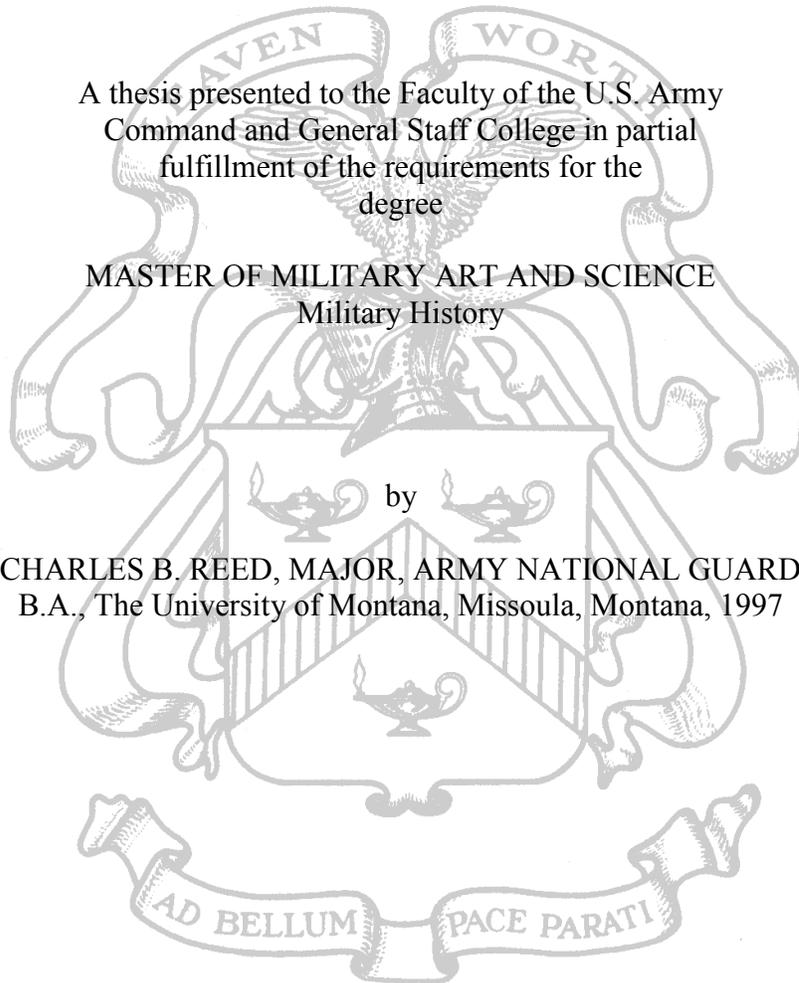


UNDER-ARMED, OVERTORQUED, UNAFRAID: A STUDY OF THE AEROSCOUT
EMPLOYMENT EVOLUTION IN VIETNAM

A thesis presented to the Faculty of the U.S. Army
Command and General Staff College in partial
fulfillment of the requirements for the
degree

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Military History

by
CHARLES B. REED, MAJOR, ARMY NATIONAL GUARD
B.A., The University of Montana, Missoula, Montana, 1997



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Name of Candidate: Major Charles B. Reed

Thesis Title: Under-armed, Overtorqued, Unafraid: A Study of the Aeroscout
Employment Evolution in Vietnam

Approved by:

_____, Thesis Committee Chair
Jerold Brown, Ph.D.

_____, Member
Wilburn E. Meador, M.A.

_____, Member
BG (Ret) Stanley F. Cherrie, M.A.

Accepted this 10th day of June 2011 by:

_____, Director, Graduate Degree Programs
Robert F. Baumann, Ph.D.

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ABSTRACT

UNDER-ARMED, OVERTORQUED, UNAFRAID: A STUDY OF THE AEROSCOUT EMPLOYMENT EVOLUTION IN VIETNAM, by MAJ Charles B. Reed, 96 pages.

The study begins with a general overview of the years following the Korean War through the Vietnam War. The overview examines the changing political landscapes, the events that helped to change doctrine, and the tactical changes that affected the development, employment, and integration of aeroscouts. The next chapter examines the political environment. The differing policies and the competing political agendas created an environment where the Army was forced to identify important changes necessary to remain relevant. The next chapter focused on the doctrinal changes, important milestones, and pioneers in Army Aviation. The chapter concludes with the idea that despite many individual and collective influences of key leaders, politicians, committees, and competing services, at the end of the day it was a collective effort that served as the catalyst for change. The final chapter examines the tactical changes by focusing first on the technological advancements, second on the weapons advancements, and finally on the changes in tactical employment. The study concludes that competition was the main force for change. Leaders searched for solutions but they really did not fully comprehend what the doctrinal development question was, which served as a poor example of how to integrate new technology and doctrine.

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ACRONYMS

ARVN	Army of the Republic of Vietnam
CONARC	Continental Army Command (predecessor to TRADOC)
ETL	Effective Translational Lift
MAAG	Military Assistance Advisory Group (Indochina)
MAAGV	Military Assistance Advisory Group Vietnam
MACV	Military Assistance Command Vietnam
NLF	National Liberation Front
TOE	Table of Equipment

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CHAPTER 1

INTRODUCTION

In years past, reconnaissance units were unique because of the capabilities the horse brought to the battlefield. Following World War I it was apparent that the horse had lost most of its utility to the Army and that mechanized or motorized reconnaissance units would become the norm.¹ Following the large scale introduction of the helicopter in the Korean War, visionaries began attempting to understand the utility and the limitations of the helicopter. Leaders established ad hoc boards to refine concepts. Individuals were given the leeway to experiment with new formations and with new technical advancements in order to try to understand how best to proceed in developing doctrine. It became clear that a series of competing forces, rather than a clear objective, fostered the development of the aeroscout.

Upon initial research of the topic concerning aeroscouts in the Vietnam War this researcher found no author that covered a thorough background of the topic area. Although much exists as historical overviews of Army Aviation, technical documentation regarding the development and fielding of new equipment, and personal and government accounts of application in combat, no narratives bridge the gap and combine all these aspects. This paper will discuss the evolution of aeroscout employment following the birthing of U.S. Army rotary-wing forces in Korea through the formative years of the Vietnam War.

¹John J. McGrath, *Scouts Out! The Development of Reconnaissance Units in Modern Armies* (Fort Leavenworth, KS: Combat Studies Institute Press, 2008), 1.

This researcher probed the question of what forces helped and hindered aeroscouts evolution by conducting a broad examination of the political, military, and technological environment beginning with President Dwight D. Eisenhower's administration in the 1950s through President Richard M. Nixon's administration in the early 1970s. Following the overview, the researcher narrowed the scope by examining three areas: the political environment, doctrinal changes, and tactical developments.

The political environment displayed some of the shifts that are all too common to defense spending. The shifts either facilitated or stymied the development of new aeroscout aircraft and doctrine. Eisenhower attempted to shield the military from the normal drastic cutbacks following wars and the dramatic buildups proceeding conflict. "Massive Retaliation" and the "Long Pull" were his tools for defending the nation's best interest. The environment continued to ebb and flow with the increases of defense spending of President John F. Kennedy's years, the cutbacks of President Johnson's administration, and the change in policy of President Richard M. Nixon's administration. Throughout these years each administration battled over what truly was the best way to defend our nation.

The doctrinal changes that resulted from the end of the Korean War through the end of the Vietnam War were a result of a collective effort. Many individual and collective influences of key leaders, politicians, committees, and competing services, at the end of the day served as the catalyst for change.

Changes at the tactical level created the conditions for the evolution of the aeroscout employment in Vietnam. Advances in aircraft, weapon systems, and tactical

employment increased the utility of the aeroscout. The aviation mission, however, continued to change as the strategy in Vietnam shifted.

Much has been written about general Army Aviation in Vietnam but few authors focused specifically on aeroscouts. The authors that spoke in detail of aeroscouts generally did so at the tactical level and did not include the other factors such as the ongoing political situation or the doctrinal changes and events from which we came from. LTG John J. Tolson's study, *Airmobility: 1961-1971*,² was invaluable in providing a historical backdrop for the doctrinal changes and in assembling the key boards while providing the significance of the boards. Tolson's study also depicted the intense interservice rivalry between the Army and Air Force. Dr. Ian Horwood's book, *Interservice Rivalry and Airpower in the Vietnam War*,³ served as a good source for gaining additional background information ranging from the early arguments over the separate Air Force to the agreements between services that early on served to restrict Army rotary-wing aviation. Government publications, such as reports from the Army Concept Team in Vietnam, combat after action reports, and requirements for the development of light observation helicopters, proved invaluable in gaining both the technical and tactical understanding of the developmental problems faced in Vietnam.

The significance of this paper will be in providing historical importance which could be later used in shaping thought for future operations. Some very similar parallels can be drawn to the challenges we are facing today balancing the fiscal health of the

²John J. Tolson, *Airmobility: 1961-1971* (Washington, DC: Department of the Army, 1989).

³Ian Horwood, *Interservice Rivalry and Airpower in the Vietnam War* (Fort Leavenworth, KS: Combat Studies Institute, 2006).

nation and with the drawdowns of forces in Iraq and Afghanistan. Aeroscouts will continue conduct dangerous missions while doing more with less, controlling what is in their ability, while other factors control the development of future aircraft and doctrine.

CHAPTER 2

OVERVIEW

As the United States transitioned from the Eisenhower Era, whose foreign policy and national defense strategy were built upon nuclear deterrence, into an era of persistent conflict in Vietnam, the evolution of rotary wing assets in U.S. Army operations struggled to carve out its role. Although influenced by difficult federal budgets, technology outpacing doctrine, and the unpredictable nature of a new type of warfare, Army scout helicopter roles nevertheless created the foundation for helicopter doctrine for the next four decades.

The utility of rotary-wing aircraft for war fighting further evolved following the Korean War. The Army as an institution had a tough time justifying itself during the major cutbacks of the Eisenhower era. The “New Look” and the Nation’s reliance on nuclear weapons for shaping foreign policy hindered growth of conventional forces (It is likely that because of restricted budgets, changes in rotary-wing inventory evolved slowly).

Army Aviation was involved in French Indochina as early as the formation of the Military Assistance Advisory Group Indochina (MAAG) in 1950. It was subsequently split to Vietnam and Laos sections in 1955. Following the French defeat, small numbers of H-19 helicopters were used to transport advisors and to train the Army of the Republic of Vietnam (ARVN) soldiers. As a result of their performance it became increasingly obvious that American helicopters were borderline archaic. Continental Army Command (CONARC) therefore recommended the initiation of a project to modernize the helicopter fleet, most notably replacing the multi-role H-13 and H-23s that were utilized during the

Korean War and form the “Sky Cav Platoon” which was one of the earliest Army aerial reconnaissance units.

Activated at Ft. Rucker in 1957, the Sky Cav was subdivided into separate recon, infantry, and gun sections.⁴ The H-13 served as the primary gunship with 2.75” rockets and .30 caliber machineguns while the “slick” version (unarmed) of the H-13 served as the primary recon platform.

To test this new concept, Colonel Jay D. Vanderpool ran a “think tank” at Ft. Rucker pioneering the applicability of aeroscouts and armed aircraft in combat operations. Vanderpool’s group operated as a part of the Army Aviation Center’s Combat Development Office (CDO) and worked tirelessly to promote the armed helicopter concept.⁵ The Sky Cav units followed no particular Table of Organization and Equipment (TOE). Two of the units existed outside of Ft. Rucker: A Troop 17th Cavalry in the 82nd Airborne Division and B Troop 17th Cavalry in the 101st Airborne Division.⁶

In the late 1950s it became apparent to senior Army officers that modernization of the aging helicopter fleet must occur in order to meet potential future demands. Future aircraft would need to perform the missions of transportation, route and position reconnaissance, and area reconnaissance.⁷ In 1958 initial aircraft were selected for the reconnaissance helicopter project, one of which was of French design, and one designed

⁴Lawrence H. Johnson III, *Winged Sabers: The Air Cavalry in Vietnam 1965-1973* (Harrisburg, PA: Stackpole Books, 1990) 14-15.

⁵Johnson, *Winged Sabers*, 3.

⁶Ibid., 3-4.

⁷James W. Williams, *A History of Army Aviation, From its Beginnings to the War on Terror* (Lincoln, NE: iUniverse, 2005), 153-154.

by a US firm, Hughes Tool Company. All of the helicopters failed testing either due to design flaws or limited payload capability, thus becoming unsuitable replacements for the H-13 and the H-23. This testing extended the process for modernizing the scout helicopter.

October 1959 brought about new hope for a revived Light Observation Helicopter (LOH) competition. The specifications that the Army desired changed slightly from those of previous applicants. The Army desired a light helicopter that was reliable and easily maintained in forward environments. This helicopter needed to be small enough to be transported by air and also needed to be capable of performing the missions of reconnaissance, visual observation, target identification, and command and control.⁸ Thus the Army began an Army Aircraft Development program in October 1959, which established the guidelines and future goals of Army Aviation for the subsequent decade. This plan essentially set the agenda for important future research, which was influenced by the Rogers and the Howze Boards of later years.

The Rogers Board (1960) often overlooked because of the famed Howze Board (1962), acted as a catalyst for change in Army doctrine and formations. LTG Gordon B. Rogers, the Deputy Commanding General for Developments, US Continental Army Command (USCONARC), served as the committee chairman (see Appendix A for list of committee members) and his committee was tasked by USCONARC with studying the training requirements necessary to support the Army Aviation Program (1960-1970). USCONARC headquarters viewed the mission of supporting the aviation program as a

⁸Department of the Army, Army Material Command, *Technical Information Report 18.1.1.1, Development of Light Observation Helicopter (LOH), OH-6A* (Washington, DC: University of Pittsburgh Army Material Staff, 1965), 2-3.

high priority. Thus the board was to expeditiously examine the training programs compatibility with available resources, the adequacy of construction programs to meet future training requirements, the ability of current and future programs to meet requirements, and the ability to consolidate, reduce, or eliminate training without loss of effectiveness.⁹

The board's conclusions identified problems in training programs as well as shortfalls in facilities and resources. The board concluded that the FY 61 operations and training programs for aviation were not compatible with the available resources. The Army needed to expand its training facilities to meet future demands. Therefore, the board examined multiple Air Force bases scheduled for closure to determine if they were suitable for Army Aviation. They found all bases unsuitable for training and therefore recommended other courses of action for expanding aviation training capabilities (see Appendix B for the purpose, facts, assumptions, recommendations, and conclusions of the Rogers Board).¹⁰

The Rogers Board comprehensively examined all existing aircrew training in order to determine where necessary training adjustments existed. Identification of course objectives and timelines for all helicopter pilot type courses to include initial qualification course, observation, instrument qualified light-transport, HC-1 transition course, and the H-37 transition course were introduced in the report. The observation helicopter aviator course objectives sought to qualify aviators in the procedures of basic flight and the

⁹Department of the Army, US Continental Army Command. "Ad Hoc Committee on Requirement for Training in Support of the Army Aviation Program 1960-1970" (Fort Monroe, VA: US Continental Army Command. December 1960), 9.

¹⁰Department of the Army, *Ad Hoc Committee*, 3.

tactical employment of aviation forces to support ground combat operations. The core of the course focused on instruction of all necessary flight maneuvers, basic instrument flight, tactical employment, air to ground gunnery, artillery adjustment, as well as various ground school subjects. The OH-23 served as the primary or basic flight maneuver trainer. Student pilots received approximately 12 weeks of training (80 hours). The H-13 served as the trainer for the tactics phase. Student pilots here received approximately 8 weeks of training (50 hours) during the tactics phase.¹¹



Figure 1. OH-13 Sioux

Source: GlobalSecurity.org, "OH-13 Picture," http://www.globalsecurity.org/jhtml/jframe.html#http://www.globalsecurity.org/military/systems/aircraft/images/h-13_oh-13.jpg|||h-13_oh-13.jpg%20%2854711%20bytes%29 (accessed 1 May 2011).

¹¹Department of the Army, *Ad Hoc Committee*, 50-51

The Rogers Board is important because it identified issues that helped change future dynamics within Army Aviation thought. The findings set in motion the wheels of change taking Army aviation from a decentralized force structure towards the Airmobile Division structure and beyond. Additionally the Board's findings helped propel the Army from a fledgling helicopter force to a very robust one through changes in training, improvements in facilities, and by reorganization and investment in future airframes.

General Maxell Taylor served as a member of the Joint Chiefs of Staff during the latter part of the Eisenhower administration. Taylor earned his reputation as the commander of the 101st during World War II. He was a vocal critic of the policy of massive retaliation and believed that the military needed to be postured to fight across the spectrum of conflict. Taylor became disenfranchised with politics particularly with the inability to build what he believed was the right kind of force, thus he retired from service. Following his retirement, Taylor published a book entitled *The Uncertain Trumpet* which chastised Eisenhower's defense policies. The book, however, caught the attention of then Senator John F. Kennedy, who later called on Taylor to continue serving the nation.¹²

The election of President Kennedy in 1960 signaled a significant change of course for the Army. Prior to the election, the Army fought an uphill battle for modernizing the force structure. The "New Look" policy of Eisenhower crippled the conventional Army by investing in nuclear weapons and cutting other defense spending. Eisenhower's policy

¹²Peter Kross, *General Maxwell Taylor's Mission to Vietnam* (Leesburg, VA: Weider History Group, 2006), <http://www.historynet.com/general-maxwell-taylor-mission-to-vietnam.htm> (accessed 30 May 2011).

of massive retaliation was useful only until the development of inter-continental ballistic missiles by other superpowers, which obviated the US policy of massive retaliation.

President Kennedy's administration therefore chose a new azimuth. His administration understood that nuclear weapons alone could not shape foreign policy and prevent future wars. Small wars continued to flare up around the world and the United States was not in position militarily to affect their outcome. He therefore sought a new way to protect the nation and to prepare it to win in future conflicts.

Kennedy believed that a "flexible response" policy should be the new strategy for the Nation. The administration viewed future conflicts to take place in areas like Korea, Southeast Asia, and the Middle East, as well as Soviet-supported insurgencies in Third World countries."¹³ Because of this shift in national strategy, it was critical to build up conventional forces, something that the previous administration had neglected.

Following the disastrous Bay of Pigs invasion, Kennedy enlisted the help of retired General Maxwell Taylor. Kennedy selected Taylor to investigate what went wrong with the failed operation. The final report detailed the political and military mistakes that doomed the invasion from the start. Kennedy was impressed by the way Taylor executed the report. Kennedy created a new post, recalled Taylor to active duty, and selected Taylor as the military advisor to the President.¹⁴

On 19 April 1962, Secretary of State Robert McNamara directed the Army to commence a review of aviation requirements. Secretary McNamara also established a by

¹³J. A. Stockfish, *The 1962 Howze Board and Army Combat Developments* (Santa Monica, CA: RAND Corporation, 1994), 12.

¹⁴Kross, *General Maxwell Taylor's Mission to Vietnam*.

name committee of civilian and military aviation experts to undertake this thorough review, thus laying the groundwork for the Army Tactical Mobility Review Board.¹⁵

The Army Tactical Mobility Review Board, later referred to as the Howze Board, consisted of Lieutenant General Hamilton Howze (then commander of XVIII Airborne Corps), a committee of reviewing officers and civilians, an advisory panel, and a secretariat. The individuals McNamara recommended for the board either served as reviewers or as members of the secretariat.¹⁶ Thirteen general officers and five civilians rounded out the board membership; however roughly 3,200 servicemen and ninety civilians participated in different phases of the testing.¹⁷ The board conducted over forty tests that ranged in scale from large exercises, complex live fire exercises, and tests of new equipment.¹⁸ The purpose of the board was to conduct a thorough review of Army aviation requirements.

The board initiated action with multiple test groups located at Fort Bragg, Fort Sill, and throughout the South. One concept team transited from Fort Bragg down to the swamps of Georgia, conducting realistic operations that simulated working in austere environments such as French Indochina. Another team conducted an exercise at Fort Bragg testing the ability for airmobile assets to perform a retrograde operation similar to the action that took place in Korea.

¹⁵Stockfisch, *The 1962 Howze Board and Army Combat Developments*, 14.

¹⁶*Ibid.*, 15.

¹⁷John J. Tolson, *Airmobility: 1961-1971* (Washington, DC: Department of the Army, 1989), 20-21.

¹⁸*Ibid.*, 22.

Similarly, live fire tests were valuable for determining the abilities of fixed wing and rotary wing aircraft to effectively engage targets. In addition to the various exercises, experts conducted several complex war gaming scenarios.¹⁹ The most significant major activity of the board throughout its deliberations was the investigation, testing, and evaluation of the organizational and operational concepts of airmobility. The findings and evaluations of field tests, war games, operations research, and visits to overseas combat theaters provided support to the final Board report.²⁰ These findings served to influence the Army's leadership and the Department of Defense regarding future force structure adjustments.

The first large commitment of American helicopters arrived in Vietnam on 11 December 1961. Thirty-two UH-21 Shawnee helicopters, crews, and support personnel arrived in Vietnam aboard the USNS Card. Less than a month later the UH-21s began transporting Army of the Republic of Vietnam (ARVN) forces across the battlefield, which initiated what becomes known as the Eagle Flight.²¹

¹⁹Stockfish, *The 1962 Howze Board and Army Combat Developments*, 17.

²⁰Tolson, *Airmobility*, 21.

²¹Williams, *A History of Army Aviation*, 115.



Figure 2. UH-21 Shawnee

Source: GlobalSecurity.org, "UH-21 Shawnee Picture," <http://www.globalsecurity.org/military/systems/aircraft/h-13-pics.htm> (accessed 1 May 2011).

The Eagle Flight was one of the early concepts for supporting ground operations with helicopter mounted troops. The Eagle Flight was essentially the lowest form of airmobility. Eagle Flight doctrinal missions included: reconnaissance in force; reinforcement of an airmobile force; self-reinforcement; reinforcement of ground forces; reinforcing airstrikes; establishing a vertical blocking force; immediate reaction force; and establishment of a covering force.²²

There were many identified weaknesses inherent with the Eagle Flight. The most obvious weakness was the language barriers for all the participants. Unfamiliarity in participants languages negated some of the abilities of the Eagle Flight. Much time was

²²Department of the Army, Military Assistance Advisory Group, Vietnam, *Eagle Flight Operations- Lessons Learned 32* (San Francisco, CA: US Army Section. October 1963), 4-6.

spent simply training ARVN soldiers how to enter and exit static helicopters instead of focusing on training the employment methods. The soldiers and advisors required suitable terrain for mounting and dismounting from the aircraft. Operations in terrain without open fields, for take offs and landings, created difficulties for employing this force. Helicopters were also particularly vulnerable to ground fire during approach and landing. The enemy would routinely wait until aircraft began to flare (slow) for touchdown then suddenly engage with direct fires. The problem is analogous to how a duck hunter waiting for the ducks to drop their feet and coast in for a landing before shooting. Lessons learned from forces in Vietnam, together with results of the Howze Board, positively shaped the future of airmobile doctrine.

The final recommendations of the Howze Board focused primarily on the formation of the air assault division. This formation was designed with more rotary wing aircraft than the normal division (459 aircraft vice 100 aircraft) while reducing the ground vehicles by roughly two thirds. These sweeping changes would permit the division to lift one third of its combat power simultaneously. Additional recommendations included the formation of the air cavalry combat brigade and the identification of the necessary intra-theater lift assets to move supplies to the air assault division.²³ It was up to the civilian and military leadership's discretion to follow the recommendations of the board. The 11th Air Assault Division (Test) and the 10th Air Transport Brigade (Test) were formed in order to test and validate the air mobility

²³Tolson, *Airmobility*, 22-23.

concepts recommended by the board.²⁴ The 11th Air Assault Division formed at Fort Benning and continued to refine the airmobility concept. Although not specifically designed for Vietnam, the escalating situation in Vietnam intensified the need for the airmobile division concept.

The Gulf of Tonkin Resolution, passed on 7 August 1964, gave the President the latitude ~~to~~ take all necessary measures to repel any armed attack against the forces of the United States and to prevent any further aggression.²⁵ President Lyndon B. Johnson and later President Richard Nixon used the resolution as a legal precedent for continued involvement in Vietnam. The number of troops and equipment sent to Vietnam dramatically escalated following Congress' resolution.

From 1965 to the end of the American involvement, helicopters participated in what is now referred to as full spectrum operations. New transport aircraft, such as the heavy lift CH-47 and various model UH-1s, were soon literally baptized in fire. Cargo and assault helicopters were relied on to move the necessary supplies and to maintain the logistical burden of supplying a force spread throughout South Vietnam.

Airmobile doctrine rapidly evolved. The lessons learned from the small scale Eagle Flights helped to solidify the changes. Formations of over 100 helicopters began moving soldiers across the landscapes of Vietnam. Although extremely important, their application was no longer limited to evacuation and troop transport. Modified aircraft

²⁴Department of the Army, DA Pam 360-216, *The Airmobile Division* (Washington, DC: Headquarters Department of the Army, November 1965), 9.

²⁵88th Congress, *Tonkin Gulf Resolution; Public Law 88-408* (General Records of the United States Government; Record Group 11; National Archives, 1964), <http://www.ourdocuments.gov/doc.php?flash=old&doc=98> (accessed 5 January 2010).

provided direct fires. Specialized aircraft provided lethal fires in support of the commanders on the ground. Early gunships, such as the UH-1 B, were outfitted with a nose mounted 40mm grenade launcher, pylon mounted 2.75” rocket pods, and flex 7.62 machine guns.

In spite of extensive tests near Fort Benning, the future of the Air Assault Division remained uncertain. The U.S. Air Force competitively conducted tests focused on sustained tactical air support of ground troops using troops of the 1st Infantry Division as the test subjects. Exercise Gold Fire I was executed in Missouri simultaneously with the final air assault tests. The Air Force concept not surprisingly embraced improving long established concepts rather than innovating new solutions to the complex problems faced throughout the changing battlefield.²⁶ The interim final report on the air assault test was submitted in December of 1964. Several more months passed while the future of the airmobile division was in doubt. Ultimately, however, the Army’s concept prevailed.

Following events in Vietnam, leaders determined that it was time to integrate the new division into the force structure. The 11th Air Assault Division was re-designated as the 1st Cavalry Division in July 1965. Secretary McNamara stated upon activating the new division:

The introduction of this new kind of division in the Army will greatly increase our growing capability to meet all kinds of threats. It places our Army on the threshold of an entirely new approach to the conduct of the land battle. Use of the helicopter to deliver men and weapons to the battlefield will result in greater freedom of movement and exploitation of the principles of surprise to an unprecedented degree.²⁷

²⁶Tolson, *Airmobility*, 58.

²⁷Department of the Army, *The Airmobile Division*, 1.

There was little time for the new unit to reflect on how far it had gone in the past couple of years. The Airmobile Division was a new concept, one that would be tested to a high degree in Vietnam.

The struggle in Vietnam appeared to be worsening. It seemed that the Viet Cong would likely be able to split South Vietnam in two parts along the II Corps Tactical Zone boundary. The deployment of the new division appeared to offer a perfect opportunity; however due to the deteriorating strategic situation, the 1st Cavalry Division had less than ninety days to prepare and deploy to Vietnam, something that appeared to be nearly an impossible task. Many problems existed that exacerbated the already short timeline. Over fifty percent of the original unit personnel were ineligible for deployment to Vietnam. Because of the shortages, the integration and training of replacement pilots and key personnel became an immediate priority. The structure of the division also underwent some major changes. The armed OV-1 Mohawks were removed and only a handful of unarmed OV-1s were retained for reconnaissance purposes.²⁸

As doctrine evolved in Vietnam so did the airframes. The underpowered OH-13 and less widespread OH-23s were finally replaced by the LOH-6A in late 1967. The Aviation leadership planned for the LOH or OH-6A to bridge the gap and fix the problems associated with operating underpowered aircraft in the high density altitudes (restricted lift) and hot humid weather of Vietnam. The OH-6A (Cayuse or Loach) was the primary light observation work horse from 1967 through the end of the United States involvement in Vietnam. In 1969 the OH-58A was introduced into theater following a much contested procurement plan. Initially Hughes was instructed to rapidly replace

²⁸Tolson, *Airmobility*, 61-62.

combat losses. When Hughes tendered the government a considerably more expensive figure per airframe in order to offset civilian market loss, the Department of Defense initiated a new LOH procurement program in which Bell Helicopter won out with an off the shelf Bell 206 model helicopter. The aircraft routinely flew in a similar configuration as the OH-6 with a 7.62 minigun mounted on the left side and a gunner/crew chief sitting in the right rear armed with a bungee corded M-60 machinegun.



Figure 3. OH-6A Cayuse

Source: Paul Freeman, “A Hughes OH-6A Cayuse, One of the Thousands of OH-6s Built at Culver City,” *Abandoned and Little Know Airfields: California*, http://members.tripod.com/airfields_freeman/CA/Airfields_CA_LA_W.htm (accessed 5 May 2011).

The aeroscouts had a very wide range of missions within their scope of operations. Their primary jobs usually fell into four categories: Visual Recons (VRs) which included scouting for enemy base camps, fighting positions, cache sites, trails, movement and other signs of activity. Bomb Damage Assessments (BDA) were oftentimes completed following B-52 strikes in order to evaluate the damage done to

terrain, enemy structures, and enemy personnel. Landing Zone (LZ) Recons helped to determine the suitability of proposed LZs for the organic lift platoon and for other forces. Screening operations rounded out the all-encompassing missions. These operations included flying on all sides of a moving ground force, providing advanced situational awareness, and terrain information. Scouts also kept the supported unit aware of the situation to its flanks and front.²⁹

Aeroscouts similarly, gave the ground commander the ability to quickly react to an unforeseen enemy. Armed scouts could fix small enemy forces with the help of organic fires, gunships, and Air Force air support assets. This ability developed over time and was not as evident in Vietnam during the mid-1960s.

Following the election of Richard M. Nixon in 1968 and the rise of Vietnamization, the role of the aeroscout did not change. Under Nixon's secret plan to win the war, the Vietnamization policy, America began taking more of an advisory role in preparation for the withdrawal from Vietnam. The South Vietnamese forces were then to take the lead in the fight. The aeroscouts continued to press their fight to the enemy. The shoot down statistics show that the OH-6 losses continued to escalate through the initial introduction to the drawdown and pull out of American forces. This increase could be attributed in part to the high number of aircraft lost supporting the ARVN during Operation Lam Son 719. One would think that with the Vietnamization policy and the reduction of forces in theater, pilots would begin flying higher and less audaciously in order to ensure they were not the last guy shot down in Vietnam.

²⁹Hugh L. Mills Jr. and Robert A. Anderson, *Low Level Hell: A Scout Pilot in the Big Red One* (Novato, CA: Presidio Press, 1992), 38-39.

It is debatable whether the evolution of the employment of aeroscouts scout changed our style of warfare or if the changing nature of warfare forced the rapid relevant emergent role. Regardless, if Korea was the birthing of Army combat helicopter roles, then Vietnam was the developmental years of its evolution and in that evolution was borne the critical role of the armed scout helicopter; a mission so important that it influenced training, doctrine, and operation for the next forty years.

CHAPTER 3

POLITICAL ENVIRONMENT

In order to understand what facilitated the evolution of scout aircraft, it is important to understand the political background of the era following the Korean War through the Vietnam War. Aeroscouts and specialized rotary-wing aviation units were not a part of the organizational structure of the U.S. Army following the Korean War. Four presidential administrations faced unique challenges that ultimately affected the further adoption, refinement, and procurement of new rotary-wing aircraft and doctrine in the U.S. Army.

President Dwight Eisenhower and his “New Look” policy greatly delayed the evolution of the fighting helicopter.³⁰ His later change from a defense posture of massive retaliation to limited response set the tone for future changes in defense policy. Incidents, such as the launching of Sputnik and the eventual French failures in Indochina, culminating at Dien Bien Phu, solidified the necessity to shift from the policy of massive retaliation. It became more and more apparent that the threat of nuclear war would not deter the fighting of small wars. President John F. Kennedy and his administration therefore formulated a flexible response policy. This policy found merit early on during the Cuban Missile Crisis and the counterinsurgency in Vietnam. President Kennedy’s administration sought to bolster the conventional side of the military in order to provide

³⁰Richard A. Aliano, *American Defense Policy From Eisenhower to Kennedy: The Politics of Changing Military Requirements* (Athens, OH: Ohio University Press, 1975), 37.

more options when addressing future threats.³¹ President Lyndon B. Johnson inherited many of the programs that the Kennedy administration had enacted in order to grow the conventional military. During President Johnson's term, U.S. policy in Vietnam shifted from supporting a counterinsurgency operation to fighting a large scale war involving the North Vietnamese and the threat of Chinese intervention. Later, President Richard M. Nixon sought a different course for the war. Nixon favored a policy of "Vietnamization" or requiring that the South Vietnamese play a larger role than the Americans in fighting the war. The purpose of Vietnamization was to facilitate the eventual American withdrawal by building the capability and effectiveness of the South Vietnamese military to prosecute the war on their own.³²

Upon President Eisenhower's election and subsequent ending of the Korean War, he began a review of the national security strategy. Eisenhower intended to decrease the military budget by increasing the reliance on nuclear superiority to win the next war if nuclear deterrence failed. Eisenhower's "New Look" led to a serious reduction of the Army from twenty to fourteen divisions and the reduction of personnel from 1,405,000 to an end-strength of 870,000 by 1957. Massive retaliation became the new security strategy.³³

Following the Korean War Eisenhower intended to reshape the military to better face the spectrum of perceived future threats. Throughout his military service he had seen

³¹David Halberstam, *The Best and the Brightest* (New York: Random House, 1969), 122-123.

³²Stanley Karnow, *Vietnam a History* (New York: Penguin Books, 1984), 611.

³³David F. Melcher and John C. Siemer, "How to Build the Wrong Army," *Military Review* 72 (September 1992): 66-76.

the massive transformations of the American military. He witnessed the dismantling of the military following World War I and he understood how this action disadvantaged the nation during the preparation for World War II. Too often the nation relied on rapidly building forces to react to threats in the near term. Oftentimes, the newly expanded force paid for in its inexperience in blood on the battlefield. Eisenhower desired to avoid the accordion action (rapid increases or decreases in the force to meet existing needs) that traditionally occurred before and after major conflicts. His plan would eliminate the peaks and valleys that had harassed the defense establishment's preparedness in the past. He sought to shield the defense budget from crises overseas and from discontent on the home front. Eisenhower believed that the way forward included reducing the force size, changing the Army organizational structure, and redefining the way our military would fight future wars.

The French failure in Indochina in 1954 temporarily disrupted the U.S. military drawdowns. However, U.S. reductions resumed following the French exit from Vietnam. The United States had been funding a portion of the French fight since 1950, providing vehicles, equipment, weapons, and funds. The price of supporting the French through material support clearly was less expensive politically than sending American troops to stop the forward march of Communist forces, the Vietminh. By 1953 the United States was funding over eighty percent of the French war costs in Indochina.³⁴

The Army found it increasingly difficult to adjust to its new role while the Air Force found ways to exploit the situation, resulting in receiving a larger share of funding.

³⁴Peter G. Boyle, *The Churchill-Eisenhower Correspondence, 1953-1955* (Chapel Hill, NC: University of North Carolina Press, 1990), 134-135.

The Army struggled with ways to stay relevant and adopted dispersion, flexibility, and mobility as the three imperatives for military operations. The increased reliance on nuclear weapons in effect limited the options for leaders when conducting operations spanning the spectrum of war from thermonuclear war to low intensity conflicts.

President Eisenhower proposed large cuts in the Army, reducing the force from 1,025,778 to 861,964 soldiers by the end of 1959. Active maneuver units faced the most significant cutbacks placing greater emphasis and reliance on Reserve and National Guard forces. The Pentomic Division appeared to be the Army's way forward to remain relevant. This new division focused on dispersing troops in separate battle groups that would be capable of fighting and surviving on nuclear battlefields. These divisions were significantly smaller than the previous divisions by over 3,000 soldiers.³⁵ Although the formation possessed significantly less troops it was particularly heavy in equipment such as vehicles. The Pentomic Division, however, was largely obsolete by the end of the decade because ~~the~~ doctrine and control problems it posed could not transcend a shift in national military strategy."³⁶ One of the greatest problems with the formation was that it eliminated the brigade organizational structure. Thus the experience level of division commanders was only that of a battalion commander.

When Eisenhower entered office he understood that the U.S. no longer had a monopoly on nuclear weapons. The threat of their use would clearly no longer thwart Soviet aggression. Still, he held firm with a set defense budget. In the mid-1950s, western

³⁵Robert A. Doughty, *Leavenworth Papers: The Evolution of US Army Tactical Doctrine, 1946-76* (Fort Leavenworth, KS: Combat Studies Institute, 2001), 19.

³⁶Melcher and Siemer, ~~How to Build the Wrong Army,~~ 66-76.

analysts believed that the Soviets had amassed large stocks of hydrogen bombs. Some members of Congress and military leaders, therefore, called for increases in the defense budget in order to build more missiles and bombs to remain more nuclear capable than the Soviets. Eisenhower, however, believed more in quality than quantity. He valued the idea that if a weapon could achieve its desired result then what was the purpose of having more similar weapons to duplicate the result.³⁷ Eisenhower believed that enough weapons meant —a capacity to destroy the viability of a foe’s society even after absorbing the first blow and, given the horrors of thermonuclear bombs, it was apparent to him that it would not take much to remove the incentive for surprise attack.”³⁸ It was clear that threats other than Soviet power affected the free world.

The French war in Indochina served as a point of peaked interest for the Eisenhower administration. The negotiations at the 1954 Geneva peace table divided Vietnam in half at the Ben Hai River (17th parallel), on 20 July 1954 essentially creating a ceasefire before the next war could take place.³⁹ The country’s division was to remain until nationwide elections could take place in 1956. The French were to withdraw to the South and keep a force behind for training South Vietnam’s forces under Ngo Dinh Diem. Diem became the leader in the South, a position for which he was totally unsuited. The Geneva accords failed to reach a settlement. Rather they —served as a temporary truce between France and the Vietminh to be honored until a durable political solution

³⁷Richard A. Aliano, *American Defense Policy From Eisenhower to Kennedy: The Politics of Changing Military Requirements* (Athens, OH: Ohio University Press, 1975), 46.

³⁸Aliano, *American Defense Policy From Eisenhower to Kennedy*, 36-37.

³⁹Stanley Karnow, *Vietnam a History* (New York: Penguin Books, 1984), 220.

could be reached.”⁴⁰ The region was shaping up to be a problem that in the eyes of the administration needed addressing, a problem that continued to grow and plague the U.S. for a generation.

The “long pull” argument or the idea that the United States needed to focus on a marathon rather than a sprint in regards to defense spending, continued to be Eisenhower’s fight. The Defense Reorganization Act of 1958 focused on changing the military structure to focus on fighting both nuclear and non-nuclear wars. The act was a missed opportunity for preparing the military for an uncertain future. His arguments might have caused harm in the lackluster modernization and manning of the Army but he did accomplish something very important. President Eisenhower displayed “relentless effort during the cold war with Russia to keep America from draining its economy by plunging into a frantic build-up of military strength.”⁴¹

The new Kennedy administration faced a myriad of foreign policy dilemmas over the years, some of which carried over from the previous administration. Like most Presidents, Kennedy conducted a thorough review of the existing national defense strategy, the military posture, and the political situation. Following the period of introspection, Kennedy chose a new course of action. While examining the evolving events prior to his taking office, he paid particular attention to the ideas expressed by then retired General Maxwell Taylor. Taylor, later recalled to active duty, served as Kennedy’s military advisor. Taylor established the framework “for a military strategy that would more completely address the range of conflict the Army would face in the

⁴⁰Karnow, *Vietnam a History*, 229.

⁴¹Aliano, *American Defense Policy From Eisenhower to Kennedy*, 60.

future, and he cultivated a dialogue with Congress, the academic community and the American people that would ultimately lead them to reject the thought of ~~massive~~ retaliation.”⁴² Counterinsurgency became the term of the day while President Kennedy sought new ways to use political and military power to reach the desired end state. Massive retaliation and the long pull were no longer viable options as far as policy was concerned. Kennedy adopted ~~flexible response~~” as the new defense strategy. Additionally, he sought to counter Eisenhower’s policy of nuclear parity. Kennedy believed it was critical to surpass the Soviets in numbers of nuclear weapons in order to prepare for the uncertain future.

The re-investment of the military’s conventional and unconventional forces also took high priority. The administration sought to shape the force to enable participation in a wide range of conflicts from flexible nuclear response, to counterinsurgency operations, to fighting small wars. The Rogers Board (see Appendix for board results and members), conducted late in the Eisenhower Administration, had signaled a change in aviation investment for the Army. The board analyzed Army requirements, made recommendations for improving helicopters, and also recommended a formal study to determine the practicality of air fighting units.⁴³ Subsequent boards and test beds conducted during the Kennedy administration brought about positive change creating lasting effects for the aviation community. As a result of the re-posturing of forces,

⁴²Melcher and Siemer, ~~How to Build the Wrong Army,~~” 66-76.

⁴³Robert A. Doughty, Leavenworth Papers, *The Evolution of US Army Tactical Doctrine, 1946-76* (Fort Leavenworth, KS: Combat Studies Institute, 2001), 28.

antiquated aviation assets were identified and solutions were sought for replacing these old airframes.

Prior to the Eisenhower administration's departure, there was a resurgence of communist activity in Vietnam. Most of the activity consisted of terrorist attacks in South Vietnam conducted by Vietnamese southerners returning from North Vietnam. The culmination of the activity was the formation of the National Liberation Front (NLF) in December of 1960. Diem viewed the NLF as an outright declaration of war from the North against his regime and his supporters, chief of whom was the United States. The United States attempted to participate in counter-insurgencies, but failures such as the Bay of Pigs showed that our government had to do some homework if they planned on future successes.⁴⁴ The situation in Vietnam continued to deteriorate with attacks numbers mounting following the re-election of Diem in April of 1961.

The state of affairs for South Vietnam was very unclear and President Kennedy desired clarification. He therefore sent retired General Maxwell Taylor to Vietnam with instructions to lead an inter-agency delegation which would examine the situation and make recommendations for future policy. Taylor returned from Vietnam in November 1961 and presented Kennedy with the requested report. The report presented to President Kennedy proposed a limited partnership with the South Vietnamese forces. The report suggested that The U.S role should increase by placing advisors at many levels within the military and the government of South Vietnam. Additionally the report sought ways to reform the corrupt and inefficient existing government in hopes of expanding popular

⁴⁴Nathaniel Weyl, *Red Star Over Cuba, The Russian Assault on the Western Hemisphere* (New York: Devlin-Adair Company, 1962), xviii-xix.

internal support.⁴⁵ Initiation of the Strategic Hamlet Program sought to protect southern citizens and to identify NLF forces and sympathizers. The program, however, had the undesired effect of invigorating the insurgency.

President Kennedy followed the interagency's recommendations and increased the commitment of U.S. military and government personnel. Field advisors increased more than four-fold to 3,400 by June and over 11,000 by the end of the year.⁴⁶ Along with the U.S. advisors came the requisite tools necessary to support the counterinsurgency, namely helicopters such as the H-21. The following February, United States Military Assistance Command, Vietnam (MACV) was activated. MACV functioned as the singular U.S. military headquarters in Vietnam and General Paul D. Harkins served as the first commander.⁴⁷ The organization combined elements of the Military Assistance Advisory Group (MAAG) and an independent joint operational command.⁴⁸

The situation with Diem proved to be a continuing problem for the administration in subsequent years. Diem's narrow vision of the ongoing struggle, his extreme mistrust of everyone outside of his family, and his repression of those deemed as outsiders,

⁴⁵Eagleton Institute of Politics, E-Gov Archive of American Politics, *Vietnam: Kennedy, Johnson and Escalation* (Eagleton Institute of Politics, Rutgers, 1995-2009), http://www.eagleton.rutgers.edu/programs/egov/ap_vietnam-escalate.php (accessed 10 January 2011).

⁴⁶Eagleton Institute of Politics, *Vietnam*.

⁴⁷Graham A. Cosmas, *MACV: The Joint Command in the Years of Escalation, 1962-1967* (Washington, DC: US Army Center of Military History, 2006), 477-478.

⁴⁸Jeffrey J. Clarke, *Advice and Support: The Final Years, The U.S. Army in Vietnam* (Washington, DC: US Army Center of Military History, 1988), 49-74.

coupled with rampant corruption eventually led to his downfall. His efforts to combat the growing insurgency appeared counterproductive to winning the support of the people. Diem was assassinated on 2 November 1963. The United States had allegedly received early warning of the coup and promised the anti-Diem perpetrators that the U.S. would not intervene. Kennedy hoped that someone more capable would fill Diem's void but that hope was denied. Three weeks later brought the assassination of President Kennedy and a subsequent changing of the guard in the White House.

President Lyndon B. Johnson took over operations where Kennedy left off. Prior to taking office, then Vice President Johnson made –extravagant statements about how vital it was to defend South Vietnam against Communist aggression, because that was what an American politician was supposed to say.”⁴⁹ President Johnson, however, notably reduced defense spending upon succeeding Kennedy. Johnson intended to fight the war as cheaply as possible. His focus was initially domestic, based on initiating a tax cut and following through with a group of social programs known as the –Great Society.” His deep cuts in military spending seemed counterintuitive to the escalating Vietnam War, but for Johnson every dollar spent on the war meant money that could not be spent on his domestic agenda. Most of the programs effected primarily the procurement of weapons and equipment and secondly research and development.

During Johnson's tenure in office, the war in Vietnam transformed yet again, this time from a counterinsurgency to a conventional war. The strategies for conducting the war also changed over the course of time, creating more opportunities for the utilization

⁴⁹Edward E. Moise, *Tonkin Gulf and the Escalation of the Vietnam War* (Chapel Hill: The University of North Carolina Press, 2004), 30.

of heliborne forces. The strategic hamlet program continued until policy makers determined that it was imperative to break the will of the North to fight rather than protect the hamlets and combat insurgents in the South. The American commitment of forces continued to escalate reaching 16,300 by the end of 1963.

While the Americans were bolstering forces in the south, communist leaders in North Vietnam realized that war would likely spread to their territory. The North's leadership sought help from the Soviets in the form of defensive measures to counter the American air threat. Soviets began installing anti-aircraft missiles and supporting stations around the main cities of North Vietnam as well as along the coastline.⁵⁰ The largely misunderstood or exaggerated Tonkin Gulf incidents of the 2nd and 4th of August 1964 sent the Americans down a path of further commitment. The Gulf of Tonkin Resolution gave the President power to do whatever was necessary to support the South Vietnamese in their fight against the North.⁵¹ Most notable was that consultation with Congress did not have to occur while exercising the new power.

MACV continued to grow, more than doubling in size in 1965. The increases allowed the command to maintain an advisory role and also to act as a combatant command. By the end of 1965, over 165,000 American troops were in Vietnam conducting advisory and direct action roles. Military hardware (to include large numbers of helicopters) and supplies poured into the country. Commitment of military hardware and personnel continued to grow, exceeding 485,000 troops in 1967. The massive

⁵⁰Stanley Karnow, *Vietnam a History* (New York: Penguin Books, 1984), 381.

⁵¹88th Congress, *Tonkin Gulf Resolution*; Public Law 88-408, 7 August 1964; General Records of the United States Government; Record Group 11; National Archives.

increase included air power directed against the North Vietnam and against Vietcong in the South. The increase also included ground troops fighting in the south. The U.S. started out as advisors in the early days of the involvement, progressed to Special Forces soldiers working in the hamlets, and finally became a massive involvement of personnel conducting operations against enemy forces in the south and against North Vietnam through direct operations.

In 1968 Richard M. Nixon campaigned for president claiming that he had a secret plan for ending the war in Vietnam. His secret plan, known as “Vietnamization,” served as the exit strategy for the United States, however, the strategy failed to enable South Vietnam to defend itself. The term “Vietnamization” in itself was degrading to the ARVN troops. The thought was that the U.S. was going to find a way to make the South Vietnamese take a larger role in fighting the war, a war that they had been fighting for decades.⁵²

The strategy fell into three distinct phases. During the first phase the U.S. shifted its role to primarily training the Republic of Vietnam Armed Forces (RVNAF) in order to develop their self-reliance of all assets and then carefully reducing U.S. forces. The subsequent phases relied on progress in the Paris Peace Accords, and a reduction in the level of enemy activity. The U.S. poured military equipment and supplies into South Vietnam resulting in a highly modernized force although the effectiveness was always in question. Nevertheless, the U.S. continued to withdraw forces regardless of enemy

⁵²Karnow, *Vietnam a History*, 611.

activity. The reduction of pressure on North Vietnam gave the North time to regroup and prepare for future operations.⁵³

Concurrently with the U.S. drawdown the Soviets and the Chinese began increasing funding and equipment to the North. The Paris Peace Accords exasperated the situation by leaving over 150,000 North Vietnamese troops in the south upon the withdrawal of all U.S. troops. The Accords were essentially the death warrant to South Vietnam. The South showed early promise stopping Northern offensives but eventually the strength of the northern forces took their toll. Gerald Ford, who ascended to the presidency in 1972, was not able to honor commitments made by Nixon to support South Vietnam and the failure in honoring commitments led to the downfall of the South. The South collapsed in less than fifty-five days from when the North Vietnamese had launched their planned two year offensive. Vietnamization proved to be an epic failure.⁵⁴

The four presidential administrations faced unique situations, balancing domestic and foreign agendas. Competition between ideas drove the government investment in future military capabilities. Ironically, Eisenhower as a former Army commander, stripped the Army of much of its power while strengthening the Air Force. Kennedy, however, sought to increase defense spending to ensure the U.S. could react to a myriad of threats from nuclear wars to insurgencies. Johnson envisioned military spending as a sideshow. He planned on fighting the war on the cheap, using the minimum amount of

⁵³James H. Willbanks, *Vietnamization: "An Incomplete Exit Strategy" In Turning Victory into Success: Military Operations After the Campaign* (Fort Leavenworth, KS: Combat Studies Institute Press, 2004), 136.

⁵⁴James H. Willbanks, *Abandoning Vietnam: How America Left and South Vietnam Lost Its War* (Lawrence, KS: University Press, 2004), 277.

force necessary and focusing funds on domestic social spending. Nixon wanted “peace with honor” and envisioned Vietnamization as the way out of Vietnam.

The differing policies and the competing political agendas created an environment where the Army was forced to identify important changes necessary to remain relevant. Once the political landscape changed and funds became available the Army could act on previous studies and acquire new technologies such as helicopters. The narrow window of opportunity for modernization and development began to again close when the political environment dictated which resulted in lost opportunities to more effectively integrate the helicopter as more than simply a tool for moving troops and advance the airmobile agenda.

CHAPTER 4

DOCTRINAL CHANGES

The start point for the evolution of the Aeroscout is somewhat obscure. The Korean War was the birthing place for helicopters in combat operations. During the war helicopters mostly fell under the Transportation Corps and some under the Medical Service Corps. Helicopters flew missions that included supply distribution, medical evacuation, and some artillery adjustment. The H-19 and H-23 helicopters served as the workhorses during the war. The apparent advantages for employing helicopters in combat operations only gained momentum during Korea. Following the war, Army leaders studied the lessons learned from the employment of this new mobility multiplier while cautiously observing the French and British tactics, techniques, and procedures for employing helicopters in Algeria and Malaysia.⁵⁵ Key events throughout the 1950s and 1960s served as catalysts for change in the development and evolution of the aeroscout.

MG James M. Gavin served as one of the earliest proponents of the development and employment of helicopters on the battlefield. Gavin had a history of developing cutting edge concepts. Gavin, one of the earliest advocates of the airborne employment concept, served as the commander of the 82nd Airborne Division during World War II. In 1954, he directed then Colonel John J. Tolson to design a theoretical cavalry unit using helicopters as the main mode of transportation.⁵⁶ Gavin apparently visualized the

⁵⁵ John J. Tolson, *Vietnam Studies: Airmobility 1961-1971* (Washington, DC: Center of Military History, 1989), 4.

⁵⁶Quoted in Tolson, *Vietnam Studies: Airmobility 1961-1971*, V-VI, by Major General Verne L. Bowers who describes LTG Tolson's airmobile experience. Lieutenant General John J. Tolson, has been involved with the airmobile concept since

increased opportunities for using rotary-wing aircraft rather than parachutes or gliders as a means for inserting troops into battle.⁵⁷ Gavin was particularly interested in this new concept. The Army was experiencing trying times in regards to remaining relevant on the battlefield and it was realized that adjusting doctrine to meet the emerging threats was a method the Army could use in order to maintain its validity. The availability of money for new programs or developments seemed unlikely due to President Eisenhower's New Look policy. Gavin appeared very emotional about the importance of the formation of heliborne cavalry organizations and published an article for *Harper's* magazine in April of 1954 entitled "Cavalry, and I Don't Mean Horses," which served as a national sounding board for the new concepts.⁵⁸ The concepts introduced in the article addressed the specific need for a new organization within the Army. The new organization would perform the typical missions of the cavalry but would bring an increase in maneuverability and speed of movement across the battlefield.

Tolson later described how Gavin directed him to develop a doctrine wherein cavalry organizations were to perform the traditional missions of the horse cavalry using a third dimension and a ten-fold increase in speed."⁵⁹ The Army had no formal doctrine

June 1939, when he participated in the first tactical air movement of ground forces by the U.S. Army. Participating in all the combat jumps of the 503rd Parachute Infantry Regiment during World War II, he became an Army Aviator in 1957, and later served as the Director of Army Aviation and the Commandant of the U.S. Army Aviation School. From April 1967 to July 1968 he served as Commanding General, 1st Cavalry Division (Airmobile), Vietnam."

⁵⁷Dr. James W. Williams, *A History of Army Aviation: From its Beginnings to the War on Terror* (Lincoln, NE: iUniverse, Inc, 2005), 69.

⁵⁸Tolson, *Vietnam Studies*, 4.

⁵⁹*Ibid.*, 5.

on how to employ an airmobile force in the early 1950s. Tolson's organization started from the ground to build a new airmobility division. Tolson identified the necessary personnel and then the procurement of the equipment needed to begin developing and evaluating the new concepts. The experiments initially used an H-19 company and subsequently employed H-34s.

Sagebrush was a forty-five day, joint exercise that involved over 110,000 Army and 30,500 Air Force personnel. The conduct of Exercise Sagebrush from 1 November to 15 December 1955 marked an important milestone in the evolution of Army Aviation. The exercise served as the largest field exercise since World War II and focused on fighting across the nuclear battlefield. The exercise also saw the debut of the Sky Cav concept, much to the delight of LTG Gavin.⁶⁰ The exercise almost did not occur because the Air Force had issues with the Army's planned employment of organic helicopter assets. The Air Force believed that the use of Army helicopters in operations forward of friendly troops was a violation of previous agreements such as the Pace-Finletter Agreement that seemed to monopolize the Air Force's mission of transporting personnel to the fight.

The Pace-Finletter agreement occurred as a result of inherent friction in the Korean War from the results of the Key West Agreement and the Bradley-Vandenburg Agreement. Secretary of the Army Frank Pace Jr. and Secretary of the Air Force Thomas K. Finletter both signed the agreement on 2 October 1951. The Key West agreement established the Air Force as the primary provider of the air support mission. The Bradley-Vandenburg Agreement followed the Key West Agreement and established weight

⁶⁰Williams, *A History of Army Aviation*, 71.

restrictions for Army aircraft. Army fixed-wing aircraft were restricted to weights of less than 2,500 pounds and Army helicopters to less than 4,000 pounds.⁶¹ The Pace-Finletter agreement gave the Army some maneuver room but did not solve all the inherent interesting problems. The results of the Pace-Finletter agreement seemed favorable to the Army because it removed the weight restrictions on Army aircraft. The agreement restricted Army aircraft to conducting operations from the frontlines to seventy-five miles toward the rear area. The Army could use its assets to move troops and equipment within this restricted area, but the Air Force remained the major provider for tactical transport, assault, and combat support.⁶²

The main disagreement between the services appeared to stem from how each branch of service viewed the employment of helicopters. The main point of the disagreement centered on how each service viewed the employment of organic Army aircraft. The Pace-Finletter agreement established the baseline that the Army could not duplicate Air Force capabilities. The Army viewed the helicopter as being something like a truck to transport soldiers to battle and the Air Force believed that the Army visualization ran counter to the Air Force's requirement to provide such an airlift.⁶³ The Air Force believed it should be the sole provider for Army transportation. The competition between services dates back to the drive for a separate Air Force in the 1920s

⁶¹Ian Horwood, *Interservice Rivalry and Airpower in the Vietnam War* (Fort Leavenworth, KS: Combat Studies Institute Press, 2006), 21.

⁶²Barry M. Bleckman, *The American Military in the Twenty-First Century* (New York: St. Martin's Press, Inc, 1993), 20-21.

⁶³Williams, *A History of Army Aviation*, 72.

and the disagreements between ground and air theorists which helped to enlarge the chasm between the branches.

The Sky Cav organization that debuted during Exercise Sagebrush consisted of three main and one minor element. The first element was a reconnaissance and surveillance unit that operated across a wide front in both day and night conditions. The second element was a small but heavily armed blocking force that could be air assaulted quickly into key areas. The third element, an anti-tank and artillery force, could move rapidly and react to the situation created by the blocking force. The minor element was an aviation platoon that resembled an early helicopter transportation company.⁶⁴ The new unit had no real standardized table of organization and equipment and it existed like an improvisation force. It would be several years before a standardized Sky Cav type unit existed.

Sky Cav received a great deal of attention and support throughout the forty five day exercise. General Maxwell Taylor visited the organization while it was in the field conducting operations. Taylor, who had served as the commander of the 101st Airborne Division during World War II, was the Army Chief of Staff from 1955 to 1959. He was a very outspoken critic of the Eisenhower administration's New Look policy.⁶⁵ During the exercise he walked through the muddy fields of Ft. Polk in the pouring rain, conversed with the commander, and thoroughly inspected the unit. The following day he conducted a press conference in which he forcibly declared the Army's need for a formation (like

⁶⁴Williams, *A History of Army Aviation*, 71.

⁶⁵Quoted in Aliano, *American Defense Policy From Eisenhower to Kennedy*, 37, The main focus of the New Look policy was to reallocate resources from the conventional ground forces and focus primarily on the nuclear capabilities and air power.

the Sky Cav) that could operate behind enemy lines and immediately respond to requests of the ground commander.⁶⁶

The results of Exercise Sagebrush ranged from that of a huge success to being less than what the Army expected. The Air Force pressed the case that they could best maneuver personnel across the battlefield. If the Air Force supported the new Army concepts, then it meant a reduction in the role of the tactical transport or TAC's responsibilities with a concomitant increase in Army organic aviation.⁶⁷ Reduction in responsibilities appeared to mean a reduction in relevance. The Air Force leadership viewed remaining relevant as critical to maintaining a solid share of the defense budget during the days of fiscal constraint. Nevertheless, the Army prevailed and the results of Sagebrush led to the authorization of three Sky Cav organizations with two assigned to the Airborne Divisions and one to Ft. Rucker.

Prior to Sagebrush, Brigadier General Carl I. Hutton (U.S. Army Aviation Center [USAAVNC] Commander) believed that the Army needed a fresh look at how to employ helicopters. Hutton raised the following question in *U.S. Army Aviation Digest*:

What sort of organization would employ the fighting aircraft, or the family of fighting aircraft? Would it not be feasible to organize a division with combinations of different types of fighting aircraft for various tactical roles? There might be, for example, a light, high-speed reconnaissance group, a fast striking force, an element to deliver a firepower punch, and finally a heavy fighting unit. The commander would coordinate the employment of the various fighting elements in the same way as an infantry or armored division commander.⁶⁸

⁶⁶Williams, *A History of Army Aviation*, 72.

⁶⁷*Ibid.*, 73.

⁶⁸John M. Carland, *How We Got There: Air Assault and the Emergence of the 1st Cavalry Division (Airmobile), 1950-1965* (Arlington, VA: The Land Institute of Land Warfare, 2003), 3.

He believed that the evolving aviation technology was causing a revolution in military affairs.⁶⁹ He saw the value in utilizing armed helicopters within the emerging Sky Cav organization. He wondered if armed helicopters could be safely employed and asked the Chief of Combat Development Office, Colonel Jay D. Vanderpool, to conduct some initial tests for arming helicopters. Vanderpool was in a very fortuitous position because he could utilize all the assets of the school for his project if required.⁷⁰

Vanderpool immediately went to work gathering the necessary equipment, largely by foraging for unwanted equipment from sister services. Vanderpool and his men had no official charter and no funding, and were explicitly instructed to conduct their evaluation without any publicity. The initial problem was to determine if the helicopter could fire weapons without damaging the structural integrity of the ship's airframe. On 15 June 1956, Vanderpool and his team set out to answer this question.

The crew outfitted two .50 caliber machineguns and 8 centimeter fixed-fin aerial rockets to an H-13 helicopter. Initially the crew mounted the H-13 helicopter approximately five feet off the ground atop a specially constructed wooden platform. The test commenced with machinegun fire from the static, shut down helicopter. When it was determined that the gun fire had no noticeable effect on the airframe, the pilot was given the order to move on to testing rocket fire also from the static position. After successfully testing the weapons, Vanderpool gave the pilot authorization to start the engine and fire the weapon systems with the engine running. In the subsequent step the helicopter was

⁶⁹Williams, *A History of Army Aviation*, 73.

⁷⁰Tolson, *Vietnam Studies*, 6.

unmoored from the platform and the pilot hovered the aircraft in ground effect. Once stable at a two to three foot hover, the pilot again tested all of the weapon systems.

The next progression involved firing the weapons in flight. After proving the successful employment of weapons in all modes of flight, Vanderpool and his men set out to try to ascertain if they could accurately place direct fires from a helicopter.⁷¹ After further tests they determined that the group could not quite overcome the problems caused by the inadequacies of the aiming devices, various ballistic factors, and meteorological factors that influenced firing. Regardless, the team was duly impressed with how far they had come in such a short period of time.

Hutton recognized the importance of the armament tests but chose to change direction slightly because he realized the technological limitations and the need for sound doctrine as a baseline for future development. He directed Vanderpool to begin designing doctrine for employment of company sized organizations. Since there was no available doctrine for the formations, Vanderpool therefore needed to determine aircraft requirements, organizational design, and possible schemes of maneuver.⁷²

Major General Bogardus S. Cairns succeeded Hutton as the Commander of USAAVNC at Fort Rucker. Following his assumption of command, Cairns provided Vanderpool with an old copy of the 1936, FM 2-5, field manual for horse cavalry.⁷³ Vanderpool said:

⁷¹Carland, *How We Got There*, 4.

⁷²Ibid.

⁷³Williams, *A History of Army Aviation*, 73.

We took the 1936 yellowback cavalry manual and went from horses to tanks to trucks. We took the horse cavalry portion of it, and substituted helicopters for horses, using the same language, the same terminology. It was well received. Older soldiers, I mean two, three and four star generals, could understand the language of their day, of the late 30s.⁷⁴

Vanderpool's team hastily reworked the cavalry manual in order to design a regimen that would provide sound training while promulgating the new concept. The notably deficient text they wrote was rushed into application and was entitled *New Tactical Doctrine*.⁷⁵ A few years later, In June of 1958, the publication of FM 57-35 (*Army Transport Aviation-Combat Operations*) established the early doctrine and vision for the future of Army Aviation.⁷⁶ The hard work of the pioneers of aviation finally took shape and paid handsome dividends in preparation for future organizational change.

In the late 1950s it became apparent to the Army leadership that some type of reorganization beyond the Sky Cav initiatives was necessary within the aviation. The Army possessed large numbers of obsolete light fixed wing reconnaissance aircraft and also possessed outdated piston driven helicopters. At this time turbine engine helicopter development was occurring. These new helicopters required significantly less maintenance than their predecessors. Additionally, these helicopters could carry more cargo because of the stronger power plant. In 1959, Lieutenant General Arthur G. Trudeau, Army Chief of Research and Development, instituted an aircraft development plan with the intention of providing guidance for the next decade's aviation research and

⁷⁴Carland, *How We Got There*, 9.

⁷⁵Williams, *A History of Army Aviation*, 73.

⁷⁶Tolson, *Vietnam Studies*, 5.

development.⁷⁷ In order to accomplish this development plan Trudeau's office established three broad objectives which later became synonymous with the Army Study Requirements. These requirements forecasted a future a need for light observation, surveillance, and transport aircraft.⁷⁸

The Rogers Board, or the Ad Hoc Committee on the Requirements for Training in Support of the Army Aviation Program, began working in 1960 to address the major issues that were plaguing the Army Aviation community. It marked the first comprehensive examination of the Army's disorganized program in an attempt to create a more capable force for the future decade. The study group was established on 15 January 1960 and chaired by Lieutenant General Gordon B. Rogers, the Deputy Commanding General of the Continental Army Command.⁷⁹ The study group consisted largely of aviation supporters which helped to facilitate the timeliness of the study.

There were four main focal areas for the study. The first asked to what degree the projected training programs would provide the necessary skills to meet the requirements of the Army Aviation program. Subcomponents included projected aircraft inventory, personnel requirements, and training concepts. The second section of the study examined the degree to which Army approved operations and training programs were compatible with the resources provided by U.S. Army Continental Command (USCONARC), the predecessor to TRADOC. The main body of this section of the report dealt with the resources for training (aircraft not facilities) and the status of the Reserve Component

⁷⁷Tolson, *Vietnam Studies*, 7.

⁷⁸*Ibid.*

⁷⁹*Ibid.*, 8.

Programs. The third section of the study examined the adequacy of the aviation construction programs and whether they could meet the projected training requirements. This section analyzed existing facilities, qualitative and quantitative requirements, as well as the long range facility plan. The final section intended to identify activities to be considered for consolidation, reduction, or elimination with the intent of not significantly degrading operational effectiveness. Sub-areas of this section included consolidation of test activities, substitution of military for civilian contract maintenance, and prioritization of Army aircraft use.⁸⁰ The formation of this board marked a significant milestone for the Army, causing a much needed introspective look into the available options and the changes needed to advance Army Aviation for the next decade.

The Rogers Board completed its study and released the results on 19 March 1960. Completion of the extensive study in two months seemed very fast for most Army boards. The Board's results spurred several important changes for Army Aviation. One of the long term contributions to change was the board's examination of the Army Aircraft Development Plan and the subsequent proposals from the aircraft industry designed to meet the projected requirements. The Board also made important recommendations regarding the specific requirements for observation, surveillance, and utility aircraft.⁸¹ One of these recommendations included conducting a design competition to develop a new observation helicopter and selecting at least two designs for full helicopter development. The planned use of the selected aircraft was to replace the aging L-19

⁸⁰U.S. Continental Army Command *USCONARC Ad Hoc Committee on Requirement for Training in Support of the Army Aviation Program 1960-1970* (Fort Monroe: Headquarters United States Continental Army Command, 1960), 10-15.

⁸¹Williams, *A History of Army Aviation*, 90-91.

airplane as well as the H-13 and the H-23 helicopters.⁸² Similar recommendations were found for the surveillance and the utility aircraft.

The Army Aircraft Requirements Board made other significant contributions. One such recommendation posited replacing all Army aircraft every ten years, if not sooner when dictated by situation. Although the plan initially appeared suitable for maintaining a solid fleet of aircraft, it however proved unrealistic due to the realities of budgetary constraints.

The Aircraft Requirements Board also recommended a major study into testing the practicality of fighting aviation units which was important because the Army's senior leadership desired to create units that could fight and maneuver using rotary-wing assets. Frequently the much publicized Howze Board, which occurred several years after the Rogers Board, received credit as the starting point for the evolution of the airmobile concept but this is not historically correct.⁸³

Incoming Secretary of Defense Robert S. McNamara was dissatisfied with the inadequacies of the Army's aviation program. Because of this dissatisfaction in 1961, he ordered the Army to prepare another study in order to examine the future requirements. The subsequent report caused Secretary McNamara to consult Brigadier General Robert R. Williams, the Director of Defense Research and Engineering, as well as others who worked in the Army Office of Research and Development for the purpose of setting the Army on the desired course. The selectees drafted two memoranda which resulted in expediting the change in the development of airmobile doctrine.

⁸²Tolson, *Vietnam Studies*, 9.

⁸³Williams, *A History of Army Aviation*, 91.

The first of the memoranda instructed the Army to re-examine the issues proposed from the initial Army report. The latter memoranda established the U.S. Army Tactical Mobility Requirements Board in order to review the “new” airmobile concepts. Lieutenant General Hamilton H. Howze served as the chairman of the Mobility Requirements Board. This board was designed similar to the Rogers Board, consisting of a staff of general officers and select civilian counterparts and subordinate working groups, who provided the opportunity for advocates of airmobility to turn their ideas into reality.⁸⁴

The Continental Army Command (CONARC) established specific guidelines for the conduct of the board. CONARC instructed Howze to ensure the board met three key milestones. The first milestone required the Board to submit a detailed outline regarding the conduct of its review, to include the proposed budget; the second dictated monthly progress reports; and the third milestone was to submit a final report including a recommended course of action for the procurement of future aircraft.⁸⁵

The Army provided the board a significant amount of forces and capital in order to facilitate a thorough review. These resources included an infantry battle group, part-time use of two other battle group elements of the 82nd Airborne Division, and 150 Army aircraft of various types for their experiments.”⁸⁶ The primary effort of the board was the review of the organizational and operational concepts of airmobility. They conducted over forty tests spanning the spectrum from live fire exercises and week-long field

⁸⁴Carland, *How We Got There*, 10.

⁸⁵Tolson, *Vietnam Studies*, 19.

⁸⁶Carland, *How We Got There*, 10.

exercises to testing of new equipment. The Board completed its research in a very short time, roughly ninety days, and created a report which some considered a masterpiece.

The main conclusion of the Howze Board ensured the continued evolution of Army aviation. The Board reached the understanding that the Army's adoption of the airmobile concept was "necessary and desirable."⁸⁷ The Board made several other recommendations that are less known such as recommending the formation of air cavalry combat brigades and air transport brigades. The Board also recommended the formation of five air assault divisions in order to take the place of five of the Army's divisions.

Army leadership did not accept all the recommendations of the Board; had they, it would have meant a total restructuring of the entire force. Nevertheless the leadership ordered future tests to refine the concepts focusing on the division and its components. These tests involved the forming of the 11th Air Assault (Test) Division, which reflagged as the 1st Cavalry Division and initiated the most important airmobile concept test on the battlefields of Vietnam.

The ideas of utilizing helicopters to accomplish the mission of the horse cavalry trace back to visionaries such as Gavin; however, the role of the aeroscout emerged with the formation of the 11th Air Assault (Test) Division. While the new air assault division formed, 3rd Squadron 17th Air Cavalry activated and served as its division cavalry squadron, the first of such units. 3/17 Cav utilized OH-13s for scout aircraft and conducted multiple airmobile validation exercises from March to November 1964.⁸⁸

⁸⁷Tolson, *Vietnam Studies*, 24.

⁸⁸Lawrence H. Johnson III, *Winged Sabers: The Air Cavalry in Vietnam 1965-1973* (Harrisburg, PA: Stackpole Books, 1990), 6.

Despite many individual and collective influences of key leaders, politicians, committees, and competing services, at the end of the day it was a collective effort that served as the catalyst for change.

CHAPTER 5

TACTICAL DEVELOPMENTS

Three components are important in understanding the evolution of the aeroscout employment in Vietnam. First, technological advances leading to enhanced airframes which enabled the conduct of a wide spectrum of missions in the environment of Vietnam. The holdover aircraft from Korea, the OH-13, became the first rotary-wing scout platform followed by the OH-6A and the OH-58A. The next component involved the weapons that were employed and their evolution over the course of the American involvement in Vietnam. The first American helicopters operating in Vietnam carried weapons designated for self-defense. These helicopters served as transports for ARVN soldiers and American advisors. The OH-13 did not arrive until much later. Because of the environmental conditions and the limited power of the scout helicopter, they could not operate with a robust weapon system. With the introduction of the OH-6A, the Army enjoyed an aircraft that could carry more armament or more observers. The flying configuration of the aircraft depended on the type of mission. The OH-58A aircraft configuration was similar to the OH-6A until power and controllability issues developed. Finally, the mission and the tactical employment of the aeroscout continued to evolve. Commanders began to rely on aeroscouts to maintain enemy contact so that American soldiers could maneuver to engage the elusive enemy while driving up the enemy body count (a measure of success during the Vietnam War).

In the late 1940s the Army had searched for a helicopter to replace their aging observation aircraft. The divisions fomented by the bitter Army/Air Force interservice rivalry required the Army to rely on the newly formed Air Force and Navy for all their

aircraft procurements. This difficult relationship stalled the development and advancement of Army rotary-wing aircraft. The prolonged service of the OH-13 served as an example of the difficulties the Army faced when it tried to acquire new technologies. The OH-13 Sioux entered service with the Army in 1947. Powered by a Lycoming horizontally opposed six cylinder engine, the Sioux acted as the first of the Army helicopter work horses. Designed originally to replace antiquated fixed wing observation planes, the Sioux truly found its niche during the Korean War.

The Bell Model 47 is the civilian nomenclature for the military H-13. The helicopter's origins date back to the prototype Model 30 helicopters built in Gardenville, NY in a joint venture between Larry Bell and Arthur Young. Bell served as the financier for Young who built the first of these prototypes. The first test flights occurred in December 1942 wherein the helicopter hovered at no more than one foot off the ground. The Subsequent Model 30 incorporated innovations such as an enclosed cockpit. This helicopter toured the country and at one point helped to evacuate fisherman trapped on Lake Erie. The attention from this rescue likely helped to validate the importance of the helicopter for civil and military use.⁸⁹

The third model aircraft discarded instrumentation and equipment more suited for fixed-wing aircraft and integrated helicopter centric innovations. The invention of the bubble canopy occurred shortly thereafter. The bubble canopy, constructed of molded Plexiglas, provided protection for the pilot and occupants while also permitting an unrestricted field of view. The first Model 47 helicopters rolled off the assembly line in

⁸⁹Warren Moseley, Bell Helicopter Site, "The Past and Future of the Model 47" (Bell-Textron, 2010), 4-5, http://www.bellhelicopter.textron.com/MungoBlobs/55/895/rb_Q1_10.pdf (accessed 22 March 2011).

December 1945 incorporating many of its predecessor's advancements. Shortly thereafter the U.S. Army Air Forces purchased the first of the Model 47s, naming them the H-13 Sioux (later designated the OH-13).⁹⁰

The Korean War saw the first widespread use of the H-13 and other helicopters in combat. The majority of Army H-13s worked in support of the Mobile Army Surgical Hospital (MASH) units. Stretchers mounted on each side of the aircraft employed a protective cover, shielding the patient from debris and wind in forward flight. The H-13 proved its worth by greatly reducing the time it took to move critically injured soldiers to higher level care providers. The golden hour or the ability to get a soldier to care within an hour after receiving wounds, greatly improved their odds for survival.⁹¹ Because of the continued success in regard to helicopter employment, leaders began to understand the great utility of the H-13 family of aircraft.

Following the Korean War, H-13s experienced a broadening of roles. The Sioux helicopter began serving as platforms for artillery observers to adjust indirect fire. Visionaries began developing doctrine that employed the H-13 in the same missions as the traditional horse cavalry. Multiple trials validated the belief that helicopters could enhance the American's ability to shape the battlefield for success. It was at this point that the OH-13 began being employed as an aeroscout aircraft. Multiple attempts to replace the OH-13 occurred during the 1950s and early 1960s with little success due largely to budgetary restraints and lack of a significantly superior aeroscout aircraft.

⁹⁰Moseley, *The Past and Future of the Model 47*, 4-5.

⁹¹*Ibid.*

The Restructuring of the Army Divisions (ROAD) placed the H-13 into the Armored Cavalry Regiments. The H-13 therefore continued serving as an aeroscout aircraft and deployed in large numbers to Vietnam in 1965. The Army maintained an average of one hundred OH-13s in Vietnam from October 1965 to December 1970. Combat losses accounted for sixty-five aircraft, while an additional 392 were combat damaged, and another 98 were operational losses. The venerable OH-13 (see below specifications) continued to serve as the frontline scout rotary-wing aircraft until the 1st Cavalry Division began fielding the OH-6 in December 1967.⁹²

OH-13 Specifications

Normal Crew	Pilot and observer
Engine	TVO-435-25 (reciprocating, turbo-supercharged engine)
Horsepower	260 BHP
Empty Weight	1,972 lbs
Gross Weight	2,850 lbs
Fuel Capacity	57 gal
Endurance	1 hr 30 min
Max Cruise	73 knots
Max Climb	800 feet per minute ⁹³

The Hughes Tool Company produced the OH-6A helicopter which served as the most widely recognizable scout helicopter of the Vietnam era. Since the late-1950s the Army had explored options for replacing the aging but reliable OH-13 Sioux helicopter, the OH-23 helicopter, and the O-1 Bird Dog light observation airplane. Between the years 1960 and 1965, the Army conducted over five studies which validated the need for

⁹²Department of the Navy, Center for Naval Analyses Study 1008, Marine Corps and Army Helicopter Employment and Attrition Statistics for Southeast Asia Operations from October 1965 through December 1971 (Alexandria, VA: Center for Naval Analyses), 11.

⁹³Lawrence H. Johnson III, *Winged Sabers: The Air Cavalry in Vietnam 1965-1973* (Harrisburg, PA: Stackpole Books, 1990), 45.

a new light observation helicopter.⁹⁴ Little developmental movement occurred until the emergence of the helicopter as a driving force on the battlefield of Vietnam invigorated the process. The scout aircraft conducted flight in a very hazardous profile. Pilots flew the aircraft at altitudes where terrain and enemy fire could both destroy an aircraft. Prone to high losses, most aircraft did not survive to see their first major maintenance services (less than 300 hours), thus the overall life expectancy for a scout helicopter was particularly low.⁹⁵ The Army therefore needed a reliable, inexpensive airframe for the critical ever developing aeroscout mission.

Finally on 21 May 1965 the two competing companies, Hiller and Hughes, submitted their final bids to the Army. Hiller submitted a per airframe price of \$29,415 with a total contract price of \$22,250,134 for 774 aircraft. Hughes submitted a substantially smaller bid price of \$19,860 per airframe including a total contract price of \$14,968,663. Hughes was able to bid such a small price because the company planned on recouping its low bid fiscal losses with the sale of the commercial version of the LOH. The low price per airframe initially surprised the Army. Following the shock, the Army requested that Hughes re-verify their financial figures. The Army awarded Hughes with the contract on 26 May 1965, two days after Hughes confirmed the unusually low price to the Army.⁹⁶

⁹⁴Thomas C. Rankin, *Light Observation Helicopter Acquisition, A Historical Case Study* (Ft. Belvoir, VA: Defense Systems Management College), 3.

⁹⁵James W. Williams, *A History of Army Aviation: From its Beginnings to the War on Terror* (Lincoln, NE: iUniverse, Inc, 2005),133.

⁹⁶Rankin, *Light Observation Helicopter Acquisition*, 10.

The first of the OH-6A Cayuse (also known as the LOH or Loach) helicopters arrived in Vietnam in 1967 with 7th Squadron, 17th Cavalry Regiment.⁹⁷ Shortly following their arrival other units in Vietnam received the new airframe and conducted in theater aircraft qualifications. OH-13s continued to operate as aeroscouts, observers, and command and control aircraft until December 1970, when sufficient numbers of replacement OH-6A airframes existed. The Army possessed an average of 374 Loaches in Vietnam between 1967 and 1971. The OH-6As flew over 1,157,000 combat hours, while supporting ground troops and conducting primarily reconnaissance and security missions. The OH-6A, however, suffered grievous losses with a total of 581 combat losses and 283 operational losses. This helicopter experienced the highest combat loss rate of any type airframe for both the Army and Marine rotary-wing aircraft, 0.25 percent per 1000 sorties while operating throughout Vietnam.⁹⁸ It is important, however, to note two facts regarding the OH-6A. The aircraft did not utilize hydraulics to assist the pilot flying the aircraft. Because of this configuration, the aircraft gained notoriety for being one of the most physically exhausting aircraft to fly in Vietnam (ACTIV evaluation of the LOH describes the high level of fatigue from OH-6 missions). The second fact is that although the airframe possessed an extremely high loss rate, it was extremely survivable in crashes because of the egg like shape and the self-sealing fuel tanks.

⁹⁷Williams, *A History of Army Aviation*, 133.

⁹⁸Department of the Navy, Center for Naval Analyses Study 1008, Marine Corps and Army Helicopter Employment and Attrition Statistics for Southeast Asia Operations from October 1965 through December 1971 (Alexandria, VA: Center for Naval Analyses), 11,13.

OH-6 Specifications

Normal Crew	Pilot and one to two observers
Engine	T63-A-5A (turbine)
Horsepower	252.5 shaft horsepower
Empty Weight	1,163 lbs
Gross Weight	2,400 lbs
Fuel Capacity	61.5 gal
Endurance	2 hr 30 min
Max Cruise	115 knots
Max Climb	1,840 feet per minute ⁹⁹

Bell helicopter received a fortuitous opportunity following the urgent request for more scout airframes in Vietnam. Bell received this opportunity after the Army's dialog with Hughes failed. The Army explored a series of options with Hughes during FY-65 and FY-66. The Army wanted additional helicopters and requested Hughes increase the production of the OH-6 which created a quandary for the helicopter manufacturer.

Hughes had more than doubled the initial contract price in order to recoup losses caused by the need to temporarily eliminate civilian OH-6 construction (thought to be in the winning bid fiscal offset) in order to fulfill the military contract. Hughes submitted a final contract price of \$55,927 per airframe and the Army ceased negotiations on 10 May 1966.¹⁰⁰ The Army re-opened the LOH competition and Bell, Hiller, and Hughes submitted proposals. The Army accepted Bell's low bid for the OH-58A and awarded a five year, fixed price escalation contract for 2,200 OH-58A helicopters.¹⁰¹

Bell Helicopter's OH-58A was an off-the-shelf, militarized version of the commercial Bell 206 Jet Ranger helicopter. Upon selection of the new airframe, the

⁹⁹Johnson, *Winged Sabers*, 48.

¹⁰⁰Rankin, *Light Observation Helicopter Acquisition*, 11-12.

¹⁰¹*Ibid.*, 12-13.

Army specified to Bell that the helicopter needed to utilize the T-63-A-5A gas turbine engine, the same engine as the OH-6. The OH-58A empty weight was over 600 pounds more than the OH-6A. The costly decision by the Army, although it reduced the logistical burden (of stocking multiple engine types), severely degraded the performance of the new helicopter. Sometimes there is a cost associated with the lowest bid.



Figure 4. OH-58A Kiowa

Source: MilitaryPhotos.Net, —Vietnam War Helicopter Aviation: OH-6A and OH-58A,” <http://www.militaryphotos.net/forums/showthread.php?139418-Vietnam-War-Helicopter-Aviation-OH-6A-and-OH-58A> (accessed 5 May 2011).

The OH-58A helicopter began operating in Vietnam during September 1969. It saw combat with 3rd Squadron 17th Cavalry, but was removed from aeroscout service after poor performance in six months of fighting.¹⁰² The initial OH-58A could not overcome the inherent performance problems associated with utilization of the T-63-A-5A engine. The helicopter continued to perform other missions such as transport and command and control.

¹⁰²Johnson, *Winged Sabers*, 48.

OH-58A Specifications

Normal Crew	Pilot and one to two observers
Engine	T63-A-5A (turbine)
Horsepower	252.5 shaft horsepower
Empty Weight	1,700 lbs
Gross Weight	3,000 lbs
Fuel Capacity	73 gal
Endurance	2 hr 10 min
Max Cruise	101 knots
Max Climb	1,780 feet per minute ¹⁰³

The evolution of the scout helicopter role is not attributed directly to the influence of new technology in regards to weapons systems. The weapons systems technology, however, simply enhanced the evolving role of the scout helicopter. Weapon systems enable aviators to identify and mark targets, fix enemy forces, harass the enemy, and destroy targets of opportunity. As we have seen, Colonel Jay D. Vanderpool initiated the development of emplacing weapons on Army helicopters (initially the OH-13). These early developments paid large dividends with the ever increasing role of the helicopter.

—Vanderpool’s “Fools” and other pioneers developed numerous weapon systems for the H-13 and other aircraft. General Electric created one of the first weapon systems which included two 7.62 mm M-60 machine guns and an eight shot 89mm rocket launcher. The system required some modifications in order to fire four 2.75” folding fin aerial rockets (FFAR). Both the guns and the rocket pod were mounted beneath the cross tubes of the helicopter and between the skids. The size of the weapon systems combined with the low skid height created undesirable landing limitations.¹⁰⁴

¹⁰³Johnson, *Winged Sabers*, 48-49.

¹⁰⁴Charles O. Griminger, *The Armed Helicopter Story Part V* (Ft. Rucker, AL: AVN Digest October 1971), 19.

The next kit developed was the KX-13-A1-2, a .30 caliber machine gun system designed to provide the H-13 with the ability to suppress hostile ground fire. This weapon system consisted of a lightweight frame designed to secure either an M-37, .30 caliber machine gun or the 7.62mm M-60 machine gun. The system introduced some noteworthy advancements which dramatically eased pilot workload. The pilot could elevate and depress the weapon system, charge, as well as fire and safe the machine gun during flight without removing his hands from either the cyclic or collective flight controls. Engineers continued to tinker with the system in hopes of increased reliability, decreased pilot workload, and increased effectiveness.¹⁰⁵ The XM-1 system resulted from the previous tests.

The XM-1 incorporated a M-37 .30 caliber machine gun and the XM-2 utilized an M-60 7.62 machine gun mounted on the left and right side of the aircraft above the skids. The XM-1 fired 550-575 rounds per minute and carried a payload of 650 rounds per gun. The XM-2 variant displayed a slightly higher rate of fire at 500-650 rounds per minute but carried only 550 rounds per gun. One thousand meters marked the maximum effective range for both systems.¹⁰⁶ These weapon systems incorporated advances from the previous system such as remote firing, charging, and safing. The weapons were fixed forward and could not be elevated or depressed. The pilot utilized aircraft pitch and yaw to place rounds on target. In simpler terms, the pilot had to point the aircraft at the target during engagements. Both weapon systems served as the primary weapons for the H-13 during the early 1960s.

¹⁰⁵Griminger, *The Armed Helicopter Story Part V*, 19.

¹⁰⁶*Ibid.*, 17.

The OH-13 encountered problems when they initially were employed in Vietnam. The XM-1 and XM-2 weapon systems proved too heavy for use in the hot and humid environment. The OH-13 did not have sufficient available power to operate in Vietnam conducting the aeroscout missions with these armament systems. Therefore units stripped the OH-13 of all weapons in order to compensate for the reduced performance created by the austere flying environment. Pilots and observers relied on weapons such as the M-16 or the M-79 grenade launcher to engage enemy troops. Both of these weapons limited the ability to suppress or destroy enemy forces. Additionally when the observer fired out the right side of the OH-13 the rounds generally landed long of the intended target. Because of the aircraft's forward momentum coupled with the gyroscopic precession imparted on the bullet as it traveled down the barrel, the gunner needed to aim right and high of the target. Often gunners fired all the rounds in the magazine before being able to place accurate fire on the intended target. The M-79 grenade launcher appeared even more problematic because it fired one 40mm grenade at a time which made it extremely difficult to utilize effectively. The need for a more effective weapon system was readily apparent.

In order to fill this capability gap, units utilizing the OH-13 began experimenting with door guns. M-60 machine guns utilized a bungee cord to suspend the weapon on the right side of the cockpit. Other crews modified truck machine gun mounts and fastened them to the skid cross tubes. This mount enabled the gunner to pull the weapon system against the body of the aircraft in order to minimize the effects of parasitic drag during

forward flight. Additionally, the crew carried 600-800 rounds of 7.62mm ammo along with a wide assortment of smoke grenades.¹⁰⁷

The introduction of the OH-6A in Vietnam brought new capabilities to the forefront. The OH-6 could utilize the XM27E1 7.62mm minigun. The XM27E1 mounted on the left side of the OH-6 fuselage. When configured with this weapon, the OH-6 generally only carried a crew of two in order to compensate for the added weapon's weight. The pilot could elevate (+10 degrees) or depress (-24 degrees) the weapon by a control on the collective. The aircraft generally carried 2,000 rounds of 7.62mm ammunition while the weapon permitted two rates of fire, 2,000 or 4,000 rounds per minute. The intention of the minigun was two-fold: marking targets for other aircraft and for immediate suppression. Army Concept Team in Vietnam came up with a realistic conclusion regarding minigun usage:

A distinct temptation existed to engage targets with the minigun rather than call in more effective weapons systems. This tendency also worked to the detriment of visual reconnaissance effectiveness by reducing surveillance time. Nevertheless, in some cases the machine gun was used to good advantage. In one instance in which a friendly village was under attack, an OH-6A crew was able to hold the VC off with minigun fire until helicopter gunships arrived.¹⁰⁸

The OH-6A possessed a pedestal type aiming system, however most were abandoned because it was believed that they caused head injuries during crash sequences. The pilot thus aimed the minigun through utilizing a bore sighted reference mark on the windscreen of the aircraft. The reference mark provided a quick orientation for

¹⁰⁷Richard L. Greene, "OH-13 Door Gun: People Pointed, Stared, and Smiled but our OH-13 Door Gun is Effective" (Ft. Rucker: Aviation Digest October 1968), 17.

¹⁰⁸Department of the Army, Army Concept Team in Vietnam. *Evaluation of the OH-6A(LOH)(U)* (San Francisco: ACTIV 30 May 1968), III-10.

adjustment of fires. The pilot noted where the rounds struck in relation to the target and adjusted the aircraft's attitude in order to place rounds on target. Not all OH-6s operating in Vietnam utilized the XM27. Generally the aircraft working with the division artillery units flew with a crew of three and no minigun. The third crewman acted as an artillery observer while the gunner flew in the right rear compartment, directly behind the pilot.

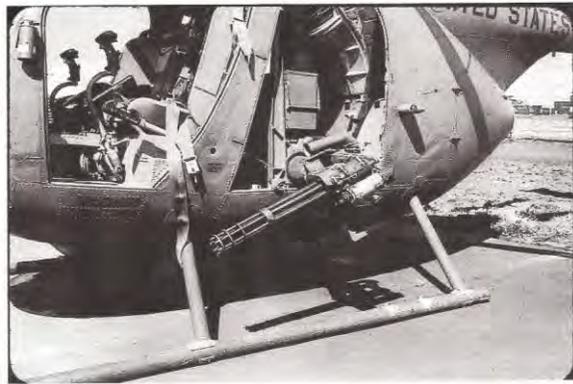


Figure 5. XM27E1 Minigun installed on a OH-6A

Source: Steve Shepard, "Killer Egg OH-6," Vietnam Helicopter Pilots Association, <http://www.vhpmuseum.org/aircraft/aircraft.shtml> (accessed 25 April 2011).

The gunner on the OH-6A sat on a jump seat (rigged sideways) so that he faced outward on the right side of the aircraft, behind the pilot. The bottom side of the jump seat was fitted with a tungsten steel armor plate. The only other armor for the gunner was the chicken plate armor (constructed of Kevlar material) on his front and back which could stop up to a 7.62mm round. The gunner did not have a seat belt, he simply used a monkey harness to secure himself to the aircraft. The harness allowed the gunner to move around the cabin and also stand on the right skid as necessary. His primary weapon was

an M-60 machine gun which was suspended from the roof of the cabin with a bungee type cord. The gunner also carried an assortment of smoke, incendiary, and fragmentation grenades.¹⁰⁹

Successfully engaging targets with the M-60 involved highly coordinated action between the pilot and the gunner. When the pilot identified a target for the gunner, the pilot provided the target direction and distance while he maneuvered the aircraft so the gunner could best engage the target. The gunner took into account the distance to the target, the speed of the aircraft, and the altitude when engaging targets on the ground. If the first rounds were not hits then the gunner could use the tracer fire to “walk” the rounds onto the target.

During its short combat tenure, the OH-58A utilized the same weapon systems as the OH-6. The XM27 7.62mm minigun system was also adapted for use on the OH-58A. Aircraft were configured with the minigun like the OH-6A and flew with a crew of two, with a gunner seated in the right aft compartment. The gunner utilized an M-60 with a setup similar to that of the OH-6A. When the OH-58A was operated without the XM-27, the crew usually consisted of two gunners with the second gunner stationed in either the copilot's seat or in the left rear compartment.

The first of the aeroscouts to arrive in Vietnam predominantly utilized the OH-13 Sioux. The scouts conducted the missions of reconnaissance in a manner that was more suited for the plains of Europe. The crews flew at high altitude and maneuvered from terrain feature to terrain feature. Doctrine at the time recommended that scouts land the

¹⁰⁹Hugh L. Mills Jr. and Robert A. Anderson, *Low Level Hell: A Scout Pilot in the Big Red One* (Novato, CA: Presidio Press, 1992), 33.

helicopters near a suitable observation point, shutdown the aircraft, dismount and move to an area suitable for conducting reconnaissance. Once completed the scouts mounted the helicopters and departed the hasty observation post. Aeroscouts were particularly adept at conducting route, area, and zone reconnaissance. Their training focused on route and bridge classification as well as threat identification of major weapon systems. The need for change from the standard operating procedures became apparent when 1/9 Cavalry began conducting combat operations in Vietnam.¹¹⁰ Prior to March 1971 there was no formal training for aeroscout pilots or observers. The air cavalry units in Vietnam simply conducted in house training for newly assigned pilots since no formal requirements for the pilot or observer existed.¹¹¹

The existing doctrine did not match well with the environment of Vietnam. The OH-13 did not possess the necessary power to land in remote areas. The aircraft barely had the ability to depart improved airfields with reduced combat loads. The high density altitude and high temperatures made it unrealistic for scouts to conduct terrain flight approaches, departures, or any maneuvers that required hover out of ground effect (OGE) power. The situation often dictated that pilots would have to accelerate the aircraft forward while bumping down the runway in order to accelerate through effective translational lift (ETL). Once through ETL the aircraft could climb and maneuver as desired. Above ETL, the rotor system became more effective requiring less power for flight. Aircrews lightened the load of the helicopters by removing extra weapons and fuel

¹¹⁰Johnson, *Winged Sabers*, 30.

¹¹¹William L. Warnick, *Combat Job Requirements for the Air Cavalry Aeroscout Pilot and Aeroscout Observer* (Fort Knox, KY: Human Resources Research Organization December 1972), 2.

in order to reduce the necessary power for takeoff and landing. Additionally pilots ensured they maintained the aircraft at airspeeds above ETL (roughly sixteen to twenty four knots). Airspeed and pilotage requirements brought about a change in tactical employment.

Following the changes, aeroscouts worked in teams of two flying low and slow across the terrain. Instead of scouting for major weapon systems such as tanks, scouts searched for an elusive enemy. The aircraft utilized a high/low formation. The high bird flew in support of the low bird and relayed all radio traffic, usually at an altitude of fifty to one hundred feet. The low bird searched for signs of enemy forces. Often the enemy direct fire weapons helped scouts identify the location of the enemy. The utilization of scout teams became more prevalent as time went on.

Time is a critical factor once the enemy has been located. The scout helicopter normally takes the enemy under fire, dependent on the force encountered, and designates the target area with marking rounds until the aero-rifle and aero-weapons elements can reach the targets. The time between the scout's detection of the enemy and the arrival of the attack elements varies from a few minutes to as many as 30, depending on the situation.¹¹²

Because of the time delay between initial contact and the arrival of the follow on forces it was necessary for the scouts to carry sufficient ammunition for aircraft survivability and target designation.¹¹³

The introduction of the OH-6A to Vietnam heralded other new changes. The OH-6A was to replace the OH-13 Sioux and the O-1 Bird Dog light fixed wing airplane, thus

¹¹²Department of the Army, Army Concept Team in Vietnam, *Final Report of Essential Load of Scout Helicopters* (San Francisco: ACTIV 17 November 1966), 3.

¹¹³Department of the Army, Army Concept Team in Vietnam, *Final Report of Essential Load of Scout Helicopters*, 3.

becoming the sole light observation aircraft in the Army's inventory. The O-1 Bird Dog served primarily in the division artillery battalions where they adjusted indirect fire and coordinated closely with Air Force tactical air assets. The O-1 configuration included two FM radios and four 2.75" rockets for marking targets. The OH-6A configuration initially included one FM radio and a UHF radio making it considerably more difficult to coordinate fires between the white team (pair of scout helicopters) and Air Force assets. Other shortfalls dealt with the scout's limited ability to mark targets from afar. The minigun on the OH-6A proved inadequate for marking targets for Air Force tactical aircraft. Smoke and incendiary grenades were suitable but they required the crew to fly dangerously over the target area however marking rockets on the O-1 permitted significant standoff. After further tests by the Army Concept Team in Vietnam, it was determined that the O-1 Bird Dog was the more capable airframe for the visual reconnaissance mission.¹¹⁴ The OH-6A, however, continued to support the division artillery battalions when called upon to do so.

Prior to the introduction of the OH-6A, OH-13s operated as white teams. The gunship elements, UH-1Cs and later AH-1 Cobras, also operated together and were known as red teams. The capabilities the OH-6 brought to the battlefield helped to change tactics. Scouts and guns began working as independent teams, otherwise known as pink teams. This employment shift maximized the effectiveness of the Cobra/Loach relationship.¹¹⁵ This new employment strategy continued as the primary employment

¹¹⁴Department of the Army, Army Concept Team in Vietnam. *Evaluation of the OH-6A(LOH)(U)* (San Francisco: ACTIV 30 May 1968), I-3, III-7.

¹¹⁵Williams, *A History of Army Aviation*, 134.

method through the rest of the American involvement in Vietnam. The scout flew low in order to visually identify targets or signs of possible enemy forces. Whenever a scout took fire it was standard operating procedures to try to mark the area with a smoke grenade. The scout could then conduct a hasty target handoff with the Cobra using the smoke as a reference mark. The scout continued out of the engagement area while the Cobra rolled in and fired rockets or guns on the target. Following the Cobra engagement it was not uncommon for scouts to suppress the target area themselves in order to provide covering fire for their wingman's egress.

The aeroscout mission continued to become more dangerous. The crews operated at high speeds very close to dangerous terrain not to mention the dangers posed from the evolving enemy anti-helicopter tactics. This operating environment required that the crew be alert at all times. Because of the inherent dangers associated with the demanding mission, the OH-6 possessed the highest combat loss rate of the war. The combat loss rate declined slightly between 1968 and 1969, but then after continued to rise exponentially. The loss rate declined from .66 losses per 1000 combat sorties in 1968 to roughly .55 losses per 1000 combat sorties in 1969. The OH-6 loss rate climbed from the 1969 low to .9 losses per 1000 combat sorties in 1971. The increase could be attributed to the high helicopter losses suffered during Operation Lam Son 719. The OH-58A performed the same missions initially as the OH-6, however after less than six months of service (in some cases) the OH-58A began performing duties outside the realm of the aeroscout. The underpowered airframe could not meet the demands of the mission in Vietnam, the consequence of earlier poor or non-existent planning.

Changes in airframes, weapons, and tactics created the conditions for the evolution of the aeroscout employment in Vietnam. The changes in airframes led to an ability to more effectively conduct reconnaissance and security missions in the demanding environments encountered in Vietnam. The weapon changes gave the aviators the ability to provide suppressive defensive fires, conduct direct fire engagements, and mark targets for other more effective platforms. Both of these advancements permitted the role of the scout to change tactics and become more effective at finding and killing the enemy.

CHAPTER 6

CONCLUSION

Competition served as the major factor that determined the speed of the aeroscout employment evolution. As the United States transitioned from the Eisenhower era, whose foreign policy and national defense strategy built upon nuclear deterrence, shifted into an era of persistent conflict in Vietnam - the evolution of rotary wing assets in Army operations struggled to carve out its role. Influenced by tight federal budgets, technology which outpaced doctrine, and the unpredictable nature of an unfamiliar type of warfare, Army scout helicopter roles created the foundation for helicopter doctrine for the next four decades.

Four presidential administrations faced comprehensive challenges that ultimately affected the further refinement of rotary-wing aviation doctrine and the procurement of new aircraft. Following the birthing of the helicopter in Korea, President Dwight D. Eisenhower drastically cut back the size of the Army and its budgetary allocations. Because of such dire conditions, Army leaders were forced to find relevance while the Air Force profited from the New Look and the massive retaliation defense strategy.

President John F. Kennedy's administration brought new life to the Army with increased defense spending, and with a changed national defense strategy which focused on flexible response or the ability to counter a wide range of threats, from nuclear war to small wars. Counterinsurgency became the name of the game during his administration. The US involvement in Vietnam increased dramatically with the formation of MACV and the increase of advisors training the South Vietnamese forces.

President Lyndon B. Johnson viewed Vietnam as a sideshow while he focused on The Great Society social programs. Johnson intended to fight the war on the cheap and to use the least amount of force necessary to achieve his desired end state. During his tenure the war transitioned from a revolutionary guerrilla war to a conventional force period to a neo-revolutionary guerrilla period.¹¹⁶

In 1968 Richard M. Nixon ran for president claiming that he had a secret plan for ending the war in Vietnam. His secret plan, known as —Vietnamization,” served as the exit strategy for the United States, however; the strategy failed to set the conditions that enabled South Vietnam to defend itself. The policy expected too much too soon. Concurrently with the U.S. drawdown the Soviets and the Chinese began increasing funding and equipment to the North.

Doctrinal and organizational structure changes proved necessary for the continued evolution of the helicopter. The Rogers Board (1960) caused dramatic shifts in doctrine and organizational structure and acted as a catalyst for change in Army doctrine and formations. The board examined the training programs compatibility with available resources, adequacy of construction programs to meet future training requirements, the ability of the current and future programs to meet requirements, and the ability to consolidate training, reduce it, or eliminate it without loss of effectiveness.¹¹⁷ The more recognized Howze Board created lasting effects throughout the Army. The major focus of

¹¹⁶Douglas E. Pike, *The Second Indochina War: Proceedings Held at Airlie, Virginia, 7-9 November 1984, Conduct of the Vietnam War: Strategic Factors, 1965-1968* (Washington, DC: US Army Center of Military History, 1986), 99-119.

¹¹⁷U.S. Continental Army Command USCONARC, *Ad Hoc Committee on Requirement for Training in Support of the Army Aviation Program 1960-1970* (Fort Monroe: Headquarters United States Continental Army Command, 1960), 9-9.3.

this board was the examination and evaluation of the operational concept of airmobility. The Air Assault Division was the main development resulting from the board's research. Despite many individual and collective influences of key leaders, politicians, committees, and competing services, at the end of the day it was a combined effort that served as the promoter for change.

Advances in technology contributed to evolving mission requirements. The early days of the American involvement in the insurgency phase of the Vietnam War saw the employment of H-19 helicopters transporting advisors and troops across the battlefield. The necessity for observation helicopters to scout ahead of troop air assaults became apparent. Armed UH-1B's initially filled the role until OH-13 and OH-23 helicopters arrived with the 173rd Airborne Division. The need for modern observation helicopters addressed initially following Korea failed to gain traction until shortly after the Rogers Board. The selection of the OH-6A brought a capable lightly armed scout helicopter to the fight. The aviation mission continued to change as the strategy in Vietnam shifted.

The forces of the political environment, doctrinal, and tactical changes shaped the integration and evolution of the aeroscout in Vietnam. However, throughout this progression, the Army and the aviation leaders really did not fully understand what they were doing in regards to aeroscout employment. Early on the vision was that they would perform the missions of the horse cavalry. Scouts provided reaction time and maneuver space for the ground commander. By arming the early aeroscouts, crews more effectively prosecuted the missions of reconnaissance and security. Mission creep and competition drove the desire for a single airframe that provided observation, adjustment of fires, reconnaissance, and attack. The O-1 Bird Dog served as an adequate artillery observation

platform during the Vietnam War however, the Army wanted to possess one standard light observation helicopter that could bridge the gap between the observation fixed-wing and rotary-wing aircraft.¹¹⁸ Leaders continued looking for solutions but they really did not fully comprehend what the doctrinal development question was. This served as a poor example of how to integrate new technology and doctrine. Regardless, aeroscout employment continued to provide ground commanders with the critical real time information necessary for successful combat operations against an elusive enemy.

¹¹⁸Department of the Army, Army Concept Team in Vietnam. *Evaluation of the OH-6A(LOH)(U)* (San Francisco: ACTIV 30 May 1968), IV.

APPENDIX A

ROGERS BOARD MEMBERS

Inclosure to Appendix I

COMMITTEE DESIGNATION

ROGERS COMMITTEE ON ARMY AVIATION

The following were appointed as an Ad Hoc Committee to conduct a study on the training requirements to support the Army Aviation Program, 1960-70, and to submit appropriate findings and recommendations to the Commanding General, United States Continental Army Command:

COMMITTEE

LT GEN G. B. ROGERS, Committee Chairman, Deputy Commanding General for Developments
MAJ GEN L. W. TRUMAN, Deputy Chief of Staff for Operations, Plans, and Training, HQ USCONARC
BRIG GEN J. F. FRANKLIN, JR, Deputy Chief of Staff for Personnel and Administration, HQ USCONARC
BRIG GEN R. B. NEELY, Commandant, US Army Transportation School, Fort Eustis, Virginia
COL T. E. TAYLOR, Office of the Deputy Chief of Staff for Operations, Plans, and Training, HQ USCONARC
COL K. K. BLACKER, Executive Secretary, Army Aviation Section, HQ USCONARC
LT COL B. G. SMITH, Fort Rucker, Alabama
LT COL J. A. SHELTON, Office of the Deputy Chief of Staff for Material Developments, HQ USCONARC
MAJ W. D. PROCTOR, HQ Third US Army
MAJ R. SHOEMAKER, Fort Rucker, Alabama
MR. V. STANLEY, Office of the Deputy Chief of Staff, Comptroller, HQ USCONARC

WORKING GROUP MEMBERS

LT COL J. J. FARNES, Office of the Deputy Chief of Staff for Personnel and Administration, HQ USCONARC
LT COL D. A. MC CARTNEY, Army Aviation Section, HQ USCONARC
LT COL W. C. FORD, Office of the Deputy Chief of Staff for Operations, Plans, and Training, HQ USCONARC (until 31 Sep 60)
LT COL W. G. KILMER, Transportation Section, HQ USCONARC (as requitrad)
MSGT R. E. BURNS, Assistant Secretary, Office of the Deputy Chief of Staff for Operations, Plans, and Training, HQ USCONARC (until 31 Sep 60)
PFC W. C. LAMERE, Stenographer, AG Section, HQ USCONARC

9.3

Source: U.S. Continental Army Command, *USCONARC Ad Hoc Committee on Requirement for Training in Support of the Army Aviation Program 1960-1970* (Fort Monroe: Headquarters United States Continental Army Command, 1960), 9.3.

APPENDIX B

ROGERS BOARD FINDINGS, RECOMMENDATIONS

ROGERS COMMITTEE ON ARMY AVIATION

FORT MONROE, VIRGINIA

22 December 1960

SUBJECT: Requirements for Training in Support of the Army Aviation Program, 1960-70

TO: Commanding General
United States Continental Army Command
Fort Monroe, Virginia

1. **Purpose.** - In your directive, ATCG, HQ USCONARC, 28 July 1960, subject: "Directive for the Conduct of a Study of Training in Support of the Army Aviation Program of the Department of the Army," you directed this committee to submit appropriate findings and recommendations in the following areas:

- a. The degree to which the current and projected training programs for Army aviation will provide the correct skills in the proper proportion to meet the requirements of the Department of the Army Aviation Program.
- b. The degree to which Department of the Army approved operations and training programs for Army aviation are compatible with resources made available to USCONARC.
- c. The adequacy and suitability of Army aviation construction programs to meet current and projected training requirements.
- d. The extent of Army aviation activities that can be consolidated, reduced, or eliminated without significant loss of operational effectiveness.

2. **Procedures.** - The Committee convened at Fort Monroe, Virginia, on 15 August 1960 and, in conjunction with working groups, continued in session until 22 December 1960. Information was compiled from trips, special questionnaires, working group meetings, individual

writings, discussions, and interviews with selected individuals. Time permitted the committee selectively to examine major problem areas. The directive for the conduct of the study to include the committee and working group designation is shown at appendix I.

3. Facts.

a. It has been Army policy that there will be no aviation branch.

b. Section 3692, US Code, Title 10, Armed Forces, requires that "to be eligible to receive a rating as a pilot in time of peace, a member of the Army must pilot a heavier-than-air craft for at least 200 hours of which 75 are alone, and must successfully complete the prescribed course."

c. The Army Aviation Training Program is outlined in "Army Aviation Guidelines for the Development of Doctrine and Organization Through Fiscal Year 1963," Department of the Army, 19 September 1958, and in The Army School Catalog.

d. During FY 61 a number of courses at several service schools were reduced or canceled to generate funds to be applied to aviation school training requirements.

e. The present method of budgeting for service schools at Department of the Army and HQ USCONARC is based primarily on the average student resident load.

4. Assumptions.

a. The aircraft inventory for this period will be as envisioned by the Army Aircraft Requirements Review Board (the Rogers Board, which was approved by the Chief of Staff for objective planning) and adjusted to conform with the Army Material Control Program.

b. The field army for the period 1960-65 will consist essentially of the type field army specified in the theater type Mobilization Corps Objective (d'), Operational and organizational concepts pertaining to the "D-Series" divisional type organizations will be valid for the period until 1965, with minor modifications caused by introduction of new items of equipment. The long-range organizational concepts for Army aviation are as envisioned in the USCONARC study, "Developmental Objectives for Army Aviation,

1950 - 1970 (U). This proposed detailed organization for combat is considered only as a guide since such future organizations must be continuously adjusted. No consideration was given to implications resulting from introduction of new types of aircraft such as the AC-2 and AC-2.

c. The strength of the Army will remain between 870,000-925,000 for this period.

d. There will be no separate Army aviation branch during this period.

e. US Code, Title 10, Armed Forces, will be amended by FY 63 to remove the 200-hour flight limitation.

f. The net effects of simplicity in aircraft or equipment design will not materially affect resource requirements during this period.

5. Conclusions:

a. Modifications to the current Army Aviation Training Programs are necessary in order to provide the correct skills in the proper proportions to meet the requirements of the Department of the Army Aviation Program. For discussion, see annex A (aircraft), annexes B and E (personnel), and annexes C and D (training).

b. The approved FY 61 operations and training programs for Army aviation are not compatible with resources made available to the Commanding General, United States Continental Army Command. For discussion, see annexes F and G (resources, base facilities).

c. The Army's current and planned construction programs are not adequate to meet the needs of the Army Aviation Program. For discussion, see annexes I and J (facilities).

d. The helicopter square dance team (one of certain activities studied with a view to consolidation, reduction, or elimination) can be eliminated. For a discussion of these activities, see annex K.

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6. Recommendations.

a. That the CG, USCONARC, approve the following for implementation:

- 64, 6-3, 6-2, 6-1 (1) Utilization of the resource requirements (aircraft, personnel, funds, and facilities) as developed in this report for planning purposes.
- 600 6-3 (2) Modification of the current flight training courses to reflect the proposed course objectives, training sites and implementation dates (ann. D).
- 600 6-3 (3) Initiation of helicopter gunnery training in the advanced tactics phase of the observation and utility/transport helicopter course as soon as practicable and promulgation of range safety criteria for the conduct of helicopter gunnery (ann. D).
- 600 6-3 (4) Revision of the current preflight training program for warrant officer candidates, to include combined arms tactical training similar to that presented in existing officer candidate courses and be conducted at the branch schools (ann. D).
- 600 6-3 (5) Revision of the current applicable programs of instruction of the service schools to provide detailed instruction of officers in their duties and responsibilities for exercising command and tactical employment of Army aviation units (ann. D).
- 6-3 (6) Identification of lands to be provided by USCONARC to army commanders for each service school with specific instructions and restrictions on their use and the revision of other USCONARC procedures for Programming and Budgeting for the US Army Service School System as outlined in paragraph 2, appendix VIII to annex F.
- 600 6-3 (7) Establishment of the Aviation Program as a designated program of special interest under an activity monitor to insure coordination and timely actions in programming and budgeting (ann. F).
- 600 6-3 (8) Revision of the current reporting and accounting system to provide realistic funded cost data by type of aircraft and mission for forecasting future fund requirements for operation and maintenance of Army aircraft (ann. G).
- 6-4 (9) Establishment of a special study on consumer funding for aircraft repair parts, with the objective of determining how the programming, budgeting, and funding should be accomplished in FY 63 (ann. G).

G-4 (10) Establishment of new maintenance support criteria for training aircraft based on actual planned utilization rather than on the figures shown in SD 1-1 (ann. G).

G-1 (11) Authorization of an active Army aviator advisor in each State which has either an aviator unit of company size or larger, or a minimum of 30 Reserve Army aviators actively participating in the Reserve program (ann. I).

AVN G-3 (12) Timely distribution of the aviation unit stationing plans to provide necessary information for modification of station master plans (ann. I).

G-4 (13) Initiation of necessary programing actions to provide the additional resources at Camp Walters, Fort Rucker, Fort Benning, and Fort Stewart which are necessary for implementing the revised training program commencing FY 63 (ann. J).

ND (14) Establishment of a satellite test activity of the US Army Aviation Board at Fort Benning, or other suitable site, to permit continuation of planned and future tests involving jet aircraft (ann. J).

AVM G-3 (15) Initiation of a separate study to develop a plan which will provide, on an orderly and economical basis, a long-range Army aviation training complex which will adequately support the quantitative and qualitative growth potential and mobilization requirements of the expanding program (ann. J).

G-1 (16) Discontinuance of all activities in connection with the helicopter square dance team. In addition, that Department of the Army be notified so as to preclude further scheduling of this unit (ann. K).

b. That the CG, USCONARC, approve and forward the following to the Department of the Army for consideration: MONITORING.

G-1 (1) Establishment of the enlisted aviation personnel requirements and of the recommended officer and warrant officer aviator personnel requirements as valid planning objectives for the period through FY 70 (app. II and V to ann. D).

G-1 (2) Modification of the current imposed aviator rated ceilings in order to be in consonance with the recommended personnel planning objectives (ann. B).

JA (3) Amendment of Section 3692, US Code, Title 10, Armed Forces, to remove the 200-hour limitation and authorize the Chief of Staff, US Army, to determine the minimum number of student pilot hours required prior to designation of an Army aviator (ann. D).

4-3 (1) Modification of current Department of the Army policies pertaining to the Army aviation training program to provide for:

(a) Incorporation of the proposed training objectives (para. 19, ann. C) into the Army Aviation Guidelines.

(b) Civilian contract helicopter instrument training (ann. D).

(c) Procurement of approximately 150 off-the-shelf helicopter instrument trainers to support the helicopter instrument training program (ann. D).

(d) Reduction of cross-training objectives to a more selective system which cross-trains to meet operational requirements or for individuals assigned to supervisory positions (ann. D).

(e) Increased emphasis in the procurement program to provide for the USAR aircraft inventory requirements (ann. H).

(f) Reduction of the training objective for USAR aviator instrument qualification to 50 percent of actual strength (ann. H).

(g) Modification of Department of the Army aviation guidelines to incorporate the training objectives outlined in paragraph 19, annex C.

4-3 (5) Determination of the US Air Force's capability to provide the Army's quantitative and qualitative requirements for training and listed air traffic control personnel and, if the requirements cannot be satisfied, authorization of the CG, USCONARC, to establish necessary courses of instruction (ann. D).

6-1 (6) Provision for officer aviators to spend at least 1 year out of every five on basic branch material assignments in order to maintain branch proficiency and that the policy apply to all officer aviators through the grade of major. Assignments for colonels and lieutenant colonels should be dictated by requirements determined by career branches (ann. F).

6-1 (7) Identification of general officer aviator positions and authority to maintain flight status for the officer only when occupying such position (ann. E).

G-1 (8) Modification of the grade distribution for officer aviators to provide qualified individuals in the program for the optimum period of time so that replacement training costs are reduced to an economical minimum (anx. E).

G-1 (9) Assignment of warrant officer aviators to branches of the service that have a requirement for such aviators, and revision of pertinent regulations pertaining to the current warrant officer career program to provide for an adequate warrant officer aviator career field (anx. E).

G-1 (10) Establishment of additional separate officer and warrant officer aviator MOS identifications or prefixes to permit more effective assignments (anx. E).

G-1 (11) Modification of the criteria to permit substitution of warrant officer aviators for certain officer aviator positions in combat and support type units, and the subsequent modification of the TOE to reflect these conversions. Further, review and adjustment of the utilization of warrant officers after experience has been obtained and the performance and utilization factors analyzed (anx. E).

COMP (12) Authorization from the Secretary of Defense for the CG, USCONARC, to effect adjustments between programs P2000 (Tactical Forces) and P2100 (Training), effective with FY 62, to meet changing requirements in the aviation programs, US Army service schools program, and other programs as priority of missions dictate (anx. F).

COMP (13) Revision of DA procedures for programing and budgeting for the US Army Service School System, as outlined in paragraph 3, appendix VIII to annex F.

COMP (14) That the technical and administrative services be requested to adopt a similar budgeting procedure for the technical and administrative Army service schools, as recommended in subparagraph 43a(1).

COMP (15) Establishment of review procedures to reconcile school program and funds requirements prior to development of the final DA program and budget guidance for USCONARC (anx. F).

COMP (16) Modification of the Department of the Army policies to establish program and budgeting procedures for the US Army Service School System which will identify changes in fund requirements between fiscal years, based on those features peculiar to each school which affect training costs instead of the single factor of resident student loads (anx. F).

CAMP. (17) Modification of the Department of the Army policies to establish an accounting and reporting structure which will identify the costs of the expanding US Army Aviation Program in program and budget documents and quarterly fund reviews, effective with FY 62 (anx. F).

G-3 (18) Continuation of the Army ROTC flight training program in sufficient quantity to support necessary inputs into primary flight training (anx. H).

G-4 (19) Revision of MCA funding programs to provide:

(a) \$6,725,000 for additional facilities to support current operations. (This is required in addition to the \$5,674,000 presently programed in FY 63.) (Anx. I.)

(b) Additional flight training facilities at Camp Wolters, Fort Rucker, Fort Sill, and Fort Stewart in the amount of \$3.8 million for implementation in FY 63 of revised programs of instruction (anx. J).

G-1 (20) Notification that all activities in connection with the helicopter square dance team have been discontinued (anx. K).


GORDON B. ROGERS
Lieutenant General, USA
Chairman

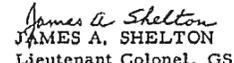

LOUIS W. TRUMAN
Major General, USA
Member


JOHN F. FRANKLIN, JR.
Brigadier General, USA
Member

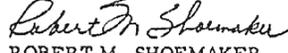

ROBERT B. NEELY
Brigadier General, USA
Member


THOMAS H. TAYLOR
Colonel, GS
Member


BILL G. SMITH
Lieutenant Colonel, Inf
Member


JAMES A. SHELTON
Lieutenant Colonel, GS
Member


WILLIAM D. PROCTOR
Major, Inf
Member


ROBERT M. SHOEMAKER
Major, Inf
Member


VALGENE STANLEY
GS-14
Member


KEMUEL K. BLACKER
Colonel, Arty
Executive Secretary

- 2 App
- I. Com Dsg, Rogers
Com on Army Avn w/incl
- II. Table of Contents

Source: U.S. Continental Army Command USCONARC Ad Hoc Committee on Requirement for Training in Support of the Army Aviation Program 1960-1970 (Fort Monroe: Headquarters United States Continental Army Command, 1960), 1-8.

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DMH
USACGSC
100 Stimson Ave.
Fort Leavenworth, KS 66027-2301

Mr. Wilburn E. Meador
DMH
USACGSC
100 Stimson Ave.
Fort Leavenworth, KS 66027-2301

BG (Ret) Stanley F. Cherrie
Cubic Applications
426 Delaware St
Leavenworth, KS 66048-2733

Major Brent A. Orr
Deputy J3, JFHQ-NC
4105 Reedy Creek Rd
Raleigh, NC 27607