet it. Perhaps the decision not to present the US military with a massed formation was the Iraqi Army's most successful adaptation in the years following ODS because it made their forces less susceptible to US air attack. Furthermore, the Iraqi Army developed an air defense plan that did not rely on radar controlled weapons that could be targeted by US technology, but rather on a decentralized network of small teams using visually guided weapons such as small arms and heavy machine guns camouflaged within the population.

Adaptations such as these pulled the Iraqi Army from the material end of the spectrum of threats more toward the purely cognitive approach of the insurgent. By including elements of both types of threats the Iraqi Army was able to asymmetrically target the US strengths in technology and firepower. The quick defeat of the Iraqi Army in March and April of 2003 speaks not to the utter failure of this strategy as it does to the fighting abilities of the American soldiers and their combat formations. The lesson of Iraq in 2003 is that future threats will likely employ a blended operational approach to warfare with the hope of countering the US advantage in technology and firepower.

CHAPTER 4

ATTACK AVIATION IN OPERATION IRAQI FREEDOM

This chapter examines attack helicopter operations as they were executed during the first 100 days of OIF. As stated in the previous chapter the Iraqi regime at the beginning of OIF represented a hybrid threat in that the Iraqis employed both regular and irregular tactics and forces to counter the qualitative superiority of US ground and air forces. Based upon this argument, a careful study of how attack aviation performed during the initial months of the war is useful in shaping army attack aviation doctrine to meet the hybrid threats expected in future conflicts.

Two overarching themes characterize attack aviation doctrine in the opening months of OIF. First, V Corps launched two deep attacks to shape the battlefield during the Corps attack towards Baghdad, and secondly attack aviation performed extensively in the aerial fire support role. Of the deep attacks, the first failed to meet its objectives and suffered extensive battle damage, while the second was largely successful and provides a template for continued viability of the deep attack against the hybrid threat model. When performing in the aerial fire support role, attack aviation was largely successful but only after modifications allowing for better integration with ground forces. When viewed in conjunction with the previous chapter the change in attack aviation tactics in the first one hundred days of OIF represents attack aviation adapting to counter a hybrid threat. When attack aviation in OIF is viewed through that lens it informs how attack aviation should continue to adapt to meet future threats.

This chapter weaves together the preceding information on attack aviation doctrine and hybrid threats with concrete examples of the use of attack aviation in recent history to inform conclusions and recommendations for the future of US Army Attack Aviation doctrine. While the threat force faced by the US military in Iraq is not as universally accepted as a model of a hybrid threat as the example of Hezbollah provided in the previous chapter, it represents a threat that employed a mixture of force types to asymmetrically target US forces, especially attack aviation.

Even in war against a peer competitor, this thesis argues that threats faced by the US military in the next generation will bear some similarity to the threat faced during OIF. The OIF threat developed a hybrid approach to war with the US to offset many of the advantages of the US military. From war against a conventional force to insurgency, the threat in the beginning months of OIF spanned nearly the entire spectrum of threat models. The Iraqi Army was not prepared to withstand the onslaught of US troops pouring into the country from Kuwait. It was nevertheless a conventional uniformed military with a conventional force structure and an established doctrine.[106] From the outset, however, the force fielded by Saddam Hussein also contained unconventional and irregular forces. Paramilitary forces such as the Fedeyeen Saddam were part of the Iraqi order of battle from the beginning, and at least in local attacks challenged the US forces in their advance towards Baghdad. The following narrative consists of two accounts of attack aviation in OIF. The first account compares and contrasts the deep attacks conducted by the 11th AHR and the 101st Aviation Brigade, and the second explores attack aviation's adaptation "back to its roots" as an aerial fire support platform using

[106]Murray and Scales, *The Iraq War*, 45-55.

tactics only slightly modified since their introduction in the Vietnam War.[107] The change in employment is an important evolution in the history of US attack aviation, because it represents a change from a focus almost completely on the deep attacks developed as part of AirLand Battle doctrine to a supporting effort in the tactical fight focused on direct support to ground forces. The changes represent a successful adaptation to an unconventional threat, but the case of the 101st Aviation Brigade shows how tactics designed to counter a conventional threat should still be retained to counter hybrid threats.

The Deep Attack

As the 3rd Infantry Division fought its way from Kuwait to Baghdad in the opening days of OIF, opposition had been more difficult than expected. In Samawah and Nasiriyah, Iraqi soldiers clad in civilian clothes had at times put up a determined resistance to the Soldiers of V Corps.[108] This fact coupled with the anticipated strength of the Iraqi Republican Guard divisions prompted LTG Wallace, the Commander of V Corps, to use the 11th AHR to destroy portions of the Medina Division of the Republican Guard and thereby operationally "shape" the battlefield before the 3rd Infantry Division

[107]The phrase "back to its roots" is taken from a US Army War College Report completed by COL Russell Stinger. The phrase is used multiple times throughout the report and describes the change in attack aviation doctrine from the deep attacks of the AirLand battle era to aerial fire support akin to attack helicopter tactics used during the Vietnam era where attack helicopters first saw service. Russell Stinger, "Army Aviation back to its Roots" (Strategy Report, Carlisle Barracks: US Army War College, 2009).

[108]Gordon and Trainor, *Cobra II*, Chapter 11-13 provide an account of the initial week of OIF.

met the Medina Division in a tactical engagement.[109] As stated in chapter two, an AHR was assigned to each corps headquarters after the 1993 Aviation Restructuring Initiative specifically to provide the corps commander with this capability. Wallace's plan to employ the 11th AHR in the deep attack role was in line with attack aviation doctrine at the time. Furthermore, in the last major land campaign the US Army fought in Kuwait and Iraq, ODS, helicopter deep attacks had been used with great success.

The 11th AHR Deep Attack 23 March 2003

The 11th AHR trained and rehearsed to perform a deep attack in the opening days of OIF, and would get the chance to perform in that capacity against one of the premier formations of the Iraqi Army. What V Corps and the 11th AHR failed to realize, however, was that the enemy they would face on the night of 23 March 2003 was different from the purely conventional force that attack aviation had faced in the deep attacks of Operation Desert Storm, and would present a different set of tactical problems than the threat force that the 11th AHR had trained against in Europe.[110] During their initial operations in support of OIF, the 11th AHR consisted of three squadrons. Of these three squadrons two were organic to the 11th AHR, 2-6 and 6-6, and the 11th AHR received the attachment of the 1-227th Battalion of the 1st Cavalry Division when it deployed to Iraq. Of these squadrons only 2-6 had conducted extensive training in desert conditions. The 2-6 had been in Kuwait supporting Operation Desert Spring prior to the

[109]Murray and Scales, *The Iraq War*, 105.

[110]Fontenot, Degen, and Tohn, *On Point*, 179-181.

arrival of the remainder of the 11th AHR.[111] Each of these battalions trained almost exclusively for deep attacks, including extensive engagement area development and stationary firing techniques. None of the battalions conducted extensive training in close air support or firing from a moving position. This is not to say that the 11th AHR was completely unfamiliar with running fire procedures and close support to ground forces, but the regiment's primary focus as a Corps attack regiment was cross-FLOT deep operations. All of the battalions in the regiment were acquainted with close fight techniques, but only 2-6 was considered "adept" at these techniques, with the rest of the regiment described as "familiar."[112]

The original V Corps plan called for multiple helicopter deep attacks focused primarily on the destruction of the Iraqi Republican Guard divisions templated in defensive positions astride the V Corps approach to Baghdad. The first attack was planned for the opening night of the ground campaign against the 11th Iraqi Division around Tallil Air Base, but was cancelled due to weather.[113] The follow on attack to be conducted by the entirety of the 11th AHR was planned for the night of 24 March and oriented on elements of the Medina Division of Iraq's Republican Guard.

As OIF began in the spring of 2003, attack aviation was coming off a series of setbacks following its successes in ODS. The most recent operational deployment for the 11th AHR was NATO's intervention in Kosovo. The 11th AHR trained, prepared, and

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[111]Gordon and Trainor, *Cobra II*, 180.

[112]Col. Bill Wolf Interview with OIF Study Group, interview conducted by Col (Ret) Greg Fontenot, https://call2.army.mil/rfi/attachment.aspx?rfi_attachment=178898 (accessed 15 May 2014).

[113]Ibid., 261.

eventually deployed in support of the NATO mission as Task Force Hawk. TF Hawk deployed to Albania to supplement the ongoing NATO air campaign. Serbian conventional forces employed their mechanized and armor forces in dispersed order amongst the populace in platoon and company sized units. This made it difficult for fixed-wing attacks to target the Serbian fielded force.[114] While it took great expense and planning to deploy the aviation task force to the Kosovo area of operations, attack aviation was never able to get into the fight in any meaningful way due to concerns based upon the risk to attacking aircrews versus the potential payoff.[115] Because of the dispersion and concealment of Serbian forces commanders feared that attacking helicopters would be vulnerable to low altitude air defenses, and there was not the potential for a sufficiently large payoff to offset the risk. Incidentally, the Kosovo campaign also marks one of the first instances of a technologically advanced army dispersing its armored forces to counter the US strength in airpower.

This event and others such as the intervention in Somalia in 1993 led some to question the survivability of attack aviation on the modern battlefield, and especially the feasibility of sending AH-64 helicopters on deep attacks into enemy territory.[116] These lingering doubts cast a shadow upon attack aviation and the 11th AHR, a shadow that only grew larger when the first of the planned deep attacks was cancelled. Knowing that some in the defense community questioned the efficacy of the deep attack, the very

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[114]John Gordon, Bruce Nardulli, and Walter L. Perry, "The Operational Challenges of Task Force Hawk," *Joint Forces Quarterly* (Fall/Winter 2001): 53.

[115]Ibid.

[116]Gordon and Trainor, *Cobra II*, 261.

mission that was the purview of the 11th AHR, coupled with the desire to get "into the fight" during the initial days of OIF led to an intense desire to complete the deep attack on 23 March. This desire to complete their part of the mission was one of the initial causes of failure for the 11th AHR because it led the command and staff to discount the warning signs that not all conditions were set for the conduct of a successful deep attack.[117]

The planned attack called for all three of the regiment's squadrons to depart from their base in Kuwait, land at an enroute assembly area known as Objective Rams south of the city of Najaf, and proceed to the Baghdad suburb of Karbala to attack the 2nd Brigade of the Republican Guard's Medina Division.[118] Ultimately the attack failed resulting in two prisoners of war, one downed helicopter due to enemy fire, and extensive damage to the remaining helicopters of the regiment. Furthermore, the attack resulted in no appreciable damage to the Iraqi forces. The following discussion examines the 11th AHR attack to determine the reasons behind its failure.

In their book *Cobra II*, Gordon and Trainor provide the following analysis on why the 11th AHR attack failed:

> When the Army looked back at the episode, it identified a confluence of errors: an underestimation of the enemy; logistical problems; overly restrictive rules of engagement; unimaginative attack routes; the long delay between the firing of the ATACMS [Army Tactical Missile System] missiles to suppress enemy defenders and the attack itself; the absence of any close air support aircraft

[117]The author makes this assertion based upon multiple sources used throughout this study. Primarily *On Point* provides background for this idea as well as Center for Army Lessons Learned interviews with commanders and staff within the 11th AHR. Also see Gordon and Trainor, *Cobra II*, 261.

[118]Buss, "Evolution of Army Attack Aviation."

> ready and on call; and, most of all, an intemperate rush to get into the fight without adequate preparation.[119]

Even in its simplest form, the night "cross FLOT" deep attack is the most complex attack helicopter operation. It was only after the fielding of the Apache that the Army possessed an attack helicopter with the range, survivability, and navigation equipment to conduct such a deliberate attack at extended distances forward of friendly lines.[120] The tactic worked excellently during the Gulf War, and Army Aviation forces had practiced the deep attack during countless training operations. Yet the first deep attack of OIF was an abysmal failure that exacted little effect on the enemy but had a profound and lasting effect on the attack aviation community.

On Point, Combat Studies Institute's history for the first months of OIF, describes the failure of the first deep attack of OIF as a "classic first battle dynamic." The AH-64 performance in the deep attack role had been wildly successful in the Gulf War and the Iraqis simply adapted their tactics to a point where the deep attack was no longer viable.[121] Without a doubt, the 11th AHR failed to update their tactics from their rehearsals and training in Europe. However, to describe the failed attack as simply a "first battle dynamic" is incomplete, nor can the attack's failure be attributed to simply a confluence of errors. Furthermore, the failures of the 11th AHR deep attack do not point to a lack of viability of the deep attack as an employment technique, but rather the failures coalesce around two ideas: first, the 11th AHR failed to insure the conditions

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[119]Gordon and Trainor, *Cobra II*, 280.

[120]Williams, *History of Army Aviation*, 211.

[121]Fontenot, Degen, and Tohn, *On Point*, 179.

required of a successful deep attack were in place, and secondly, the 11th AHR visualized the Iraqi Army as purely conventional rather than the hybrid threat it actually was.

As stated previously, the 11th AHR leadership had an intense desire to conduct the deep attack planned originally for the night of 24 March 2003. Following the frustrations of cancelling the 20 March deep attack on the 11th Iraqi Army Division, the regiment saw the deep attack against the Medina Division as its only chance to get into the war in a meaningful way.[122] On the 21st, the attack was moved forward to 23 March 2003 due to impending severe weather in the V Corps area of operations, as well as the faster than expected movement of 3rd ID on their attack north. Both the 11th AHR and V Corps leadership thought that the 23rd of March would be the last opportunity to employ the 11th AHR against the Iraqi Republican Guard divisions.[123]

Prior to the conduct of any deep attack, whether a training operation or wartime mission, a pre-conditions checklist is used to determine that all conditions surrounding the planned mission are confirmed and according to plan. A "condition" is anything from the required number of aircraft ready to launch, to logistics requirements such as fuel and ammunition, to a sufficient knowledge of the enemy and terrain in the engagement area. Because of the complexity and risk inherent to a cross-FLOT deep attack, the checklist used to determine whether or not to execute the attack is both detailed and extremely important.[124] The pre-conditions or GO-NOGO checklist covers contingencies such as air

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[122]Fontenot, Degen, and Toth, *On Point*, 110; Gordon and Trainor, *Cobra II*, 261-265.

[123]Fontenot, Degen, and Tohn, *On Point*, 110.

[124]Department of the Army, FM 1-112, 3-24 – 3-30.

defense threat, Suppression of Enemy Air Defense (SEAD) plan, support requirements such as fuel and security, as well as confirming with recent reconnaissance the exact locations of the templated enemy.[125] The 11th AHR conducted a pre-conditions check prior to commencing the 23 March deep attack, but the failure to acknowledge pre-conditions that were not conducive to a successful deep attack contributed in no small part to the failure of the operation.

According to *On Point*, the conditions check prior to launching the 11th AHR deep attack focused almost exclusively on the enemy, overlooking several conditions that were not favorable. Colonel Wolf and V Corps staff based their decision on the limited enemy information available and decided to proceed with the attack. The regimental intelligence officer described the enemy situation at the time of the 11th AHR pre-conditions check as a seventy-five percent picture and consisted of 1000 square meter locations to "20 or 25" company sized enemy formations. In pre-mission training, the aircrews were accustomed to scenarios that detailed the locations of enemy armor, artillery and air defense pieces to within 100 meters.[126] To exacerbate the situation, no unmanned aircraft system was available to conduct reconnaissance on the target area

[125]FM 1-112 provides information on what should be considered in a helicopter deep attack. The actual format of an pre-conditions check is left to the unit conducting the mission. For an example of the level of detail required in a pre-conditions check for aviation cross FLOT operations see http://www.fas.org/man/dod-101/army/docs/101st-goldbook/CH5A/sld001.htm for a pre-conditions check listed in the "Gold Book" on Air Assault operations published by the 101st Airborne Division.

[126]Department of the Army, "11th Attack Helicopter Regiment Operations," https://www.jllis.mil/?cdrid=56947&doit=view&disp=cdrview (accessed 13 May 2014), 4.

immediately prior to the 11th attack.[127] The V Corps Hunter UAS was still moving north to OBJ Rams via air and ground lift, and the USAF Predator UAS was unavailable.[128] Not present in the pre-mission assessment was an appreciation for how the Medina Division would meet the attacking helicopters. No connection was made between the unconventional ways in which Iraqi paramilitary forces were engaging the US military throughout the country and how they might engage US attack aviation. The 11th AHR did not know how the enemy was arrayed nor the adaptations in Iraqi tactics designed to counter the attack helicopters of the US.[129] This is perhaps the largest single failure of the operation. At the Corps level, analysts failed to connect the manner in which Iraqi paramilitary forces engaged 3rd ID as they attacked through places such as As Samawah to the ways in which Iraqi forces would engage attack helicopters. The failure of the 11th AHR to properly visualize their enemy is the biggest difference between the unsuccessful 11th AHR deep attack and the successful attack of the 101st Aviation Brigade discussed in following paragraphs.

Eleven years after the event, hindsight makes it easy to draw attention to this failure, but the lessons learned from the 11th AHR tie back to the discussion of hybrid threat characterization in chapter three. Both the 11th AHR and V Corps failed to predict the danger of Iraq's paramilitary forces because the presence of the Iraqi Army fit the model of a conventional threat. The US military focused on the means of the Iraqi Army,

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[127]Fontenot, Degen, and Tohn, *On Point*, 185.

[128]Department of the Army, "11th Attack Helicopter Regiment Operations," 4.

[129]Fontenot, Degen, and Tohn, *On Point*, 185.

its armored divisions, technology, and integrated air defenses as opposed to the ways in which Iraq would employ its military force.

In his interview with the Combat Studies Institute Lieutenant Colonel Mike Barbee, who in 2003 was the squadron commander of 6-6 Cavalry in the 11th AHR, stated "we didn't have a good grasp on the enemy" Barbee also stated that due to the incomplete picture of the enemy the mission was more of a "movement to contact in zone" as opposed to a deliberate attack. Perhaps the most telling information from Barbee's interview highlighted how the conditions check prior to the attack focused entirely on the location of enemy armor and artillery within the engagement area with little appreciation for the threat the aircrews would face enroute to the objective.[130] This is not surprising because the 11th AHR's training focused entirely upon conventional threats. The 11th AHR's pre-mission training in Poland simulated long routes to the objective area, but did not simulate those routes being defended against heliborne attacks. The result was a regiment with an incorrect visualization of the Iraq battlefield.[131] This incorrect visualization of the threat led to the wrong tactics being employed and hindered the 11th AHR's ability to fight their way to the objective.

In addition to an incomplete estimate of the enemy situation, many other mission variables were not favorable at the outset of the 11th AHR attack. Only half of the refuel and rearming capability required by the 11th AHR made it to OBJ Rams in time for the

[130]Combat Studies Institute, *Operational Leadership Experiences Project, Interview with Mike Barbee* (Fort Leavenworth, KS: Combat Studies Institute), 2007.

[131]Gordon and Trainor, *Cobra II*, 281.

mission.[132] The lack of fuel meant that key command and control aircraft would not be able to participate in the operation, nor would all of the planned AH-64 aircraft be able to take part in the attack. Two critical pieces of communications equipment that would have enable the 11th AHR key leaders at OBJ Rams to communicate with higher headquarters further south did not make it to the assembly area. The mobile server equipment and secure extension node enable high bandwidth communications via satellite, but could not be sling-loaded to OBJ Rams due to weight and atmospheric considerations.[133] Additionally the very assembly area used by the 11th AHR was unsecure and reportedly under observation by Iraqi civilians. The after action report from 11th AHR cites that, "pilots watched as one group of Iraqi civilians moved throughout the area in a pickup truck."[134]

Sources argue that the leaders of the 11th AHR made the decision to proceed with the attack, "out of an intemperate rush to get into the fight without adequate preparation" as stated in *Cobra II.*[135] This author believes that the "Go" decision reflected a more honorable, yet intense and misplaced, desire to sacrifice for the good of the operation that clouded the judgment of the 11th AHR Commander. Furthermore, subordinate commanders within the regiment did not voice concerns over the decision to proceed with the attack. Barbee states in a CSI interview:

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[132]Department of the Army, "11th Attack Helicopter Regiment Operations," 2.

[133]Ibid.

[134]Gordon and Trainor, *Cobra II*, 281.

[135]Ibid., 282.

> Anyway because of these factors (the previously cancelled attack on 20 March) I didn't want to be the guy who spoke up on the night of 23 March and said I wasn't confident we had all the information and intel as well as the support we needed for this mission. After all, I had been that guy who turned around and did a 180 three nights before. Lt. Col. Thompson, the 2-6 commander, felt the same as I did about the mission. We didn't feel we had a good grasp on the enemy and we had problems with refuel.[136]

Ultimately no one voiced any dissent at the GO—NO GO brief prior to the 11th AHR deep attack despite any misgivings that may have been present. The 11th AHR Commander made the decision to proceed with the attack regardless of incomplete knowledge of the enemy, and more importantly regardless of the multiple logistical and operational conditions that jeopardized the attack. Exactly how much the incomplete knowledge of the threat and the insufficient support, both logistical and fires, contributed to the failure of the 11th AHR attack is unknown. It is likely, however, that given all of the unsatisfactory conditions present prior to the attack, to include most notably the less than 80 percent knowledge of the enemy's locations and dispositions, and the lack of sufficient fuel made the decision to proceed with the attack an incorrect one.

The Suppression SEAD plan for the 11th AHR attack included fires from artillery as well as air to ground fires and electronic attack from USAF aircraft. A SEAD plan is designed to suppress templated enemy air defense sites along friendly attack routes. The plan included 32 Army Tactical Missile System (Surface-to-Surface) missiles from V Corps artillery that would fire on templated enemy air defense sites 30 minutes prior to the arrival of friendly aircraft and USAF close air support aircraft that would be on station during the 11AHR attack.[137] Due to the poor communications discussed

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[136]Combat Studies Institute, *Interview with Mike Barbee.*

[137]Department of the Army, "11th Attack Helicopter Regiment Operations," 5.

previously, USAF aircraft did not receive the word that 11th AHR attack had been delayed and flew their sorties at the previously planned time leaving the deep attack without any USAF support. Conversely, the planned fires from the V Corps artillery received word of the delay in mission, but still fired their planned missions at the V Corps standard thirty minutes prior to the arrival of the 11th AHR helicopters. Many of the pilots believed this was too early and arguably this did little other than alert the Iraqis to the impending attack.[138] Effectively the 11th AHR conducted its attack without support of an effective SEAD plan.

Unknown to the 11th AHR decision makers at the pre-conditions check was the fuel status of Wolf's command and control aircraft, it was one of the aircraft affected by lack of refuel capability in OBJ Rams prior to the operation. Without the command and control aircraft, there would be no platform available to coordinate the entire regiment of attack helicopters heading toward the objective area compounding the communication difficulties the regiment experienced.[139] Additionally, the lack of support from USAF aircraft due to those crews not receiving the information regarding the delay of the 11th AHR attack likely had a profoundly negative effect on the conduct of the mission given the amount of enemy resistance the regiment faced enroute to the engagement area.

Failure to Visualize the Enemy

The second and most critical set of factors in the failure of 11th AHR's deep attack centers on the failure of the regiment to properly visualize the nature of the threat

[138]Fontenot, Degen, and Tohn, *On Point*, 186.

[139]Gordon and Trainor, *Cobra II*, 270.

they would face during the operation. As stated earlier, deep attack doctrine proved successful in the Gulf War and was an entrenched part of the pre-OIF attack aviation doctrine. The 11th AHR rehearsed deep attack operations in Poland prior to their arrival in Iraq. The common thread among all of the previous deep attack experiences is the threat, whether real or simulated, was an enemy formation of mechanized vehicles using conventional tactics. Attack aviation countered this threat through detailed engagement area planning and analysis using set-piece fire planning, with the aircraft firing most often from a hover to maintain standoff and concealment from the advanced optic and radar location systems expected of a modern threat force. Conversely the threat that the 11th AHR faced was hybrid in its composition and tactics.

Apart from the Iraqi move to a more hybrid threat force that combined regular portions of its armed force with irregular forces such as the "Fedeyeen Saddam," the composition and disposition of its air defenses was a focus of intense adaptation following the Iraqi defeat in ODS. Based upon their experience in ODS, the Iraqi Army worked to develop methods to counter attack helicopters in the decade between ODS and OIF. Chief among their adaptations was a move from a centralized air defense system using radar technology to detect incoming attack helicopters to a decentralized air defense network of air defense battalions organized into helicopter ambush teams. An air defense battalion consisted of up to 18 of these ambush teams.[140]

These teams employed a mixture of small arms and heavy machine guns to engage the helicopters of the 11th AHR as they made their way to the objective area. Whereas the pre-mission planning done by both 11th AHR and V Corps expected the

[140]Ibid.

Iraqis to use more conventional radar controlled air defense measures, the Iraqis actually used visual and aural detection measures coupled with early warning provided by civilian cellular phones operating below the detection threshold of everything but the eyes of the aircrews. During the long period of Operation Northern Watch and Southern Watch, the Iraqis learned that active radar signals would invite attack by Coalition aircraft. The system of low tech early warning employed by the Iraqis consisted of hundreds of observation points in Southern Iraq, and many of the air defense battalions were augmented with Iraqi Special Forces soldiers who were trained to provide aircraft early warning. Upon detection of the attack helicopters, the Iraqis planned to shoot their small arms and machine guns into the air, forcing the helicopters to fly through a wall of lead. This tactic was paired with the plan to employ their S-60 surface to air missiles so that they would "airburst" at 500 feet, forcing the helicopters to fly at a lower altitude that would in turn place them in range of the small arms and heavy machine gun fire.[141] A further component to the plan concerned the integration of shoulder fired surface to air missiles such as the SA-7 and SA-14. Finally, it is noted in *On Point* that the volume of fire experienced by the 11th AHR was more than regular Iraqi air defense forces alone were capable of producing, and is due in part to the raising of "less formal" air defense forces by the Iraq Army or paramilitary forces.[142]

The Iraqi tactics and the resultant decentralization of their air defense forces provided another obstacle to the 11th AHR by rendering traditional SEAD planning

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[141]Ibid.

[142]Fontenot, Degen, and Tohn, *On Point*, 183. This idea is contained in an endnote to chapter 4 of the text.

almost worthless. A fires plan designed to suppress radar based mechanized anti-aircraft artillery pieces was not effective against individuals afoot or mounted in civilian pick-up trucks in residential neighborhoods. Furthermore, the SEAD plan, and the 11th AHR in its entirety did not expect to encounter fierce enemy resistance enroute to its targeted engagement area and focused instead on the threat within the engagement area itself.

Major John Lindsay, the 11th AHR operations officer, commented on how unprepared U.S. intelligence had left the regiment by stating in his journal:

> G2 really screwed the pooch on this one, no assessment ever accounted for the threat we faced. CPT Hobart, the intelligence officer for the regiment stated, 'This ambush was rehearsed. It was trained for. This was asymmetrical warfare at its best. They had decided they can't turn on their radars because they knew we would kill them, but they knew we were going to send the Apaches in to clear the way.'[143]

While the 11th AHR aircrews expected to find armor and artillery of the Medina Division in the engagement area, the enemy forces they actually faced were portions of the Nebuchanessar Division of the Republican Guard. These forces operated in civilian pickup trucks and established machine gun nests in the housing areas along 11th AHR's routes as well as the planned engagement area.[144] In doing this the Iraqi Army presented the 11th AHR with a force they had failed to anticipate.

Ultimately the 11th AHR attack failed only partially because the regiment was eager to get into fight and subsequently did not heed the warning signs pointing to a low probability of success. Several "NO GO" criteria were evident such as a lack of precise

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[143]The quotation referenced in this text was taken from Cobra II, the book references the diary of John Lindsay as reviewed by the authors as well as an interview with CPT Karen Hobart, see: Gordon and Trainor, *Cobra II*, 279 and 535.

[144]Combat Studies Institute, *Interview with Mike Barbee.*

target locations, poor communications, and the disorder of the refuel plan at OBJ Rams.[145] Furthermore the lack of Unmanned Aircraft Systems support on the night of the attack meant that the 11th AHR had no reconnaissance of the air routes or engagement area as they moved north towards their targets. Ignoring adverse criteria, or explaining them away can be partially justified by the perceived importance of attriting the Republican Guard divisions through helicopter deep attacks prior to 3rd Infantry Division fighting those divisions in the close fight. The decision to conduct a helicopter deep attack is a question of perceived risk versus perceived reward. The conditions check is a tool, but the decision ultimately lies with the commander. In the case of the 11th AHR, the decision to conduct the attack even with the large number of NO GO conditions was a costly one. And while it is clear that the lack of required fuel, lack of clear knowledge of the enemy situation, and lack of defined targets resulting in the use of "search and attack" methods hampered the conduct of the attack, the most important failure surrounding the 11th AHR's deep attack is the complete failure to understand that the Iraqi Army had adapted to counter the Apache helicopters based on its experience in ODS.

The conventional threat that the 11th AHR prepared for and trained against prior to deploying to OIF was not the one it met on the night of 23 March, and subsequently the manner in which it conducted the deep attack was misaligned to the threat. In ODS, the Iraqi Army met US attack helicopters symmetrically, in a conventional way through an integrated air defense system employing radar detection methods and advanced weaponry. In ODS the Iraqis faced horrendous losses from to attack helicopters and adapted their defenses. In OIF, the Iraqi military employed a decentralized, low

[145]Ibid., 270.

technology air defense system composed of not only regular military forces, but also paramilitary and irregular defenses organized at the local level. Cellular telephones, low power radios, and the systematic manipulation of the power grids resulting in the flickering of the lights in certain towns to alert fighters provided early warning as opposed to radars. Additionally the armored vehicles of the Medina Division could not be located within the engagement area, largely because they were not present given that the Iraqi forces both regular and irregular were using civilian pick-up trucks for mobility. The Iraqi air defense forces that engaged the 11th AHR made themselves very difficult to suppress because they located within residential neighborhoods, forcing the aircrews to precisely identify their targets prior to returning fire to prevent civilian casualties.[146]

Almost all of the tactics adapted by Iraqi air defense forces defending against the 11th AHR on 23 March 2003, are most closely associated with guerrilla forces. Because these tactics and the efforts of the individual air defense teams were coordinated by an integrated effort and chain of command as evidenced by the sheer scale of the resistance faced by the 11th AHR, and were completely unexpected made them devastatingly effective against the attacking helicopters.

The threat faced by the 11th AHR on 23 March, fits the model of the hybrid threat attack aviation can expect to face in the future. The threat was an integrated command structure conducting a planned ambush using guerilla tactics. The threat employed primarily low-tech weaponry supplemented by advanced equipment such as the S-60 surface to air missile system. The 11th AHR clearly had a technological and firepower overmatch with respect to the defenders, but the defenders had the advantage of

[146]Fontenot, Degen, and Tohn, *On Point*, 191.

concealment within the population, surprise, and decentralization to neutralize the firepower advantage of the US force. Furthermore the threat faced by the 11th AHR operated with a minimal electronic signature and was nearly impossible for the 11th AHR to locate through technological means.

The 11th AHR deep attack also failed in part due to the lack of coordination and integration with enablers such as reconnaissance and fire support assets, a fact that was exacerbated by the nature of the enemy. The SEAD plan designed to support the regiment fired 30 minutes prior to the arrival of the helicopters, and likely did little other than provide the Iraqis with early warning.[147] Additionally, due to the delay in starting the attack, USAF fighter aircraft scheduled to support the attack were not available during the course of the attack. This provided for no capability of "on call" fire support to the 11th AHR. This type of fire support would have proved beneficial given the severity of enemy resistance faced by the aircrews during the attack. Lastly, the absence of an unmanned aircraft to support the 11th AHR with detailed reconnaissance of the objective area hampered the aircrew's ability to identify targets in the engagement area. Much like the conditions check, the failure to properly synchronize fire support and reconnaissance enablers was only one facet of the multiple points of failures surrounding the 11th AHR's attack, but one that could have been instrumental given the failure to properly characterize the threat force.

[147]Gordon and Trainor, *Cobra II*, 263.

101st Aviation Brigade Deep Attack
28 March 2003

If the 11th AHR attack represents the failure of deep attack doctrine against a hybrid threat, the deep attack conducted by the 101st Aviation Brigade only five days later provides a template for the continued use of the deep attack against hybrid threats. First and foremost, the 101st had the benefit of learning from the mistakes made by the 11th AHR during the previous deep attack, secondly they had the benefit of hindsight that would help insure they would be prepared for the type of threat they would face. Finally, the 101st plan leveraged multiple Army and joint enablers that would assist the aircrews through fire support and reconnaissance.

On 24 March a severe sandstorm hit southern Iraq and grounded all aviation support.[148] The sandstorm provided the 101st Aviation Brigade the opportunity to work with and learn from the aircrews of the 11th AHR. A lengthy conference call was conducted between the two units with the 11th AHR relaying the need to avoid well lit areas and apprising the aircrews of the 101st of dangers and volumes of small arms fire the 101st could expect. Perhaps one of the more important lessons passed was the need for aircrews to prepare to fight their way to the objective.

A theme throughout the body of literature surrounding the 11th AHR attack is the reluctance and difficulty of the aircrews to return fire and suppress the air defense teams employing small arms and machine gun fire. According to a Combat Studies Institute interview with the 6-6 commander, Lt. Col. Mike Barbee, crews were reluctant to engage the enemy based on a fear of collateral damage. He states,

[148]Fontenot, Degen, and Tohn, *On Point*, 192.

> I had no idea, until after the mission, the impact that all those briefings we'd had about capitulating forces and our tapes being reviewed at the highest levels would have in the minds of some of my young aviators. In retrospect, I would have made sure that they knew to always, always, always return fire. If you're returning fire at someone who's shooting at you, there's nothing to worry about.[149]

Furthermore, the rules of engagement were overly limiting to the aircrews with multiple no fire areas and restrictive limitations on the use of rockets in proximity to civilians.[150] Ultimately the reluctance by the aircrews to engage the threat can also be traced back to the regiment and V Corps' failure to properly visualize the enemy. The aircrews were initially unsure of how to respond to a threat that was completely unlike the one for which they prepared. Planning to use their Forward-Looking Infrared (a low light vision system) systems to identify enemy tanks and artillery pieces, the aircrews found it very difficult to positively identify individual enemy personnel.[151] Furthermore, Col. Wolf, the Commander of 11th AHR, had advised his aircrews "their combat recordings might be inspected for infractions of the rules of engagement."[152] According to Lt. Col. Barbee's previously mentioned CALL interview, this and other such statements led to a perception among the aircrews that any mistake in fire control would carry consequences resulting in an initial reluctance to return fire at times where it would have been appropriate to do

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[149]Combat Studies Institute, *Interview with Mike Barbee.*

[150]Fontenot, Degen, and Tohn, *On Point*, 191.

[151]FLIR systems are adapted to detect the thermal energy of an object and translate that energy into the visual image for the pilot. A FLIR system can not visualize the tracer signature in the same manner as the night vision goggles used by many of the pilots flying in the front seat of the AH-64, further contributing to the difficulty in returning fire.

[152]Gordon and Trainor, *Cobra II*, 272.

so.[153] V Corps and 11th AHR leadership emphasized to the aircrews, as they had to other V Corps units that the US military would be welcomed as liberators, stressing the restraint that would be needed. While restraint should always be applied to a lethal force situation, in this instance the over emphasis of restraint led to delayed reactions by US aircrews in defending themselves.

A final lesson passed from the 11th AHR to the 101st Aviation Brigade was the requirement for the aircrews to prepare to fight their way to the engagement area and to employ moving fire techniques in order to make their aircraft a more difficult target for enemy surface to air fires. The 11th AHR had used a formation that promoted speed over security. This type of formation put the aircraft in loose but discernable formations, assisting in the control and speed of the flight of aircraft but only at the expense of security. Moreover, many of the 11th AHR aircrews had to be reminded to keep moving when finally forced to return fire as opposed to slowing down to fire from a hovering position.[154] In contrast, the 101st planned to maintain constant movement to make its aircraft harder to engage, and also to employ a "lead aircraft, wingman" formation that would allow one aircraft to actively search for targets while the second aircraft would focus on identifying potential threats so that the formation could immediately provide supporting fires if needed.[155]

In addition to a better appreciation of the ROE and a plan to engage enemy en route to the engagement area, the 101st plan placed a primary focus on the security of the

[153]Combat Studies Institute, *Interview with Mike Barbee.*

[154]Gordon and Trainor, *Cobra II*, 273.

[155]Fontenot, Degen, and Tohn, *On Point*, 193.

flight. Whereas the 11th AHR fired SEAD missions 30 minutes in advance of the aircraft, the 101st reduced that time to four minutes. Whereas the 11th AHR did not have any USAF support during their mission, the 101st plan specifically integrated fires from USAF aircraft as part of its fires plan. From the moment the attack helicopters of the 101st left their assembly area, they planned to engage the enemy with direct fires from the helicopters followed by engagements with close air support if required.[156] The 101st Aviation Brigade after action review from this time period stresses the use of joint fire support. Stating, "The close air support served in nearly a direct support role in our attacks."[157] The 101st after action review stresses the use of multiple types of fire support assets from direct fire from the helicopter's armament, to joint close air support from fixed wing aircraft, to long range artillery fires. Through the use of these multiple types of fire support, the 101st forced the enemy to react to multiple types of fire, this technique allowed the Apache crews to maneuver closer to their targets and destroy any remaining enemy fighters.[158] This plan effectively wrapped the aircraft of the 101st in a cocoon of fire support that protected the aircraft and crews both enroute to and in the engagement area. This close integration of direct fires from the attack helicopters, CAS from USAF fixed-wing aircraft, and indirect fires from army artillery, coupled with the increased en route security employed by the 101st marks the largest difference in the 101st deep attack vice the 11th AHR's effort.

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[156]Ibid.

[157]101st Aviation Brigade, "101st Aviation Brigade (Attack) Operation Iraqi Freedom: Lessons Learned through 15 April 2003," https://www.jllis.mil/?cdrid=56487&doit=view&disp=cdrview (accessed 15 May 2014).

[158]Ibid.

The 101st applied a different methodology than did the 11th AHR in the selection of air routes from their assembly area to the objective. The 11th AHR planned routes in the same way they had been trained to conduct a deep attack against a conventional threat. The 11th AHR routes endeavored to avoid lit areas in favor of flying in the darker portions of the landscape in order to avoid detection. Furthermore their routes anticipated a threat using radar technology to guide their air defense fires as opposed to visual observers.[159] The routes of the 11th AHR placed a premium on fast, low altitude flight that got the attacking aircraft to the objective area as quickly as possible.

In contrast, drawing upon the lessons learned from the 11th AHR's experience, the 101st planned routes designed to deceive the visual observers that were part of the low technology Iraqi air defense network. These routes flew through areas illuminated by ground lights because the enemy was expecting the aircraft to fly through the dark areas. Most importantly, the 101st planned routes with multiple changes of direction designed to deceive enemy visual observers as to the true direction of the attacking helicopters. In their deep attack of 28 March, 2003 the 101st phased the routing and timing of the two attack battalions so as to deceive the enemy regarding not only the final target area of the attack, but also as to the direction from which the main effort of the brigade's attack would appear.[160] Furthermore, the 101st Aviation Brigade planned to vary the altitude and airspeed of the aircraft in the flight to further deceive Iraqi observers and fighters engaging the aircraft with small arms and machine gun fire.

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[159]Ibid.

[160]Fontenot, Degen, and Tohn, On Point, 193.

The 101st conducted the attack with two battalions attacking towards Karbala along two different routes. All of the attacking companies received ground fire in a similar manner to that experienced by the 11th AHR, but the increased en route security measures paid off for the 101st. During the approach portions of their mission, the flights employed one aircraft to the rear and flanks of the formation that was solely focused on identifying enemy combatants and suppressing those individuals with direct fires. While in the engagement area, the aircraft used the lead (wingman) formation to maintain constant movement and security while the crews were engaging enemy vehicles and weapons systems.[161] Furthermore, as planned, CAS fires were used to destroy targets identified by the attack helicopters.

At the end of the 101st attack, only one aircraft sustained enemy fire, and while the damage inflicted by the 101st was less than hoped it was appreciable including 25 vehicles, seven ADA systems, and seven other maneuver systems out of the 14th Brigade of the Medina Division. Additionally, the en route security measures worked with 2/101 estimating that it destroyed five enemy vehicles and fifteen enemy fighters while moving to the objective area.[162] The most notable feature of the attack is how quickly army aviation adapted to the hybrid threat posed by the Iraqi forces.

Of the two deep attacks, one was almost a complete failure, while the other was a clear, if not resounding success. In hindsight, the 11th AHR's failed attack is more widely known and researched than the 101st Aviation Brigade's successful one, and has led many in Army Aviation and the broader military community to question the efficacy

[161]Ibid., 195.

[162]Ibid., 194.

of the helicopter deep attack on the modern battlefield.[163] Furthermore, following the collapse of the Hussein regime and the Iraqi Army, subsequent attack aviation operation in Iraq were flown in support of the counter insurgency campaign, meaning that attack aviation focused on reconnaissance, security, and close combat attacks. As a result, the deep attack has been relegated to a secondary status within current Army Aviation doctrine. The secondary status of the deep attack in current doctrine is evidenced by the change in attack aviation doctrine from the 1997 version of FM 1-112 *Attack Helicopter Operations* to the 2007 FM 3.04-126 *Attack Reconnaissance Helicopter Operations*, and finally FM 3-04 *Army Aviation* published in 2014. In FM 1-112 attack helicopter operations are described as best conducted independently in order to take advantage of the speed, lethality, and firepower of the attack helicopter battalion. In this publication, close combat attacks are not mentioned in favor of deep attack employment techniques. Conversely, in the post 2003 doctrinal publications not only is the term "deep attack" changed to "interdiction attack," but it is only listed following explanations of attack helicopter roles in security, reconnaissance, and close combat attack operations.[164]

On closer examination, however, the 11th AHR's failure is not a failure of deep attack doctrine or tactics, nor did the attack fail solely due to the hybrid threat it faced. As previously stated, the 11th AHR attack failed due to a poor visualization of the operational environment and an inability to adapt tactics designed for a purely conventional threat to a hybrid threat that evolved specifically to counter helicopter deep attacks. Furthermore, the 11th AHR leadership either ignored or explained away

[163]Thornburg, "Army Attack Aviation Shift in Training and Doctrine," 17.

[164]Department of the Army, FM 1-112; Department of the Army, FM 3-04.126.

conditions that were unfavorable for the conduct of such a risky and complex operation as a brigade sized helicopter deep attack, including having less than 50 percent of the fuel required for the mission on hand. The lack of fuel resulted in one attack battalion not entering the attack and the regimental commander's aircraft unable to participate due to a lack of fuel. Whether the true motivation to conduct the attack was due to an intense desire to "get into the fight" at any cost, or whether the leadership of the 11th AHR and V Corps believed the attack was an acceptable risk is known only to those present at the time of the decision. What is clear however is that in hindsight, the decision to conduct the attack was incorrect given the lack of understanding of the enemy situation and the near total unpreparedness from a logistical and force protection standpoint was imprudent. The 11th AHR's deep attack should be viewed as a failure to correctly apply deep attack doctrine, and a failure of leadership to understand and visualize the operational environment as one that had changed from ODS or the training grounds of Europe. It should not be used as evidence of the ineffectiveness of helicopter deep attacks on the modern battlefield.

The 101st had the opportunity to learn from the 11th AHR's mistakes and to apply that knowledge to their practiced tactics and techniques. The 101st attack, while not resulting in the numbers of destroyed enemy personnel and equipment expected from pre-war training and simulations, was however successful in that it did attrite the Medina Division prior to 3rd ID engaging them in battle, and the aircraft and crews emerged from the attack with minimal damage from enemy fire. The result is that army aviation now has a model for how the helicopter deep attack, or interdiction attack, as it is now named can be applied to a hybrid threat. Through increased security and a detailed fires plan, an

attack helicopter force can fight its way to the engagement area and successfully destroy enemy forces, however the capabilities of a hybrid threat must not be underestimated.

Transition of Attack Aviation to the Aerial Fire Support Role

Following the deep attacks conducted by the 11th AHR and the 101st Aviation Brigade, attack aviation began to revitalize itself in the close air support role in reaction to a threat that was more unconventional than originally planned. In response to the initial attacks, General Tommy Franks told his staff to develop new tactics for the employment of Apache helicopters in the environment of OIF.[165] These tactics developed were not new, but rather returned the Apaches to the original role of the attack helicopter, that is, close air support to soldiers on the ground. In his 2003 essay, Major Robert Cassiday referred to the new tactics as "close shaping." The close air support role would prove to be the manner in which attack aviation was employed throughout the remainder of the war.

Some attack helicopter units, notably the attack helicopter battalions of the 101st Aviation Brigade had long enjoyed a close relationship with the infantry brigades of the 101st Airborne Division and easily made the transition to "over the shoulder" support of ground forces. As stated in chapter 2, 101st Airborne Division was the only light infantry division equipped with AH-64 attack helicopters as opposed to the OH-58D armed reconnaissance helicopters which filled the role of attack helicopter in all other light divisions. Because the 101st was designed as an "air assault" division, there were three

[165]Tommy Franks and Malcolm McConnel, *American Soldier* (New York, NY: Harper Collins, 2004), 493-499.

attack helicopter battalions in the division, one for each infantry brigade, where all other divisions only had one attack helicopter battalion in their aviation brigades. It was the 101st that developed the close combat attack techniques that would eventually promulgate throughout the attack aviation force in OIF.[166] Other attack helicopter battalions, such as those from the corps aviation brigades like the 11th AHR or heavy divisions such as the First Cavalry Division had traditionally not fostered as close of a habitual relationship with their supported infantry and had to relearn many of the lessons of air ground integration that fell dormant during the years that attack aviation focused on the deep attack.[167] An important lesson learned from the experience of transitioning away from the deep attack was that aircrews could adapt quickly to an emerging mission only if they have previously trained for that mission.[168] In other instances, such as with the corps attack helicopter battalions it took time and retraining before they were proficient in the close combat attack role.

Attack battalions required additional training when transitioning to the close combat role because in addition to rekindling the air ground relationships between aircrews and their supported ground forces, the aircrews themselves had to adapt the manner in which they flew and conducted engagements. In the deep attack, engagements were traditionally conducted while the aircraft is hovering in a stationary position. The stationary firing technique, like the deep attack itself was well suited for both a conventional enemy on a "linear" battlefield. Stationary firing allowed the aircrews to

[166]Buss, "Evolution of Army Aviation," 39.

[167]Stinger, "Attack Aviation back to its Roots," 26.

[168]Buss, "Evolution of Army Aviation," 37-40.

remain in concealed battle positions, waiting for enemy mechanized formations to enter the engagement area. Furthermore the relatively cool climate and low altitudes of the central European plains provided the denser air needed for the Apache's engines to produce the power needed to hover the fully loaded aircraft.

Running and diving fire, as well as other moving engagement techniques came back into favor beginning in OEF and matured in OIF for two reasons, firstly the operational environment in both theaters was non-linear, meaning that the attack helicopters had to stay moving in order to avoid engagements from surface to air fires. Secondly, the climates in both Afghanistan and Iraq are either very hot, high in altitude, or both. In high temperature, high altitude environments the air is less dense which results in aircraft engines producing less power. Hovering a helicopter in a stationary position requires more power than maintaining the aircraft in forward flight due to an aerodynamic effect known as effective translational lift.[169] During the OEF and summer periods in OIF some fully loaded attack helicopters could not hover and had to use moving fire techniques. However, the primary impetus to transition to running fire engagement techniques was security. As the 11th AHR re-discovered, small arms and machine guns could prove deadly to an attack helicopter. Irregular forces could employ these weapons relatively easily against attack helicopters operating in urban terrain. This required attack aviators to remain moving at all times, and resulted in a transition to running and diving fire engagement techniques. Incidentally, these moving fire techniques were often the same as the techniques used in Vietnam by AH-1 attack

[169]Department of the Army, FM 3-04.203, *Fundamentals of Flight* (Washington, DC: Government Printing Office, 2007), 1-117.

helicopter pilots. As a result, Army Aviation began updating its helicopter gunnery manual in late 2003 with a large emphasis placed on standardizing moving fire techniques and close combat attacks.[170]

Another important lesson learned during the transition of focus from deep attack to the close fight concerned the mutual trust and cohesion that had to be built in the air ground team took training and standard operating procedures. In 2003 these operating procedures were not present in many divisions, and although aviation doctrine acknowledged attack aviation role in close support of ground troops, it did not specify how that support should be conducted.[171] Soldiers on the ground not only had to develop a common language and method of requesting fire support from the air crews, but attack helicopter companies and battalions had to learn how to best work in direct support of or operationally controlled by ground commanders. Placing an attack helicopter unit in an OPCON relationship to a maneuver brigade commander leaves the administrative concerns of aviation, specifically maintenance and aircrew management under the leadership of the aviation commander, but places the tactical control of those aircraft under the command of the maneuver commander. The maneuver commander dictates, in council with the supporting aviation unit when and where the aircraft fly and which of the brigade's subordinate units the helicopters support. The OPCON relationship results in a more responsive attack aviation force that can better meet the immediate needs of ground commanders in addition to helping create a more cohesive air ground team.

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[170]Stinger, "Army Avaition back to its Roots," 25-29.

[171]Buss, "Evolution of Army Aviation," 37-39.

Dispersing attack aviation to work OPCON to ground brigades sought to negate the asymmetric advantage the Iraqis sought against attack helicopters through their adaptation to a hybrid threat. Prior to OIF, attack helicopters normally operated in battalion mass or phased attacks such as the previously discussed deep attack, but after 23 March 2003 attack helicopters started operating in continuous close combat attacks.[172] Decentralized and continuous support to ground forces meant that the attack helicopters worked in small teams and were available for multiple smaller scale missions as required by the ground commander, and more importantly were available nearly around the clock.[173] Employing attack aviation in this role not only provided infantry and armor companies and platoons with extra firepower, but also extra sets of eyes that could assist in preventing irregular forces from attacking US forces and then evaporating into the populace. Attack helicopters could often halt or maintain contact with enemy irregular forces attempting to flee engagements with US forces.[174]

Shifting to the close combat role completely changed the employment of attack aviation during OIF. In the deep attack role, attack helicopters worked not in conjunction with the ground force, but independent from and adjacent to the ground force. In this role, army attack aviation operated almost more as an instrument of air power than a part of

[172]Robert M. Cassiday, "Renaissance of Army Aviation in the Close Fight," *Military Review* 83, no. 4 (July/August 2003): 42.

[173]Ibid.

[174]Fontenot, Degen, and Tohn, *On Point*, 198.

the ground force.[175] Conversely, for attack aviation to perform in the aerial fire support role the aircrews and their supported infantry began to work in either a direct support role or operationally controlled (OPCON) by the ground brigade commander.[176]

Following the successful deep attack by the 101st Aviation Brigade on 28 March, attack aviation doctrine began to focus almost exclusively on close combat attack vice deep attack. This adaptation of doctrine was in response to the initial mischaracterization of the Iraqi military as a conventional threat as opposed to the hybrid threat it was. The US Army overrated the conventional Iraqi Army, but underrated the irregular forces that operated as part of the Army, and whom continued to fight after the fall of the Hussein regime.[177] It was Iraq's irregular forces that provided the US with the most resistance while the conventional forces put up minimal resistance or simply melted back into the populace as soon as they got the opportunity. Because the Iraqi Army had "learned that if they massed in the open desert, the Americans would destroy them rapidly and from a distance," they instead attacked dispersed using the terrain and the civilian populace to their advantage. It is ultimately this adaptation by the enemy from a hybrid force to an increasingly unconventional one that forced attack aviation to adapt its tactics.

This chapter shows that when operating against a hybrid threat, both close combat attack and deep attacks are a viable employment option. Though the preponderance of attack helicopter operations in OIF took place in direct support of ground troops,

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[175]Brad Mason, *U.S. Army Helicopters and U.S. Air Force Expeditionary Forces: Implications for Halting Military Operations,* Occasional Paper No. 22 (Maxwell Air Force Base, AL: Center for Strategy and Technology, Air War College, June 2001), 7.

[176]Cassiday, "Renaissance of Attack Aviation in the Close Fight," 44.

[177]Fontenot, Degen, and Tohn, *On Point*, 265.

operations by the 101st Aviation Brigade provide a template for the successful application of interdiction attacks. The key ingredient in the success of attack aviation against hybrid threats ties in to the ideas expressed in the previous chapter. Each threat is characterized by the ways in which it operates along a continuum between conventional and unconventional ways of warfare. Attack aviation must properly characterize and understand its enemy to apply the proper employment technique.

CHAPTER 5

CONCLUSIONS AND RECOMMENDATIONS

This thesis examines questions regarding how army attack aviation should adapt in an operational environment where threat forces are increasingly hybrid in nature. The central argument is in an era of hybrid threats, the focus of attack aviation should maintain a balance between supporting ground forces and interdiction attacks at operational depths of the battlefield. Historically the focus of attack aviation doctrine focused on either providing aerial fire support to ground forces in the form of close combat attacks, or on the interdiction, formerly known as deep, attack employing attack helicopters at enemy formations beyond the forward line of troops or who are not yet committed against friendly forces to shape the close fight. When pitted against an irregular threat, such as in Vietnam, OIF, and OEF, the focus of attack aviation leans towards the close combat attack. Conversely when faced with a conventional threat, such as the Soviet Union during the latter stages of the Cold War the focus shifts to the deep attack. Hybrid threats however require a different approach. Because the core characteristic of hybrid threats is their ability to blend conventional and unconventional methods of warfare, attack aviation should blend the two aforementioned operational approaches.

The final chapter of this thesis draws conclusions from the preceding analysis and discussion. The conclusions address the research questions stated in chapter 1. Specifically, should army attack aviation adopt a balanced employment approach, is the interdiction attack still a viable operational approach for attack aviation on the modern battlefield, what aspects of the hybrid threat model dictate a balanced approach, and

finally how does the attack aviation experience in recent conflicts inform future attack aviation employment?

Conclusions

Should Attack Aviation Maintain a Balanced Approach to Employment?

In the exploration of attack aviation doctrine undertaken in chapter 2 of this thesis, it is evident that in the period between the end of ODS in 1991 and the present the focus of attack aviation employment is a dichotomy between aerial fire support of ground forces and independent deep attacks at operational depths of the battlefield. Just as attack aviation doctrine written in 1997 stated, "to take advantage of its speed and mobility against armored forces, the attack helicopter battalion fights pure," and boldly stated in the first paragraphs of its first page, "the attack helicopter battalion is an aerial maneuver unity usually employed as a battalion."[178] The aviation doctrine published in 2014 places more emphasis on reconnaissance, security, and attack operations in direct support of ground forces.[179] Though each of these doctrinal publications address attack aviation's role in both interdiction attacks as well as fire support for ground forces, each publication clearly regulates one role of attack aviation in favor of the other.

[178]Department of the Army, FM 1-112, 1-1, 3-1.

[179]Chapter 4 of FM 3-04 concerns attack reconnaissance helicopter operations. The author bases the assertion that reconnaissance, security, and attacks in direct support of ground forces based on the relative emphasis each operation is given in the doctrine. Attack aviation pure attacks on enemy forces out of contact with ground forces receive relatively little emphasis compared to attack aviations employment in the close fight. This is compared to the 1997 version of FM 1-112, *Attack Helicopter Operations* that deals extensively with attack helicopter pure attacks onto yet uncommitted enemy forces.

The assertion that the emphasis of attack aviation is now focused upon the close fight is further indicated by the writings of numerous attack aviation professionals who argue not only that the focus of attack aviation is the close fight, but also moreover that upon the close fight is where the focus should remain. One of the first such articles advocating attack aviation's focus on the close fight, published in the July-August 2003 edition of Military Review, discussed the ongoing transition of the attack helicopter from the deep attack to its role as a member of the small combined arms team.[180] This same transition led another writer to state that attack aviation had, "Returned to its roots" as a supporting element to ground maneuver.[181] In his thesis, Major Todd Thornburg stated, "with current and future wars and the improved technology of UAS and fixed-wing assets, the Army's focus should be on training Army attack aviation's aircrews CCA techniques, tactics, and procedures to ensure victory at all levels of war."[182] While none of these writers advocated completely abandoning attack aviation's role in deep operations, they argue that attack aviation should focus on the close fight as its primary role. A common tenet cited in the argument for attack aviation's focus on the close fight is the post Cold-War era shift in the threat landscape away from conventional threats toward unconventional threats.

The aforementioned writers are not completely wrong in arguing for the importance of the attack helicopter in the close fight, but subordinating the use of the

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[180]Cassiday, "Renaissance of the Attack helicopter in the Close Fight," 38.

[181]Stinger, "Aviation back to its Roots," 1-4.

[182]Thornburg, "Army Attack Aviation Shift in Training and Doctrine to Win the War of Tomorrow Effectively," 19.

attack helicopter in the deep fight and the positive shaping effects that such employment can have on the close fight is dangerous. If the spectrum of attack aviation employment were characterized by a continuum with close combat attacks on the left pole and deep attacks on the right, then the likely employment of attack aviation in future conflicts is left of center in favor of the close fight. However in a threat landscape characterized by hybrid threats, embodying elements of the conventional threat in conjunction with the unconventional, attack aviation with its inherent mobility, flexibility, and firepower may be the maneuver element able to best counter the conventional element of a particular threat. Furthermore, attack aviation provides a method of directly attacking a threat while exposing the overall force to less risk either because less of the overall friendly force is committed, or because attack aviation is not impeded by restrictive or impassable terrain in the same manner as other maneuver forces. Finally, through firepower, technological advantage, and shock effect, attack aviation may be able to qualitatively overmatch an opponent with a quantitative advantage to the US army or joint force committed to the operation, similar to attack aviation's anticipated role on the Cold War battlefield.

Perhaps the salient characteristic of the hybrid threat that requires a balanced approach from attack aviation is that threat's ability to engage US forces through multiple ways of force application from the conventional to the unconventional. The myriad of options available to the hybrid threat, coupled with its inherent propensity for metamorphosis, requires US military forces to enter a conflict with the diversity of capabilities required to counter a hybrid threat across the spectrum of conflict. This characteristic of hybrid threats plays to a strength of attack aviation because of the potential flexibility in its employment. It takes time to adapt conventional ground forces

to employment along different sections of the continuum of conflict. In a US military context, a field artillery battalion that is employed as infantry in a counterinsurgency environment takes time to return to its role as fire support. Furthermore, a light infantry force may have difficulty in countering a hybrid threat possessing the capability of employing armored forces. Attack aviation can more easily transition between conventional and unconventional ways of warfare.

United States forces must enter the conflict with the skills needed to instantly adapt to the evolutions of a hybrid threat from unconventional to conventional ways of war. Although the US Army is a learning organization, the size and diversity of the organization dictates that institutionalizing adaptations to changes in the threat environment will take time. Whereas the strength of the hybrid threat is its irregular component whose decentralized nature promotes adaptation, a purely conventional armed force can only make instantaneous change if the needed change exists under the umbrella of previously established doctrine and tactics, techniques, and procedures. When the doctrine and techniques do not exist, or exist but are not trained and developed, the conventional armed forces of the US are challenged to immediately adapt to changing approaches from the threat. The shift from deep attacks to close combat attacks in 2003 is indicative of an attack aviation force that can only shift its operational approach after training and development of the tactics and techniques of the new approach.

Are Interdiction Attacks Still a Viable Operational Approach Against Hybrid Threats?

In advocating for a balanced approach, it is useful to explore the viability of the interdiction attack in today's operational environment. The two deep attacks conducted in

OIF provide the vehicle with which to answer whether or not the interdiction attack should be maintained as an operational approach. Of the two attacks explored in chapter four of this thesis, the first, conducted by the 11th AHR was a failure while the second, conducted by the 101st Aviation Brigade achieved success. In short, yes, the interdiction attack is a viable employment technique in today's environment as long as the attack is planned and conducted in the correct manner.

Two primary characteristics made the 101st deep attack successful. First, the 101st properly understood the threat was not a purely conventional threat and would seek to defeat them asymmetrically just as they had the 11th AHR five nights prior. Second, the 101st planned the operation to maximize the integration of both army and joint enablers, particularly joint fires from USAF platforms. These two components of the 101st deep attack represent two of the three characteristics in which a deep attack must embody to be successful in today's operational environment. The third component is reconnaissance and precision targeting capabilities, which are available with today's technology and were only emerging in 2003. Finally, to orchestrate and synchronize an operation as risky and complex as an attack helicopter deep attack requires joint enablers to insure success. To fully leverage joint forces and enablers deep attacks should be planned and executed as a joint and not just an army operation.

The 11th AHR trained and prepared to conduct the type of deep attacks the unit executed on 23 March 2003 prior to their deployment to OIF. The problem in this approach was the enemy simulated a conventional threat using a Soviet-style doctrine. In the pre-deployment training scenarios the threat did not require the attacking helicopters to engage the enemy on their way to the engagement area, and the air defense threat was

technology oriented and could be located and targeted through SEAD planning and radar warning devices. The 11th AHR carried this paradigm into OIF, but the threat adapted to the traditional deep attack techniques the regiment employed. Particularly the Iraqi Army, following its defeat in ODS took extensive measures to adapt an air defense methodology to counter helicopter deep attacks. As a result the 11th AHR did not properly prepare for the asymmetric threat it faced, and failed accordingly.

In contrast, the 101st had the opportunity to learn from the experiences of the 11th AHR, and recent experience from deployments to Afghanistan in support of OEF.[183] This experience included not only operating against a guerilla threat, but also the running fire and lead-wingman techniques characteristic of today's CCA. As a result the 101st planned for the enemy fire during movement to the objective, they dedicated aircraft within the flight to provide suppressive fires, assuming the threat would employ small arms and machine guns as they had against the 11th AHR. Furthermore the 101st built experience with moving fire during their previous employment to OEF, which enabled the aircrews to return fire while continuing to move out of the engagement area. By understanding that the asymmetric ways in which the Iraq Army would counter helicopter deep attacks the 101st developed a plan using fire and maneuver and air routes designed to confuse enemy observers, they were able to maneuver to their objective area relatively unharmed.

The second component of a successful deep attack in today's operational environment, as evidenced by the experience of the 101st, is the integration of not only

[183]Stinger, "Army Aviation back to its Roots," 23.

army indirect fire support, but USAF fixed wing close air support as well.[184] Electronic attack is another enabler, which could prove crucial to a deep attack. The Iraqis used cell phones for early warning against the 11th AHR deep attack; electronic attack platforms could jam certain types of communications during the deep attack. The idea should be to wrap the attacking helicopter formations within the protection of on-call fire support to enable the attack helicopters to reach the intended objective area. In the 101st deep attack, when the aircrews received fire they immediately suppressed the enemy combatant, developed the situation, and handed the target off to fixed-wing close air support assets while the attack helicopters continued to the objective. This integrated fire support plan with both direct fires from the attack helicopters and fixed-wing CAS aircraft coupled with indirect fires from army artillery batteries are crucial to the successful conduct of deep attacks against hybrid threats not only because of the physical damage inflicted on the enemy, but also because of the psychological effect. Because the 101st returned fire with both its organic weapons as well as other fire support platforms, enemy fighters knew there would be consequences if they engaged the attack helicopters as they flew overhead. In contrast the 11th AHR was slow to return fire on the night of 23 March, and as a result the volume of surface to air fire never decreased because the enemy did not perceive any consequences from their actions.[185]

The third component of a successful deep attack is the integration of multi source intelligence collection into the attack plan. While this sounds elementary, the 11th AHR did not have any UAS support during their attack. Given the command and control

[184]Fontenot, Degen, and Tohn, *On Point*, 193.

[185]Combat Studies Institute, *Interview with Mike Barbee.*

problems experienced by the 11th AHR both prior to and during the attack it is unlikely reconnaissance information gained from the UAS would have made it successfully to the aircrews, but some type of near real time reconnaissance such as a UAS enables would have been the only way to confirm the templated enemy situation. Currently the US Department of Defense contains a much more robust and technically advanced intelligence, surveillance, and reconnaissance capability than it did in 2003. Depending upon how permissive the environment is with reference to air defense threat, flying intelligence collection platforms both manned an unmanned must be maximized to insure a successful deep attack.

The Army has already made great strides in the area of UAS integration. The current aviation restructuring initiative includes a Gray Eagle UAS company in each CAB as well as Shadow UAS organic to the attack reconnaissance squadron within each CAB.[186] These reconnaissance and surveillance assets should be a part of every deep attack plan. Not only do the Gray Eagle UAS have the range to operate at the depths associated with a helicopter deep attack, but the ability of UAS to loiter for extended periods over segments of the attack route or engagement area assisting in the location of threats or targets. The need for real-time targeting and information collection capabilities is even more important in deep attacks against hybrid threats than purely conventional threats due to the difficulty in locating dispersed enemy forces which are often camouflaged amongst the civilian population. In addition to target location, UAS have a role to play in threat avoidance as part of deep attack SEAD planning. As part of the

[186]David Vergun, "Army at Tipping Point of Unmanned Aircraft System Capabilities," *Army Times*, http://www.army.mil/article/122068/Army_at__tipping_point__of_unmanned_aircraft_system_capabilities/ (accessed 1 May 2014).

manned-unmanned aircraft team, the Shadow UAS can observe pre-planned SEAD fires, or detect targets for on call SEAD. A surface to air threat assessment is required if UAS is employed in this role, as UAS is susceptible to medium and high altitude air defense systems. However, the altitudes at which UAS operate are above the effective range of small arms and heavy machine gun fire.[187]

Attack Aviation against a Hybrid Threat in Recent Conflicts

The opening months of OIF provide a clear example of attack aviation operations against a hybrid threat. As stated in chapter 3, the Iraq Army in 2003 possessed an irregular capability to supplement the divisions of their conventional army. Army aviation experienced this during the 11th AHR deep attack when the regiment received sustained small arms fire while moving to the objective as opposed to the conventional air defense system it expected. Furthermore, Iraq's use of paramilitary forces clad in civilian attire, and dispersed amongst the civilian population made their detection difficult by attack aircraft using targeting systems designed to detect mechanized vehicles.

This thesis argues that attack aviation began OIF with a doctrine focused almost entirely on conventional threats, linear battlefields, and deep attacks, and then subsequently shifted focus entirely towards the close fight. Given the insurgent threat present in Iraq after March 2003 this author does not argue the complete shift to the close fight was incorrect, but rather upon the completion of OIF and the decreased operations

[187]Information based upon the authors personal experience as a UAS company commander in support of Operation Iraqi Freedom.

in Afghanistan it is time to re-look the focus of attack aviation with an eye toward maintaining balance in attack aviation employment.

Lessons learned from OIF demonstrated attack aviation units could not immediately shift from their focus on deep attacks to the close fight without training and the time required to develop atrophied skills and doctrine.[188] After required training and development of necessary techniques and procedures, all attack aviation units were able to shift focus to the close fight, however time may not be available in future conflicts. Furthermore it would be prudent to argue re-learning deep attack techniques and procedures would be more difficult vis-à-vis close combat attack techniques, given the complex nature of deep operations and the combined arms and joint enablers required to conduct a successful deep attack. Attack aviation doctrine at the outset of OIF made no mention of the close combat attack, and relegated close air support to ground soldiers as a secondary focus. Although the model for close combat attacks existed from army aviation's experience in Vietnam, and some attack battalions such as those from the 101st Aviation Brigade were using the same techniques in Afghanistan, the majority of attack helicopter aircrews were untrained and unfamiliar with this type of attack aviation employment. Conversely in our current force, the institutional knowledge of deep attack doctrine developed during the late 1990s and refined during and after ODS should not be lost from the culture of attack aviation, only to be relearned when it is needed to counter the hybrid threats of the current and future operational environment. The time required to

[188]Chad A. Smith, "Employment of Attack and Reconnaissance Helicopters," (Master's thesis, Command and General Staff College, 2005), 54-60.

relearn deep attack or interdiction attack technique could result in missed opportunities against a rapidly evolving threat.

Recommendations

As previously stated, this thesis asserts attack aviation should develop a balanced approach to operations against hybrid threats that characterize the present and future operational environments. Attack reconnaissance helicopter battalions will primarily operate in the close fight, but should without hesitation be ready to conduct an interdiction attack at operational depths of the battlefield should the opportunity arise. Attack aviation can only react to evolving hybrid threats throughout the spectrum of conflict by maintaining this balanced approach.

This thesis concludes with three recommendations that will enable attack aviation to maintain the previously mentioned balanced approach. First, attack aviation must retain the institutional knowledge on interdiction attacks in a doctrinal publication. Second, interdiction attacks conducted at operational depths of the battlefield must be planned and executed as a joint operation. Finally, attack aviation will only retain the capability to conduct interdiction attacks if the techniques are trained and developed at the battalion and company level. While it is difficult to train all tasks required of an attack reconnaissance battalion in a time and budget constrained environment, certain elements of interdiction attacks should be incorporated into training programs to ensure this capability is maintained within the attack aviation community.

The first recommendation of this thesis is to incorporate a detailed description of interdiction attacks into army aviation doctrine. Currently FM 3-04 devotes a few short paragraphs to interdiction attacks, their purpose, and techniques associated with this type

of attack operation. The information should be expanded to include details on all the associated planning, preparation, and execution steps so future attack aviation units will have a framework to apply to interdiction attacks. Doctrine 2015 provides a place for such a publication in the army tactics and techniques publication; the Army Aviation Center of Excellence is currently working on an army tactics and techniques publication focused on attack aviation. This publication should contain the institutional knowledge on interdiction, or deep, attacks gained during the 1980s and 1990s. The information contained in 1997 version of FM 1-112 on deep attacks provides an excellent starting point, and if updated could serve as the basis for new interdiction attack doctrine.

Secondly, attack helicopter interdiction attacks must be planned and executed as a joint operation with joint enablers integrated throughout the process. Properly leveraging joint enablers such as fire support assets, reconnaissance, surveillance, and electronic attack aid in mitigating the risk inherent in helicopter deep operations. The 101st Aviation Brigade deep attack illustrates this with their use of USAF close air support assets in an integrated fires plan to mitigate the effect of Iraqi air defenses enroute to the engagement area. On today's battlefield, joint enablers provide a significant capability not just as fire support, but also in reconnaissance and other intelligence collection efforts. Joint intelligence, surveillance, and reconnaissance provide a crucial element to interdiction attacks by increasing the likelihood of precisely locating enemy forces. The dispersed nature of hybrid threats imposes two difficulties in the execution of deep attacks outside of target and threat location that joint enablers can mitigate. Chief among these is the hybrid threat's likelihood to deploy in vicinity of non-combatants. In this instance, precise and observed fires are required. The employment of indirect fires near

the civilian population as part of the SEAD plan may not meet certain requirements of the rules of engagement, but joint enablers provide the observed precise fires to suppress enemy air defense teams such as the ones encountered by 11th AHR and the 101st Aviation Brigade during OIF.

Finally, attack aviation must continue to train the techniques and procedures involved in interdiction attacks. It is not enough maintain interdiction attacks as an operational approach, and to publish the tactics, techniques, and procedures for deep operations in doctrine if the techniques are not trained and rehearsed. With limited resources and time for training it is difficult to train the multitude of tasks expected from an attack reconnaissance battalion, but this should not preclude training on deep attacks entirely. Not all of this training has to be live however, much of the training is appropriate for constructive or virtual environments.

Deep interdiction attacks are arguably the most difficult and detailed operation an attack helicopter battalion performs. Much of this detail and difficulty however lies in the planning, synchronization, and command and control of the attack. Flight simulators such as could be used to practice command and control of the execution of the attack while staff and planning exercises could train staff and aircrew duties during the planning phase of the operation. These techniques alone would not result in an attack aviation unit that was fully proficient in deep operations, but would keep deep attack techniques alive and practiced in the attack helicopter battalions. Neither does the training for interdiction attacks end with the aircrews and small unit tactics. Corps, division, and brigade commanders and staffs must train to employ the attack reconnaissance battalions in the interdiction attack role not only to develop procedures required to plan and synchronize

the execution of deep attacks, but to determine the planning and support requirements between the multiple headquarters and elements involved in the operation. A CAB will require intelligence collection and targeting support in the planning and execution of the attack from the division and corps headquarters in addition to their assistance in resourcing the army and joint enablers required.

Recommendations in this final chapter are not meant to be sweeping nor difficult to implement. The central conclusion of this thesis is that interdiction attacks conducted at operational depths of the battlefield have a place against hybrid threats, but in order for army aviation to maintain the capability to conduct deep operations the doctrine and techniques of the deep attack must remain as a valid requirement for army attack aviation. This will only be done through continue emphasis on the deep attack as an operational concept.

Finally, the conclusions and recommendations in this chapter must be viewed in the context of the current Army and operational environment. In a 2012 document published by the US Army's Training and Doctrine Command (TRADOC) Intelligence Section (G2), entitled Operational Environments to 2028, the requirements for army formations to be adaptable and versatile are stressed by both the former TRADOC Commander and the document as a whole.[189]

Adaptability and versatility are the greatest strength of army aviation. Because the basic fighting unit of an attack aviation formation does not change, it is easier to change the focus of attack aviation to counter evolutions in the threat's operational approach than it is of other maneuver elements. Brigade combat teams (BCT) conducting counter-

[189]Department of the Army, "Operational Environments to 2028," 1-7.

insurgency operations (COIN) often organize differently than BCTs conducting combined arms maneuver against a conventional threat. An example is an armored BCT using Mine Resistant-Armor Protected (MRAP) vehicles or armored trucks during a COIN or stability operation as opposed to the main battle tanks and armored personnel carriers the same BCT would use during a conventional engagement. Furthermore, the threat could attempt to employ armored or mechanized forces against a lightly armed infantry BCT. It is the mobility and speed of attack aviation that can significantly contributes to the army and joint force commander's flexibility in countering hybrid threats. Attack aviation can only do this however if it is trained and prepared to conduct the full range of attack aviation missions.

APPENDIX A

HISTORY OF THE AH-64 APACHE:

AIRLAND BATTLE TO OIF

The army realized the need for a dedicated attack helicopter platform to provide close air support to ground forces during the Vietnam War.[190] The size of the Southeast Asia Theater of operations and the relative lack of traditional artillery was recognized as a weakness when conducting airmobile operations.[191] Originally it was thought that the need for close air support to ground forces would be filled by the US Air Force, but it was realized during tests conducted by the 11th Air Assault Division (test) and the first airmobile units in Vietnam that the USAF was unable to satisfactorily fill this capability gap. When it was available USAF close air support was often ineffective due to a lack in unity of command and joint training deficiencies.[192] The resulting development initiative gave birth to the AH-1 Cobra helicopter. Able to keep pace with the UH-1 assault aircraft and armed to counter a light infantry threat, the UH-1 was ideal for the Vietnam War. But as Operation LAM SON 719 would show, the attack helicopter would have to be updated to meet the armored threat expected in Europe.[193] The Army required a technologically advanced attack helicopter capable of carrying more anti-armor weaponry than the AH-1.

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[190]Frank W. Tate, "Army Attack Aviation Returning to the Close Fight: Impact of the MOUT Environment" (Monograph, School of Advanced Military Studies, 2001).

[191]Ibid., 20.

[192]Ibid.

[193]Stinger, "Army Aviation back to its Roots."

Following the conclusion of the Vietnam War, the US Army shifted focus to countering the Soviet threat in a planned battle on the plains of Europe. This shift required changes in doctrine to meet the armored threat of a peer competitor. The 1973 Yom Kippur War further proved the changing nature of warfare given the advancements in the lethality of weapons and improved armor and air defense artillery systems.[194] The Army realized through analysis conducted by the then new Training and Doctrine Command (TRADOC) that attack helicopters represented a vital component of its force but that to be relevant in the battle against the Warsaw Pact the attack helicopter would have to be redesigned into an anti-tank weapon.[195] General William Depuy stated, "a tank killing helicopter added new capability for attack, defense, and delay."[196] Out of this analysis, the Apache was born.

From its inception the Apache was designed to capitalize on the lessons of the 1973 Arab-Israeli War and the doctrinal concepts that would come to be known as AirLand Battle. Leaders in Army Aviation believed that standoff from long-range missiles, nap of the earth tactics, and night operations could exploit the attack helicopters' contribution to the battle.[197] For the first time, the 1976 version of FM 100-5 acknowledged that the attack helicopter could be considered as something other than a close air support platform.[198] With this doctrinal change the attack helicopter began to

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[194]Ibid.

[195]Tate, "Army Aviation Returning to the Close Fight," 25-26.

[196]Ibid., 27.

[197]Stringer, "Army Aviation back to its Roots," 40-50.

[198]Ibid., 29.

separate from its supported ground units, this separation progressed and became a component the Army's warfighting doctrine in AirLand Battle.

In 1984 the first Apache helicopters were delivered to the Army.[199] Despite some initial problems, Army leadership quickly realized the utility of this new aviation platform and the dynamic shift it signaled from previous attack helicopters. The first units equipped with the AH-64 were part of III Corps stationed at Fort Hood, TX. The Corps Commander quickly realized that the AH-64 would allow the manifestation of AirLand Battle as an operational concept and enabled truly deep operations.[200] Up to this point, attack helicopters had rarely been employed forward of the FLOT, but with the Apache III Corps leadership began to train for attack helicopter operations 20-30km forward of the FLOT. This represented a major paradigm shift in attack aviation employment.

Once army aviation demonstrated it could successfully attack targets at night at a distance of 30 km forward of the FLOT, that distance was extended to a point where AH-64 units trained on conducting night attacks at distances of 100-150km. If attack aviation could operate at this greatly increased separation from its supported ground forces it could do more than attack enemy forces moving against friendly divisions. At distances of 100 or more kilometers from the FLOT, the AH-64 could interdict formations moving from the enemy's reserve that would enter the fight at a future date. As Williams states, "they were no longer talking about a raid but about a deliberate, deep-attack operation as a routine part of the ground fight."[201]

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[199]Williams, *History of Army Aviation*, 211.

[200]Ibid.

[201]Ibid., 219.

The remainder of the 1980s saw the continued refinement of deep attack tactics. Army aviation began to operate in areas of the battlefield there had previously been a part of the joint arena. Army aviation began to develop methods to operate as part of a joint air attack team. Furthermore, doctrinal advancements employed Apaches as part of joint suppression of air defense operations and in the air-to-air role. This mindset that envisioned attack aviation primarily operating separately from its supported ground force is the paradigm that army aviation took into Operation Desert Storm. Attack aviation's direct support to the ground commander in the close fight was only a supporting act.

Operation Desert Storm represented the largest military operation since Vietnam, and pitted the United States and its allies against a near peer competitor. It was also the first time that many of the systems designed to fight the cold war, particularly the AH-64, were employed against a conventional threat. From the outset of the conflict, the Apache was employed separately from ground troops, illustrating the deep attack focus of the newly formed aviation branch.[202] Successful deep attacks such as the one conducted by TF Normandy comprised mainly of Apache crews from 1/101AB played a large part in the air campaign that opened Operation Desert Storm. At the end of Desert Storm AH-64 crews had accounted for the destruction of "278 tanks, 600 light armored vehicles, 100 pieces of artillery, and a variety of other targets."[203] This wartime performance

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[202]Stringer, "Army Aviation back to its Roots," 18-19.

[203]U.S. General Accounting Office, *Operation Desert Storm: Apache Helicopter Was Considered Effective in Combat, but Reliability Problems Persist, Report to the Chairman, Subcommittee on Oversight and Investigations, Committee on Energy and Commerce, House of Representatives* (Washington, DC: U.S. General Accounting Office, April 1992), 3.

legitimized the deep attack focus of air land battle, the aviation branch, and the role of attack aviation.

In turn, this was the experience that AH-64 units and attack aviation took into OIF. In the interim between ODS and OIF signs pointed to a changing threat. The cold war was over, and our nation's enemies learned from the Iraqi experience in ODS. In Haiti, Kosovo, and Somalia attack aviation met a much different enemy than the one faced in ODS. The enemy was increasingly dispersed, less technologically advanced, and more urbanized.[204] All of these factors are opposed to the deep attack doctrine optimized to combat massed enemy armor formations, but each instance was dismissed as atypical of the future fight.[205] As a result, although army doctrine as a whole began to focus more on Low Intensity Conflict, Operations Other than War, and stability operations attack aviation continued its primary focus on the deep fight. When the US entered OEF and OIF, attack aviation did not have a developed and practiced close air support doctrine.

[204]Stringer, "Army Aviation back to its Roots," 22.

[205]Ibid.

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