

THIS FILE IS MADE AVAILABLE THROUGH THE DECLASSIFICATION EFFORTS AND RESEARCH OF:

THE BLACK VAULT

THE BLACK VAULT IS THE LARGEST ONLINE FREEDOM OF INFORMATION ACT / GOVERNMENT RECORD CLEARING HOUSE IN THE WORLD. THE RESEARCH EFFORTS HERE ARE RESPONSIBLE FOR THE DECLASSIFICATION OF THOUSANDS OF DOCUMENTS THROUGHOUT THE U.S. GOVERNMENT, AND ALL CAN BE DOWNLOADED BY VISITING:

[HTTP://WWW.BLACKVAULT.COM](http://www.blackvault.com)

YOU ARE ENCOURAGED TO FORWARD THIS DOCUMENT TO YOUR FRIENDS, BUT PLEASE KEEP THIS IDENTIFYING IMAGE AT THE TOP OF THE .PDF SO OTHERS CAN DOWNLOAD MORE!

**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 STRIKE FORCE: A NEW STRATEGIC ASSET
FOR THE 21ST CENTURY**

BY

**LIEUTENANT COLONEL CRAIG K. MADDEN
United States Army**

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

19980605 047



USAWC CLASS OF 1998

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

USAWC STRATEGY RESEARCH PROJECT

**ARMY AVIATION STRIKE FORCE: A NEW STRATEGIC ASSET FOR
THE 21ST CENTURY**

by

LIEUTENANT COLONEL (P) CRAIG K. MADDEN
UNITED STATES ARMY

Dr. Douglas V. Johnson II and Colonel Jan E. Callen
Project Advisors

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.

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

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

ABSTRACT

AUTHOR: Craig K. Madden (LTC-P), USA
TITLE: Army Aviation Strike Force: A New Strategic Asset for
the 21st Century
FORMAT: Strategy Research Project
DATE: 12 April 1998 PAGES: 46
CLASSIFICATION: Unclassified

This essay recommends the establishment of an Army Aviation Strike Force (ASF) consisting of a mobile airborne Command and Control platform, AH-64 Longbow Apaches, RAH-66 Comanche's, and tactical UAV's. The ASF will be a highly mobile, early entry unit designed for rapid strategic deployment worldwide. The capabilities of the ASF will include: joint and combined mobile C2, battlefield synchronization, precision attack, multi-target destruction, anti-armor/tank, stealth armed reconnaissance, unmanned aerial reconnaissance, counter-air, and tactical missile defense. The ASF is designed to provide the National Command Authority with a new joint and combined air mechanized decisive force capability. The Aviation Strike Force should be developed in conjunction with the Army's Force XXI program.

TABLE OF CONTENTS

ABSTRACT iii

LIST OF ILLUSTRATIONS vii

ARMY AVIATION STRIKE FORCE: A NEW STRATEGIC ASSET FOR THE 21ST
CENTURY 1

PART I - THE NEW SYSTEMS 2

 THE ARMY AIRBORNE COMMAND AND CONTROL SYSTEMS (A2C2S) 2

 THE AH-64D LONGBOW APACHE 4

 THE RAH-66 STEALTH WARRIOR 9

 TACTICAL UNMANNED AERIAL VEHICLES 14

PART II - ARMY AVIATION STRIKE FORCE 17

 WHY DO WE NEED AN AVIATION STRIKE FORCE 17

 THE ARMY AVIATION STRIKE FORCE 18

PART III - OPERATIONAL EMPLOYMENT 27

 A FUTURE SCENARIO 27

 EMPLOYING THE ASF 28

CONCLUSION 30

ENDNOTES 33

BIBLIOGRAPHY 35

LIST OF ILLUSTRATIONS

Figure 1 AVIATION STRIKE FORCE	19
Figure 2 AVIATION STRIKE FORCE COMMAND ELEMENT	20

ARMY AVIATION STRIKE FORCE: A NEW STRATEGIC ASSET FOR THE 21ST CENTURY

On 2 August, 1990 hundreds of Iraqi main battle tanks, fighter planes, and helicopters raced into Kuwait, quickly overwhelming the outnumbered Kuwaiti Army. On 8 August, 1990 at the direction of the National Command Authority, General Norman Schwarzkopf directed the deployment of the Division Ready Brigade from the 82nd Airborne to Saudi Arabia, drawing a "line in the sand" against Iraqi aggression.

General Schwarzkopf was concerned that the soldiers from the 82nd could be overrun by Iraqi armored forces. According to Schwarzkopf "In an attack their only option would be to pull back to an enclave on the coast and hope we could either reinforce them or get them out. It would have been something like the U.S. retreat to the Pusan perimeter in the early days of the Korean War-a very disturbing thought."

When asked by the transportation planners: "What are your priorities"? General Schwarzkopf replied "Combat troops and tank-killing airplanes and helicopter!" He desperately wanted the antitank capability of two dozen AH-1F Cobra attack helicopters from Fort Bliss, Texas and a brigade of AH-64 Apaches from 101st Air Assault Division at Fort Campbell, Kentucky.

Army Aviation is in the midst of major evolutionary change which could ultimately lead to the development of a highly deployable, strategic level asset; the **Army Aviation Strike Force**. This strike force will expand the range of options for our National leadership to respond to a broad spectrum of crises and threats.

The synchronization of four new systems into an Aviation Strike Force will provide CINC's and Joint Force Commanders with

an unprecedented combat capability. The four systems are: the Army Airborne Command and Control Platform, the AH-64 Longbow Apache, the RAH-66 Comanche, and the tactical UAV.

This essay is divided into three parts. Part I contains a brief review of these four new systems that are expected to be introduced into the Army in the next eight years. Part II explains why it's time for an the Aviation Strike Force (ASF) and what the ASF will look like. Part III presents a future combat scenario in 2008 and describes how the ASF might be employed. Results of recent testing and experimentation will be used to emphasize the possibilities.

PART I - THE NEW SYSTEMS

THE ARMY AIRBORNE COMMAND AND CONTROL SYSTEMS (A2C2S)

The Army Airborne Command and Control System (A2C2S) is a UH-60 Black Hawk-based airborne tactical command post for the Corps, Division, Maneuver Brigade, and attack helicopter battalion commander. The primary function of the A2C2S is to monitor the execution of current operations, while a Main Command Post (CP) focuses on future operations. It provides battlefield information processing and connectivity equivalent to a tactical command post or the Battle Command Vehicle. The A2C2S can operate while airborne or on the ground.

A robust communications system, five automated computer workstations, and a 30-inch large-screen display will allow a commander to maintain contact with Army Aviation assets, joint service fighters, Airborne Warning and Control Systems (AWACS) aircraft, Joint Surveillance Target Attack Radar System (JSTARS) aircraft, and other members of the combined arms team.

The system will provide the commander an immediate, mobile Command and Control node for early entry operations, with benefits of commonality in communications, automation, and information handling capabilities.³ The A2C2S is designed to be interoperable with C2 systems throughout the battlefield, to include joint and allied forces. During operations other than war (OOTW), the system will provide connectivity to embassies, law enforcement, maritime support forces, civil and/or other humanitarian and communication networks.⁴

The Aviation Brigade from the 4th Infantry Division tested two A2C2S prototypes during the Advanced Warfighting Experiment (TF XXI AWE) conducted at the National Training Center in March 1997. It proved very effective. Commanders were provided a potent communications suite and timely situational awareness on a highly mobile platform, the Black Hawk.⁵

These prototypes were so successful that the A2C2S was one of eleven systems to receive accelerated funding as part of the Army's Warfighting Rapid Acquisition Program. Task Force 160th Special Operations Aviation Regiment at Ft. Campbell, Kentucky

will be the first unit to receive the A2C2S followed by 4th Infantry Division in FY2000. The basis of issue will be six per Division and 12 per Corps.

THE AH-64D LONGBOW APACHE

During Operation Desert Storm the AH-64A set the standard against which all other attack helicopters are measured. It was credited with destroying more than 500 tanks and hundreds of armored personnel carriers and trucks.⁶ However, battlefield deficiencies were identified. Instead of embarking on time consuming and expensive fielding of a new aircraft the Army committed itself to an extensive Apache Modernization program. The result is the **AH-64D Longbow Apache**.

Capabilities

General. The Longbow Apache is considered the most technically advanced and deadliest rotary wing aircraft in the world; fully digitized for the 21st Century. There are two significant improvements from the original AH-64A Apache. A millimeter-wave **Longbow Fire Control Radar (FCR)** and the AGM-114D fire-and-forget **Longbow Hellfire missile**. Both were developed to overcome deficiencies associated with the AH-64A electro-optical weapon systems. The millimeter wave radar technology significantly improves combat capability in adverse weather and

battlefield obscurants. The Longbow Hellfire missile provides a fire-and-forget capability.

Longbow Fire Control Radar (FCR)

The FCR rotates above the main rotor, allowing the Apache to detect targets from a position of cover with only the top part of the mast exposed. A millimeter wave radar scans through 360 degrees in azimuth for airborne targets and through 270 degrees for ground targets.

The battlefield is presented on a cockpit display which categorizes and prioritizes multiple targets, marks those targets which have already been engaged, and indicates where friendly forces are located. The target classifications on the display include: shoot this target first, shoot this target second, already shot at, wheeled vehicle, tracked vehicle, air defense vehicle, helicopter, and fixed wing aircraft.⁷

Data can be transmitted via secure digital data burst throughout the combined arms team and it is customized to present the view from each recipient's location. Allocation of priority and no-fire zones reduces the potential for fratricide and minimizes duplicate kills. The Longbow Apache can also receive target information from theater level assets such as JSTARS.

The FCR can be unmasked for a single radar scan then remasked. The processors determine the location, speed, and direction of travel of as many as 256 targets. The most

dangerous threats are prioritized and data is displayed indicating the highest priority targets. This data is transmitted to other AH-64D's and designated members of the combined arms team. The battle area is divided and priority zones are assigned and transmitted to the attacking elements. A coordinated precision attack can be initiated thirty seconds after the first AH-64D unmasked its FCR.⁸ The amount of time it takes to conduct an attack will be greatly reduced and crews will experience less exposure to enemy fires.

Longbow Hellfire Missile

The Longbow Hellfire missile is the latest variant in a family of tactical anti-armor High Explosive Anti-Tank (HEAT) Hellfire missiles. The Longbow Hellfire missile provides a true fire-and forget capability in fog, smoke, rain, snow, and battlefield obscurants. Conditions which rapidly degrade a laser designator and electro-optical targeting sensors, used in previous Hellfire missiles, have little or no impact on the millimeter-wave radar guidance section. The fire-and-forget guidance allows the Longbow Apache helicopter to launch a missile and then remask, thus minimizing exposure to enemy fire.

The Longbow missile was designed to attack targets in closely-spaced tactical formations. Multiple missiles can be launched at the prioritized list of FCR classified targets with

high confidence that the selected targets will be killed.⁹ The advanced warhead is capable of defeating reactive armor projected into the 21st Century.

The lethality of the Longbow Hellfire missile combined with the high rate of fire, minimizes exposure time. With a range of 8 kilometers, the Longbow Hellfire missile allows the Apache to operate at extended stand-off distances.

During recent operational testing the Longbow Apache consistently demonstrated seven times more survivability and four times greater lethality than the leading A-model Apache in the field today. This means the force-exchange ratio of Longbow Apache over the baseline A-model Apache is 28:1, establishing Longbow as the leading combat force multiplier for the U.S. Army's modern digitized Force XXI battlefield.¹⁰

General Armament

The Longbow can carry 16 Hellfire missiles, 76 2.75 inch rockets, or a combination of both, and up to 1200 rounds of 30 mm automatic cannon. It can also carry air-to-air missiles. The weapons mix may be varied to suit a wide range of scenarios, from high to low intensity.

Getting to the Fight

The AH-64 Longbow Apache is self-deployable over long distances or it can move strategically on Air Force transport aircraft. In a self-deployment mode, it can mount attachable fuel pods and expand it's unrefueled range to 1,100 miles.

For strategic deployment, an AH-64 company can be deployed strategically on four C-17 aircraft within 18 hours of notification. A company-sized package includes eight Apache helicopters, 33 soldiers, and combat service support for maintaining operations. Within 48 hours of notification, an entire Apache battalion (24 aircraft) can be deployed on eleven additional C-17's.¹¹

Fielding

FY 99 fielding plans call for 227 out of a total Army fleet of 748 AH-64A's to be remanufactured into the AH-64D Longbow, with the Fire Control Radar, by 2009. The remainder of the AH-64A's will be modified with a number of enhancements through 2012, but they will not have the Longbow radar.¹² However, the aircraft without the Longbow radar will still be able to receive FCR data. A company will have three AH-64's with Longbow radar and five without.¹³ The first production AH-64D was delivered to the Army in Mar 97. The AH-64D Longbow Apache and the modified

AH-64D's will be the Army's primary attack helicopter on the digital battlefield.

THE RAH-66 STEALTH WARRIOR

The RAH-66 Comanche is the Army's next generation armed reconnaissance helicopter. It combines lethality with superior reconnaissance capabilities to multiply the combat effectiveness of the entire force. Comanche is designed to be the centerpiece of the digital battlefield, collecting and distributing battle information and directing operations among all the members of the combined force.¹⁴ It is the technology breakthrough which will fill a serious deficiency in Army Aviation, armed reconnaissance.

Comanche will provide the maneuver commander the unique ability to use stealth to observe previously unattainable areas, communicate with all elements of the combined arms team, maneuver rapidly, and employ multispectral sensors for covert collection of information, unconstrained by weather, terrain, temperature, altitude, or time of day.¹⁵

Although the RAH-66 will have a number of significant improvements from previous helicopters, four of the most important are; the advanced long-range high resolution sensor suite, a digital communication and processing system, its stealth characteristics, and a substantially reduced logistics and sustainment requirement.

Advanced Long-Range Sensor Suite

The success of any combat operation is directly related to the quality and currency of knowledge of the battlefield---clearing up the "fog of war". The Comanche will have a suite of integrated sensors which will provide a near real-time picture of the battlefield. The two main sensors are the **Electro-Optical Target Acquisition System (EOTAS)** and the **Longbow Fire Control Radar (FCR)**.

The EOTAS consists of a day TV, second-generation forward-looking (FLIR) and laser rangefinder/designator. The FLIR increases target acquisition range performance by 50% relative to the FLIR systems fielded today and it allows for greater standoff ranges which enhances crew survivability.¹⁶

Using an Aided Target Detection/Classification (ATD/C) system, a Comanche crew will scan the battlefield, store the imagery, and withdraw from the scan position to review the data. The target images are displayed for crew identification, and a text list of the detected targets is created to be shared with other combat platforms in the maneuver area or be used internally for the engagement cycle. The location and symbols from the electronic map overlay data, as well as the target images or sensor video, can be transmitted to other users.¹⁷

Approximately one-third of the Comanche fleet will have the same Longbow FCR as the AH-64 Longbow Apache. This will allow those Comanches to view the battlefield in the millimeter-wave frequency spectrum in addition to the Infrared (IR) spectrum.

Digital Communications and Processing System

The Comanche will have the ability to detect if something is out there, classify it as an air or ground vehicle, recognize it as a tank or truck, identify it as a friendly or enemy tank and then relay this information, in near real-time, to various integrated joint and combined platforms on the battlefield.

Comanche's communications system is designed to be interoperable and compatible with Air Force and Navy assets to include, JSTARS/AWACS, F-14, F-15, F-16, F-22, ships, and USMC tactical air control systems.

The Comanche's advanced sensors coupled with the integrated communications suite enhances the commanders ability to synchronize direct and indirect fires, improve situational awareness, and shorten the shooter-to-sensor time line. These unique capabilities will assist the Army's long-range advanced shooters, such as the MLRS, the Crusader, and ATACMS.

Stealth and Survivability

Comanche breaks new ground in the use of high technology composites for low detectable (600 times smaller than an Apache), ballistic-tolerant (withstands a 23 mm round), light weight, and crashworthy composite airframe.¹⁸ Its low radar signature, composite body, special acoustic design, and cooled engine exhaust, make it the worlds first "stealth helicopter." The bearingless main rotor is designed to reduce the "whopping noise" made be most helicopters today and the infra-red signature is approximately four times smaller than an Apache.

The two man crew is ballistically protected and they also have a positive pressure air system for protection against chemical and biological warfare. It is the only helicopter that can successfully operate in, detect, and report biological and chemical contaminants.¹⁹ It is also equipped with a laser and radar warner devices, and radar infrared jammers.

The Comanche cruises at 161 knots, has a dash speed of 172 knots, and can fly sideways or backwards at 70 mph.²⁰ An advanced five bladed, bearingless main rotor system further enhances the performance and agility in air-to-air combat situations.

Armament

The Comanche will carry up to 14 Hellfire II missiles, 56 2.75 inch Hydra rockets or 28 Stinger air-to-air missiles to

attack fixed or rotary wing aircraft. To maintain the low profile, the Comanche will have a fully retractable missile armament system, enabling it to hide missiles and rockets in Integrated Retractable Munitions Systems (I-RAMS) bays. Missiles fire within three seconds of the bay door opening.²¹ Comanche also stows a three-barreled, 20 mm turreted nose gun that carries up to 500 rounds of ammunition.

Getting to the Fight

The Comanche can carry two 430-gallon ferry tanks to self-deploy over 1,260 nautical miles or crashworthy 230-gallon tanks for more than four hours of combat endurance.²² This capability provides for rapid force projection while freeing up strategic transport aircraft to carry other critical assets.

The RAH-66 is air-transportable by all Air Force transport aircraft. One Comanche can be loaded on or off a C-130 transport in less than 22 minutes. The C-5 transport aircraft can carry eight Comanche's, the C-17 four, and the C-141 three.²³

Fielding.

The Comanche is currently in the development phase of the acquisition life-cycle. Two prototype aircraft have been built and tested. The first flight of a prototype Comanche took place on January 4, 1996. 1197 Comanche's will replace approximately

3100 Vietnam-era light helicopters. Production should begin in 2005, with the first Comanche unit fielded in 2006.²⁴ An air cavalry squadron will have two troops of 12 Comanche's.

TACTICAL UNMANNED AERIAL VEHICLES

The discussion of Unmanned Aerial Vehicles (UAV's) is limited to the **Tactical Unmanned Aerial Vehicle (TUAV)** because they will be more instrumental in supporting the ground commander and the concept of Army Aviation Strike Force. The TUAV (Pioneer and Outrider) will support Army battalions, brigades, and light divisions along with Marine regiments and deployed Navy units.²⁵ TUAV's will provide near-real-time reconnaissance, surveillance and target acquisition (RSTA), and battle damage assessment (BDA) in a very responsive manner to the tactical commander. Currently, both the Hunter and Pioneer UAV's are performing this role.

The Pioneer program was started in 1985 as an interim UAV for the tactical commanders on land or at sea. In ten years, Pioneer had flown nearly 14,000 hours and supported every major U.S. contingency, including the Persian Gulf, Somalia, Haiti, and Bosnia. The Pioneer has a radius of 185 nautical miles and an on-station time of five hours. It has a cruise speed of 65 knots with a maximum altitude of 15,000 feet.

The Outrider is an Advanced Concept Technology Demonstration (ACTD) to support tactical commanders with near-real time imagery intelligence (IMINT) at ranges beyond 200 km and on-station endurance greater than four hours.²⁶ It will have a cruise speed of 90 knots and maximum altitude of 15,000 feet. The Outrider will provide reconnaissance, surveillance and target acquisition (RSTA), tactical situational awareness, gun fire support, and battle damage assessment to Army brigade/battalion, Navy task force and Marine Corps regimental/battalion levels. Outrider UAV will deploy via one C-130, an improvement over earlier systems.

Unmanned aerial vehicles are the smallest, least expensive, and possibly the most effective sensor platforms available. The most recent success story for tactical UAV's was in Bosnia. Pioneer UAVs supported a number of different operations including, video retransmission to a command ship to support the amphibious task force commander, real-time imagery provided directly to IFOR units, demonstration of dynamic retasking, and surveillance of population centers, tracking of suspected terrorist training sites, and route reconnaissance. Clearly, UAV's will play an important role in future contingency operations.

TUAVs will be capable of flying designated routes ahead of the helicopters and provide alternate routes, if necessary. In the future, TUAVs may be controlled by pilots in Comanche's or

Longbow Apaches to give pilots direct access to tactical information.

There will be nine systems available through FY 2003 when the Outrider UAV is expected to be available in quantity and replace the Pioneer. The Army can expect to see tactical UAV's supporting theater ground operations in the near future. Congress continues to support the development of a UAV that can be placed directly in the hands of the warfighter.

Modern technologies will exploit situational understanding phenomena to enable tailored, still undefined combat organizations to task organize quickly and fight dispersed with extraordinary ferocity and synchronization. Fused inputs from manned and unmanned sensors (including satellites) will provide unprecedented battlefield situational understanding to depths well beyond the horizon.²⁷

-Army Vision 2010-

Technology will enable an agile Aviation Strike Force to deploy quickly, fuse real-time enemy and friendly information, and strike targets throughout the entire battlefield; a great tool for the Joint Task Force Commander.

PART II - ARMY AVIATION STRIKE FORCE

WHY DO WE NEED AN AVIATION STRIKE FORCE

Joint Vision 2010 states, "Long-range precision capability, combined with a wide range of delivery systems, is emerging as a key factor in future warfare. Stealth will strengthen the ability to accomplish surprise, reduce overall force requirements in many operations, and make forces less visible to an unsophisticated or disoriented adversary."²⁸

Army Vision 2010 foresees a capabilities-based Army with the proper mix of heavy, light and Special Operations Forces (SOF) focused on Euro-Middle East and Asian Arc regions of the world--- a force trained, ready, and equipped to conduct full-spectrum operations, to do what needs to be done across the entire crisis spectrum.²⁹

In the December 1997 National Defense Panel Report to the Secretary of Defense it states, "We will need greater mobility, precision, speed, stealth, and strike ranges while sharply reducing our logistics footprint. All operations will be increasingly joint, combined, and interagency."³⁰

A principal finding in The 1997 Annual Report on The Army After Next Project was that mobility, characterized predominantly

by speed of maneuver, proved to be the most important factor contributing to battlefield success.³¹

To meet the requirements mentioned above, the U.S. Army must take advantage of emerging technologies, consider new ways of employing forces, and design a fighting force that will be relevant in the 21st Century. Unfortunately, as illustrated in Army Vision 2010, the Army remains wedded to only the heavy, light, and SOF force designs.

Based on the revolutionary capabilities that were discussed in Part I and the evolving nature of combat, the time is right for a new combat force option that will transform the way the U.S. Army conducts warfare. The ASF brings unequalled deployability, agility, and versatility to the joint warfight. It's another tool in the National Command Authority toolbox that will operate across the entire spectrum of conflict.

THE ARMY AVIATION STRIKE FORCE

GENERAL. Now that we've examined the capabilities of the A2C2S, the AH-64D Longbow Apache, the RAH-66 Comanche, and the tactical UAV it's time to synchronize these four systems into a new unit called the Army Aviation Strike Force.

JOINT AND COMBINED STRATEGIC CAPABILITY. The Army Aviation Strike Force will be the first truly joint combat unit because of the unique interoperable capabilities of the A2C2S and the Comanche. The mobile command and control platform will

coordinate the battle with all service components while the Comanche communicates with any Joint Operations element in the theater. The A2C2S is an excellent tool for the Joint Task Force Commander.

MISSION. A strategically deployable, early entry, joint and combined multi-mission air mechanized force.

DESIGN. The ASF will consist of a Command Element and five subordinate units, for a total of 78 helicopters and 1000 soldiers (see Figure 1). This is five more helicopters and 358 less troops than an aviation brigade in a mechanized division today. All units are designed to be highly mobile with minimal staff and logistics overhead.

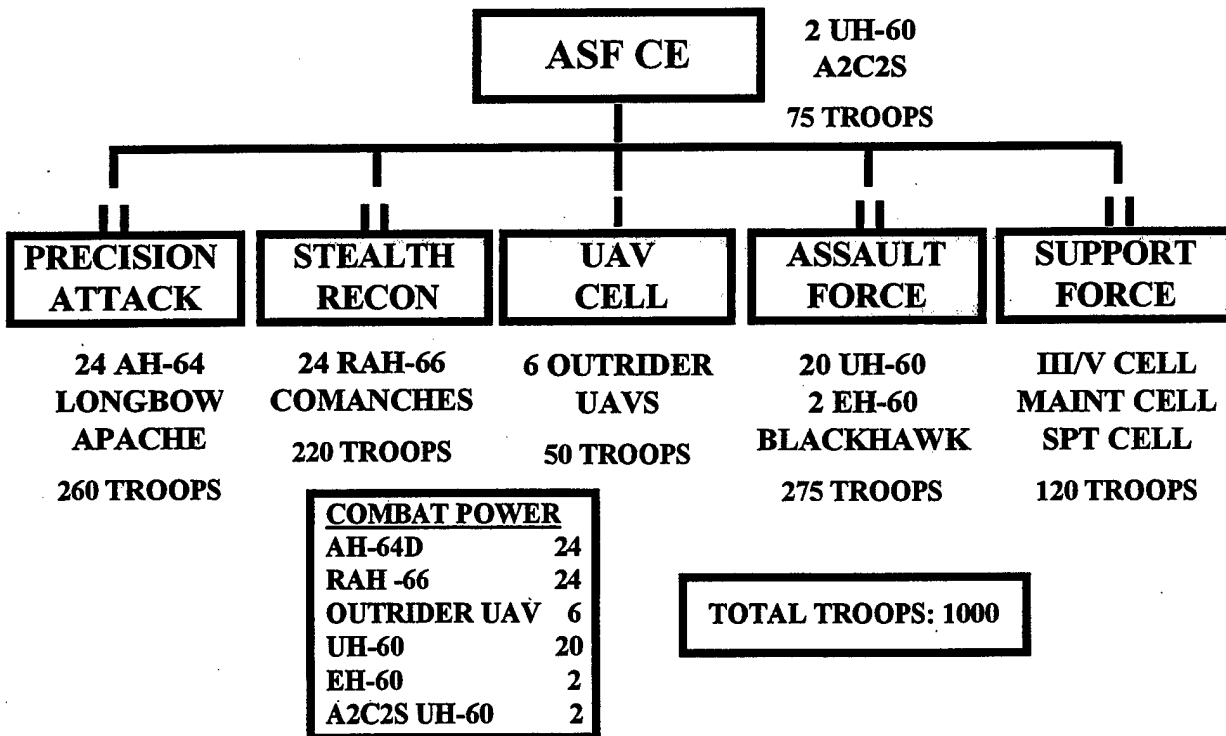


Figure 1 AVIATION STRIKE FORCE

(1) **Command Element (CE)** - The ASF will be commanded by a Colonel and supported by three staff elements: Operations and Intelligence, Joint Coordination and Long Range Planning Cell, and Logistics and Maintenance (see Figure 2). Two A2C2S aircraft (a primary and a backup) will provide mobile C2 for current operations while the Aviation Tactical Operations Center (AVTOC) will remain in a fixed position to plan future operations. (Note: The AVTOC is being developed as a standard ground tactical operations center with integrated communications and local area network capability).

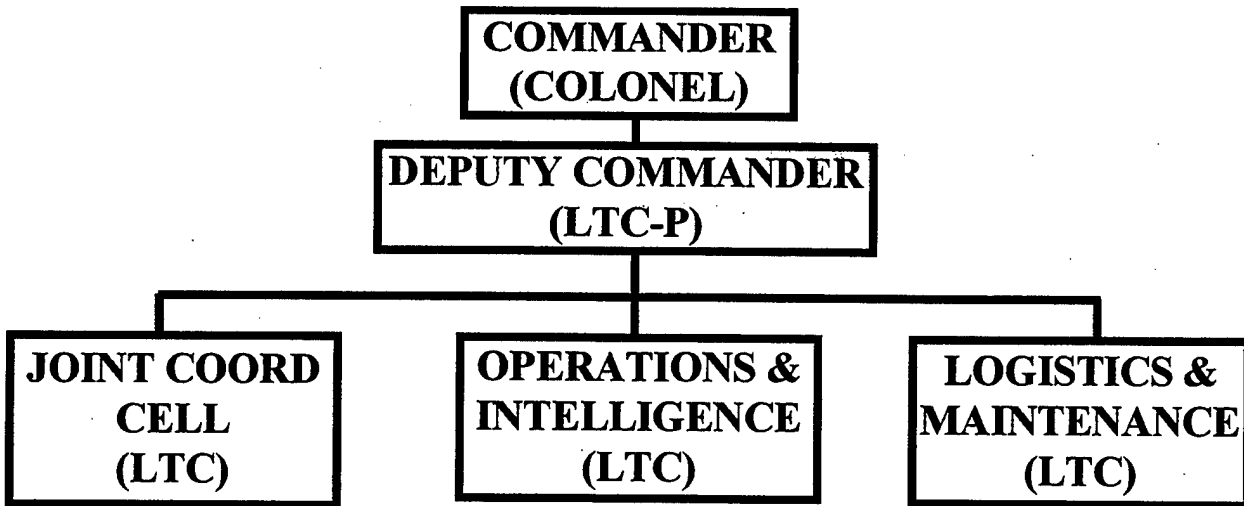


Figure 2 AVIATION STRIKE FORCE COMMAND ELEMENT

The A2C2S will allow a commander to coordinate, direct, and influence operations and not be limited by a static or distant position. Operations that the ASF may execute will generally be

too fast paced for stationary or unwieldy tactical operation centers. The A2C2S will permit the commander to execute joint and combined operations with the robust communications system.

The A2C2S is an effective system to control the speed of execution and extend the limits of the battlefield of the future. It will provide aviation and maneuver commanders secure, jam resistant voice and digital communications to see the battlefield and control aviation assets operating in depth to ranges of 200 kilometers or more.³²

(2) Precision Attack Unit. The precision attack unit will operate across the entire spectrum of conflict, from peacekeeping and peace enforcement to a Major Theater of War. It will consist of 24 AH-64 Longbow Apaches. The Longbow will attack multiple targets, provide a powerful anti-tank/anti-armor capability, destroy air defense artillery (ADA) sites, and in some cases be utilized for theater missile defense (TMD). Offensive operations will be fast, violent and lethal. The Longbows will mass fires without massing aircraft. However, they will perform peacekeeping and peace enforcement missions similar to the way Apache support the Bosnia mission today.

In March 1997, eight AH-64A Apaches and two prototype AH-64D Apache Longbow participated in the Task Force XXI Army Warfighting Experiment (AWE) at the National Training Center (NTC) at Fort Irwin, California. In several of the exercise events, the two Longbows Apache destroyed an opposing force air

defense command and control network in a deep attack and rendered a division artillery group and combined arms regiment combat ineffective in a deliberate attack.³³

During Exercise Roving Sands 1995 AH-64A model Apaches were employed in a totally new mission, theater missile defense. They were was able to consistently locate and destroy unconfirmed TBM sites through a combination of innovative tactics, techniques, and procedures in marginal weather, behind enemy lines.³⁴ AH-64s were credited with ninety per cent of all mobile TBMs killed during the five day exercise.³⁵ They competed against all of the U.S. armed forces, as well as German an Belgian air defense units. The Longbow will provide an even more robust capability to conduct the TMD missions than the A model Apaches.

(3) Stealth Recon Unit. The Stealth Recon Unit will consist of 24 RAH-66 Comanche's. The focus of this unit will be on reconnaissance as opposed to the attack mission of the Longbow Apaches. The Stealth Recon Unit will conduct three primary missions; Armed Reconnaissance, Cooperative Attack, and High-Value Target Attack.

In the Armed Reconnaissance role they will locate, classify, and categorize the type of enemy targets (land and air) and then digitally transmit the information to the Joint Forces Commander, JSTARS aircraft, or mobile/airborne attack forces, in near real-time. The RAH-66 can then select the ideal force deployment and coordinate a combined arms attack. Depending on the threat, the

Comanche will carry three to four times the number of missiles as current generation scout helicopters to engage high value targets.

In the Cooperative Attack role the Stealth Recon unit will compliment the capability of the Precision Attack Unit and other Joint and Combined Forces. It will support a ground or air attack using its near real-time targeting information.

Comanche's will also be prepared to take over C2 in the event the A2C2S is not available. Comanche's will also conduct counter recon against enemy UAV's and destroy them with stinger missiles.

The High-Value Target Attack role will be directed by the Joint Force Commanders as necessary. Their long-range sensors and stealth capabilities will allow the Stealth Recon Unit to enter enemy locations without using overwhelming force and destroy key targets. Advanced sensors will facilitate precision attacks against short dwell targets, in addition to immediate and detailed battle damage assessment.

A combination of the Stealth Recon and Precision Attack units will search JFC designated areas and destroy moving armored or mechanized infantry formations, key command and control nodes, stationary or moving artillery, TBM's, logistics assets, reserves, critical enemy air defense systems and early warning radar's to clear air avenues of approach for follow-on Army and Air Force operations, and deny enemy avenues of approach. The

Comanche will, if necessary, conduct these operations on the dirty battlefield.

(4) **UAV Cell.** The Tactical UAV Cell consisting of six Outrider UAV's provide the ASF with unprecedented real time situational awareness. The ability of the UAV's to work in concert with the Longbow Apache and Comanche helicopters, along with airborne sensor platforms such as Guardrail Common Sensors (GRCS) and Joint Surveillance and Target Attack Radar System (JSTARS), will provide the ASF with the information to attack targets in depth and protect his forces from attack.

TUAV missions may include; acquire and track people, equipment, and vehicles, real-time operations and intelligence support, combat search and rescue (CSAR), non-combat evacuation (NEO), mobile missile targeting, threat detection, tracking and cueing, real time BDA, aviation unit ingress/egress, laser designation (Outrider only), COMINT, ELINT, mine detection, and NBC protection.

UAV's must be fully integrated into ASF in order to have full dimension dominance at the tactical level. ASF commander's cannot be dependent on "higher" pushing down real time information due to the fluid nature of attack helicopter operations.

Near real-time information in the cockpit and corollary of providing UAV control to the cockpit must be the next step. Tomahawk Operational Test Launch 165 demonstrated passing live

UAV video to strike aircraft that were to attack a mock weapons facility immediately following a Tomahawk attack on nearby AA radar.³⁶ The airborne strike commander, getting information instantly from "his" UAV, was able to alter the attack route and complete his mission.³⁷

A UAV simulation embedded in a recent III Corps Warfighter Exercise demonstrated the synergy of preceding Apache deep attacks with a UAV. Placing a UAV in the control of the Battle Captain is the next step.³⁸ The benefits are substantial. The attack helicopters fly down a route just reconnoitered and cleared by a UAV and attack the objective area with near-real time intelligence. Then, they can hand off the sometimes dirty job of battle damage assessment (BDA) to the UAVs as the attack helicopters stand-by to reattack in a previously cleared holding area or egress to their assembly area. Chances of losing an manned helicopter are greatly reduced.

(5) Assault Force. 20 UH-60L Black Hawk utility helicopters will provide general support, aeromedical evacuation, ammunition and fuel resupply, and in some cases air assault soldiers. Two EH-60's will support signal-intercept and precision emitter location and jamming capability.

(6) Support Force. The Support Force will provide fuel, ammunition, and maintenance support to the ASF. This is a critical component of the ASF. The ASF will require a highly mobile fuel and ammunition capability. UH-60's will be the prime

movers for both. However, the ASF will have the tendency to go through ammunition and fuel at a very high rate and systems in use today may not provide sufficient support.

The ASF will require less logistical support because of improvements in maintenance, supply, and logistics. Comanche will require less soldiers, tools, and equipment to repair.

DEPLOYMENT. As an early entry force, the ASF will be a more efficient use of strategic mobility assets. In the future, the JFC will have a choice for early entry, fast moving operations. He may load one M1A2 tank or six Longbow Apaches on a C5A. Rapid deployment of the ASF will add an enormous capability to early entry forces..

The ASF offers the advantage of self-deployment, in many situations, where tanks and other heavy vehicles cannot compete. The aviation assets are not restricted by any terrain. The ASF will have the capability of holding off large armored formations until the strategic deployment of heavy forces.

FORCE AVAILABILITY. The ASF structure can be constituted from existing Army structure. However, it will require to reconfiguration of possibly the 101st Air Assault Division or Corps aviation assets.

PART III - OPERATIONAL EMPLOYMENT

By 2010, we should be able to change how we conduct the most intense joint operations. Instead of relying on massed forces and sequential operations, we will achieve massed effects in other ways.³⁹

-Joint Vision 2010-

A FUTURE SCENARIO

After years of mismanaging the affairs of Iraq, Saddam Hussein was assassinated in 2005. However, the country was run by another ruthless dictator. Years of United Nations sanctions had crippled the economy and oil revenues were still limited. In 2007, Iraq attacked Turkey after the flow of water from the Tigris and Euphrates Rivers was reduced to a trickle. Iraqi was substantially weakened after loosing the war with Turkey. The government and the military were in disarray.

Iran saw this as an opportunity to become a regional hegemony. In October of 2008 Iran invaded Iraq after claims of Iraqi border violations. However, their real intent was to take over the oil producing land in Iraqi. Iran threatened to launch TBM's at Israel if the United States intervened. Small but lethal Iranian fast attack boats were threatening the U.S. Navy and commercial shipping in the Persian Gulf.

The Commander-in-Chief of U.S. Central Command (CINCCENT) was concerned that Iran's next move would be toward Kuwait and possibly Saudi Arabia. CINCCENT requested the NCA to deploy

combat forces to defend Kuwait, halt hostile Iranian actions in international waters, and if necessary defend Saudi Arabia.

Recalling General Schwarzkopf dilemma during the early days of the Gulf War, CINCCENT knew he needed a highly mobile, anti-armor capability in theater quickly.

EMPLOYING THE ASF

The Aviation Strike Force was selected to deploy because of its unmatched capabilities. As the ASF landed in Saudi Arabia, via strategic airlift, the Iranian armored forces were moving south towards Kuwait City. The Joint Task Force Commander (JFC) immediately deployed the Stealth Recon Unit and the UAV Cell to conduct reconnaissance north of Kuwait and provide detailed information to the JTFC. The ASF initially provides early warning and troop protection. The Comanche's, working in conjunction with JSTARS, picked up a large armored formation heading toward Kuwait City.

The JFC directed the ASF commander to destroy the Iranian armored division before they could reach Kuwait. The ASF commander, operating from the A2C2S aircraft, coordinates a joint and combined attack. The Precision Attack Unit self-deploys, with the maximum number of Hellfire missiles, from airfields in Saudi Arabia towards objectives in Iraq. UAV's clear the ingress and egress routes. The Comanche's digitally pass all the target

information to the Longbow Apaches and then they conduct a massed attack at maximum stand-off range. The A2C2S simultaneously coordinates Air Force and Naval tactical air assets. UAV's provide a detailed BDA picture showing total destruction of the Iranian division.

Iran employed UAV's to conduct reconnaissance and targeting of U.S. and coalition forces. They typically stayed just out of friendly Air Defense umbrella but still within intelligence gathering range. The JFC directed the ASF to deploy Comanche's to locate and destroy enemy UAV's within specific target boxes. Comanche's, using long range sensors, located and destroyed a large number of UAV's with Stinger missiles.

Several U.S. Navy ships were hit by missiles that were launched from Iranian fast attack boats. The JFC directed the ASF to deploy a Longbow Apache/Comanche team to destroy the fast attack boats and other Iranian Navy vessels. The team self-deployed to an Amphibious Assault Ship so they could conduct night helicopter operations. The Longbow/Comanche team was able to detect and destroy the majority of fast attack boats in the Persian Gulf.

A Marine Expeditionary Force (MEF) was preparing to conduct an amphibious assault to seize and hold airfields in Kuwait. Tilt-rotor aircraft were used to project Marine combat power up to 75 miles inland. However, their glaring weakness was a lack of anti-armor capability. Consequently, the JFC directed to ASF

to send a company size element from the Precision Attack Unit to provide an anti-armor capability to Marine ground forces. The Longbow Apaches self-deployed to rendezvous with the MEF. During the mission, TUAV's were used to locate a downed F-16 pilot.

The UH-60 Assault Force carries ammunition and fuel blivets and throughout the battlefield to support the high tempo of operations of the ASF. A portion of the unit is tasked to conduct a night air assault in the vicinity of an enemy held town. Comanche's clear the route and provide air assault security.

Israel was hit by several Iranian SCUD-type missiles. The missiles were launched from Iran, but close to the Iraqi border. UAV's were sent ahead of a Longbow Apache/Comanche team to search a designated TBM box. The Comanche's quickly detected the missile launchers and destroyed them using Hellfire missiles. Comanche's detected chemical agents after the missiles were destroyed. Their positive pressure system allowed them to move through the contaminated area.

CONCLUSION

The National Command Authority (NCA) and joint regional Commanders-in-Chief (CINC's) will have a new strategic asset to call on, just as they've done in the past with Marine Air-Ground Task Force (MAGTF's) and Special Operations Forces. The intent is to provide an air mechanized capability to the NCA which will

self-deploy, operate off any of the Navy's projected 36 amphibious ships, or deploy via Air Force strategic lift assets. The ASF will be a new strategic capability that the NCA can use to carry out the National Military Strategy.

The capabilities of the ASF are already on hand, in production, under development, or programmed for fielding. The ASF is a natural "bridge unit" between Force XXI, Army Vision 2010, and Army After Next. Although an ASF may seem radical to some, it's actually a progressive approach to warfighting which takes advantage of proven systems and the latest advanced technology.

The ASF, with a fully digitized mobile command and control platform, a deadly attack helicopter, the stealth RAH-66 Comanche, and the Tactical Unmanned Aerial Vehicle will provide the U.S. Armed Forces with deployable, versatile, and agile force to fight across the entire spectrum of conflict.

Word Count: 5,991

ENDNOTES

- ¹ Schwarzkopf, H. Norman, It Doesn't Take A Hero, New York: Bantam Books, 1992, 310.
- ² Ibid., 311.
- ³ "A2C2 Overview," Available from <<http://rde-net.sc.ist.ucf.edu/avrdec/dis/exercise/a2c.htm>>; Internet; accessed 2 February 1998.
- ⁴ Paulino, Kenneth, Objective Army Airborne Command and Control System (A2C2S) Information Paper, Combat Developer, DCD, U.S. Army Aviation Center, Ft. Rucker, Al, March 3, 1997.
- ⁵ Ibid., 27.
- ⁶ Boeing-AH-64 Apache, available from <<http://www.boeing.com/rotorcraft/military/ah64d/ah64d/htm>>; Internet; accessed 10 January 1998.
- ⁷ The Website for Defense Industries-Army, AH-64D Apache, available from <<http://www.army-technology.com/projects/apache/index.html>>; Internet; accessed 22 March 1998.
- ⁸ Sale, David F. and Lund, Gregory J., "AH-64 Apache Program Update," U.S. Army Aviation Digest, January/February 1993, 16.
- ⁹ The New Hellfire Family, Lockheed Martin Corporation, available from <<http://www.lmco.com/mmmmti/slidel2a.htm/>>; Internet; accessed 21 March 1998.
- ¹⁰ Neilsen, Harold K., "Longbow: More Lethality With Less Fratricide," Army Aviation, May 31, 1996, 26.
- ¹¹ Scott, Bruce K. and Toguchi, Robert M., "Strategic Dominant Maneuver," Army Magazine, Sep 97, 2.
- ¹² Lafond, Ron, AH-64D Systems Integrator, Army Aviation Division, ODCSOPS, telephone interview by author, 30 March 1998.
- ¹³ Kee, Stephen G., "Apache Attack Helicopter", Army Aviation, November 30, 1996, 13.
- ¹⁴ Snider, James R., Brigadier General, Sikorsky News - Comanche for the 21st Century, U.S. ARMY Experiment III CD ROM, AE3 Program Office, Wagner Hall, Fort Leavenworth, Kansas.
- ¹⁵ Harper, William H. and Bergantz, Joseph L., "Centerpiece of the Digital Battlefield," Comanche Program Manager Office, April 1998, 9.
- ¹⁶ Ibid., 5.
- ¹⁷ Ibid.
- ¹⁸ "21st Century Multi-Mission Helicopter," Available from <<http://www.rah-66.comanche.com/>>; Internet; accessed 1 February 1998.
- ¹⁹ "Comanche RAH-66 Capability," Available from <<http://www.rah-66.comanche.com/capab.html>>; Internet; accessed 1 February 1998.

²⁰ "21st Century Multi-Mission Helicopter," Available from <<http://www.rah-66.comanche.com/>>; Internet; accessed 1 February 1998.

²¹ "Comanche RAH-66," The Website for Defense Industries - Army, Available from <<http://www.army-technology.com/projects/comanche/>>; Internet; accessed 16 February 1998.

²² "Inside Comanche," Available from <<http://www.sikorsky.com/programs/comanche/firepower.html>>; Internet; accessed 15 January 1998.

²³ "Comanche RAH-66," The Website for Defense Industries - Army, Available from <<http://www.army-technology.com/projects/comanche/>>; Internet; accessed 16 February 1998.

²⁴ Scherrer, Kevin, Comanche System Integrator, Army Aviation Division, ODCSOPS, telephone interview by author, 30 March 1998.

²⁵ UAV Annual Report FY 1996, Defense Airborne Reconnaissance Office, 6 November 1996, 12.

²⁶ Ibid., p.16.

²⁷ Army Vision 2010, Washington, D.C., Department of the Army, Pentagon, Washington, D.C., 12.

²⁸ Joint Vision 2010, Washington, D.C., Chairman of the Joint Chiefs of Staff, 11.

²⁹ Army Vision 2010, 18.

³⁰ Transforming Defense, National Security in the 21st Century, Report of the National Defense Panel, December 1997, Arlington, Va., p.iii.

³¹ Knowledge & Speed, The Annual Report on The Army After Next Project to the Chief of Staff of the Army, July 1997, 12.

³² Ahearn, "David, Aviation Vision For Force XXI Operations," Army Aviation, February 29, 1996, 19.

³³ Kee, Stephen G., "Apache Update," Army Aviation, November 30, 1997, 24.

³⁴ Sinclair, E.J. and Mooneyham, Alan P., "AH-64 In the Theater Missile Defense Role," Army Aviation, January 31, 1998, 26.

³⁵ Ibid., 29.

³⁶ Duckworth, Roger L., "Tactical UAVs: The Eyes of Force XXI," Army Aviation, June 30, 1996, 19.

³⁷ Ibid., 19.

³⁸ Ibid.

³⁹ Joint Vision 2010.

BIBLIOGRAPHY

- "21st Century Multi-Mission Helicopter," Available from <<http://www.rah-66.comanche.com/>>. Internet. Accessed 1 February 1998.
- "A2C2 Overview," Available from <<http://rde-net.sc.ist.ucf.edu/avrdec/dis/exercise/a2c.htm>>. Internet. Accessed 2 February 1998.
- Ahearn, David, "Aviation Vision For Force XXI Operations," Army Aviation.
- Army Vision 2010, Department of the Army, Pentagon, Washington, D.C.
- "Boeing-AH-64 Apache," Available from <<http://www.boeing.com/rotorcraft/military/ah64d/ah64d/htm>>. Internet. Accessed 10 January 1998.
- "Comanche RAH-66," The Website for Defense Industries - Army, Available from <<http://www.army-technology.com/projects/comanche/>>. Internet. Accessed 16 February 1998.
- "Comanche RAH-66 Capability," Available from <<http://www.rah-66.comanche.com/capab.html>>. Internet. Accessed 1 February 1998.
- Cordesman, Anthony H., "Compensating for Smaller Forces: Adjusting Ways and Means Through Technology, Strategic Studies Institute," U.S. Army War College, Carlisle, Pa.
- Duckworth, Roger L., "Tactical UAVs: The Eyes of Force XXI," Army Aviation.
- Eller, Douglass R. and Boyd, Terry, "Attack Helicopter Operations in Force XXI - The Future is Now!," Army Aviation.
- Harper, William H. and Bergantz, Joseph L., Centerpiece of the Digital Battlefield, Comanche Program Manager Office, April 1998.
- Healy, Edward A., "Army Airborne Command and Control System (A2C2S)," Army Aviation.

Inside Comanche, Available from
<<http://www.sikorsky.com/programs/comanche/firepower.html>>.
Internet. Accessed 15 January 1998.

Joint Vision 2010, Chairman of the Joint Chiefs of Staff,
Pentagon, Washington, D.C.

Kee, Stephen G., "Apache Attack Helicopter," Army Aviation,
November 30.

Knowledge & Speed, The Annual Report on The Army After Next
Project to the Chief of Staff of the Army, July 1997.

Lafond, Ron, AH-64D Longbow Systems Integrator, Army Aviation
Division, ODCSOPS. Telephone interview by author, 30 March
1998.

Neilsen, Harold K., "Longbow: More Lethality With Less
Fratricide," Army Aviation.

Paulino, Kenneth, "Objective Army Airborne Command and Control
System (A2C2S) Information Paper," Combat Developer, DCD,
U.S. Army Aviation Center, Ft. Rucker, Al.

"Requirements for Comanche," TRADOC Systems Manager (TSM) for
Comanche, Briefing Slides.

Sale, David F. and Lund, Gregory J., "AH-64 Apache Program
Update", U.S. Army Aviation Digest.

Scott, Bruce K. and Toguchi, Robert M., "Strategic Dominant
Maneuver," Army Magazine.

Sinclair, E.J. and Mooneyham, Alan P., "AH-64 In the Theater
Missile Defense Role," Army Aviation.

Snider, James R., Brigadier General, "Sikorsky News - Comanche
for the 21st Century," U.S. ARMY Experiment III CD ROM, AE3
Program Office, Wagner Hall, Fort Leavenworth, Kansas.

Scherrer, Kevin, Comanche System Integrator, Army Aviation
Division, ODCSOPS. Telephone interview by author, 30 March
1998.

Schwarzkopf, H. Norman, It Doesn't Take A Hero, New York, New
York, Bantam Books, 1992.

"The New Hellfire Family," Lockheed Martin Corporation,
available from <<http://www.lmco.com/mmmti/slide12a.htm/>>.
Internet. Accessed 22 March 1998.

The Website for Defense Industries-Army, "AH-64D Apache," available from <<http://www.army-technology.com/projects/apache/index.html>>. Internet. Accessed 22 March 1998.

Transforming Defense, National Security in the 21st Century,
Report of the National Defense Panel, Arlington, Va.,
December 1997.

U.S. ARMY Experiment III CD ROM, Briefing Slides, AE3 Program Office, Wagner Hall, Fort Leavenworth, Kansas.

UAV Annual Report FY 1996, Defense Airborne Reconnaissance