**Title and Subtitle:**
Army Aviation: Adapting to Meet Uncertainty and Complexity

**Authors:**
Chivers, Bryan J., Major, United States Army

**Abstract:**
Faced with a challenging strategic environment and an uncertain national economy, the United States Army cannot afford to develop the wrong aviation force. Without exact knowledge of the next threat or where the next conflict will occur, Army aviation must have the capability and capacity to hedge against uncertainty, and the institutional agility and flexibility to adapt operationally. Leveraged against the warfighting functions, the Army's concept of its future aviation brigade, the FS CAB, achieves the level of operational adaptability necessary to succeed in future operating environments and ensures U.S. Army dominance into the next decade.

**Keywords:**
Full Spectrum Combat Aviation Brigade; Army Aviation; Operational Adapability; Aviation Study-II
FUTURE WAR PAPER

TITLE:

Army Aviation: Adapting to Meet Uncertainty and Complexity

SUBMITTED IN PARTIAL FULFILLMENT
OF THE REQUIREMENTS FOR THE DEGREE OF
MASTER OF OPERATIONAL STUDIES

AUTHOR: Major Bryan J. Chivers, USA

AY 2011-12

Mentor: Dr. Gordon Rudd, Professor of Military History
U.S. Marine Corps School of Advanced Warfighting

Approved: [Signature]

Date: 29 Mar 2012
DISCLAIMER

THE OPINIONS AND CONCLUSIONS EXPRESSED HEREIN ARE THOSE OF THE INDIVIDUAL STUDENT AUTHOR AND DO NOT NECESSARILY REPRESENT THE VIEWS OF EITHER THE MARINE CORPS SCHOOL OF ADVANCED WARFIGHTING OR ANY OTHER GOVERNMENTAL AGENCY. REFERENCES TO THIS STUDY SHOULD INCLUDE THE FOREGOING STATEMENT.
Executive Summary

Title: Army Aviation: Adapting to Meet Uncertainty and Complexity

Thesis: The United States Army’s current concept of the Full Spectrum Combat Aviation Brigade achieves the level of operational adaptability necessary to succeed in the future operating environment.

Discussion: Shaping the future force is a primary objective of the 2011 National Military Strategy. After nearly a decade of conflict, the United States is still a nation at war and ten years of hindsight foreshadows a future of uncertainty and complexity and an era of persistent conflict. U.S. Army doctrine postulates future adversaries will probably wage a hybrid form of warfare employing a combination of regular, irregular, terrorist, and criminal forces to achieve mutually benefitting effects. While the future operating environment will never be clear, Army forces must adapt to specific threats and retain the initiative in future conflicts.

No service has adapted more in the last decade, both structurally and doctrinally, than the U.S. Army. A critical portion of Army transformation focused on the combat aviation brigade and enabling combat forces to effectively dominate and exploit the vertical dimension. Educated through combat experience, recent capability reviews resulted in the rapid acquisition of new and improved aviation programs, adding two active component aviation brigades to the force to meet force generation requirements, and continued analysis for a replacement armed aerial scout helicopter.

The most contentious change has been the restructuring of aviation formations into full-spectrum combat aviation brigades (FS CAB). Operational commitments and experiences in Iraq and Afghanistan largely contributed to and shaped the FS CAB concept. It is apparent that a decade of counterinsurgency operations and the inability to develop a replacement armed reconnaissance aircraft dominate the Army’s future combat aviation brigade concept. Some critics assert that the FS CAB concept is too narrowly focused and shortsighted, optimizes its aviation resources for the current irregular threat, and does not maximize aviation capabilities for conventional war. Leveraging the warfighting functions as outlined in Army doctrine, this study examines the CAB structural changes that alter the way aviation leaders conduct operations, manage knowledge and information, and influence activities, as well as analyzes new aviation systems and technology alterations that provide commanders the means to adapt to a broad range of national security threats.

Conclusion: Faced with a challenging strategic environment and an uncertain national economy, the United States Army cannot afford to develop the wrong aviation force. Without exact knowledge of the next threat or where the next conflict will occur, Army aviation must have the capability and capacity to hedge against uncertainty, and the institutional agility and flexibility to adapt operationally. Leveraged against the warfighting functions, the Army’s concept of its future aviation brigade, the FS CAB, achieves the level of operational adaptability necessary to succeed in future operating environments and ensures U.S. Army dominance into the next decade.
# Table of Contents

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>DISCLAIMER</td>
<td>ii</td>
</tr>
<tr>
<td>EXECUTIVE SUMMARY</td>
<td>iv</td>
</tr>
<tr>
<td>TABLE OF CONTENTS</td>
<td>v</td>
</tr>
<tr>
<td>INTRODUCTION</td>
<td>1</td>
</tr>
<tr>
<td>THE OPERATIONAL ENVIRONMENT</td>
<td>2</td>
</tr>
<tr>
<td>ARMY CAPABILITIES</td>
<td>3</td>
</tr>
<tr>
<td>STRUCTURAL CHANGES THAT AFFECT THE FS CAB</td>
<td>4</td>
</tr>
<tr>
<td>FS CAB FORCE STRUCTURE AND SYSTEMS ANALYSIS</td>
<td>6</td>
</tr>
<tr>
<td>MISSION COMMAND</td>
<td>6</td>
</tr>
<tr>
<td>INTELLIGENCE</td>
<td>7</td>
</tr>
<tr>
<td>MOVEMENT AND MANEUVER</td>
<td>8</td>
</tr>
<tr>
<td>FIRES</td>
<td>11</td>
</tr>
<tr>
<td>SUSTAINMENT</td>
<td>13</td>
</tr>
<tr>
<td>PROTECTION</td>
<td>15</td>
</tr>
<tr>
<td>CONCLUSION</td>
<td>15</td>
</tr>
<tr>
<td>ENDNOTES</td>
<td>18</td>
</tr>
<tr>
<td>BIBLIOGRAPHY</td>
<td>21</td>
</tr>
</tbody>
</table>
Army Aviation: Adapting to Meet Uncertainty and Complexity

The evidence seems to suggest that the seeds of success for the next war lie in the experiences of the last, if only the generals and admirals would look for them in an unbiased way, or listen to their subordinates who immerse themselves in warfighting disciplines.

-Montgomery C. Meigs, Slide Rules and Submarines

Introduction

In 2003, the United States Army Chief of Staff directed a review of Army aviation capabilities. This study recommended cancelling the RAH-66 Comanche program and transforming Army aviation into a more "capable, lethal, sustainable, and affordable" force. The result was a modular aviation force structure designed for expeditionary warfare. In 2009, Army Chief of Staff, General George Casey, concerned with Army aviation's ability to sustain the current operational tempo, directed a follow-up study to address Army Force Generation (ARFORGEN) requirements. A task force, led by the Army Aviation Center of Excellence Capability Development and Integration Department (CDID), convened at Fort Rucker, Alabama to determine what aviation capabilities would support operations across the operational spectrum while "preserving the volunteer force from the [operation tempo] effects of persistent conflict."

Arguably, the most significant organizational change since the 1995 Aviation Restructure Initiative (ARI), Aviation Study I and II has profoundly affected Army aviation. Most notably, the transformation to a modular aviation brigade design, approval of the additional twelfth and thirteenth aviation brigades, and ultimately the evolution of the Full Spectrum Combat Aviation Brigade (FS CAB). Operational commitments and experiences in Iraq and Afghanistan largely contributed to and shaped the FS CAB concept. It is apparent that a decade of counterinsurgency operations and the inability to develop a replacement armed reconnaissance aircraft dominate the Army's future combat aviation brigade concept. Some critics assert that the FS CAB concept is
too narrowly focused and shortsighted, optimizes its aviation resources for the current irregular threat, and does not maximize aviation capabilities for conventional war. This, however, is not the case and this study illustrates that the United States Army’s current concept of the Full Spectrum Combat Aviation Brigade achieves the level of operational adaptability necessary to succeed in the future operating environment.

The Operating Environment

Shaping the future force is a primary objective of the 2011 National Military Strategy. After nearly a decade of conflict, the United States is still a nation at war. While political and military leaders debate how to prosecute and end the wars in Iraq and Afghanistan, ten years of hindsight foreshadows a future of uncertainty and complexity and an era of persistent conflict. It is under these conditions that Army aviation expects to operate.

In an attempt to shape this uncertain and complex future environment, the United States Army Training and Doctrine Command (TRADOC) produced two documents, The Army Capstone Concept and The United States Army Operating Concept, to “change the conceptual focus of the Army from major combat operations to that of operational adaptability.” This capstone concept depends on a reliable estimate of future threats. The most probable threat is violent extremism; the most dangerous threat, a nation state adversary that possess conventional weapons and weapons of mass destruction (WMD). However, U.S. Army doctrine postulates future adversaries will probably wage a hybrid form of warfare employing a “combination of regular, irregular, terrorist, and criminal forces to achieve mutually benefitting effects.” Preparing to defeat these hybrid threats has the potential to pull the United States in multiple directions, particularly when considering force capabilities and capacity. While the future operating environment will never be clear, Army forces have to be able execute two primary
responsibilities: combined arms maneuver (CAM) and wide area security (WAS). Essentially, Army forces must maneuver to seize and gain the initiative, then immediately consolidate such gains by providing security. Neither task is more important than the other; both are mutually supporting, and successful employment simultaneously enables Army forces to adapt to specific threats and retain the initiative in future conflicts. While the current aviation brigade structure allows the Army to fulfill these responsibilities, there is room for improvement.

**Army Capabilities**

No service has adapted more in the last decade, both structurally and doctrinally, than the U.S. Army. A critical portion of Army transformation focused on the combat aviation brigade and enabling combat forces to effectively dominate and exploit the vertical dimension. Conducting combat operations since October 2001, Army aviation has flown more than 4.2 million hours, in manned and unmanned platforms, in support of Operations Enduring Freedom, Iraqi Freedom, and New Dawn, as well as humanitarian assistance and disaster relief operations. Educated through combat experience, Army aviation brigades continue to transform. Recent capability reviews resulted in the rapid acquisition of new and improved aviation programs, adding two active component aviation brigades to the force to meet force generation requirements, and continued analysis for a replacement armed aerial scout helicopter.

The most contentious change has been the restructuring of aviation formations into full-spectrum combat aviation brigades. Rooted in the legacy medium CAB design, the Association of the United States Army (AUSA) billed the FS CAB as the aviation answer to “deliver[ing] steady-state combat power while maximizing efficiencies in training, maintenance, and support across the Aviation Enterprise.” The FS CAB concept is approved and the first equipped unit
will deploy in late 2012. Furthermore, the latest system upgrade programs extend the service life of existing aircraft into the 2030s, and service component developers already have plans for a joint multi-role rotary wing aircraft. The FS CAB may be the last major structural change for the immediate future. In the interim, can the FS CAB provide the first-class support the warfighter demands? Detailed analysis will address how two aspects of the FS CAB, force structure and aviation systems, alter the CAB’s ability to deliver unique, full-spectrum capabilities that achieve operational adaptability. Understanding the structural and aviation system changes that affect the FS CAB is necessary in order to analyze future CAB capabilities and capacities.

**Structural Changes that Affect the FS CAB**

Aviation Study-I (2003) divested all aviation assets from Army Corps headquarters and resulted in the creation of modular combat aviation brigades, with three slightly different configurations: light (two OH-58D Armed Reconnaissance Squadrons), medium (one OH-58D ARS and one AH-64 Attack Reconnaissance Battalion), and heavy (two AH-64 ARBs) CABs. After reviewing nearly seven years of combat operations, the Aviation Study-II task force observed that most aviation brigades organized into multi-functional aviation battalion task forces before deployment in order to cover full-spectrum operational requirements.

In his 2009 Chief of Staff of the Army white paper, *The Army of the 21st Century: A Balanced Army for a Balanced Strategy (Shifting our Aim)*, General George Casey identified specific qualities future forces must possess, two of which are fundamentally applicable to Army aviation: attack and reconnaissance operations. The CAB’s inability to conduct full-spectrum operations or provide persistent surveillance led the Aviation Study-II task force to consider reorganization. Finding that there were not enough OH-58D aircraft in the Army inventory to completely replace a battalion of AH-64Ds in the heavy CABs, the Aviation Study-II task force
recommended reducing the number of manned aircraft in the Armed Reconnaissance Squadrons and augmenting them with a troop of Shadow, RQ-7, unmanned aerial vehicles. Another major structural change showcased in the FS CAB was the addition of the extended-range multipurpose unmanned aircraft system. The MQ-1C, Gray Eagle, is a division-level asset assigned to the combat aviation brigade to provide an organic reconnaissance, surveillance, and target acquisition (RSTA) intelligence data collection capability.

Minor changes that do not necessarily change the brigade force structure, but do alter how the aviation battalions plan and execute missions, are the addition of a fire support element (FSE) in the Assault Helicopter Battalion (AHB) and the General Support Aviation Battalion (GSAB), and an increase of three UH-60 aircraft in the medical evacuation company of the GSAB.

In total, the Army designed the full-spectrum combat aviation brigade around the following aviation battalions/squadrons and separate company:

- one Armed Reconnaissance Squadron (ARS)
  - 21 OH58-Ds, 8 RQ-7s (Shadow)
- one Attack Reconnaissance Battalion (ARB)
  - 24 AH-64Ds
- one Assault Helicopter Battalion (AHB)
  - 30 UH-60Ms
- one General Support Aviation Battalion (GSAB)
  - 8 UH-60Ms, 12 CH-47Fs and 15 UH-60Ms (medical evacuation)
- one Aviation Support Battalion (ASB)
- one Extended-range Multipurpose (ERMP) UAS company
  - 12 MQ-1Cs (Gray Eagle)

These structural changes alter the way aviation leaders conduct operations, manage knowledge and information, and influence activities. However, comprehensive analysis of the formation must include aviation systems and technology to determine whether the FS CAB provides the joint force commanders the means to adapt and meet a broad range of national security threats.
Discussion of these aviation systems changes as well as structural changes will occur in the analysis portion of this study. Leveraging the warfighting functions as outlined in Army Doctrine Publication (ADP) 3-0, *Unified Land Operations*, will demonstrate how the FS CAB achieves the level of adaptability necessary to succeed in the future operational environment.

**FS CAB Force Structure and Systems Analysis**

The warfighting functions are “a group of tasks and systems united by a common purpose that commanders use to accomplish missions and training objectives.” These six functions which include mission command, intelligence, movement and maneuver, fires, sustainment, and protection, are an excellent means to determine tactical and operational implications of the FS CAB concept and the organization’s ability to deliver unique, full-spectrum capabilities that achieve operational adaptability to cope with an uncertain and complex operating environment.

**Mission Command**

Army Doctrine Publication 3-0 states that the warfighting function, mission command, “balances the art of command and the science of control.” This doctrine places people, not systems or technology, at the center of command, and allows commanders to drive the operations process through the actions of understand, visualize, describe, direct, lead, and assess. Arguably the FS CAB’s greatest characteristic, its modular construct, facilitates the rapid addition or subtraction of assets based on operational requirements. It is therefore critical that CAB commanders task organize their formations to maximize leadership as well as operational capabilities to mitigate tactical and accidental risk. The ability to match the right leader to the right formation, postured to execute the right mission, is inherent in the FS CAB concept and improves the CAB commander’s mission command.
While people, specifically leaders, are the nucleus of the mission command doctrine, systems and technology still play a huge role. Both systems and technology allow commanders to command forward and develop the best possible situational awareness at the lowest level. Technology expands range of communications over greater distances throughout the command and between joint, interagency, and multinational headquarters, and allows operational forces greater effectiveness using a common operating picture. Systems improvements in every aircraft, specifically those inside the cockpit, enhance aviation operations at the user level by decreasing pilot workload and improving situational awareness. The addition of Shadow and Gray Eagle UAS provides a constant reconnaissance capability previously absent in the aviation brigades. The synergy created through the interface of manned-unmanned operations (MUM-O) allows commanders to more accurately visualize the situation, describe what they want to do, and direct subordinate units and staffs to quickly develop the situation. This improved, shared understanding between the aviation and ground-supported commanders allows leaders to better assess situations and lead their formations. The system and technological improvements inherent in the FS CAB adequately balances the art of command and the science of control, improving mission command at all levels.

**Intelligence**

The adage that intelligence drives maneuver is only partially correct. The intelligence warfighting function foremost enhances mission command and a commander’s decisions with regard to movement and maneuver by “facilitating an understanding of the operational environment, the enemy, terrain, and civil considerations.”²¹ Rarely, if ever, will leaders possess perfect situational awareness during armed conflict. However, they must possess broad knowledge of the enemy and environment to place military efforts in context.²² *The Army*
Capstone Concept states that “the degree of understanding necessary for successful operations against adaptive enemy organizations in complex environments” requires the use of technology and thorough reconnaissance. It is here that the FS CAB makes marked improvements.

Second only to its modular construct, the FS CAB concept improves Army aviation’s ability to both conduct reconnaissance and employ technology, thereby generating and collecting intelligence on an unprecedented level. The addition of Gray Eagle UAVs in the aviation brigade will undoubtedly increase division intelligence collection and top down information flow; however, the “most critical information flows from the bottom up” as it is generally more accurate and timely than what comes from higher headquarters. The addition of Shadow UAVs in the Armed Reconnaissance Squadron (ARS) spawned from successful MUM-O in combat. Manned-unmanned operations “maximize coordination, integration, and synchronization, and reduce exposure to the manned aircraft.” A concept discussed in more detail in the movement and maneuver section of this study, MUM-O significantly improves how the ARS conducts reconnaissance. Combining both manned and unmanned systems in the ARS will help create diverse reconnaissance teams, prevent groupthink, and promote collaboration, thereby increasing timely, reliable information and improving small unit combat effectiveness.

More information may not equate to better intelligence. With the acquisition of the Shadow UAV, the ARS has the capability to acquire more information, but without more intelligence soldiers to analyze the data, this information remains information instead of valuable intelligence. Aside from this deficiency, the FS CAB is better postured to conduct reconnaissance and generate information for analysis than current aviation brigades. Improvements in this warfighting function posture aviation brigades to fight for intelligence and
provide timely and accurate information to supported units. Under conditions of uncertainty, this equates to better situational understanding and an ability to quickly, more decisively adapt.

**Movement and Maneuver**

According to U.S. Army doctrine, the movement and maneuver warfighting function is the "related tasks and systems that move and employ forces to achieve a position of relative advantage over the enemy and other threats." Movement is necessary to displace the force while maneuvering and effective maneuvering requires close coordination with fires. Of the numerous structural and systems changes implemented in the FS CAB concept, the decrease in armed reconnaissance aircraft, the addition of the UAVs, systems upgrades that facilitate manned-unmanned operations, and improved cockpit interfaces enhance how the aviation brigade conducts and supports movement and maneuver. Some of these capabilities create operational challenges as well.

The biggest departure from the legacy medium CAB is that the FS CAB replaces nine OH-58D Kiowa Warriors with eight RQ-7 Shadow UAS. The Association of the United States Army claims that this replacement will "maximize combat potential and build a full-spectrum team." To be clear, the addition of Shadow UAS in the FS CAB is primarily an interim solution to achieve full-spectrum capabilities until the Army acquires a replacement armed aerial scout helicopter. That said, manned-unmanned operations would improve both air and ground movement and maneuver and combine the persistence of UAS with the tactical curiosity of aircrews. By extending where and what the manned aircraft can see, the UAS allows reconnaissance and attack crews to increase their standoff ranges and develop options before they reach the intended target or reconnaissance objective. This increases security, reduces the
likelihood of exposure, and improves aircrew survivability. An increase in station time also limits aviation breaks in coverage and improves supported unit maneuver.

The aforementioned employment of UAS is hardly a departure from how ground units employ UAS today. However, three major systems improvements, the Universal Ground Control Station (UGCS), the One System Remote Viewing Terminal (OSRVT), and Manned-Unmanned Teaming Level 2 (MUMT-2), will definitely maximize coordination, integration, and synchronization between manned and unmanned systems and ground units. Both the UGCS and the OSRVT systems can control multiple UAS from a single controller; however, the OSRVT systems are fielded to units below the brigade combat team. This allows higher headquarters to push all types of UAS feeds to company and platoon level and enables tactical units to develop the situation further.

Even more cutting-edge, the ability to receive UAS video, and in some cases, control UAS optics and weapons as provided by the MUMT-2 systems in the Block III Apache and Kiowa Warrior aircraft, creates redundancies and increases aircrew and ground commander situational awareness. Lastly, MUMT-2 allows aircrews to stream video from their internal sensors directly to the OSRVT and the soldier on the ground. This capability could lead to ground elements “getting inside the scout and attack cockpits” and limit their ability to engage targets. While unfounded, as the battle space owner, the ground commander is responsible for granting clearance of fires to the aviators and both are responsible for positively identifying the target. The MUMT-2 technology provides benefits similar to UAS operations but with far more responsiveness and clearly has the potential to enhance friendly maneuver, increase enemy engagements, and limit fratricide incidents.
The greatest benefit of having both manned and unmanned systems in a single squadron is that they share the same commander. A common commander facilitates target prioritization; a dilemma that plagues MUM operations when manned and unmanned systems have competing demands. Furthermore, a common commander can integrate helicopter and UAV operators, standardizes operations by developing MUM teaming tactics, techniques, and procedures (TTP), creates efficiencies, and ultimately improves MUM-O effectiveness. This of course assumes that the ARS conduct MUM-O and that the force mix is correct. Before the Army fields other FS CABs, the first unit equipped will serve as the proof of principle and determine what, if any, TTPs or force structure alterations are necessary.32

Fires

The fires function is the related tasks and systems that provide collective and coordinated use of Army indirect fires, air and missile defense, and joint fires through the targeting process.33 While direct fire is inherent in maneuver, this study uses the fires warfighting function to analyze the FS CAB’s direct fire capability separate but not independent from maneuver. The structural and technological improvements introduced by the FS CAB significantly change how aviation brigades employ fires. Specifically, the reduction of armed reconnaissance aircraft in the ARS, the addition of UAS, the reduction of Apache aircraft in heavy aviation brigades, and the standardization of fire support officers in every aviation battalion are changes to the current aviation brigade structure that will alter the FS CAB’s fires warfighting function. These changes largely improve the FS CAB’s ability to conduct irregular war but come at the expense of conventional war capabilities.

The decision to transform current CABs to FS CABs begets multiple tradeoffs with respect to Army aviation’s fires capabilities. First and most glaring is the elimination of nine
armed reconnaissance aircraft in the ARS. An extremely dependable reconnaissance aircraft, the Kiowa Warrior fleet surpasses all other Army helicopters in readiness while executing missions at nearly five times the normal peacetime rate. Arguably not their primary mission, the reality is that Kiowa Warriors have a direct fire capability and a reduction in airframes equates to a reduction in fire support in the FS CAB. On the surface, one might think that the Gray Eagle UAS will make up the difference, but as a division reconnaissance asset this is not probable. One alternative to mitigate the reduction of armed reconnaissance aircraft is arming the Shadow UAV. While the U.S. Marine Corps is weaponizing Shadow UAVs for operations in Afghanistan, the U.S. Army is not, arguing that endurance is more important than lethality. Either way, the Army has the option to adapt as necessary.

While the reduction of armed reconnaissance aircraft in the ARS degrades the FS CAB fires capability, transformation of legacy heavy CABs to FS CABs reduces the entire Army’s direct fire capability. Simply stated, the trade off for full-spectrum capabilities (i.e. reconnaissance aircraft in the ARS) comes at a cost of lethality. A robust reconnaissance capability is certainly necessary to effectively conduct counterinsurgency operations, and while equally necessary in high intensity conflict, one can argue that there is now a disparity between having the requisite amount of reconnaissance and attack platforms to conduct both counterinsurgency and high intensity conventional war. In this particular warfighting function, the FS CAB is optimized for irregular war and the Army accepts risk in the event of major conventional war. Lack of armed reconnaissance aircraft could become an unintended mitigating factor. The inability to transform every CAB into a FS CAB requires the Army to retain four heavy Active Component CABs across the fleet and provides one heavy CAB per Army Force Generation Cycle. The result is still a slight degradation in the FS CAB’s ability
to deliver direct fires, but not to the extent originally expected. Anticipating a hybrid threat, the FS CAB’s capabilities are in consonance with future fires requirements.

A reduction of armed reconnaissance aircraft degrades the FS CAB’s ability to provide direct fires. However, the addition of Shadow and Gray Eagle UAS, upgrades in technology, and systems optimization greatly improves the division and brigade targeting process. The decide, detect, deliver, and assess (D3A) methodology inherent in the targeting process optimizes and synchronizes the improved intelligence, movement and maneuver, and fires warfighting functions of the FS CAB. An improved targeting process is arguably more beneficial to commanders than a particular direct fire capability since it provides them with both lethal and nonlethal options.

A less significant structural change, but an improvement nonetheless, is the addition of a fire support element in the Assault Helicopter and General Support Battalions. This adjustment will reduce CAB fire support element requirements and streamline airspace deconfliction at the battalion level.

Changes to the FS CAB, both structurally and technologically, alter its fires warfighting function. It appears that through the acquisition of full-spectrum capabilities, the FS CAB sacrificed the ability to provide collective and coordinated fires. Counter to the *Army Operating Concept*, the FS CAB does not increase decentralized access to fires at lower tactical elements. Furthermore, the addition of twelve Gray Eagle platforms in the FS CAB does not offset the reduction of Kiowa Warrior and Apache aircraft and this reduction of fires support assets actually creates an imbalance of precision and suppressive fires for the supported ground commander. Because direct fire is inherent to maneuver, this reduction of fires across the
aviation formation hinders friendly freedom of maneuver and does not improve the ground commander's ability to gain, maintain, and exploit the initiative.  

**Sustainment**

The sustainment warfighting function is the “related tasks and systems that provide support and services to ensure freedom of action, extend operational reach, and prolong endurance.” Multiple structural and technological characteristics of the FS CAB alter its ability to execute this warfighting function.

Aside from the need to achieve full-spectrum capabilities, the next dominate factor for creating the FS CAB was that the Army was able to create an additional aviation brigade through the restructuring of separate aviation companies and battalions. Additionally, the Army gained congressional approval to build another brigade from scratch. Both decisions significantly increased the aviation force structure. By adding two CABs to the Army inventory for a total of thirteen active component CABs and increasing the deployable CABs, the Army effectively increased the time between aviation brigade deployments from 15 months to almost 21 months while decreasing the reliance on the reserve component and national guard CABs (8 RC CABs). Surprisingly, these additions still do not allow aviation brigades to meet the Secretary of Defense guidance of a minimum of two years between deployments for active component formations. Force reductions in Iraq and the surge in Afghanistan actually resulted in an increase of deployed Army aviation formations. Nonetheless, creation of a twelfth and thirteenth CAB will help sustain war-weary aviation personnel and equipment.

The second structural change incorporated in the FS CAB is the increase in the number of medical evacuation (MEDEVAC) aircraft from 12 to 15 aircraft in the General Support Aviation Battalion. Sister services and many coalition partners do not have an aerial MEDEVAC
capability. Coupled with the U.S. policy to evacuate casualties to a medical treatment facility in less than one hour, the current U.S. Army MEDEVAC posture does not sufficiently meet these demands. Couched as a “strategic capability,” the increase in MEDEVAC platforms will improve MEDEVAC operations in combat and help sustain joint and multinational forces.45

The restructuring of CABs in 2005 allocated an Aviation Support Battalion (ASB) and improved the CAB’s ability to supply and maintain itself. The FS CAB’s modular construct facilitates task organization; however, the ASB is not structured to support several multifunctional aviation task forces in various locations. Specifically, the ASB does not possess the requisite personnel or special tools and equipment to support the split-based concept. To fully support the FS CAB modular construct, the ASB must review current personnel and equipment authorizations and field the required shortages to support multiple aviation formations in separate locations.46

Implementation of the FS CAB has many sustainment benefits. With minor improvements in key areas, the FSCAB can provide outstanding support and services and ensure freedom of action, extend operational reach, and prolong endurance of its people and aircraft.

Protection

The protection warfighting function is the ability to preserve the force so the commander can apply maximum combat power to accomplish the mission.47 Two areas the FS CAB can improve this warfighting function is in personnel recovery (PR) and air defense. Resident only in the 82nd and 101st Airborne Division CABs, Pathfinder companies reside in the Assault Helicopter battalions and conduct PR for the divisions. This sixty-man company specializes in personnel recovery and can execute limited objective air assaults, long-range reconnaissance, and sensitive site exploitation. While every formation is responsible for conducting PR,
specially trained and equipped Pathfinders are essential and the addition to every FS CAB will fill the PR void resident throughout the Army.

Unmanned aerial systems are rapidly replacing manned systems across the globe. Their unique capabilities and relative inexpensiveness compared to manned systems make them the likely choice of drug cartels, terrorist organizations, and non-state actors.\textsuperscript{48} To date, the Department of Defense does not have a coordinated, comprehensive counter-UAV doctrine. In many cases, our own small and medium UAVs do not have an identify friend or foe (IFF) feature compounding our counter-UAV problems. While not necessarily a CAB commander’s problem to solve, aviation leaders have to think through counter-UAV operations and how the FS CAB deals with this very likely threat in the very near future.

Conclusion

Faced with a challenging strategic environment and an uncertain national economy, the United States Army cannot afford to develop the wrong aviation force. Without exact knowledge of the next threat or where the next conflict will occur, Army aviation must have the “capability and capacity to hedge against uncertainty, and the institutional agility and flexibility” to adapt operationally.\textsuperscript{49} Leveraged against the warfighting functions, the Army’s concept of its future aviation brigade, the FS CAB, largely possesses these attributes.

Structural changes are the most prevalent departure from the current aviation brigade design; however, aircraft systems and technological changes also contribute to the future FS CAB concept. Collectively, these changes alter how Army aviation conducts operations. While the FS CAB significantly improves how commanders execute mission command, collect intelligence, and maneuver, the aviation brigade concept makes marginal sustainment and protection improvements. Surprisingly, in its quest to acquire full-spectrum capabilities, the
Army actually degraded the aviation commander’s ability to deliver fires. Until the Army develops an armed aerial scout platform and increases the number of aircraft in the ARS, the FS CAB concept will not likely improve in this area. Fortunately, the first unit equipped will highlight deficiencies in the concept and the Army can implement the necessary changes before transforming the entire formation.

That notwithstanding, the FS CAB’s modular design and added persistent surveillance and reorganized precision fire capabilities is an improvement over the current CAB structures. This concept provides joint force commanders with responsive aviation capabilities required to meet a broad range of threats on short notice for an indeterminate amount of time. Most importantly, the FS CAB achieves the level of operational adaptability necessary to succeed in future operating environments and ensures U.S. Army dominance into the next decade.
Endnotes


3 Danny Ball and Ellis Golson, *Army Aviation Study-II*, (Fort Rucker: Headquarters, Capability Development and Integration Department, United States Army Aviation Center of Excellence, 2010), 1.

4 Ball and Golson, 1.


6 TRADOC Pam 525-3-0, *The Army Capstone Concept* (Fort Monroe, VA: Headquarters, Department of the Army, 2009), 1.

7 TRADOC Pam 525-3-0, 1.


11 Ibid, 5-8.

12 Ibid, 10.

13 Danny Ball and Ellis Golson, 29.


15 Danny Ball and Ellis Golson, 30.

16 Danny Ball and Ellis Golson, 7.


18 Army Doctrine Publication 3-0, 13.
19 Army Doctrine Publication 3-0, 13.

20 Army Doctrine Publication 3-0, 13.


22 TRADOC Pam 525-3-0, 38.

23 TRADOC Pam 525-3-0, 38.

24 TRADOC Pam 525-3-1, The United States Army Operating Concept, (Fort Monroe, VA: Headquarters, Department of the Army, 2010), 15.

25 Army Aviation Center of Excellence MUM-O fact sheet (cannot access website).

26 Army Doctrine Publication 3-0, 14.

27 Field Manual 3-0, 4-4.


32 Ellis Golson, statement made to the author during telephonic interview, 16 November 2011.

33 Army Doctrine Publication 3-0, 14.

34 Institute of Land Warfare Association of the United States Army, U.S. Army Aviation and Full-Spectrum Operations, 12.


36 Ellis Golson, statement made to the author during telephonic interview, 16 November 2011.


38 TRADOC Pam 525-3-1, 47.

39 Army Doctrine Publication 3-0, 14.


43 Philip C. Baker, statement made to the author in an email, 8 March 2012.


46 Danny Ball and Ellis Golson, 148.

47 Army Doctrine Publication 3-0, 14.


49 TRADOC Pam 525-3-0, 5.
Bibliography


"The United States Army Operating Concept." *TRADOC Pam 525-3-I*. Fort Monroe, Virginia: Department of the Army, August 19, 2010.

"TRADOC Pam 525-3-0." *The Army Capstone Concept*. Fort Monroe, Virginia: Department of the Army, December 21, 2009.
