STRATEGY RESEARCH PROJECT

The views expressed in this paper are those of the author and do not necessarily reflect the views of the Department of Defense or any of its agencies. This document may not be released for open publication until it has been cleared by the appropriate military service or government agency.

ARMY AVIATION AS AN ELEMENT OF AIRPOWER

BY

LIEUTENANT COLONEL DAVID L. LAWRENCE
United States Army

DISTRIBUTION STATEMENT A:
Approved for Public Release.
Distribution is Unlimited.

USAWC CLASS OF 2000

U.S. ARMY WAR COLLEGE, CARLISLE BARRACKS, PA 17013-5050

DTIC QUALITY INSPECTED 1

20000522 082

USAWC STRATEGY RESEARCH PROJECT

Army Aviation as an Element of Airpower

by

LTC(P) David L. Lawrence
US Army

COL Nathan R. Bard, USAF
Project Advisor

The views expressed in this academic research paper are those of the author and do not necessarily reflect the official policy or position of the U.S. Government, the Department of Defense, or any of its agencies.

U.S. Army War College
CARLISLE BARRACKS, PENNSYLVANIA 17013

DISTRIBUTION STATEMENT A:
Approved for public release.
Distribution is unlimited.

ABSTRACT

AUTHOR: LTC David L. Lawrence

TITLE: Army Aviation as an Element of Air Power

FORMAT: Strategy Research Project

DATE: 10 April 2000 PAGES: 30 CLASSIFICATION: Unclassified

This paper demonstrates that the Army must embrace jointness to affect future employment of its attack helicopters as an element of airpower. To accommodate the joint employment of these aircraft, Army doctrine must evolve beyond dated, Cold War doctrine that restricts helicopters to exclusive support of the land component. Analysis of the air campaign in Kosovo serves to illustrate a missed opportunity to start the doctrinal evolution. In this conflict, the Army arrived in theater unprepared to conduct its assigned airpower mission. By the time they were ready to fight, the nature of the conflict changed sufficiently to render attack helicopters unnecessary. A solution, to remedy future scenarios, is to assign joint operational missions to the Army's corps aviation brigades and attack helicopter regiments, similar to maritime interdiction missions flown by 6th Cavalry Brigade in Korea. In addition to joint doctrinal evolution, if the Army is to achieve relevancy as an element of airpower, it must make changes to its attack helicopter force structure. A shift in training focus and willingness within the Army to subordinate attack helicopters to other components of the joint force, particularly the Joint Force Air Component Commander (JFACC), will assure their airpower role.

TABLE OF CONTENTS

ABSTRACT iii

ARMY AVIATION AS AN ELEMENT OF AIRPOWER 1

AVIATION: A BRANCH IN CRISIS 1

ATTACK HELICOPTERS: COMPLETING THE AIRPOWER SOLUTION 2

KOSOVO: A MISSED OPPORTUNITY 5

ARMY DOCTRINE: LAND-LOCKED IN THE COLD WAR 9

JOINT INTERDICTION DOCTRINE: BLUEPRINT FOR CHANGE 10

JOINT FORCE AIR COMPONENT COMMANDER: UNITY OF EFFORT 11

6TH CAVALRY BRIGADE IN KOREA: EXAMPLE OF JOINT RELEVANCY 12

CORPS AVIATION BRIGADE: OPERATIONAL CHANGES 13

DOCTRINAL EVOLUTION 13

ORGANIZATIONAL CHANGE 15

TRAINING AND EDUCATION: JOINTNESS 15

CORPS AVIATION BRIGADE: SUPPORT REQUIREMENTS 16

MATERIEL 16

LEADERSHIP 16

PEOPLE 17

CONCLUSION 17

ENDNOTES 19

BIBLIOGRAPHY 23

ARMY AVIATION AS AN ELEMENT OF AIRPOWER

Recent U.S.-led, coalition military operations in the Balkans demonstrate a greater reliance on standoff, precision guided munitions and the instruments of airpower to contend with small scale contingencies (SSC). In order to minimize casualties and limit collateral damage, the United States depends less and less on its land component to achieve strategic aims. This trend has put some military leaders, specifically those in the US Army, in the midst of a "relevancy crisis." Ongoing efforts by the Chief of Staff of the Army to revolutionize the service are in direct response to the Army's criticized performance in support of recent contingency operations in the Balkans. Fueled by perception of Army ineptness in response to events in Kosovo, the service has centered its modernization effort on a lighter, more strategically deployable force capable of serving as a full-fledged member of the joint warfighting team.

However great the Army's quest for relevancy, it pales in comparison to the current crisis within its own aviation branch. The abysmal performance of Task Force (TF) Hawk in Albania highlighted the service's dogmatic over-allegiance to the land component, demonstrated a lack of serious commitment to joint warfare, and proved little more than an extension of Cold War doctrinal employment precepts. Recent operations in Bosnia and Kosovo lead to the conclusion that the National Command Authority (NCA) will likely continue to use airpower instead of ground forces to resolve future conflicts. Therefore, Army aviation must evolve quickly if it is to develop into a force that supports this airpower-only concept.

This paper will demonstrate that the Army must embrace jointness to affect future employment of its attack helicopters as an element of airpower. To accommodate the joint employment of these aircraft, which are viable airpower assets, Army doctrine must evolve beyond dated, Cold War doctrine that restricts helicopters to exclusive support of the land component. Analysis of the air campaign in Kosovo serves to illustrate a missed opportunity to start the doctrinal evolution. In this conflict, the Army arrived in theater unprepared to conduct its assigned airpower mission. By the time they were ready to fight, the nature of the conflict changed sufficiently to render attack helicopters unnecessary. A solution, for the future, is to assign joint operational missions to the Army's corps aviation brigades and attack helicopter regiments, similar to maritime interdiction missions flown by 6th Cavalry Brigade in Korea. In addition to joint doctrinal evolution, if the Army is to achieve relevancy as an element of airpower, it must make changes to its attack helicopter force structure. A shift in training focus and willingness within the Army to subordinate attack helicopters to other components of the joint force, particularly the Joint Force Air Component Commander (JFACC), will assure their role as a viable force in support of national objectives.

AVIATION: A BRANCH IN CRISIS

Today, Army aviation finds itself in a self-proclaimed crisis. Sidelined recently in Operation Allied Force in the Balkans, senior aviation leaders are focusing intently on ways to prevent a similar debacle in the future. Their proposals, which focus on individual pilot competency and technology improvements,

while important in light of recent shortcomings, conspicuously do not address the broader issue of jointness.

LTG Riggs, Commander of the First United States Army, recently identified service shortfalls in fielding of new aviation systems, aging equipment, and inadequate junior leader training as the symptoms of a near-fatal illness in the branch. He declared, "If we continue the course we're on now, I'm concerned we won't be able to fulfill the tactical and strategic vision the Army has for us."[1]

Simultaneously, the U.S. Army Aviation Center at Fort Rucker proposes a substantial increase in individual pilot flying hours as a solution to more effective employment of attack helicopters in the future. Gleaning lessons learned with TF Hawk, several senior Army leaders believe the window for employing the Apaches in Kosovo closed while aircrews vigorously trained on individual flight skills after arriving in theater. As a result, MG Anthony Jones, commander of the Army's Aviation Center, singled out increased funding for flying hours for modernized helicopters as a major initiative. He stated recently, "We need more training hours and we need to train people at flight school on the aircraft they are going to be flying in the field." Noting the unnecessary burden placed on field commanders upon arrival in Albania, he asserts, "We are transferring too much of the responsibility for basic aircrew training to our units in the field; that's not their mission area. We need to make our crews ready to fight the first day they step into the aircraft."[2]

Future operational concepts, being developed at the U.S. Army Aviation Center, omit jointness in addressing the employment of army helicopters. Notably, the draft "Aviation Operational and Organizational Concept – 2000," which serves as the branch's blueprint for the future, continues to detail aviation employment exclusively within the context of corps and divisions. It reaffirms that Army aviation's role is to shape the area of operations and conduct decisive operations in support of ground maneuver forces. Barely addressing joint employment, it merely states that an aviation brigade, operating independently, could operate in support of a JFACC, a Navy component commander, or the USMC when operating as the land component commander (LCC).[3] In this capacity, this emerging doctrine doesn't provide sufficient depth from which to develop joint warfighting tenants for Army aviation.

Resourcing of the flying hour program and continuing to modernize helicopters is vital to remain a viable combat force. However, to avoid charges of irrelevancy in the future, and to enhance the nation's ability to fight two near simultaneous regional conflicts, the branch must emphasize collective joint warfighting skills and employment of attack helicopters at the operational level.

ATTACK HELICOPTERS: COMPLETING THE AIRPOWER SOLUTION

The viability of employing attack helicopters in the context of airpower is a topic of debate throughout the U.S. military but not with the Air Force Historian. Dr. Richard Hallion believes, "The attack helicopter is a tool that can fully exploit the shock and awesome capabilities of today's aerospace systems, generating actual physical damage and destruction as well as a profound psychological blow from which the opponent may never recover if the conflict tempo is fast, swift, and termination occurs

quickly." He cautions, "If on the other hand, one dithers about attack helicopter use, we shouldn't be surprised if our foes show some greater resiliency under its effects."[4] This cautionary note was evidenced most recently in Kosovo as Lieutenant General Michael C. Short, the JFACC, disagreed with General Wesley K. Clark, SACEUR and Joint Force Commander (JFC) during Operation Allied Force, on the use of attack helicopters in the air campaign. Disagreement on the campaign targeting strategy and risks associated with Apache vulnerability to enemy air defenses ultimately proved persuasive in keeping the attack helicopters on the ground in Albania. Regardless of the debate in Kosovo, these aircraft bring unique capabilities that are superior to fixed wing assets in many situations.

In fact, Army attack helicopters may very well play a more vital airpower role in future conflicts. Colonel Phillip S. Meilinger, an Air Force instructor at the U.S. Naval War College, prescribes a theory that future wars will be characterized by gradual escalation because of political and tactical constraints placed on the military. He believes that unlike during "Rolling Thunder" in Viet Nam, attrition thru gradualism works today because precision guided weapons allow the U.S. to inflict damage with near impunity. According to this theory, the military gradually tightens the ratchet as necessary to attain the desired result with little risk due to standoff distances. COL Meilinger predicts wars in which a measured and steadily increasing use of airpower against an enemy, which gives him ample opportunity to assess his situation and come to terms, may be the future of war.[5] If one subscribes to that theory, which General Clark applied in Kosovo, it is easy to envision attack helicopters included in future campaigns as one of the JFC's available airpower means of gradual escalation.

In support of his decision to employ attack helicopters, General Clark grew concerned, early in the air campaign, about the pace of operations and the relative insignificant impact NATO's actions were having on Milosevic. He became convinced that going after Serb ground forces with attack helicopters was a method of achieving the objectives of the air campaign before public support waned. He stated, "I don't want to get into something like the Rolling Thunder campaign, pecking away indefinitely. We've got to steadily ratchet up the pressure ... we also need to become increasingly relevant to the situation on the ground. Otherwise, we are at risk of being paused indefinitely. We'll lose public support."[6] As observed in Kosovo, strengths of the Army's modern attack aircraft argue for inclusion in future joint applications of airpower.

A strong advocate for such employment is MG Richard Cody, who served as the Commander, TF Hawk in Kosovo and now as the Director of Operations, Readiness, and Mobilization, USA DCSOPS on the Army Staff. One of the Army's most experienced attack helicopter commanders, he emphasizes the advantages that helicopters bring to the battlefield, largely because they are unhampered by terrain and weather and prove effective against integrated enemy air defense systems. He recognizes force structure shortcomings as well as Army employment issues when he concludes that aviation must get out of traditional Cold-War discussions of the deep fight and transition to a full spectrum joint force. This force, he states, must be flexible enough to conduct a different kind of deep fight: one dominated more by time and space. Notably, he continues, shifting from current aviation focus, it must be equally capable of

engaging in the close, or red zone fight with fixed wing aircraft. Likewise, he argues, it must also be flexible enough to shift to a TF Hawk scenario or perhaps deploy early, as part of a joint team, to buy time for land forces to set while preparing for combat operations. As a solution, MG Cody offers that aviation must optimize the mid-spectrum of conflict by complementing airpower strengths or weaknesses. He measures the complementary role that aviation can play in future joint scenarios by rhetorically asking, "What does Army aviation bring that fixed wing aircraft cannot?"[7] If that question can be answered, then aviation will find its niche on the joint battlefield. Not surprisingly, his philosophy is derived from lessons learned in the aftermath of Kosovo, and his experience in Desert Storm, as commander of the Apaches that destroyed Iraqi air defense systems to facilitate coalition air operations in the opening minutes of the ground war.

Beyond the well-known success of Army attack helicopters during Operation Desert Storm, aviation units continue to affirm their unequalled warfighting capability in tough environments such as at the combat training centers. These attack helicopter units routinely demonstrate flexibility and lethality, in support of the land component, when attacking hard to detect, mobile targets in marginal weather conditions. Using dominant maneuver and precision engagement, often in concert with fighters and attack aircraft from the other services, these helicopters mitigate collateral damage while devastating the opposing force. A unique advantage these aircraft demonstrate is their ability to strike in marginal weather conditions. Giving the land commander crucial tactical options at the training centers, attack helicopters routinely conduct independent attacks when low ceilings restrict high altitude strikes by fighters and bombers.

Even the most sophisticated military helicopter has indisputable limitations and vulnerabilities that must be addressed during planning. Notwithstanding the ever-present threat of man portable air defense systems (MANPADS) and other anti-aircraft weapons systems, weather effects on restrictive terrain, and distance to target challenges, modern armed helicopters are still a formidable threat to an adversary. By employing effective terrain masking flight techniques, electronic countermeasures, aggressive maneuver tactics, extended range fuel systems, and suppression of enemy air defenses, attack helicopters are quite maneuverable and survivable on the modern battlefield. As such, their speed, range, lethality, and precision engagement bring additional flexibility to an air operation, especially when fully integrated with the joint air element.

The viability of attack helicopters as an airpower asset, as envisioned by General Clark, was apparent in Kosovo. However, failure to employ the Apaches in Operation Allied Force proves to be a missed opportunity for the joint force to determine future precepts for joint employment of Army aviation in similar conditions. Recognizing the need to consider Army aviation capabilities to perform this type of mission in the future, Secretary of Defense William S. Cohen and General Henry H. Shelton, Chairman of the Joint Chiefs of Staff, recently told the Senate Armed Services Committee, "We recognize the need to regularly experiment with the innovative, independent use of key elements of all of our forces in the absence of their usual supporting or supported command elements."[8] Equally significant in the aftermath

of Kosovo, our nation lost an opportunity to employ an asset that would have made a significant contribution.

KOSOVO: A MISSED OPPORTUNITY

If the campaign in Kosovo is a predictor of future NATO strategy, the JFC will likely continue to use airpower as a principal means to achieve limited multinational objectives. This will be especially true when employment of land forces is determined to entail too much risk or is politically undesirable. In an article published in Joint Force Quarterly, Dr. Richard P. Hallion, stipulates that this is the case as our nation increasingly depends upon airpower to dominate and control an adversary as opposed to occupying and holding terrain with ground troops. He advocates that the best indicator of what recent developments in airpower have meant to our nation is that surface and air forces increasingly select air armaments as their weapons of choice: attack helicopters, battlefield missile systems, submarine launched cruise missiles, carrier-based strike airplanes, and land-based fighters and bombers. He sites the most dramatic example of this shift from land to air orientation is the proliferation of attack helicopters in military inventories worldwide and the growing recognition that they represent more than "flying tanks" or adjuncts to artillery and armor.[9] He surmises that airpower will not only suffice in future conflicts but will be the most desirable means of confronting an enemy if our nation intends to reduce risk to its men and women in uniform. Whether one agrees with Dr. Hallion or not, experience in Operation Allied Force strongly illustrates his theory. It also advocates that Army aviation must develop the capability to be employed as an element of airpower.

During an intense 78-day period, the JFC executed an unprecedented air campaign in Kosovo, devoid of a land component to achieve limited, multi-national objectives. Surprisingly though, General Clark contradicted one of the fundamentals of joint doctrine by placing TF Hawk, which was an independent aviation regimental combat team, "organized, equipped, and trained to operate as an integral part of a larger land force,"[10] under command and control of the Army and not his air component commander. Doctrine states, the JFC, in order to increase the total effectiveness of the joint force, must synchronize assets to achieve strategic and operational objectives through integrated, joint campaigns and major operations.[11] As will be seen later, the JFC did not achieve synchronization in Kosovo, as there was very little integration between V Corps and the JFACC. This omission proved unfortunate, not because the Army merely failed to get into the fight, but because it deprived the JFC of a unique capability that would have contributed towards achieving his objectives in Kosovo.

As noted earlier, General Wesley K. Clark, SACEUR envisioned the operational value of employing attack helicopters in Kosovo early as atrocities against ethnic Albanians continued despite the intense bombing campaign. Determining that NATO would have to attack armored ground targets and artillery to deter the ongoing ethnic cleansing in Albania, General Clark received permission to deploy the attack helicopters in April 1999. At the time, a Pentagon spokesman acknowledged attack helicopter employment under the concept of airpower, "It's a logical expansion of the current air campaign. It gives

us greater precision, all-weather capability day or night, to go after the types of weapons that the Yugoslav army is using."[12] Remarkably, the Army insisted on employing them under control of its V Corps. This arrangement resulted in poor coordination and synchronization with the JFACC in Aviano, Italy.

TF Hawk deployed to participate in the air campaign as if it were subordinate to a land component. Commensurate with the decision to deploy attack helicopters to combat the Yugoslav army, an all-Army component C2 infrastructure was developed around the doctrinal employment concepts of the Army corps. In a Cold War type deployment, this entails employment of attack helicopters exclusively within the corps area of operations. It also requires the corps to coordinate land component deep operations with air operations beyond the fire support coordination line. In this arrangement, synchronization, deconfliction, and coordination are a challenge for both components. But since these operations occur within well-defined geographical boundaries and areas of operations, each component is able to execute complimentary tactics-techniques-procedures that rarely conflict. That was not the case in Kosovo. There wasn't a land component and there weren't linear boundaries. Thrust into an unfamiliar joint operational environment, against an asymmetrical threat on a non-linear battlefield, eventually proved too complicated for the Army. Their efforts to overcome an evident lack of experience with joint air operations created unnecessary friction that eventually preempted commitment of the helicopters.

Insisting upon an Army-led operation, V Corps established its deep operations coordination cell (DOCC) and planned to conduct doctrinal deep attacks, supported by organic Army artillery and sensors, into Kosovo. The DOCC and TF Hawk occupied Tirana Air Base in Albania. This location was desirable because it placed primary enemy targets within the range of the helicopters. And with a major effort by the Army, it became suitable for security and basic services. However, this arrangement placed the attack helicopter planners 500 miles away from the CAOC, in Italy. It also set the conditions for the Army to plan its operation in a near vacuum. For example, because the primary planning was not embedded in the CAOC, crucial airpower enabling assets, all under control of the JFACC, were usually committed to support unrelated coalition air strikes in Kosovo. Compounding the friction between the components, the quality of the Army's liaison with the JFACC was flawed. Major John Heaton, Director of Operations, 4th Air Support Operations Group and the Air Liaison Officer to V Corps during Operation Allied Force, argues the Battlefield Coordination Detachment (BCD), deployed to Italy in support of the CAOC, actually hampered targeting and integration of the Apaches. Most members of the BCD were either infantry or artillery personnel and were unfamiliar with air operations and aircraft capabilities. It proved ineffective and inefficient when coordinating the most rudimentary air functions. Notably, their consistent requirement to laboriously translate and decode the most basic joint terminology and airpower information adversely affected opportunities to integrate the helicopters in the air campaign. Furthermore, the physical separation of the respective planning cells further exasperated coordination and communications

between the Army in Albania and the JFACC, in Italy. Coalition and joint air elements, on the other hand, were directly represented in the Master Air Attack Plan cell and on the CAOC operations floor in Italy.[13]

Hence, the Army frequently developed attack plans without dedicated air assets such as coalition joint suppression of enemy air defense (JSEAD) and aerial C2 platforms that were crucial to support the Apaches deep. Instead, V Corps warfighting plans depended on its organic multiple launched rocket systems and other Army-only assets to provide critical fire support, targeting, and intelligence against Yugoslav defenses. Rehearsals, essential to synchronizing complex, deep attack helicopter operations, were also affected by the ineffective relationship between the DOCC and the CAOC. In fact, sixty percent of all rehearsals were canceled because supporting fixed wing aircraft were not available, either because they were engaged in other air war operations or grounded by weather.[14] Major Heaton concludes that if the Apaches had been imbedded in joint strike planning and operations at the CAOC, mission shortcomings such as use of national collection, aerial C2, and JSEAD assets could have been more available to the Army for rehearsals and operations.

As stated earlier, there were numerous opportunities to perform attack missions early in the air campaign in Kosovo. This was especially evident before Milosevic consolidated his ground forces and focused his low altitude air defense effort later in the war. These missions, employing the unique capabilities of attack helicopters, would have broadened the JFC's menu of options considerably, and arguably, could have accomplished General Clark's primary objective: prevent further human atrocities by attacking the Former Yugoslav Army.

In fact, the Apaches would have specifically targeted General Clark's second set of targets: Serbian fielded forces – military units, tactical assembly areas, command and control nodes, bridges in southern Serbia and Kosovo, supply areas, POL storage and pumping stations, choke points, and ammunition storage. This set of targets, in concert with his plan to gradually tighten the ratchet on Milosevic, was intended to demonstrate that NATO was now pursuing a multipronged strategy with its air campaign. The goal of which, was not just to demonstrate NATO resolve or coerce Milosevic, but was intended to directly reduce and eliminate the ability of Yugoslav forces to carry on their campaign of destruction in Kosovo.[15]

General Clark's plan to expand the war was eventually cause for concern throughout NATO. Estimates of high collateral damage through TF Hawk's reliance on organic artillery to combat enemy air defenses threatened escalation of the conflict into a ground war. This was unacceptable within the alliance. Ultimately this strategy proved contradictory, as NATO became more adverse to casualties within the alliance and indiscriminate collateral damage from artillery, ostensibly to prevent atrocities in Kosovo.

Aside from issues arising from Army tactics, the Air Force had operational concerns of its own when it came to the employment of attack helicopters in Kosovo. According to Dana Priest, in a series of articles in the Washington Post, Air Force General Joseph W. Ralston, the vice-chairman of the Joint Chiefs of Staff, was skeptical from the outset. He and the service chiefs thought General Clark's plan to

use the Apaches was too vague and unconventional. General Ralston believed a stepped-up air campaign by coalition jets hitting strategic targets such as ministries and power stations in Belgrade was more likely to cause Milosevic to relent. Consequently, there was reluctance to attack Serb armor at all, with either helicopters or fixed wing aircraft. It came down to diverging strategies between the JFC and senior Air Force leaders. Fears of *body count* permeated throughout the Air Force as plans to attack Serb armor gained steam. "The tank, which was an irrelevant item in the context of ethnic cleansing, became the symbol for Serb ground forces, " said General Joseph Ralston. Drawing lessons from Viet Nam, he mused, "How many tanks did you kill today? All of a sudden this became the measure of merit that had nothing to do with reality."[16] His argument proved persuasive as attacks on Serb ground forces waited until the last week of the war.

However, General Clark was not just dealing with Air Force qualms about helicopter tactics nor his aggressive strategy, but also with reluctance among the Army leadership.[17] General Reimer looked at the problem entirely in terms of risk versus benefit analysis. He even doubted the Apaches could locate good targets. "It's like looking through a soda straw," General Reimer said. Furthermore, he worried that the Army's Apaches would be a step toward the use of ground forces. This was something the Army leadership did not favor.[18]

As the JFC's campaign progressed in Kosovo, without commitment of a land component, and while leaders debated the merits of attack helicopters, time ran out for the Army to employ TF Hawk. During the critical early stages of the conflict, the unit had to expend considerable effort to prepare its aircrews for combat. Senior Army aviation leaders attributed this training, which was accomplished after arriving in theater, to initial pilot training deficiencies. It fueled charges in the press that TF Hawk did not deploy ready to fight in the Balkans. Thus, as conditions changed in Kosovo, the Army missed the window to contribute to the war effort. In the aftermath, General Henry Shelton, chairman of the Joint Chiefs of Staff surmised, "Between the time the Apaches and supporting elements began deploying to Tirana and the time they were ready to conduct operations, the conditions on the ground in Kosovo changed dramatically." He continued, "Serb tanks and artillery were no longer operating in massed formations as they had in the early days of the conflict. Instead, Serb armor and vehicles were dispersed and hidden, often in residential areas."[19] Risk to the Apache helicopters increased as the air campaign waged on and the Joint Chiefs of Staff eventually persuaded the White House that casualty estimates were too high for their employment.

Consequently, the Serbs hid sufficient forces and used decoys effectively enough so that when the Kosovo Liberation Army (KLA) attack began in the last week of the war, they had plenty of armor and artillery to mass against NATO operations.[20] As the KLA forced enemy troops out of their hiding places, and the weather cleared, Yugoslav forces became easy targets for NATO warplanes to attack from high altitude. The Apaches were, by then, unnecessary to accomplish NATO's objectives.

Notwithstanding aircrew training deficiencies, the decision to exclude TF Hawk was not based on lack of confidence in the capabilities of the Apache helicopter, but rather on the Army's inability to employ

its aviation assets in a capacity outside the control of the land component. Since the Army doesn't have experience with employment of helicopters in this fashion and couldn't draw from operational doctrine, TF Hawk eventually proved irrelevant in the air campaign. Unless the Army is willing to change its doctrine, as learned from NATO's actions in Kosovo, it is doomed to making the same mistakes again if called upon to perform in future air-only campaigns.

ARMY DOCTRINE: LAND-LOCKED IN THE COLD WAR

Aviation doctrine, based on threats posed by the Former Soviet Union, envisions exclusive attack helicopter support to the ground maneuver force. In this capacity, aviation brigade employment principles ignore joint employment concepts by dictating that Army helicopters operate exclusively in the ground regime at division and corps level.[21] This was the doctrine the Army relied upon to execute its portion of the joint air campaign in Kosovo. Not only would this doctrine prove to be unsuitable for the conditions in which the helicopters were to be employed, but also somewhat prophetic in its contradiction of joint force dictums found in the National Military Strategy (NMS).

Jointness is clearly the dominant theme in the NMS. At its core is the assertion that to successfully implement the U.S. strategy of shaping, responding, and preparing, the military must be ready to fight as a coherent force – fully interoperable and seamlessly integrated. It states the U.S. Armed Forces, as a whole must be multi-mission capable and interoperable among all the elements of U.S. Services and selected foreign militaries.[22] The Army clearly failed to embrace the key precepts of the NMS as this doctrine, executed by V Corps in Kosovo, does not support the employment of attack helicopters in any condition other than as an element of land power.

Army aviation's doctrine further defines its operations exclusively as a maneuver arm of the land component in support of the Deep-Close-Rear battle. This battlefield framework, by ignoring joint employment principles, supports the argument that the Army remains intellectually and structurally mired in the Cold War planning environment of preparation for large-scale, high-intensity conventional warfare against like adversaries.[23] Aviation focus, under this doctrine, is on massing of fires by large attack formations against conventional linear targets rather than the effects of precision fires against asymmetric threats as is prevalent in joint doctrine.

In order to facilitate C2, when attack helicopters are employed deep, a corps-level DOCC is employed to facilitate operational planning outside of the land component. Liaison is established with the Joint Air Operations Center (JAOC) or Combined Air Operations Center (CAOC) through an Army-manned Battlefield Coordination Detachment (BCD) that ensures synchronization with fixed wing targeting and operations in the corps area of operations.

It doesn't appear that future aviation doctrine will incorporate joint lessons learned in Kosovo, as doctrinal development at the U.S. Army Aviation Center mirrors current publications. To this end, emerging branch doctrine maintains that aviation will remain the third dimension centerpiece of the *land* force and fails to earnestly consider employment outside of the land component.[24] Though purporting to

be a visionary doctrine, the application of the term jointness continues to be problematic in that it refers primarily to land force employment of joint sensors, fires, airborne C2, etc. in its area of operations. It still doesn't embrace joint interoperability of its major combat systems in a support role outside the terrain and span of control of the land force headquarters.

> By conducting armed reconnaissance and security missions with real-time, sensor-to-shooter linkages, Army aviation can rapidly confirm the enemy's intentions, disrupt his tempo, deny his freedom of action, and get into his decision cycle. The ultimate in shaping the battlespace is to preclude the necessity for conducting decisive operations. We can sustain the tempo of the fight, attacking with depth and simultaneously throughout the battlespace. At a time and place of our choosing, we will initiate decisive operations in conjunction with maneuver ground forces to complete the destruction or defeat of enemy forces.[25]

Dr. Richard Hallion, in addressing aviation's over-stated commitment to the land component, offers that, philosophically, there is a traditional suspicion that a helicopter that leaves the field of view is probably off doing something that is unproductive and unrelated to the Corps commander' needs. Furthermore, he declares, "It is a corps-only warfare mindset issue that can only be changed from within the service. The first step is the recognition that the helicopter possesses such a freedom of action that it is unnecessarily constrained by being held within the limits of a single maneuver arena, such as corps-level warfare. It is a true theater-wide asset, and as such is one that exists to serve the needs of the JFC and the Theater CINC, not just the corps-level warfighter."[26] In keeping with Dr. Hallion's theory and in order to counter service component concerns, the decision not to employ attack helicopters in Kosovo might not have prevailed had joint and service doctrine more adequately defined the employment of Army aviation as an element of airpower. As illustrated by the debate on employment of attack helicopters in Kosovo, aviation must further modify its doctrine in order to accommodate joint operational commitment to the JFC. This is especially critical as our military expands its joint warfighting capability to combat emerging and diverse, global threats of the 21st Century.

JOINT INTERDICTION DOCTRINE: BLUEPRINT FOR CHANGE

Interdiction, as defined in Joint Pub 3-03, is "action to divert, disrupt, delay, or destroy the enemy's surface military potential before it can be used effectively against friendly forces."[27] This doctrinal publication, which enumerates joint airpower tasks, is relevant to assess the employment of Army aviation as a maneuver element of airpower. It proves visionary in providing for the inclusion of land forces, including attack helicopters, in interdiction and air-to-surface attack operations.

> Attack helicopters provide a commander with an effective and versatile means for interdicting enemy forces. They may use them for rapid reaction operations and where terrain restricts or prohibits ground force occupation or engagement of enemy's forces. Attack helicopters are capable of employing precision guided weapons and providing terminal guidance for other interdiction forces. They are capable of operating during the day or night and in adverse weather conditions.[28]

Furthermore, joint doctrine delineates air-only interdiction operations, which support the concept for employment of attack helicopters in the absence of a land component. Air interdiction operations are defined as air operations conducted to destroy, neutralize, or delay the enemy's military potential before it can be brought to bear effectively against friendly forces at such distance from friendly forces that detailed integration of each air mission with the fire and movement of friendly forces is not required.[29]

While the Army stands to benefit by incorporating joint precepts of airpower in its own interdiction doctrine, Air Force counterland doctrine is also a useful tool to analyze future helicopter employment concepts. This doctrine indirectly supports the decisive use of attack helicopters, independent of the division and corps, to dominate the battlespace with maneuver and fires. The main objectives of USAF counterland operations are to dominate the surface environment and prevent the opponent from doing the same. Although normally associated with support to friendly surface forces, counterland is a flexible term that can encompass the identical missions without friendly surface-to-surface presence. This independent or direct attack of adversary surface operations by air and space forces is the essence of asymmetric application and is a key to success during operations to decisively halt an adversary during initial phases of a conflict.[30]

It also argues for early deployment of airpower, which, if embraced in Army aviation doctrine, will support the concept of a force protection Army. In this capacity, since the air component proves to be the first to deploy to theater, independent attack helicopter operations will have to be controlled initially outside of the land component. Unlike in General Clark's arrangement in Kosovo, the attack helicopter commander in similar future missions would likely be the JFACC, who in order to achieve unity of effort will possess the requisite authority to direct all forces employed in pursuit of a common purpose.[31]

JOINT FORCE AIR COMPONENT COMMANDER: UNITY OF EFFORT

As presented earlier, General Clark permitted V Corps to maintain control of its attack helicopters in Kosovo. This is a bewildering decision that contradicted joint doctrine. The decision is striking since LTG Short's air campaign responsibilities met all the C2 requirements stated in joint interdiction doctrine:

> The JFACC is the supported commander for the JFC's overall air interdiction effort. The JFACC provides the unifying effort for the JFC's air campaign by directing all air interdiction and optimizing theaterwide joint interdiction targeting. Efficient and effective interdiction targeting is essential because the demands for interdiction support are usually greater than available assets.[32]
>
> The JFACC has the authority to exercise operational control, assign missions, direct coordination among subordinate commanders, redirect and organize forces to ensure unity of effort in the accomplishment of the overall mission. Using the JFC guidance and authority, and in coordination with other service component commanders, the JFACC will recommend to the JFC apportionment of air sorties to various missions or geographic areas.[33]

The failure of the Army to align itself with joint doctrine was clear in the Kosovo operation. Insisting upon separating the attack helicopters from the joint air component amply illustrates reluctance to relinquish control of attack helicopters outside of the Army. This is not the case in Korea, where the Combined Forces Command routinely attaches Apache helicopters to the Naval Component Command to conduct counter-special operations force missions. Army aviation proves quite capable as an element of airpower in this scenario.

6TH CAVALRY BRIGADE IN KOREA: EXAMPLE OF JOINT RELEVANCY

As much as the Army got it wrong in Kosovo, it gets it right in Korea. There, Army aviation exemplifies the essential quality of jointness as Apache helicopters from the 6th Cavalry Brigade routinely performs maritime interdiction missions under the operational control of the naval component. Through a habitual relationship with a surface action group from the U.S. Seventh Fleet, the organization demonstrates willingness to address emerging, asymmetrical threats with innovative, joint operational solutions. Their example is worthy of emulation as it demonstrates relevancy to the JFC without compromising commitment to the land component.

This tactical overwater operation is joint in every regard. Army Apaches team up with Navy SH-60 LAMPS (Light Airborne Multipurpose System) helicopters and P3 Orions to locate surface targets. Subsequently they coordinate with the Maritime Sea Operations Center (MASOC), stationed on an Aegis-class cruiser, and the combat information center, onboard a command and control ship, to coordinate the attack of North Korean semi-submersible infiltration craft that threaten the coastline. Although overwater attack operations are not the primary mission of the unit, the Apache's speed, armament, night sensors and target acquisition and loiter time make them uniquely suited for such operations. The LAMPS helicopters acquire and identify targets for the Apaches, provide communications relay between the operations area and the command ship, and conduct search and rescue for the operation. The 6th Cavalry Brigade plugs into the Navy's Land Attack Warfare System (LAWS) to coordinate planning and then to keep the 7th Fleet Commander apprised of the operation once execution commences.

6th Cavalry Brigade normally conducts these operations before commitment of the land component. As war escalates, the Apache helicopters seamlessly revert to control of the JFLCC. This corps level attack brigade, synonymous with attack helicopter regiments in other corps, illustrates the ability of Army aviation to remain relevant in the post-Cold War environment. Notably, the organization proves tremendous value added to the JFC's operational mission without degrading the land mission.

A dynamic member of the joint team, the Apaches of 6th Cavalry Brigade represent a powerful response to effectively target, attack and destroy the ever-present asymmetric threat posed by North Korean SOF.[34] They demonstrate the relevancy of Army aviation in future conflict by providing the JFC with viable options to combat asymmetrical threats. The unit proves, through its joint maritime interdiction mission, that Army aviation is flexible enough to perform joint operations without compromising its commitment to the land component. Getting there required innovation of tactics, techniques and procedures; reorientation of training resources; and most importantly, a commitment to jointness by each

component in the theater. Consequently, joint force experimentation under creative leadership and strong service component efforts achieved a significant counter-force capability for the JFC. Army corps aviation brigades and attack regiments, which are organic to each Army corps, are equally capable of conducting similar joint operations outside the control of the land headquarters. However, the modified corps aviation brigade or attack regiment will require significant changes. A thorough analysis of doctrine, organization, training and education, materiel, leadership, and people is a useful method, referred to as DOTMLP in the Army, to examine such a proposal.

CORPS AVIATION BRIGADE: OPERATIONAL CHANGES

Corps aviation brigades and attack regiments are ideally suited, as demonstrated by 6th Cavalry Brigade, to evolve into flexible theater-wide, operational warfighting assets without yielding their primary Army mission of conducting deep operations for the corps commander. It is a lean, yet lethal organization, with a high tooth-to-tail ratio. With its modern rotary wing aircraft, it is capable of operations throughout the depth of the operational battlefield. If tasked, the unit would join the vast joint airpower arsenal available to accomplish JFC-directed missions under C2 of the JFACC.

DOCTRINAL EVOLUTION.

Doctrinal evolution might be the most challenging aspect of achieving relevancy as an element of airpower. However, given the NCA's predisposition to use airpower exclusively as a means of achieving its objectives, it is essential the Army develop interdiction doctrine for employment of its helicopters. This organization must be rapidly deployable and capable of performing deep operations under the C2 of a joint headquarters immediately upon arrival in theater. Mission essential tasks must reflect jointness: joint air interdiction (deliberate attack and movement to contact to divert, disrupt, delay, or destroy enemy surface forces), joint suppression of enemy air defense (deliberate attack and movement to contact, reconnaissance and target acquisition to destroy or suppress high payoff air defense systems), theater missile defense (attack operations to engage theater missile launch platforms and supporting command, control, and communications), joint offensive counter air (attack operations to destroy aircraft and missiles before enemy employment) and combat search and rescue (CSAR). These proposed tasks would serve to focus the unit on its joint wartime function as well as provide the framework for training prior to conflict.

Employing these helicopters TACON to the JFACC is essential towards achieving unity of effort in an air campaign. If the JFC's priority shifts to the land component, then the corps aviation brigade or attack regiment can readily shift back to the land mission. Assigning joint operational and tactical missions to the corps aviation brigade and attack regiment distinguishes this force from other Army attack units. However, the current corps aviation brigade mission: "... to support the corps scheme of maneuver"[35] must be overhauled to reflect jointness.

The JFACC, with integrated targeting in the JAOC, is ideally suited to employ this force fully synchronized with other strike aircraft and assets under his control. Assignment of a senior Army aviator

as the Deputy JFACC will alleviate service concerns and ensure component oversight on the employment of apportioned attack helicopters.

> The JFACC's staff should be organized and manned so that component representation reflects the composition of the joint force. This representation will provide the JFACC with the expertise needed to effectively employ the capabilities made available. Functional component staffs require advanced planning for efficient operations. Such individuals should be identified and trained during peacetime and used when JFACC staffs are formed for exercises and actual operations to ensure an effective transition to combat operations.[36]

Planning and rehearsing under the watchful eye of the JAOC completely integrates attack helicopters in the air battle. Operational and tactical intelligence is tailored for the strike elements, especially focused on imagery, surface threats, weather, and flight hazards. A key benefit of immersion in the JAOC is the dedicated, non-competing support JSEAD assets made available during operations. A direct tie-in with the joint rescue coordination center, theater combat search and rescue, and air tasking order is an added bonus. The Army too often considers the joint rescue coordination center and combat search and rescue (CSAR) cumbersome. These critical elements of the battlefield usually receive minimal leader and staff attention. Since experience gained in Desert Shield / Desert Storm most Army aviation leaders agree inclusion in the ATO is necessary to integrate deep operations on the modern battlefield. If placed TACON to the JFACC, it would not be optional. Formalizing the command relationship with the JFACC, beyond ensuring synchronization, achieves unity of effort through the ATO and master air attack plan.

In Kosovo, the CAOC served as the pulse-point of aerospace integration. Performing its mission directly under the JFACC ensures integrated joint fire support targeting – the bread and butter of successful interdiction operations. C3I was enhanced as multiple intelligence sources downlinked into the CAOC for analysis and linked many aerial platforms in a short span of time. Operators rapidly integrated target information and relayed it to strike aircraft in real time. Pilots could radio back to the CAOC to report new targets and get approval to strike.[37]

Long range communications through national assets, a staple of strike aircraft operations assures the ability to maintain C2 as well as adjust the plan with short notice due to changes on the battlefield. While executing the counterland mission with attack helicopters, the JFACC can exploit airpower's ability to concentrate firepower quickly against a variety of targets, including C2 systems, logistics, movement networks, or follow-on forces.[38] The JFACC possesses the organic ability to assure flexibility: not just a single knockout blow, but flexibility to conduct continuous, small-unit team attacks against operational targets supported by all elements under control of the air component.

In order to overcome split-based operations challenges (with some aircraft deployed and others remaining at home station), which affected TF Hawk in Albania, the Army must deploy this proposed unit in its entirety. It must be supported by its organic attack, lift, and support squadrons, fully confident that it can depend on joint logistics infrastructure to reduce the logistics challenges faced when operating outside the corps.

As much as this is a radical change for the Army, the implications for the other Services are equally imposing. Inclusion of joint attack helicopter employment doctrine and tactics-techniques-procedures in Service training programs becomes essential, especially for future JFACCs and senior leaders / staff officers in the JAOC.

ORGANIZATIONAL CHANGE.

Reorganize the corps aviation brigades and attack regiments to be joint aviation forces. It must be a lean-mean, functional organization that is capable of self-sustainment much like the armored cavalry regiments currently in the Army force structure. The Army must develop it to conduct operations independent of the Army corps C2 structure. The two or three authorized organic attack battalions should remain the core organization. Add a robust assault helicopter battalion (UH60 and CH47) to give the attack force an organic CSAR, MEDEVAC, downed aircrew recovery, forward arm and refuel operations, and logistics resupply capability. Integrate an aviation support battalion to provide joint and Army logistics support. Assign unmanned aerial vehicles to provide an organic deep R&S and intelligence capability. These organizational changes will ensure the unit is capable of training the way it fights.

TRAINING AND EDUCATION: JOINTNESS

Senior warrant officers and junior commissioned officers must be afforded joint professional military education to achieve the degree of joint competency necessary to fulfill the needs of the JAOC. Individual education must focus on joint warfighting doctrine and operations. Aviation leadership must make a major investment in joint aviation training with emphasis on electronic warfare and joint airpower tactics-techniques-procedures. Though imperative in other service flight training, this kind of training remains a critical shortcoming in Army aviation.

Participation in joint exercises such as Red Flag at Nellis AFB, NV and Marine Air Weapons and Tactics School at Yuma, AZ, which are graduate-level training events, are invaluable in raising the joint-level of competency of aircrews and staffs. Integration of helicopters and fixed wing aircraft with focus on joint targeting and attacks greatly enhance real world competency of aircrews and staffs during these exercises. Furthermore, training assault aircrews in the intricacies of joint CSAR and downed aircrew recovery must be a priority. Frequent employment of unmanned aerial vehicles during exercises and development of joint tactics, techniques and procedures is crucial to employing this asset under C2 of the JFACC. Additionally, developing critical joint leader and staff skills is imperative to providing functional area experts to the JFACC.

> Functional area experts, such as intelligence, logistics, airspace, plans, and communications, provide the critical and unique expertise in support, plans and execution functions, as appropriate for the employment scenario. Mission experts provide the technical warfighting expertise required to plan and employ capabilities made available by the components.[39]

It is necessary to conduct joint experimentation during joint training exercises, Army Warfighter exercises, and battalion command training program. Subordinate attack squadrons must develop joint

tactics, techniques and procedures to perform air interdiction, JSEAD, theater missile defense, offensive counter air, and R&S missions. R&S is a complex task that few attack units train to, but it is essential towards accomplishing joint mission essential tasks on the future non-linear battlefield against asymmetrical threats. Successful R&S or search and attack will prove a major advantage of attack helicopters in future scenarios as they demonstrate unequalled ability to find-fix-finish elusive, mobile targets. Aircrews must train to evade and survive capture when operating deep. Survival-Evasion-Resistance-Escape Level-C training is imperative for cross-FLOT operations. Joint air headquarters must develop intelligence preparation of the battlefield, targeting competency, and logistics support for employment of attack helicopters. Similarly, non-Army components must train to support attack helicopter operations in the JAOC.

CORPS AVIATION BRIGADE: SUPPORT REQUIREMENTS

The analysis of materiel, leadership, and people for the modified corps aviation brigade or attack regiment is not as contentious or difficult to achieve as the recommended doctrinal, organizational, or training changes. The Army can outfit the organization by shifting equipment, combat systems, and personnel from other units.

MATERIEL.

In addition to the two attack squadrons, the corps aviation brigade or attack regiment must possess an organic assault helicopter battalion, aviation support battalion and unmanned aerial vehicle detachment. Lift aircraft in the assault battalion, adequately equipped for joint operations, are essential to accomplish cross-FLOT CSAR and medical evacuation, deep forward arming refuel point, downed aircrew recovery, and intra-theater logistics resupply for the task force. Major emphasis must be placed on improving joint c4i capabilities between the aviation tactical operations center, army helicopters, ABCCC / AWACS / JSTARS, and the JAOC. Fielding of reliable long range radios and systems that assure situational awareness in the aviation tactical operations center and JAOC are essential to assuring the JFACC and aviation commander maintains appropriate c2. The unit must field state of the art active countermeasures from enemy air defense systems on its helicopters. These systems must be compatible with sophisticated systems deployed on strike aircraft.

LEADERSHIP.

Senior aviation leaders and planners must be proficient in joint disciplines as well as employment of attack helicopters. Since Army aviation places a premium on the talent and responsibility of the warrant officer, these warfighters must receive higher level, service and joint professional military education. The Army must classify leaders and aircrew members with specialty codes that ensure personnel managers continually assign them against joint billets to further develop their unique skills.

PEOPLE.

Besides the inclusion of the assault helicopter company, very few people plus ups are required. However, this organization will require additional staff officer manning (at the field grade and company grade levels) to assure parity and appropriate experience in the JAOC and to establish a tactical operations center similar in function to the wing operations centers used by USAF wings. This personnel plus up is not significant but will require depth to achieve 24-hour operations. Temporary plus ups are not conducive to achieving a high level of cohesion in the unit and rarely produce the staff competencies commensurate with the unit.

CONCLUSION

As the Army and its aviation branch struggle to achieve relevancy in the 21st Century, national interests and worldwide commitments will continue to challenge military strategists. In meeting this challenge, the Army has determined it must undergo a difficult and costly revolution of military affairs that will require a generation to complete. To this end, Chief of Staff of the Army General Shinseki's vision of a lighter, more lethal Army will eventually yield a more strategically deployable force. Army aviation, in its quest for relevancy, faces a fundamentally different, though equally important challenge if recent events in Kosovo are an indicator of future requirements: adopt a joint warfighting capability outside the immediate control of the land component. The most capable force to conduct such operations for the JFC is the corps aviation brigade or attack helicopter regiment. Fielding joint-focused corps aviation brigades and attack regiments, capable of performing, among others, joint air interdiction missions against an asymmetrical enemy, under the C2 of the JFACC assures future relevancy. The commitment of which, as demonstrated by 6th Cavalry Brigade in Korea, does not have to be at the exclusion of the land force commander, when there is one. But when employed by the JFACC in an air-only campaign, this organization, a true joint force multiplier, will prove relevant to our nation and a flexible member of the airpower team.

Word Count = 8521

ENDNOTES

[1] Ron Laurenzo, "Army Aviation in Crisis, General Says." Defense Week, 18 January 2000: 15.

[2] Marc Strass, "Army Sees Flight School 21 As Fix For Task Force Hawk Woes," Defense Daily, 20 January 2000.

[3] "Aviation Operational and Organizational Concept – 2000 (Draft)," U.S. Army Aviation Center, Ft Rucker, AL (February 28, 2000): 29.

[4] Dr. Richard Hallion, <Richard.Hallion@pentagon.af.mil>, "Army & Airpower," electronic mail message to LTC David Lawrence <DAVLAW@AOL.COM>. 14 MAR 2000.

[5] Phillip S. Meilinger, Colonel, USAF, "Gradual Escalation: NATO's Kosovo Air Campaign. Though Decried as a Strategy, Maybe the Future of War," Armed Forces Journal, October 1999, 18.

[6] Dana Priest, "Tension Grew With Divide Over Strategy," Washington Post, September 21, 1999; available from <https://ca.dtic/mil/cgi-bin/ebird?doc_url=/Sep1999/e19990921battle.htm>; Internet; accessed 21 September 1999.

[7] MG Richard Cody, Director of Operations, Readiness and Mobilization, USA DCSOPS, Army Staff, telephone interview by author, 18 March 2000.

[8] William S. Cohen and Henry H. Shelton, Joint Statement on the Kosovo After Action Review, Testimony before the Senate Armed Services Committee, 14 October 1999.

[9] Richard P. Hallion, "Airpower and the Changing Nature of Warfare," Joint Force Quarterly, Autumn/Winter 1997-1998, 40.

[10] William S. Cohen and Henry H. Shelton, Joint Statement on the Kosovo After Action Review, Testimony before the Senate Armed Services Committee, 14 October 1999.

[11] Joint Chiefs of Staff, Doctrine for Joint Operations, Joint Pub 3-0, II-5.

[12] Jim Garamone, "Air Ops in Yugoslavia Pick Up; Apaches to Albania," 6 April 1999; available from <http://www.defenselink.mil/news/Apr1999>; Internet; accessed 20 December 1999.

[13] John E. Heaton, Maj, USAF, <alodov@HQ.C5.ARMY.MIL>, "Joint Air Power," electronic mail message to LTC David Lawrence <DAVLAW@AOL.COM>. 18 December 1999.

[14] Dana Priest, "Army's Apache Helicopter Rendered Impotent in Kosovo," Washington Post, December 29, 1999; available from <https://ca.dtic/mil/cgi-bin/ebird?doc_url=/Dec1999/e19991229army.htm>; Internet; accessed 2 January 2000.

[15] Rebecca Grant, "Airpower Made It Work," Air Force Magazine, November 1999, 32.

[16] Dana Priest, "Tension Grew With Divide Over Strategy," Washington Post, September 21, 1999; available from <https://ca.dtic/mil/cgi-bin/ebird?doc_url=/Sep1999/e19990921battle.htm>; Internet; accessed 21 September 1999.

[17] Dana Priest, "Army's Apache Helicopter Rendered Impotent in Kosovo," Washington Post, December 29, 1999; available from <https://ca.dtic/mil/cgi-bin/ebird?doc_url=/Dec1999/e19991229army.htm>; Internet; accessed 2 January 2000.

[18] Ibid.

[19] Sheila Foote, "Shelton: Risk Was The Key In Decision Not To Use Apaches," Defense Daily, September 10, 1999, 2.

[20] Earl H. Tilford, Jr., "Operation Allied Force and the Role of Air Power," Parameters, (Winter 1999-2000): 35.

[21] Department of the Army, Aviation Brigades, FM 1-111 (Washington, D.C.: U.S. Department of the Army, 27 October 1997), 3-1.

[22] John M. Shalikashvili, General, USA, National Military Strategy (Washington, D.C. 1997), 21.

[23] Jeffrey Record, "Operation Allied Force: Yet Another Wake-up Call for the Army?," Parameters, (Winter 1999-2000): 18.

[24] Department of the Army, Army Aviation Operations, FM 1-100 (Washington, D.C.: U.S. Department of the Army, 21 February 1997), 1-2.

[25] Ibid., viii.

[26] Dr. Richard Hallion, <Richard.Hallion@pentagon.af.mil>, "Army & Airpower," electronic mail message to LTC David Lawrence <DAVLAW@AOL.COM>. 14 March 2000.

[27] U.S. Joint Chiefs of Staff, Joint Interdiction, Joint Publication 3-03 (Washington, D.C.: U.S. Joint Chiefs of Staff, 10 April 1997), IV-11.

[28] Ibid., Chapter V, V-4.

[29] Ibid., Chapter II, II-4.

[30] Department of the Air Force, Air Force Basic Doctrine, Air Force Doctrine Document 1 (Washington, D.C.: U.S. Department of the Air Force, September 1997), 48.

[31] Joint Chiefs of Staff, Doctrine for Joint Operations, Joint Pub 3-0 (Washington, D.C.: U.S. Joint Chiefs of Staff, 1 February 1995), Appendix A, A-2.

[32] R. Kent Laughbaum, LtCol, USAF, "Synchronizing Airpower and Firepower in the Deep Battle", The Cadre Papers, (January 1999): 59.

[33] Department of the Air Force, JFACC Primer (Washington, D.C.: U.S. Department of the Air Force, February 1994), 1-2.

[34] Ron Buffkin, LTC, USA, "Combined Forces Command Attack Helicopter Operations Over the Yellow Sea," Army Aviation Association of America Magazine, January 2000, 28.

[35] Department of the Army, Aviation Brigades, FM 1-111 (Washington, D.C.: U.S. Department of the Army, 27 October 1997), 1-6.

[36] Joint Chiefs of Staff, Command and Control for Joint Air Operations, Joint Pub 3-56.1 (Washington, D.C.: U.S. Joint Chiefs of Staff, 14 November 1994), Chapter II, para 8.

[37] Rebecca Grant, "Airpower Made It Work." Air Force Magazine, November 1999, 35.

[38] Department of the Air Force, Air Force Basic Doctrine, Air Force Doctrine Document 1, (Washington, D.C.: U.S. Department of the Air Force, September 1997), 48-49.

[39] Joint Chiefs of Staff, Command and Control for Joint Air Operations, Joint Pub 3-56.1 (Washington, D.C.: U.S. Joint Chiefs of Staff, 14 November 1994), Chapter II, para 8a.

BIBLIOGRAPHY

"Aviation Operational and Organizational Concept – 2000 (Draft)." U.S. Army Aviation Center, Ft Rucker, AL (February 28, 2000): 29.

Buffkin, Ron, LTC, USA. "Combined Forces Command Attack Helicopter Operations Over the Yellow Sea." Army Aviation Association of America Magazine, January 2000, 28.

Cody, Richard, MG, USA, Director of Operations, Readiness, and Mobilization, USA DCSOPS, Army Staff. Telephone interview by author, 18 March 2000.

Cohen, William S. and Henry H. Shelton. Joint Statement on the Kosovo After Action Review. Testimony before the Senate Armed Services Committee, Washington, D.C., 14 October 1999.

Foote, Sheila. "Shelton: Risk Was The Key In Decision Not To Use Apaches." Defense Daily, 10 September 1999, 2.

Garamone, Jim. "Air Ops in Yugoslavia Pick Up; Apaches to Albania." 6 April 1999. Available from <http://www.defenselink.mil/news/Apr1999>. Internet. Accessed 20 December 1999.

Grant, Rebecca. "Airpower Made It Work." Air Force Magazine, November 1999, 32-35.

Hallion, Richard P. Dr. "Airpower and the Changing Nature of Warfare." Joint Force Quarterly, Autumn/Winter 1997-1998, 40.

Hallion, Richard P. Dr. <Richard.Hallion@pentagon.af.mil>. "Army & Airpower." Electronic mail message to LTC David Lawrence <DAVLAW@AOL.COM>. 14 March 2000.

Heaton, John E., Maj, USAF <alodov@HQ.C5.ARMY.MIL>. "Joint Air Power." Electronic mail message to LTC David Lawrence <DAVLAW@AOL.COM>. 18 December 1999.

Laughbaum, R. Kent, LTC, USAF. "Synchronizing Airpower and Firepower in the Deep Battle." The Cadre Papers (January 1999): 59.

Laurenzo, Ron. "Army Aviation in Crisis, General Says." Defense Week, 18 January 2000, 15.

Meilinger, Phillip S., Colonel, USAF. "Gradual Escalation: NATO's Kosovo Air Campaign. Though Decried as a Strategy, Maybe the Future of War." Armed Forces Journal, October 1999, 18.

Priest, Dana. "Army's Apache Helicopter Rendered Impotent in Kosovo." Washington Post, December 29, 1999. Available from https://ca.dtic/mil/cgi-bin/ebird?doc_url=/Dec1999/e19991229army.htm. Internet. Accessed 2 January 2000.

Priest, Dana. "Tension Grew With Divide Over Strategy." Washington Post, September 21, 1999. Available from https://ca.dtic/mil/cgi-bin/ebird?doc_url=/Sep1999/e19990921battle.htm. Internet. Accessed 21 September 1999.

Record, Jeffrey. "Operation Allied Force: Yet Another Wake-up Call for the Army?" Parameters (Winter 1999-2000): 18.

Shalikashvili, John M., General, USA. National Military Strategy. Washington, D.C. 1997.

Strass, Marc. "Army Sees Flight School 21 As Fix For Task Force Hawk Woes." Defense Daily, 20 January 2000.

Tilford, Earl H., Jr. "Operation Allied Force and the Role of Air Power." Parameters (Winter 1999-2000): 35.

U.S. Department of the Air Force. Air Force Basic Doctrine. Air Force Doctrine Document 1. Washington, D.C.: U.S. Department of the Air Force, September 1997.

U.S. Department of the Air Force. JFACC Primer. Washington, D.C.: U.S. Department of the Air Force, February 1994.

U.S. Department of the Army. Army Aviation Operations. FM 1-100. Washington, D.C.: U.S. Department of the Army, 21 February 1997.

U.S. Department of the Army. Aviation Brigades. FM 1-111. Washington, D.C.: U.S. Department of the Army, 27 October 1997.

U.S. Joint Chiefs of Staff. Command and Control for Joint Air Operations, Joint Publication 3-56.1, Washington, D.C.: U.S. Joint Chiefs of Staff, 14 November 1994.

U.S. Joint Chiefs of Staff. Doctrine for Joint Fire Support. Joint Publication 3-09. Washington, D.C.: U.S. Joint Chiefs of Staff, 12 May 1998.

U.S. Joint Chiefs of Staff. Doctrine for Joint Operations. Joint Publication 3-0. Washington, D.C.: U.S. Joint Chiefs of Staff, 1 February 1995.

U.S. Joint Chiefs of Staff. Joint Interdiction. Joint Publication 3-03. Washington, D.C.: U.S. Joint Chiefs of Staff, 10 April 1997.

Utley, Douglas E. "The Area of Operations – Fighting One Campaign." Joint Force Quarterly, (Autumn / Winter 1998-1999): 38.

Wall, Robert. "Army Aviation Seen In Crisis." 17 January 2000. Available from <http://www.awstonline.com/cgi-bin/authenticate.pl?destination=docs/issues/2000>. Internet. Accessed 19 January 2000.