

# **Army Aviation and Unified Land Operations:**

## **Renewing Army Aviation's Role and Doctrine to Dominate the Third Dimension of Land Warfare**

**A Monograph**

**by**

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**AY 2012**

# REPORT DOCUMENTATION PAGE

Form Approved  
OMB No. 074-0188

Public reporting burden for this collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing this collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302, and to the Office of Management and Budget, Paperwork Reduction Project (0704-0188), Washington, DC 20503

1. AGENCY USE ONLY (Leave blank)

2. REPORT DATE

3. REPORT TYPE AND DATES COVERED

4. TITLE AND SUBTITLE

Army Aviation and Unified Land Operations: Renewing Army Aviation's Role and Doctrine to Dominate the Third Dimension of Land Warfare

5. FUNDING NUMBERS

6. AUTHOR(S)

LTC Richard A. Martin

7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES)

School of Advanced Military Studies  
250 Gibbon Ave.  
Ft. Leavenworth, KS 66027

8. PERFORMING ORGANIZATION REPORT NUMBER

9. SPONSORING / MONITORING AGENCY NAME(S) AND ADDRESS(ES)

Command and General Staff College  
1 Reynolds Ave.  
Ft. Leavenworth, KS 66027

10. SPONSORING / MONITORING AGENCY REPORT NUMBER

11. SUPPLEMENTARY NOTES

12a. DISTRIBUTION / AVAILABILITY STATEMENT

APPROVED FOR PUBLIC RELEASE; DISTRIBUTION IS UNLIMITED

12b. DISTRIBUTION CODE

13. ABSTRACT (Maximum 200 Words)

Much has changed in the U.S. Army over the last decade. Transforming to a modular, brigade-centric force included a transition of operating concepts as well. Just as ground maneuver brigades transformed to be more versatile, adaptable, agile, deployable and tailorable, so too, did Army Aviation. The Combat Aviation Brigade embodies many of the lessons learned yet represents many of the same mistakes made throughout the history of Army Aviation. As with previous periods in Army Aviation's history, the Aviation Branch remains disconnected from the rest of the Army's transformation. To optimize for the new operating concept of Unified Land Operations, Aviation Branch must redefine the role and renew the doctrine of Army Aviation in the execution of Decisive Action. Unified Land Operations requires flexibility, adaptability, integration, and a depth that will require a return to centralized, maneuver focused brigade operations and an end to the current operational trends of CABs. Lastly, Army Aviation must assess the current force structure evolution to ensure it truly enables Army Aviation's total contributions to Combined Arms Maneuver (CAM) and Wide Area Security (WAS), and the ability to conduct the offensive, defensive and stability or Defense Support to Civil Authority (DSCA) operations.

14. SUBJECT TERMS

Army Aviation doctrine, ULO, CABs, role of Army Aviation

15. NUMBER OF PAGES

51

16. PRICE CODE

17. SECURITY CLASSIFICATION OF REPORT

(U)

18. SECURITY CLASSIFICATION OF THIS PAGE

(U)

19. SECURITY CLASSIFICATION OF ABSTRACT

(U)

20. LIMITATION OF ABSTRACT

# SCHOOL OF ADVANCED MILITARY STUDIES

## MONOGRAPH APPROVAL

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## **Abstract**

Army Aviation and Unified Land Operations: Renewing Army Aviation's Role and Doctrine to Dominate the Third Dimension of Land Warfare by LTC Richard A. Martin, U.S. Army, 48 pages.

Much has changed in the U.S. Army over the last decade. Transforming to a modular, brigade-centric force included a transition of operating concepts as well. Just as ground maneuver brigades transformed to be more versatile, adaptable, agile, deployable and tailorable, so too, did Army Aviation. The Combat Aviation Brigade embodies many of the lessons learned yet represents many of the same mistakes made throughout the history of Army Aviation. As with previous periods in Army Aviation's history, the Aviation Branch remains disconnected from the rest of the Army's transformation. To optimize for the new operating concept of Unified Land Operations, Aviation Branch must redefine the role and renew the doctrine of Army Aviation in the execution of Decisive Action. Unified Land Operations requires flexibility, adaptability, integration, and a depth that will require a return to centralized, maneuver focused brigade operations and an end to the current operational trends of CABs. Lastly, Army Aviation must assess the current force structure evolution to ensure it truly enables Army Aviation's total contributions to Combined Arms Maneuver (CAM) and Wide Area Security (WAS), and the ability to conduct offensive, defensive and stability or Defense Support to Civil Authority (DSCA) operations.

## Acknowledgements

I would like to thank Mr. Rusty Rafferty and Ms. Elizabeth Dubuisson of the Combined Arms Research Library for their incredible help in the research for this paper. I would also like to thank LTC (Ret.) Mark Calhoun, for his unwavering commitment, assistance, guidance and mentorship during the entire process of researching and writing this monograph. Mr. Calhoun managed to give my project an incredible amount of attention, well beyond his charge as a monograph director, all while completing his doctoral dissertation. Simply going through this process, I learned far more than I could have imagined, and I am forever grateful and indebted to him. Further, I would also like to thank COL Jesse Farrington, COL Scott Thompson, and COL Donald Galli for their guidance, encouragement and candor. Finally, beyond all others, I would like to thank my loving wife Julie and my precious daughters Lillian and Lydia, for their love, devotion and encouragement. Thank you for understanding the long nights and weekends away from the family to research a project, that means so much to me.

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## Introduction

We remain in an era of persistent conflict. In order to prepare for an uncertain future and an increasingly complex strategic environment we must maintain the combat edge gained during the last decade of war, reconstitute the force and continue to build resilience into our formations and people. These efforts will ensure that we continue to prevail in the fights we are in today and are prepared for new challenges in the future.

– Honorable John M. McHugh and General George W. Casey

This statement by the Honorable John M. McHugh and General George W. Casey sets the tone for the 2011 Army Posture Statement (APS). This statement describes both where the Army is going and from whence it came. Over the past decade, the Army has undergone its largest restructuring and transformation since World War II. Transitioning from a division-centric to a Brigade Combat Team (BCT)-centric force while engaged in combat speaks volumes to the capabilities, flexibility, and resilience of the preeminent global military power. Yet transformation has posed significant challenges, and at times put the Army out of balance and at risk of failing to meet its commitments to the Joint Force. Former Chief of Staff of the Army, General George Casey, made rebalancing the force a top priority in 2007, and that effort is starting to pay off. However, the struggle to finalize and stabilize the right force continues. The following paragraph demonstrates the continued emphasis on transformation in the 2011 APS:

In order to provide combatant commanders with tailored, strategically responsive forces that can dominate across the spectrum of conflict in an uncertain threat environment, the Army continues to transform our operating force by building versatile, agile units capable of adapting to changing environments. We continue to convert brigades to more deployable, tailorable, and versatile modular organizations while rebalancing our skills to better prepare for the future. This process not only positions us to win today's conflicts, but it also sets the conditions for future success.<sup>1</sup>

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<sup>1</sup> Department of the Army, "2011 Army Posture Statement," John M. McHugh, George W. Casey Jr., [https://secureweb2.hqda.pentagon.mil/VDAS\\_ArmyPostureStatement/2011/](https://secureweb2.hqda.pentagon.mil/VDAS_ArmyPostureStatement/2011/) (accessed December 19, 2011), 41-52.

The conversion of brigades to more deployable, tailorable, and versatile organizations implies the need to optimize the Army's total force to support the modular concept, which includes Army Aviation. Therefore, a thorough analysis of the Army's transformation requires a look at the effectiveness of the units and organizations that support or enable the BCT.

The Army Aviation Branch provides several organizations that support modular BCTs. The advent of the helicopter and its inclusion in modern land campaigns represents one of the most significant technical revolutions in the twentieth century. The helicopter, and more recently the creation of the Army Aviation Branch, has made an immeasurable impact on the field of battle. Over the past six decades, from the earliest days of aerial medical evacuation (MEDEVAC) and the critical distribution of logistics in Korea, to the advances in air mobility and immediate close air support in Vietnam, to today's modern Aviation Branch organizations, every Army force transformation effort has involved significant change for Army Aviation. With each new shift in Army operating models and doctrine, Army Aviation forces evolved to meet the mission requirements.

Today, Aviation Branch's transformation is a part of the overall Army transformation effort, guided by the "Restructuring Army Aviation" information paper attached to the 2011 APS, and focused on "aligning the aviation force with the Army's Future Combat Force concept, fielding aircraft, and subsystems required to achieve full-spectrum operational capability and continuing to provide support to the deployed force."<sup>2</sup> The transition to nine Active Component (AC) and six Reserve Component (RC) Full-Spectrum CABs helps balance attack and reconnaissance assets, pair piloted aircraft with unpiloted aerial systems, and increase aerial

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<sup>2</sup> Department of the Army G3/5/7 Aviation, "Restructuring Army Aviation," Headquarters, Department of the Army, [https://secureweb2.hqda.pentagon.mil/VDAS\\_ArmyPostureStatement/2011/information\\_papers/PostedDocument.asp?id=325](https://secureweb2.hqda.pentagon.mil/VDAS_ArmyPostureStatement/2011/information_papers/PostedDocument.asp?id=325) (accessed December 19, 2011).

medical evacuation capacity at the aviation brigade level.<sup>3</sup> On the surface, Army Aviation's transformation initiatives seem perfectly aligned with the rest of the Army's. However, history reveals a consistent disconnect between Army Aviation's transformation and the evolution of Army operating concepts, which seek to maintain the appropriate force structure to support the Army's mission of providing a combatant commander with "the capability—by threat, force, or occupation—to promptly gain, sustain, and exploit comprehensive control over land, resources, and people."<sup>4</sup>

As an illustration, *Military Technology* published an article entitled "US Army Aviation Modernisation Overview" in which the author claimed, "US Army Aviation is transforming and modernising to improve capabilities to meet current and future full-spectrum aviation requirements."<sup>5</sup> The article appeared in 2009, five years after the first announcement of Army Aviation's contribution to modularity. The multi-functional aviation brigade, eventually labeled the Combat Aviation Brigade (CAB), evolved from the 2003 "Comprehensive Review of Army Aviation Modernization." This review described the Army's Training and Doctrine Command (TRADOC) plan to develop Army Aviation into a deployable and sustainable force that was tailorable, joint interoperable, and comprised of standardized formations.<sup>6</sup> TRADOC viewed the new CAB as the best organizational structure given time and resource constraints, providing an

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<sup>3</sup> Ibid.

<sup>4</sup> Department of the Army, *FM 1, The Army* (Washington, DC: Headquarters, Department of the Army, 2005), 2-8.

<sup>5</sup> "U.S. Army Aviation Modernisation Overview," *Military Technology* 33, no. 10 (2009), <http://lumen.cgscarl.com/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=mth&AN=45223016&site=ehost-live>.

<sup>6</sup> Association of the United States Army, "U.S. Army Aviation: Balancing Current and Future Demands," in *Torchbearer National Security Report*, ed. Gordon R. Sullivan (Washington, DC: Association of the United States Army, 2008), 6.

Aviation Brigade with all of the means to support a division's brigade combat teams, shifting the focus of combat power from the corps level down to the division and below.<sup>7</sup>

*Military Technology* published this article less than one month before the conclusion of "Army Aviation Study II," the second top-to-bottom review of Army Aviation within six years. This new review posits that the 2003 CAB was not as optimized for BCT-centric modularity as originally envisioned. Under the CAB structure, the entire aviation force, including the mix of active component and reserve component brigades, could not match the Army Force Generation (ARFORGEN) requirements in step with the BCTs. The Army Aviation Study II, begun in 2009 and published in February 2010, sought to "optimize current assets to continue to increase the time available for aviation units within ARFORGEN and maintain relevance as a capability-based maneuver arm, optimized for the Joint Fight with a more efficient logistics tail."<sup>8</sup> This aligns with the 2011 National Military Strategy (NMS), which envisions U.S. Joint Forces as "expeditionary in nature and [requiring] a smaller logistical footprint...."<sup>9</sup> However, neither study referred to the doctrine, either current or evolving, that would substantiate the proposed force structure requirements. Moreover, the current aviation doctrine does not emphasize the intent for CABs to act as maneuver organizations.<sup>10</sup>

Today's Aviation force structure challenges bear striking similarities to those facing Army Aviation since the emergence of AirLand Battle Doctrine, making the need to overcome them particularly significant. Following Operations Desert Shield and Desert Storm, Aviation

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<sup>7</sup> Ibid.

<sup>8</sup> Daniel Ball and Ellis Golson, "Army Aviation Study-II," (Fort Rucker, AL: U.S. Army Aviation Center of Excellence, 2010).

<sup>9</sup> Department of Defense, "The National Military Strategy of the United States of America, 2011," M. G. Mullen, [http://www.jcs.mil/content/files/2011-02/020811084800\\_2011\\_NMS\\_-\\_08\\_FEB\\_2011.pdf](http://www.jcs.mil/content/files/2011-02/020811084800_2011_NMS_-_08_FEB_2011.pdf) (accessed December 19, 2011), 18.

<sup>10</sup> In Chapter 1, Missions and Organizations or Chapter 3, Employment, the doctrine does not refer to CABs as maneuver headquarters. Department of the Army, *FM 3-04.111 Aviation Brigades* (Washington, DC: U.S. Army Publication Directorate, 2007), 1-1, 3-1.

Branch executed an enterprise-wide transformation that sought to make up for many of the gaps within the Army of Excellence aviation force structure. The 1993 venture, labeled the Aviation Restructuring Initiative (ARI), evaluated Aviation's support to AirLand Battle. ARI identified operational, platform, and resource constraints and implemented changes in the organizational design of aviation units across the Army to improve aviation support to the land forces in future conflicts, while reducing Aviation's total operating costs. However, nearly simultaneous with ARI, the Army as well as the rest of the joint community began to adopt the Network Centric Warfare (NCW) concept. Disconnected from the rest of the Army, Aviation Branch adapted to meet the mission demands, but the debates regarding the resulting force structure and doctrine continued for the remainder of the decade. This pattern demonstrates an example of Army Aviation's reorganization efforts generally remaining unsynchronized with those of the Army ground forces it supports during the past twenty years.

With the likelihood of imminent military budget cuts and related force reduction initiatives, immense risk exists that this cycle will continue, and Army Aviation will remain disconnected from the ground forces in organizational change. In October 2011, with the release of the *Army Doctrinal Publication 3-0, Unified Land Operations* (ADP 3-0), the Army updated its war fighting doctrine yet again. The new doctrine rests

on the central idea that Army units seize, retain, and exploit the initiative to gain a position of relative advantage over the enemy. This is accomplished through simultaneous combination of offensive, defensive, and stability operations that set conditions for favorable conflict resolution. The Army's two core competencies- combined arms maneuver and wide area security- provide the means for balancing the application of Army warfighting functions within the tactical actions and tasks inherent in offensive, defensive, and stability operations.<sup>11</sup>

With the recent BCT cuts, the Army must begin another recalculation of the structure of the Divisions and BCTs. Therefore, Army Aviation once again finds itself at a critical point. With the

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<sup>11</sup> ———, *Army Doctrinal Publication No. 3-0, Unified Land Operations* (Washington, DC: Army Publication Directorate, 2011).

new Full-Spectrum CAB evaluation just beginning, and the Army updating its core operational doctrine, Army Aviation has the opportunity to regain some initiative. Aviation Branch should take a pause in its current efforts to evolve the force, now potentially obsolete due to the adoption of the new Army operational doctrine, and clearly define its role in the objective force. In short, Army Aviation must evaluate its force structure to support Unified Land Operations (ULO) simultaneously with the implementation of this new doctrine, rather than after the fact, as it has done so often in the past. More importantly, this evaluation must be in parallel with the evaluations of the ground maneuver BCTs.

To optimize for ULO, Aviation Branch must answer three fundamental questions. It must determine the role of Army Aviation and the division's Full-Spectrum CAB in the Army's execution of Decisive Action. With this role in mind, it must update aviation doctrine. ULO requires flexibility, adaptability, integration, and a depth that will require a return to centralized, maneuver focused brigade operations and an end to the current operational trends of CABs. Recently, most CABs task-organize primarily as aviation battalion task forces (ABTFs) in long-term, direct support of BCTs. This parsing of aviation assets into standing task forces, bypassing the mission command capabilities of the CAB commander and headquarters dilutes the combat power and potential of the CAB. Lastly, Army Aviation must assess the current force structure evolution to ensure it truly enables Army Aviation's total contributions to Combined Arms Maneuver (CAM) and Wide Area Security (WAS), and the ability to conduct the offensive, defensive and stability or Defense Support to Civil Authority (DSCA) operations that take place nearly simultaneously in any theater of operations around the world.

A combination of historical and doctrinal analysis supports this assertion, leading to recommendations for bringing Army Aviation reorganization up to date with current Army-wide modernization efforts. The analysis consists of four main parts. A brief history of four major evolutions of the Army and Army Aviation force structure developed to support the new Army Operating Concepts over the past sixty years highlights the evolving missions and roles, as well

as enduring challenges of Army Aviation. Case study analysis demonstrates the capabilities and limitations of the current CAB structure observed in Operations Enduring Freedom and Iraqi Freedom. Discussion of aviation's ability to support the emerging doctrine of Unified Land Operations leads to recommendations for codifying the role of Army Aviation and necessary changes to Aviation doctrine. This discussion provides several means for evaluating recommendations for optimizing aviation force structure and validates the idea that Army Aviation should finally reorganize in step with the rest of the Army. The conclusion summarizes findings and offers recommendations for further study in the fielding and implementation of the Full Spectrum CAB organizational structure.

## **Background: A Brief History of Army Aviation**

From the infancy of manned flight, the United States Army understood the value that aircraft provided to the field of battle. Following the separation of the United States Air Force, the Army came to rely on its own organic aviation to provide the close support of ground operations that commanders expected. From the earliest days of aerial artillery spotting in World War II, to critical aerial mobility and MEDEVAC in Korea, and the effective immediate close air support learned in Vietnam, Army Aviation tried to meet the changing demands of the Army's ground commanders with maximum flexibility, adaptability, and ingenuity. However, with each shift in national strategy, new Army operating models, and doctrine, Army Aviation could never fully meet the demands of the new mission requirements. Each evolution was disconnected from the Army's greater modernization and restructuring effort, both in force structure and in aviation doctrine.

### **The Formative Years: PENTANA**

The end of the Korean War started a significant period of budget reduction, force structure changes, and doctrinal quandaries for the United States Army. Convinced that the Cold War would define the global security environment for the long term, President Dwight

Eisenhower proposed his “New Look,” which called for a national policy of strategic deterrence relying on nuclear firepower. Due to Eisenhower’s desire to improve national economic health by balancing the budget, the New Look led to significant cuts in defense spending, reduced force structure and resources, and a national security strategy based on global containment of Soviet aggression.<sup>12</sup> Relying on nuclear weapons delivered by strategic bombers and submarines, America did not require a large standing Army to fight campaigns akin to those of World War II or Korea to achieve a massive retaliation against any Soviet aggression.<sup>13</sup> Eisenhower’s vision limited the role of the nuclear age Army to restoring and maintaining order on the home front in the event of a nuclear strike against the United States. This led to a fifty percent reduction in the Army’s operational budget and manpower.<sup>14</sup>

The Army Chief of Staff, General Matthew Ridgeway, disagreed with the political leadership’s opinion of land forces. Convinced land forces remained relevant even in an era focused on nuclear deterrence, Ridgeway called for the development of a new concept of land warfare. This new concept would rely on technology to aid in the dispersion and protection of the force, while enabling “flexibility and mobility to mass quickly and strike a foe, then disperse again.”<sup>15</sup> More importantly for the future Army force, a clearly defined role would regain the Army a larger share of the defense budget, and justify the appeal for additional funding to develop new weapons and new capabilities, including tactical nuclear weapons.<sup>16</sup>

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<sup>12</sup> Glen R. Hawkins, "United States Army Force Structure and Force Design Initiatives 1939-1989," (Washington, DC: U.S. Army Center of Military History, 1991), 21.

<sup>13</sup> Kenneth Osgood, *Total Cold War: Eisenhower's Secret Propaganda Battle at Home and Abroad* (Lawrence, KS: University Press of Kansas, 2006), 72.

<sup>14</sup> The Army’s budget dropped from \$15 Billion to \$7.5 billion and personnel reduced from 1.5 million to 998,000 between 1953 and 1957. Hawkins, "Force Structure and Design Initiatives," 22.

<sup>15</sup> *Ibid.*, 23.

<sup>16</sup> John B. Wilson, *Maneuver and Firepower: The Evolution of Divisions and Separate Brigades*, Army Lineage Series (Washington, DC: U.S. Army Center Of Military History, 1998), 263.

What began in April 1954 as the Atomic Field Army (ATFA-1) study under General Ridgeway eventually evolved into General Maxwell D. Taylor's 1955 Pentagonal Atomic-Nonatomic Army (PENTANA) study. Both studies originally sought to develop a standardized, completely air transportable division, but the Pentomic division soon evolved into three distinct types: airborne, infantry, and armor. According to General Taylor, these new divisions could not only operate on a nuclear battlefield, but would also meet the challenge of "preventing or stopping a small war."<sup>17</sup> In theory, the Pentomic design would possess enhanced flexibility and mobility, while incorporating new weapons systems.<sup>18</sup>

With the Pentomic structure modeled using the 1<sup>st</sup> Cavalry's Divisions success on the Naktong in Korea, the Army's operational focus shifted toward fighting in a battle zone covering 150-200 kilometers. Ideally, the division, with its iconic five battle groups, centralized vehicular mobility assets, and flattened command and control structure, would "concentrate rapidly, destroy the enemy, and disperse again before the enemy could reply with nuclear weapons."<sup>19</sup> To accomplish this, the Pentomic divisions incorporated another lesson from the Korean War. Each new division centralized all of the division's Army Aviation assets by creating company sized aviation organizations at the divisional level, increasing the number of organic aircraft from twenty-six to fifty aircraft within an infantry division, from twenty-six to fifty-three within the airborne division, and from twenty-eight to fifty within the armored division.<sup>20</sup>

The Pentomic Division's aviation tables of organization and equipment were the first to centralize the command of aviation assets within a division. Never before had one commander

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<sup>17</sup> Ibid., 279.

<sup>18</sup> Hawkins, "Force Structure and Design Initiatives," 34.

<sup>19</sup> Dr. James W. Williams, *A History of Army Aviation: From Its Beginnings to the War on Terror* (Lincoln, NE: iUniverse, 2005), 69.

<sup>20</sup> Jr. Weinert, Richard P., *A History of Army Aviation- 1950-1962*, ed. Susan Canedy, TRADOC Historical Monograph Series (Fort Monroe, VA: Office of the Command Historian, U.S. Army Training and Doctrine Command, 1991), 141.

exercised command and control over all divisional Army Aviation. The standard company varied slightly in organization depending on the type of division, and consisted of a direct support platoon, general support platoon and a service platoon, supported by an operations section and a communications and aircraft control section.

For aviation units, this centralization gave the aviation commander greater control over maintenance, supply, and administration, and made operational planning centralized as the responsibility of the division aviation staff officer. Conceptually, centralized planning allowed for decentralized operational control of aviation assets, because the aviation commander relinquished operational control of individual platoons to supported unit commanders. Ideally, this created habitual support relationships, meaning the same pilots flew for a specified unit whenever possible, enabling ground units to develop familiarity and trust with the aviators that routinely supported them. Finally, centralized command enabled the aviation company commander and the division aviation officer to manage and utilize the aircraft and crews as effectively and efficiently as possible, providing maximum flexibility of support to ground force commanders.<sup>21</sup>

However, Pentomic division aviation companies had several shortcomings that made supporting the ground commanders' missions a challenge. For example, the focus on division efficiency meant aviation units possessed limited organic maintenance capability, and still relied heavily on aviation maintenance from outside of the division.<sup>22</sup> Further, Army Aviation never achieved the flexibility and maneuverability PENTANA planners envisioned because the aviation

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<sup>21</sup> Gast claims that the largest benefit of the centralized control "was in the areas of maintenance, supply, and administration." This alleviated the imbalances of experienced maintenance personnel since they were now in the same unit. This was not always true in the old system. Philip C. Gast, "Evolution of Aviation Organization Within the Army Division and an Appraisal of the ROAD Aviation Organization" (Ft. Leavenworth, KS: U.S. Army Command and General Staff College, 1965), 41-52.

<sup>22</sup> P.W. McGurl, "Command and Control of Organic Aviation In U.S. Army Divisions" (Ft. Leavenworth, KS: U.S. Army Command and General Staff College, 1966), 85.

requirements of the maneuver commanders quickly exhausted the aircraft availability.<sup>23</sup> From a command and control perspective, the decentralization of operational control made it possible for the division aviation planners and aviation commanders to receive mission orders from multiple sources, adding additional strain to the very relationships intended to be improved. The Army planners that developed the Pentomic divisions saw Army Aviation as a secondary enabler and, given the early stage of rotary wing aviation development at the time, did not envision the full impact of its future value and criticality to the force.

Army doctrine from the Pentomic era highlights the gaps between division ground units and division aviation. Although division organizations and force structure changed significantly during the Pentomic period, to include organic aviation, aviation doctrine failed to keep pace. *Field Manual 20-100 Army Aviation* (1952), the base doctrine for all Army Aviation operations during the Pentomic era, defined the mission of Army Aviation:

- a. Expedite and facilitate the conduct of operations on land.
- b. Improve mobility, command, control, and logistic support of Army Forces.
- c. Provide greater battlefield dispersion and maneuverability under conditions of atomic warfare.<sup>24</sup>

Throughout the Pentomic period, Army Aviation settled for training texts in lieu of a comprehensive divisional aviation company doctrine. Most branch schools published independent field manuals centered on their parochial views of employing of aviation assets.<sup>25</sup> Army Aviation

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<sup>23</sup>During a period of fiscal constraint, the Army's investment in tactical nuclear weapons and other new technologies took priority over the investment in aircraft due to the significant cost of aircraft and maintenance. Yet, through the years of PENTANA testing, the requirements to increase the mobility of the divisions consistently increased the demand on Army aircraft, especially helicopters, and exceeded the available resources. Though the Army formally adopted the Pentomic division, field tests indicated that ground units could have a consistent demand for nearly 100 organic aircraft per division. Weinert, *Army Aviation 1950-1962*, 142.

<sup>24</sup> Department of the Army, *FM 20-100: Army Aviation* (Washington, DC: U.S. Government Printing Office, 1952), 1.

<sup>25</sup> McGurl, "Command and Control of Organic Aviation In U.S. Army Divisions," 86.

did not publish new doctrine until 1959, in the form of the new *FM 1-100, Army Aviation*. Even then, after years of testing and growth, Army Aviation failed to capture the increased reconnaissance, firepower, and maneuver capabilities organic to division aviation.<sup>26</sup> This new doctrinal manual did not update the mission of Army Aviation, nor did it match the final organizational tables of the Pentomic division and thus was largely obsolete before reaching print.<sup>27</sup>

Understanding the nature behind its development, Army planners never intended for the Pentomic division to last, viewing it as transitional in its design. Many field commanders, such as General Hamilton Howze, felt that the Pentomic division was incapable of decisive operations on the modern battlefield. The division's flexibility was hampered by the flat command structure and the personnel allocations between companies and staffs were either too cumbersome to manage or too small to be effective. The orientation toward the nuclear battlefield, coupled with the inadequate artillery support within the division, made the Pentomic division ineffective in a conventional combat role.<sup>28</sup> Finding solutions to these shortcomings emerged as key factors in the next organizational and doctrinal evolution.

## **A Leap Forward: ROAD Divisions and Air Mobility**

As the Pentomic experiment reached the end of its life span, the Army continued to seek solutions to its shortcomings in Army Aviation assets. In spite of significant strategic constraints, the Army began developing the extra lift and organic aviation firepower necessary to support

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<sup>26</sup> Department of the Army, *FM 1-100, Army Aviation* (Washington, DC: U.S. Government Printing Office, 1959), 6.

<sup>27</sup> Gast, "Army Aviation ROAD Organizations," 46.

<sup>28</sup> General Hamilton Howze was the first director of Army Aviation, as a deputy member of the Army Staff under the Army G3, MG James Gavin. Howze was serving as the commanding general of the 82<sup>nd</sup> Airborne when he offered his critique of the Pentomic Division. Hawkins, "Force Structure and Design Initiatives," 36-37.

itself.<sup>29</sup> With demand at an all-time high, the Army needed to formalize its aviation requirements and charge the aviation industry to produce the capabilities to meet the Army's needs. In 1960, Lieutenant General Gordon Rogers, the deputy-commanding general for the U.S. Continental Army Command (CONARC), convened the Army Aircraft Requirements Board, or the Rogers Board. The Rogers Board studied the future employment potential of Army aircraft, and queried civilian industry for new design proposals. The Rogers Board also recommended three distinct types of aircraft for Army use: observation, surveillance, and transport. Finally, the board recommended that the Army continue the study of 'air fighting units'.<sup>30</sup>

The quest for truly mobile and flexible forces gained momentum with the significant shift in national strategy that occurred in 1960 upon the election of President Kennedy. The New Look and Massive Retaliation gave way to the new security strategy of Flexible Response, which relied on land forces tailored to respond to limited war operations, similar to Korea.<sup>31</sup> President Kennedy's directive for the Reorganization Objective Army Division (ROAD) called for the Secretary of Defense, Robert MacNamara, to reorganize and modernize the army, increasing mobility in any environment, while maintaining a nuclear capability.

The ROAD divisions returned to the proven triangular division structure; built on three ground maneuver brigades with subordinate battalions. Each division had a common divisional headquarters and command base, and its predominant type of maneuver battalion determined the type of division: mechanized, infantry, or armor. The common division base included battalions

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<sup>29</sup> In 1956, Secretary of Defense Charles E. Wilson limited the Army's aircraft functions to liaison and communication; observation, fire adjustment, and topographic survey; personnel and materiel airlift; and [medical evacuation] (MEDEVAC). However, the Air Force continued to focus on strategic bombers and multi-role fighters at the expense of close air support. Therefore, the Army had to carefully maneuvering within the political constraints. Williams, *History of Army Aviation*, 78.

<sup>30</sup> Rickey Rife, "Aviation Restructure Initiative: Tactical Implications for the Heavy Division Combat Aviation Brigade" (Ft. Leavenworth, KS: U.S. Army Command and General Staff College, 1993).

<sup>31</sup> Hawkins, "Force Structure and Design Initiatives," 42.

of enabling functions, including signal, engineer, reconnaissance, and aviation.<sup>32</sup> Announced on the heels of the Rogers Board, obtaining new helicopters to equip this new Army structure became a top priority.<sup>33</sup>

The Pentomic division's inability to maximize the mobility advantage offered by Army aircraft, especially the helicopter, was only one source of information from which to draw as planners decided on the Aviation structure of the new division. Another source was the 1955 test called Exercise Sagebrush. Exercise Sagebrush was the largest test and evaluation exercise of its time, and experimented with Major General Gavin's concept of Sky Cavalry or 'Sky Cav'. These platoon level organizations, organic to the divisions, used helicopters to transport soldiers deep across enemy lines to "conduct reconnaissance, set up blocking positions, harass the enemy, and provide a quick-reaction force until reserves could assemble to destroy the enemy."<sup>34</sup> Exercise Sagebrush demonstrated that the helicopter and helicopter-borne infantry represented a new capability with far more potential than imagined. Helicopters were more than replacements for trucks; they now served as a new kind of fighting platform.<sup>35</sup> With these lessons in mind, ROAD divisions now fielded aviation battalions consisting of 103 far more capable and modernized aircraft. These aviation battalions possessed more than double the number of aircraft that had made up the Pentomic division's aviation company.<sup>36</sup>

Operationally, the ROAD division meant an end to the centralization of Aviation commands within the division, as in the Pentomic divisions. The core aviation battalion had forty-five of the aircraft, and the rest were in the other six units within a division to have organic

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<sup>32</sup> Ibid., 46.

<sup>33</sup> Gast, "Army Aviation ROAD Organizations," 54-55.

<sup>34</sup> Williams, *History of Army Aviation*, 70.

<sup>35</sup> Ibid., 70-76.

<sup>36</sup> Gast, "Army Aviation ROAD Organizations," 56.

aircraft.<sup>37</sup> This organizational change met one objective of the ROAD division, which put organic aircraft with the units that needed continuous aviation support. This structure as well as the expanded mission and capability of the more modern aircraft arguably required decentralized control and utilization.<sup>38</sup> As with the Pentomic divisional aviation doctrine, many senior military leaders challenged this new doctrine as flawed and outdated almost immediately upon its publication. More importantly, this doctrine continued the debate surrounding assets availability to ground commanders and the command and control or supporting relationships of aviation and ground commanders.

Many senior leaders viewed the new ROAD structure as adequate, and expected it to remain the Army's core divisional structure for many years.<sup>39</sup> Nevertheless, several key events forced the national leadership and the Army to push for an even greater emphasis on aircraft and air mobility. The Berlin crisis and corresponding increase of Army divisions, the mobilization of reserve forces, and the increase in American presence in Vietnam all increased the requirements for aviation assets (or capability).<sup>40</sup> Thus, the new divisional structure was generally successful, but it possessed one key shortcoming: too few aircraft to support the demand. As historian John Wilson describes, in April 1962 Secretary of Defense Robert McNamara "wanted the Army to take a new look at the employment of aircraft in land warfare, particularly the helicopter."<sup>41</sup>

Lieutenant General Hamilton Howze, at McNamara's direction, presided over a new board that studied the aircraft recommendations and the concepts of air mobility for three months. The Mobility Requirements Board, or the Howze board, concluded, "[t]he adoption of

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<sup>37</sup> Weinert, *Army Aviation 1950-1962*, 147.

<sup>38</sup> Gast, "Army Aviation ROAD Organizations," 56-58.

<sup>39</sup> Virgil Ney, "Evolution of the U.S. Army Division," ed. U.S. Army Combat Developments Command (Fort Belvoir, VA: Combat Operations Research Group, 1969), 101.

<sup>40</sup> John J. Tolson, *Airmobility: 1961-1971* (Washington, DC: U.S. Government Printing Office, 1973), 17.

<sup>41</sup> Wilson, *The Evolution of Divisions and Brigades*, 314.

airmobility, the capability of a unit to deploy and receive support from aircraft under the control of a ground commander, was necessary and desirable.”<sup>42</sup> The Howze board recommended the creation of five air assault divisions, each with 459 aircraft, allowing for the air movement of one third of the division’s assault elements simultaneously.<sup>43</sup> Though the Army never fielded all five divisions or the Air Cavalry Combat Brigades, the Howze board had a significant impact on future Army Aviation doctrine and force structure.

Based on the findings of the Howze board, the Army began in 1963 the largest testing and evaluation of divisional force structure since the development of the original triangular divisions prior to World War II.<sup>44</sup> Over the course of two years, the 11<sup>th</sup> Air Assault Division tested the ideas and concepts of air mobility in Alabama, Georgia, and the Carolinas. Tests ranging from moving one infantry battalion to moving an entire division highlighted the differences between true air mobility and the simple employment of aviation “as adjunct to ground combat.”<sup>45</sup> The new Aviation Group was the primary means of mobility for the 11<sup>th</sup> division, indicated by the division having less than 1,200 ground vehicles, compared to more than 3,400 vehicles in other ROAD divisions.<sup>46</sup>

The 11<sup>th</sup> Air Assault division tests demonstrated the usefulness of integrating ground forces and aviation forces when testing force structure and developing doctrine. The tests inculcated and promulgated actual operational lessons learned from Vietnam by sending

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<sup>42</sup> Ibid.

<sup>43</sup> Hawkins, "Force Structure and Design Initiatives," 50.

<sup>44</sup> Tolson, *Airmobility: 1961-1971*, 53.

<sup>45</sup> Williams, *History of Army Aviation*, 109-10.

<sup>46</sup> Built on the same divisional foundation of three maneuver brigades as other ROAD divisions, the 11<sup>th</sup>'s key difference was the formation of the 11<sup>th</sup> Aviation Group. The 11<sup>th</sup> Aviation Group had over 400 aircraft, compared to approximately 100 in other ROAD divisions. The group consisted of two light assault helicopter battalions, one medium general support aviation battalion, and a general support aviation company. Additionally, the division had three air cavalry troops in the reconnaissance squadron as well as aerial artillery battalion and aviation batter in the divisional artillery. Hawkins, "Force Structure and Design Initiatives," 50.

personnel on frequent visits to deployed units as well as forming and training six separate airmobile companies for deployment.<sup>47</sup> Aerial Rocket Artillery (ARA) units were another example of new techniques developed and perfected based on current operational lessons learned from Vietnam and incorporated in the 11<sup>th</sup> division. The ARAs, while in the United States, developed techniques for delivering far superior direct fire support to airmobile operations than those delivered by the Air Force's close air support CAS missions.<sup>48</sup> Thus, it was no surprise that the reflagging of the 11<sup>th</sup> Air Assault to the 1<sup>st</sup> Cavalry Division, and its subsequent deployment, "changed the face of the war" in Vietnam.<sup>49</sup> Though the Army employed helicopters in Vietnam from the beginning of America's presence, the 1<sup>st</sup> Cavalry Division's air mobility, validated many of the ideas and concepts published by the Howze Board, and highlighted the shortcomings of the ROAD division's aviation structure and its underestimated demands on Army Aviation.

As stated earlier, the ROAD divisions espoused a decentralized operational model, with seven different units within the division having organic aircraft.<sup>50</sup> As more and more ground combat forces deployed to Vietnam and adopted airmobile techniques, demand for aviation units increased. The sheer numbers of aviation units required continued to impose excessive burdens on the Army's available resources of aircraft and units, similar to the demands of the 1950s. With the deployment of more non-divisional aviation units into theater, the Army realized that its aviation units deployed throughout Vietnam did not have the requisite command and control

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<sup>47</sup> As different techniques arose in one location, they were tested and implemented in another, forging the basis of army-wide air mobility doctrine. Perhaps the most significant example of this meshing of testing and implementation was the development of aerial rocket artillery (ARA). Developed with the 11<sup>th</sup> Air Assault, ARA units replaced the firepower of the Little John rockets and inadequate 105-mm howitzers. Tolson, *Airmobility: 1961-1971*, 54, 121.

<sup>48</sup> Williams, *History of Army Aviation*, 123.

<sup>49</sup> Russell Stinger, "Army Aviation-Back to Its Roots" (Carlisle, PA: U.S. Army War College, 2009), 8.

<sup>50</sup> Gast, "Army Aviation ROAD Organizations," 56.

overhead to ensure standardization of training, procedures, and operational methods.<sup>51</sup>

Decentralization of aviation units was not working.

The formation of the 1<sup>st</sup> Aviation Brigade on 1 March 1966 created a division-sized unit under the command of Brigadier General George Seneff, to command “all non-organic Army Aviation elements in Vietnam.”<sup>52</sup> The centralization of command fostered efficient management of the limited aircraft and aircrew resources, while continuing to reinforce the fundamental belief in decentralized control of aviation assets to the lowest possible commander. As a forerunner to the future Corps Aviation Brigades, the 1<sup>st</sup> Aviation Brigade did not solve the problem of decentralization within the division. However, it mitigated the challenges associated with non-organic, non-divisional aviation units. Furthermore, it highlighted the enduring doctrinal debate within the aviation community on the merits of centralized command and the challenges of decentralized versus centralized control.<sup>53</sup>

Doctrinally, Army Aviation kept pace with force structure and operational changes more effectively in the Vietnam era than it did in the Pentomic era. Between 1963 and 1971, the Army rewrote *FM 1-100, Army Aviation* five times. Not surprisingly, the largest and most significant update came in November 1966, at the conclusion of the airmobile tests and the Army’s first year in combat in Vietnam. The 1967 version contained a major revision of the chapter on armed helicopter employment, due to the fielding of the AH-1 Cobra. Despite these changes, Army Aviation’s mission remained remarkably stable between 1962 and 1971. The 1966 version states:

The mission of Army Aviation is to augment the capability of the Army to conduct prompt and sustained combat incident to operations on land. It accomplishes its mission

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<sup>51</sup> Tolson, *Airmobility: 1961-1971*, 102.

<sup>52</sup> *Ibid.*, 103.

<sup>53</sup> While supported commanders exercised operational control, the 1<sup>st</sup> Aviation Brigade developed standardized operational manuals and procedures, as well as standardized training programs. At its peak, the 1<sup>st</sup> Aviation Brigade had four aviation groups totaling more than 4000 aircraft and 27,000 soldiers. Williams, *History of Army Aviation*, 136.

by augmenting other organic means of mobility and firepower through use of aircraft capable of avoiding concentrations of enemy firepower and ground obstacles.<sup>54</sup>

This meant, despite significant advances in doctrine and technology, ground commanders continued to view Army Aviation merely as forces that augmented their organic assets, causing them to undervalue the significant role Army Aviation played on the battlefield. In spite of the multitude of changes in organizations and employment techniques, as well as new and more sophisticated aircraft, the role of aviation remained unclear and undefined.

### **AirLand Battle and the Army of Excellence**

With the end of the Vietnam War, the United States once again returned to an era of reduced budgets and leaner force structure. Even with American influence in world affairs in question, the United States could not return to a period of political or military isolation. With American attention diverted to Southeast Asia, the Soviet Union and Warsaw Pact threat grew in Western Europe. Once again military planners and force structure designers grappled with the tensions between reduced resources and the requirement to provide a credible threat to the nation's enemies.<sup>55</sup> In 1973, the Army created the Training and Doctrine Command (TRADOC), and charged it with designing and evaluating Army force structure and organization, as well as combat development and individual training.

The primary concern to the fledgling TRADOC was the ROAD division's ability to employ the new, modern weapons, developed through the Vietnam War, on the likely battlefields of Europe.<sup>56</sup> The battlefield of the mid to late 1970s was far more lethal than originally assumed in the early 1960s when ROAD divisions were first developed. The 1970s introduced integrated

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<sup>54</sup> Department of the Army, *FM 1-100, Army Aviation Utilization* (Washington, DC: U.S. Government Printing Office, 1967), 4.

<sup>55</sup> Wilson, *The Evolution of Divisions and Brigades*, 13.

<sup>56</sup> John L. Romjue, *The Army of Excellence: The Development of the 1980s Army*, ed. Henry O. Malone and John L. Romjue, TRADOC Historical Monograph Series (Fort Monroe, VA: Office of the Command Historian, TRADOC, 1993), 6.

air defense systems, antitank weapons, increased artillery range, and long-range communications, navigation, and mobility.<sup>57</sup> Thus, the Army sought in its studies of the early 1970s to maximize its combat potential by combining air cavalry, tanks, mechanized forces, artillery, attack helicopters, and airmobile infantry into an integrated combined arms team.<sup>58</sup> Between 1975 and 1979, the Army's Division Restructuring Study (DRS) tested new formations to counter the Soviet threat. However, these studies utilized the Active Defense doctrine first published in 1976 and refined in 1982, which focused on the defense to achieve victory in the first battle, neglecting to account for enemy follow-on echelons. The new commanding general of TRADOC, General Donn Starry believed the Army's operational doctrine must focus on offense, mixing maneuver and firepower from the air and ground over wide areas to defeat an adversary. This was the foundation of the doctrine later known as AirLand Battle (ALB) after its publication in 1986, which arguably served as the birth of modern combined arms maneuver.<sup>59</sup>

In October of 1979, General Starry pitched his plan for the division of 1986 ("Division 86") to Chief of Staff of the Army General Edward Meyer. General Starry's approach was unlike any before in that he used emerging doctrine to drive the force structure developments as well as new weapons procurements to support the new doctrine. General Starry sought to define the functions of the new divisions first, and then design the subordinate organizations to accomplish those functions.<sup>60</sup> The resulting tests to modernize the heavy divisions ultimately influenced the creations of light divisions and changed the structures of corps and echelons above corps.

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<sup>57</sup> Hawkins, "Force Structure and Design Initiatives," 54.

<sup>58</sup> Ibid.

<sup>59</sup> A pivotal event occurred in 1973, which arguably changed the direction of the U.S. force structure development. The fast-paced and extremely lethal Arab-Israeli War of 1973 highlighted just how lethal the post-Vietnam battlefield could be for the United States. With the Egyptian and Syrians losing more armor pieces than the United States had positioned in Europe at the time, the United States had to reevaluate its Active Defense doctrine and divisional structures. Wilson, *The Evolution of Divisions and Brigades*, 380-84.

<sup>60</sup> Romjue, *The Army of Excellence: The Development of the 1980s Army*, 9.

Eventually the DRS and Division 86 concepts merged into the Army of Excellence (AOE) divisional model.

Following Vietnam, in spite of the rapid drawdown of the Army force structure, one thing remained constant. With a reduction in ground forces, the Army knew it would continue to rely upon the helicopter to meet the operational demands for ground forces to perform their missions. The 1976 version of *FM 100-5, Operations* highlighted the positive developments of Army aircraft in terms of firepower, mobility, intelligence, command and control, and combat service support. In fact, TRADOC acknowledged that the Army's armor and mechanization developments paled in comparison to the fact that "the most dramatic organizational advance has been the adoption of the 'airmobile' concept."<sup>61</sup> Beyond air mobility, the lessons of Lam Son 719 showed that attack helicopters equipped with anti-tank weapons systems could significantly improve the Army's capability to counter the Soviet armor threat in Europe.<sup>62</sup>

Approved in 1984, the AOE division structure united all Army Aviation under a single brigade headquarters with a colonel as the brigade commander and senior aviation expert in the division. Just slightly larger than the ROAD division aviation battalion, the final AOE combat aviation brigades varied by type of division. In total, there were three different variants of division aviation brigades between the new light infantry divisions, heavy divisions, and air assault division.<sup>63</sup> Additionally, the heavy division aviation brigade gained operational control of the division cavalry squadron, including its ground and air reconnaissance troops. Perhaps the most significant change to Army Aviation's force structure was the creation of corps-level aviation brigades and attack helicopter groups. The AOE corps-level aviation structure is beyond the scope of this paper, but its bearing on the division aviation brigade is significant, in that it

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<sup>61</sup> Department of the Army, *FM 1-100, Operations* (Washington, DC: 1976), 2-30.

<sup>62</sup> Stinger, "Aviation Back to Roots," 12.

<sup>63</sup> Romjue, *The Army of Excellence: The Development of the 1980s Army*, 92.

reduced the division commander's capability to integrate aviation into the combined arms maneuver of division forces, but increased a corps commander's ability to shape the deep battle.

ALB doctrine and the Army of Excellence created a boon for Army Aviation. The doctrine was pivotal in substantiating the acquisition of modern aircraft such as the AH-64 and the UH-60. Like every other force structure change since World War II, the AOE and ALB sought to maximize the mobility advantage of modern systems within the Army. Stressing speedy action and reaction throughout the depth of the battlefield, Army Aviation was vital to the tactical and operational success on the modern battlefield. The new Army Aviation formations and modern aircraft could bring mass and firepower, as well as concentrate forces at critical times and space.<sup>64</sup> A key concept that emerged during the Division 86 study, and one that remained relevant through the eventual AOE structure, was the concept that the aviation brigade would function as a fourth maneuver brigade. Though the aviation brigade could not hold terrain without additional forces attached or operationally controlled by the aviation brigade, TRADOC concluded that the new division aviation brigade was now a multifunctional maneuver element, and not just the support element of the past.<sup>65</sup>

Though the Army preceded the development of its new force structure with a significantly different doctrine, there were still many organizational shortcomings, especially within the aviation brigades. The final AOE structure aimed to reduce the hollowness of the Division 86 structure, except in aviation units. Division aviation brigades lost key manning slots from the ranks of door gunner, mechanics, logistical support staff, and even line-company pilots. Some divisions were 40% below mission requirements.<sup>66</sup> By the late 1980s, the total aviation

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<sup>64</sup> Department of the Army, *FM 1-100, Combat Aviation Operations* (Washington, DC: U.S. Government Printing Office, 1984), 3.

<sup>65</sup> Romjue, *The Army of Excellence: The Development of the 1980s Army*, 94.

<sup>66</sup> Rife, "Aviation Restructure Initiative," 16.

force of the AOE required more than 8,000 personnel slots to correct its manning shortages.<sup>67</sup> Furthermore, aircraft acquisition and resourcing constraints prevented nearly all of the heavy divisions from receiving their second attack battalion.<sup>68</sup> Perhaps more significantly, because of the manning and airframe restrictions, Army Aviation's capability as a maneuver force was limited since critical staff actions, dispersed command and control nodes and twenty-four hour operations were not possible.<sup>69</sup>

With ALB driving the force structure development, Army Aviation's core doctrine stayed more connected with the rest of the Army's doctrinal shifts than in previous transformations, but it had its challenges. Updated in 1984, *FM 1-100, Combat Aviation Operations* highlighted the new view of Army Aviation as a maneuver arm. Updated again in 1989, three years after the major structure changes of 1986, *FM 1-100* reflected the new brigades and new employment doctrine to shape the deep battle. Regardless of the currency, some would argue that the doctrinal employment of the attack helicopter battalion under ALB shifted too far away from its core role as a close support platform. The deep attack mission seemingly separated attack aviation from the very forces the Army designed them to support.<sup>70</sup>

## **A New Era: Aviation Restructuring Initiative**

Nearly simultaneous with the Army's overwhelmingly successful validation of Air Land Battle during Operation Desert Storm, the world changed considerably. The new strategic context of the early 1990s included a crumbled and dissolving Warsaw Pact. Facing dramatic funding

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<sup>67</sup> Williams, *History of Army Aviation*, 201.

<sup>68</sup> A significant resource constraint of the AOE aviation force was the heavy division aviation brigades second attack helicopter battalion. The original plan for heavy division combat aviation brigades called for two attach battalions per brigade. Eventually, those battalions shifted to the corps aviation brigades. Given the resource constraints, only two divisions ever received a second battalion, and those were battalions came from either the Army Reserve or Army National Guard. Stinger, "Aviation Back to Roots," 23.

<sup>69</sup> Rife, "Aviation Restructure Initiative," 17.

<sup>70</sup> Stinger, "Aviation Back to Roots," 16.

cuts and force reductions, the 1993 Aviation Restructuring Initiative (ARI) had four major objectives: correct deficiencies in the Army's aviation force structure, particularly in its reconnaissance and attack capabilities; reduce aviation maintenance and support requirements; reduce aviation operational costs; and retire old aircraft.<sup>71</sup>

In the end, ARI accomplished a few of its objectives. The Army rotary-wing fleet downsized to four primary aircraft, retiring the old UH-1 Huey, AH-1 Cobra, and OH-58 Kiowa helicopters, while setting the structure for the ultimate fielding of the RAH-66 Comanche. ARI did not completely fix the personnel shortages of the AOE, but made tremendous improvements.<sup>72</sup> However, ARI also reduced the number of helicopters assigned to Army divisions, mostly in lift and utility units. For example, a heavy division dropped from 125 aircraft to less than 80 aircraft under ARI. As a result, the Army's air mobility, especially within a heavy division, dropped significantly.

Ostensibly, ARI did not change how the division would fight ALB operations. However, ARI's attempt to fix the attack and reconnaissance capabilities did create a major doctrinal challenge. The division attack battalions gained additional aircraft, but their mission remained focused on the close fight. The deep fight was the purview of the corps commander, yet the corps attack battalion lost aircraft in the restructuring. Additionally, both division and corps attack aviation units remained focused on the conduct of deep and deliberate attack missions, at the expense of integrating with ground forces.

## Summary

From the 1950s to the present day, Army Aviation evolved from a small company level force, subordinate to ground commanders, to an independent brigade-size maneuver force,

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<sup>71</sup> Louis J. Rodrigues, "Army Aviation Modernization Strategy Needs to Be Reassessed," (Washington, DC: United States General Accounting Office, 1994), 2.

<sup>72</sup> Rife, "Aviation Restructure Initiative," 39.

integral to the combined arms efforts of the modern division. Every doctrinal shift and Army structural change sought to capitalize on and increase the Army's maneuver and mobility advantage afforded by Army Aviation, thus nearly every new Army structure increased the demand, and size, of aviation units. Additionally, as the battlefields became larger and more lethal, the reconnaissance and firepower capabilities of helicopters became decisive advantages that every division structure tried to maximize. Lastly, aviation's manpower and operational costs ultimately drove the final force structure of the aviation units.

Army Aviation's contributions to land warfare over the last sixty years are indisputable. Yet, the means with which commanders employ helicopters, whether via centralized or decentralized control, remains a debate to this day. Seemingly, this spawns from the disconnection of Aviation force structure and doctrine development from that of the rest of the Army. The 11<sup>th</sup> Air Assault tests showed that Army Aviation made its most successful and enduring doctrinal changes when done simultaneously with the ground units through integrated testing and evaluation to ensure that the aviation units could support what they needed. Separate Aviation force studies often leave many questions unanswered, such as the demand on assets and command of formations. Lastly, and perhaps most critically, Army's aviation has many enduring missions, from reconnaissance, lift, MEDEVAC, to deliberate attack and command and control. Doctrinally, however, Army Aviation continues to struggle with defining its true role in support of the land forces. Army Aviation must address this fundamental question before it continues to develop its objective force.

## **Today's Combat Aviation Brigade**

Nearly ten years of twenty-first century combat experience confirms the key role Army Aviation continues to play in combined arms warfare. Yet, in less than seven years, Army Aviation transformed its force structure twice, and continues to identify and correct inefficiencies.

These shortcomings highlight the challenges the Army Aviation community faces in providing operational commanders with the maximum flexibility needed in the contemporary environment.

## **The Creation of the Combat Aviation Brigade**

In 2003, the Army Chief of Staff ordered the creation of a Department of the Army, G-3 Army Aviation Task Force to review and assess the force structure, training, equipment, and organization of aviation forces. With early efforts in Operations Enduring Freedom and Iraqi Freedom, the Army learned that the Army of Excellence aviation structure was incapable of supporting the land force commander adequately across the breadth and depth of the modern noncontiguous battlefield. The Army had to develop a new Army Aviation Master Plan that would be joint, feasible, and affordable. The Task Force had less than five weeks to study the entirety of the Aviation enterprise and to make recommendations to the Army Chief of Staff as to the future structure of Army Aviation's support to modularity.

The Army Aviation Study was actually a second Aviation modernization study conducted within three years. At the time of the Army Aviation Study, the aviation force structure centered on the Total Army Analysis (TAA 09) requirements, as set forth in the 2000 Aviation Force Modernization Plan (AFMP). The Department of the Army published the AFMP in March of 2000, and had nearly completed the last unit transition as the United States launched Operation Iraqi Freedom. The significance of the TAA 09 structure was that it consisted of five different brigade level organizations, with an extremely robust aviation structure at the Corps level, including attack, reconnaissance, assault, and lift. Given the Army's shift toward more rapidly deployable, tailorable forces below the division level, this aviation force structure was inefficient and ineffective.

To begin the Aviation Study, the Army Aviation Task Force assumed that the multifunctional battalion would continue to be the fundamental building block of Army

Aviation.<sup>73</sup> This building block approach helped to frame the study's analysis of the missions and capability requirements for the modular aviation brigades. When analyzing the mission and operational tempo requirements, the Army Aviation Task Force used the initial data gathered from the first few months of Operation Iraqi Freedom as the data point. The task force assumed that any tactical engagement or combat operation would last approximately seventy-two hours. Secondly, for the aircrew human dimension, the study assumed the daily, sustainable pilot endurance times were eight hours for daytime flying and six hours for nighttime flying. Using these timeframe assumptions, the task force created what it believed would be the requisite capabilities and limitations, by airframe, for Army Aviation's various mission requirements. The Army Aviation Task Force analyzed the enduring Army Aviation missions of reconnaissance and security, attack, air assault/ air movement including MEDEVAC, "battle command on the move" (including air space management), and aviation sustainment.

Upon completion of its study, the Army Aviation Task Force recommended the creation of the CAB, a robust, modular and tailorable, division-level aviation force that could support up to five Brigade Combat Teams.<sup>74</sup> Gone were the corps-level aviation brigades of the AOE. The new aviation brigade would have four variants. The first would be a heavy CAB equipped with two AH-64D Apache Longbow battalions. The second, or medium CAB, would be equipped with one AH-64D and one OH-58D Kiowa Warrior Squadron. The light CAB was the third variation and would be equipped with two OH-58D squadrons. The final variation is the Expeditionary CAB, aligned with the Reserve Component and specific to a Homeland Defense/ Security mission. Each CAB, regardless of variation would have a standardized Air Assault battalion,

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<sup>73</sup> As of April 2000, the building block of Army Aviation was the multi-functional battalion consisting of 10 RAH-66 Comanche, 10 AH-64D Apache Longbow and 10 UH-60 Blackhawk helicopters. Craig D. Hackett, "Brigadier General Hackett Updates Army Aviation Modernization Program," (Washington, DC: Office of the Assistant Secretary of Defense (Public Affairs), U.S. Department of Defense, 2000).

<sup>74</sup> "U.S. Army Aviation Modernisation Overview," 39.

General Support Aviation Battalion and an organic Aviation Support Battalion, equipped to support the type of CAB.<sup>75</sup> The divisional CAB was the most acceptable solution that addressed all course of action evaluation criteria as well as stayed within the structure and cost caps established by the Army.

## **Capabilities**

The new CAB was a significant departure from the Army of Excellence aviation models. The size of the CAB nearly doubled from the AOE brigades. The common design and basic framework of the CAB provides a common, modular brigade command and control headquarters. In an operational environment, the CAB commander can create tailored, multi-functional Aviation Battalion Task Forces (ABTF), as required, in support of brigade combat teams.<sup>76</sup> When not deployed, or if the missions do not require the creation of ABTFs, the four operational battalions remain pure to their Tables of Organization and Equipment, which allows for a common training and sustainment base.

The ability to organize quickly into multifunctional task forces within the brigade is perhaps the greatest capability of the new CAB structure. With the first CAB deployments, commanders organized their brigades into task forces to provide the most responsive support possible to the ground force commanders. During their 2008 Operation Enduring Freedom deployment, the 101<sup>st</sup> CAB indicated that this task organization was the key reason that the brigade successfully met “mission requirement in four geographically distinct [Areas of Operations] shaped by different environmental challenges, mission, enemy , terrain, weather, and

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<sup>75</sup> Association of the United States Army, "Aviation: Balancing Current and Future Demands," 7.

<sup>76</sup> *FM 3-04.111, 2007, 4-1.*

available support.”<sup>77</sup> During its deployment, the 101<sup>st</sup> CAB habitually had two task forces working in Direct Support of BCTs, while two other task forces remained in a general support role for other forces of CJTF 101. The 25<sup>th</sup> CAB had the same experience during Operation Iraqi Freedom from October 2009 to July 2010. During their deployment, the CAB commander established four multi-functional aviation task forces (MATF) in direct support of the four BCTs within their divisional operations area. The ABTF/ MATFs generally organized to provide the full range of attack, security, MEDEVAC, air assault and air movement to the BCTs they supported.<sup>78</sup>

A second departure from the AOE brigades is the inclusion of former corps-level assets, including CH-47 heavy lift helicopters, Air Ambulance companies, and Air Traffic Services Companies. These assets enable the new CAB to be truly capable of performing the full range of Army Aviation missions under one command headquarters, where as formerly, multiple commands and varying echelons directed these various missions, making for an inefficient aviation structure to support ground commanders. All three of these assets are now included under one General Support Battalion commander by MTOE, and are available for task organization as directed by the CAB commander. The CH-47 is the venerable work horse of the CAB, performing a proportionally large amount of both air movements and air assault operations in support of BCTs, between Iraq and Afghanistan. Prior to 2004, the CH-47 was a corps level asset, with the only exceptions being the CH-47s organic to the 101<sup>st</sup> Air Assault Division. Giving the CABs the heavy lift capability to support BCTs is a tremendous combat multiplier.

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<sup>77</sup> Center for Army Lessons Learned Collection and Analysis Team, "Operations Enduring Freedom Aviation Operations November 2008 Initial Impressions Report," ed. Center for Army Lessons Learned (Fort Leavenworth, KS: Center for Army Lessons Learned, 2008), 4.

<sup>78</sup> *FM 3-04.111* refers to the Aviation Battalion Task Force, while many CAB commanders called their organizations Multi-functional Aviation Task Forces. For the purposes of this essay, MATF and ABTF are interchangeable. Alan Farrier, "Commander Interview- COL Michael Lundy, 25th Combat Aviation Brigade," (COB Speicher, Iraq: Center for Army Lessons Learned, 2010).

The 2003 Aviation Study I transformation plan also created aviation staffs and liaison elements within divisions and BCTs. Though not assigned to the CABs, the division aviation cells are now more robust providing critical aviation expertise for division operational planners, as well as airspace situational awareness throughout the division battle space. At the BCT level, Brigade Aviation Elements (BAEs) are a significant change in how Army Aviation supports the ground force commanders. Each BCT now has a small aviation cell, which includes two aviation officers, as well as aviation operations and airspace management personnel, giving BCT commanders the requisite aviation expertise, fostering relationships and improving air ground integration (AGI).<sup>79</sup>

## **Limitations**

Just as the new structure of the CAB enables one of its greatest capabilities – the creation of multiple task forces – it also highlights one of its most significant limitations. The current CAB, established on the assumption that it could support up to five BCTs at one time, is not large enough to support all of the brigade-level organizations within a division. Technically, the division does not have any organic BCTs, and under modularity, the division is completely tailorable. Commonly, under the current TOEs, a division has four BCTs. However, during Operations Iraqi and Enduring Freedom, most divisions had more than four BCTs, depending on the size of their area of operations and the scope of their mission, and were substantially larger than MTOE strength. Including Special Operations Forces, other brigade-level enabling assets, interagency organizations, and multinational partner forces, most divisions provided command and control for as many as eight BCTs. This size of force exceeds the capabilities of a single

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<sup>79</sup> Stinger, "Aviation Back to Roots," 27.

CAB, and leads division commanders to employ CABs as overstretched support assets rather than as another maneuver brigade.<sup>80</sup>

As stated earlier, current aviation doctrine describes the general employment of CABs through the creation of ABTF/MATFs. Inherently, this type of organization for combat creates a new series of problems for the CAB. Mission command for a CAB commander becomes extremely difficult when portions of his task force are either under the continuous Operational Control (OPCON) of another BCT commander or in long-term support relationships of other BCTs, such as Direct or General Support. Aviation doctrine and regulations place specific mission authorities on aviation commanders, including initial and final mission approval authorities and MEDEVAC launch authorities.<sup>81</sup> During operations in Afghanistan in 2008, the 101<sup>st</sup> CAB commander had two battalion task forces GS to CJTF 101 while two other task forces were each DS to a different BCT commander.<sup>82</sup> This makes it very difficult for a CAB commander to prioritize efforts and aircraft sustainment when he or she has to weigh the mission requirements of multiple other commanders.

Understanding the increased need for aviation capabilities within modular divisional organizations, most CABs have assumed control of additional aviation forces once deployed, becoming nearly twice as large as the MTOE strength of a CAB. Using the same 25<sup>th</sup> CAB deployment to OIF in 2009 as an example, the CAB grew to nearly 4,000 Soldiers. Comprised of four of their organic battalions, the 25<sup>th</sup> CAB gained one cavalry squadron from the Tennessee National Guard, an attack battalion from Germany, Task Force ODIN and a C-130 Expeditionary Squadron Detachment. Therefore, while the 25<sup>th</sup> CAB had four battalion task forces working in

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<sup>80</sup> Personal discussion with two former Aviation Brigade Commanders that commanded brigades during combat operations in Iraq and Afghanistan.

<sup>81</sup> Department of the Army, *AR 95-1 Aviation Flight Regulations* (Washington, DC: Army Publication Directorate, 2008), 8-9.

<sup>82</sup> Center for Army Lessons Learned Collection and Analysis Team, "OEF Aviation Operations IIR," 52.

direct support of four BCTs, there were four additional battalion level organizations working in general support to the same BCTs, as well as USD-N, Combined-Joint Special Operations Task Force, Joint Special Operations Command, and United States Forces-Iraq.<sup>83</sup> The net result is that it takes more than one full CAB to provide the entire range of aviation support in contemporary divisional operations. More importantly, it took the full CAB headquarters and staff, though considerably undersized, to provide centralized command the divisions aviation efforts.

Nearly every CAB that deployed ABTFs from their formation reported significant logistical challenges, especially regarding the special tools, sets, kits, and outfits required for properly maintaining the aircraft. Though doctrine says the CAB creates ABTFs, the TOEs do not fully provide for the splitting of each maneuver battalion by factors of three or four, nor do they account for the distances the task forces will be from centralized maintenance. Therefore, the aviation maintenance support for each battalion is not equipped to split three and four times and still provide adequate maintenance support to its fleet. As stated in a TRADOC Operations, Insights, and Lessons Learned (OIL) memorandum, “the current MTOE lacks the proper allocation of special equipment, tools....”<sup>84</sup> Again, in 2008, the 101<sup>st</sup> CAB had task forces spread over 300 miles and found that “creating multiple similar MATFs requires a larger logistical package. Each MATF must have its own portion of [intermediate aviation maintenance]. Situation and terrain may not allow for a centralized maintenance facility.”<sup>85</sup> Some CAB commanders have called for each battalion and aviation maintenance element to be able to split into three parts, including the aviation support company from the ASB.<sup>86</sup>

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<sup>83</sup> Farrier, "Interview with COL Lundy," 2.

<sup>84</sup> Ellis Golson, "Center for Army Lessons Learned Aviation Split Based Operations Observations, Insights, and Lessons Memorandum," ed. Center for Army Lessons Learned (Fort Rucker, AL: U.S. Army Aviation Center of Excellence, 2011), 1.

<sup>85</sup> Center for Army Lessons Learned Collection and Analysis Team, "OEF Aviation Operations IIR," 52.

<sup>86</sup> Farrier, "Interview with COL Lundy," 3.

The current CAB structure also lacks sufficient air traffic services (ATS) capability. Possibly one of the most undervalued and neglected areas within Army Aviation over the last fifty years, the need for airspace situational awareness (SA) and understanding has never been greater. A 2006 Center for Army Lessons Learned report stated, “As commanders increase the density of operations in a volume of airspace, SA must increase to minimize the risk of mid-air collisions and fratricide from indirect fires. Where possible, a COP [common operational picture] which integrates both the Army low altitude air picture and the [U.S. Air Force’s] air picture, can enable commanders to provide real time positive control and integration of congested airspace.”<sup>87</sup>

One year later, the 101<sup>st</sup> Division reported many of the same issues. Lack of personnel to provide real-time control of airspace within a divisional battlespace, challenges integrating into the joint airspace control plan (ACP) and absence of a common air picture below 3,000 feet above ground level (AGL) plagued operations through the division often considered the experts on Army Aviation operations.<sup>88</sup> With the addition of tactical unmanned aerial systems (UAS), as well as the fluid and dynamic nature of contemporary battlefields, a common airspace picture shared between division, BCT, and CAB commanders is more necessary than ever. These are but a few of the challenges that continue to plague commanders’ development of airspace command and control plans. Highlighting the continued disconnect, the 101<sup>st</sup> CAB, following a tour in Afghanistan in 2011, stated that “battle space owning units will often establish restrictive operating zones (ROZs) to allow the rapid launch of UAS or artillery fire missions.”<sup>89</sup> The result of uncoordinated activation of airspace control measures is aviation rotary wing assets are unable to support the ground forces in need of assistance.

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<sup>87</sup> Center for Army Lessons Learned Collection and Analysis Team, "OIF-OEF Airspace Command and Control Collection and Analysis Team Initial Impressions Report 07-14," ed. Center for Army Lessons Learned (Fort Leavenworth, KS: Center for Army Lessons Learned, 2006), 7.

<sup>88</sup> ———, "101st Airborne (AA) Assessment Initial Impressions Report," ed. Center for Army Lessons Learned (Fort Leavenworth, KS: Center for Army Lessons Learned, 2007), 78.

<sup>89</sup> Ellis Golson, "101st CAB Collection Summary," ed. Center for Army Lessons Learned (Fort Rucker, AL: U.S. Army Aviation Center of Excellence, 2011), 1.

Ironically, the organization designed to solve many of these friction points, the Brigade Aviation Element (BAE), often lacks the ability to influence them. Assigned to the respective ground BCTs, the BAE serves as a tremendous asset to BCT commanders. The Brigade Aviation Officer (BAO), an aviation branch major, leads the BAE. The BAO supervises one aviation branch captain, one aviation warrant officer, two aviation non-commissioned officers and one aviation enlisted Soldier.<sup>90</sup> However, many of the BCTs use the BAO in different staff functions, losing the experience and capability the BAO provides as the BCT's primary aviation expert. Additionally, with modularity, most CABs support BCTs from divisions other than their own. Thus, when the BAEs from four different divisions try to work with a CAB from yet a fifth, they experience significant challenges.<sup>91</sup> A particular BCT's BAE does not always know or appreciate the differences in training, standardization, and leadership of the various CABs and subordinate battalions from another division, as a liaison element from within the CAB itself would know.

## **Summary of the CAB**

The Combat Aviation Brigade embodies many of the lessons learned throughout Army Aviation's history. The CAB creates a standard aviation organization capable of conducting the full array of Army Aviation missions within a division. The CAB enables the centralized command and decentralized execution of operations, providing the critical support required to the lowest user possible, by retaining the ability to create multi-functional aviation battalion task forces, ideally coordinated for a BCT through the BAEs. Yet, the new CABs also represent many of the same mistakes made over the past 60 years. The last two aviation studies conducted were done seemingly independent of the other combined arms branches, highlighted by a force structure that is incapable of meeting the demands and requirements of the BCTs in current

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<sup>90</sup> Department of the Army, *TC 1-400, Brigade Aviation Element Handbook* (Washington, DC: U.S. Army Publication Directorate, 2006), 1-2.

<sup>91</sup> Farrier, "Interview with COL Lundy," 3.

operations. Army Aviation's doctrine does not match current operations, thus decentralized execution evolved into the decentralization of the CABs command with multiple BCTs having operational control of ABTFs assets for long durations, instead of CAB commanders. Furthermore, CABs staffs are not equipped or manned as the BCTs are, and have lost the ability to execute as a true maneuver headquarters capable of conducting 24 hour operations. Parsing the CAB into ABTFs, geographically displaced, for long periods, induces additional strain on the logistics and sustainment capabilities. Lastly, even though the BAEs are representatives of the BCTs, they are generally misused and remain disconnected from the CABs.

## **Emerging Doctrine: Aviation and Unified Land Operations**

As the United States Army entered into the Global War on Terror, it had an aviation force with five different divisional aviation structures to support specific types of divisions; Air Assault, Airborne, Heavy, Light and the forward deployed division in Korea. When tested in combat, the aviation force structure lacked robust attack and reconnaissance as well as lift at every echelon. Intra-theater lift was crippled and overly reliant upon the U. S. Air Force.<sup>92</sup> Because of these shortcomings, Army leaders questioned the viability of the aviation force structure and initiated the 2003 Aviation Study.

For six years, Army Aviation transformed to meet the demands of the current wars and the new Brigade-centric force and accomplished much on the battlefield. In spite of its limitations, the new divisional CAB proved to be a tremendous force-multiplier in Iraq and Afghanistan. Unfortunately, as the most demanded asset in both theaters, the new CABs could not match the demands of ARFORGEN. In terms of force availability, there simply were not enough aviation units and assets to support the demands of both theaters. The recent 2009 Aviation Study II sought to reduce the ARFORGEN challenges and capitalize on the efficiencies

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<sup>92</sup> Tactical Airland Subcommittee, Armed Services Committee, *Statement by LTG Richard A. Cody, Deputy Chief of Staff, G3, U.S. Army*, 108th Congress, March 30, 2004.

of a standardized medium CAB by shifting current aviation fleet assets creating the 16<sup>th</sup> Combat Aviation Brigade, a twelfth active duty divisional CAB.

Both aviation studies also supported the necessity of providing the best aviation equipment to the force, such as the AH-64D Block III, UH-60M, CH-47F, as well as growing UAS programs and improving aircraft survivability equipment. Terminating the RAH-66 and ARH-72 programs redistributed critical monies to ensure that the force continues to benefit from the best equipment possible. Lastly, the recent Aviation Study II also generated the approval for a thirteenth active component CAB, which will further reduce the strain on the aviation sourcing for ARFORGEN.

### **Aviation Modernization Eight Years Later**

This is the point where the Army as a whole must take a pause in Aviation Transformation. As with previous studies regarding Army Aviation, those of both 2003 and 2009 concluded relatively quickly and relied more on assumptions than empirical data. More importantly, the most recent studies did not address all of the relevant issues for Army Aviation, leaving many questions unanswered.

Each aviation study has shown, dating back to the Pentomic divisions, that analyzing how to optimize current assets is never complete without a review and revision of the accompanying doctrine. Neither of the two most recent aviation studies even addressed the operational doctrine of Army Aviation. In fact, Aviation's capstone doctrine, *FM 3-04.111, Aviation Brigades* took three years to catch up to 2004-transformation plan. The 2009 Aviation Study II not only failed to address potential doctrinal changes required for optimizing the force, it also failed to codify exactly how the new full spectrum CABs would truly serve as a member of the Joint and Combined Arms team. Just like previous transformation initiatives, Aviation's changes did not nest with the rest of the Army's operational doctrine. In other words, the enduring missions of

lift/transport, reconnaissance, attack, battle command and sustainment will continue with the FS-CAB, but Aviation's true purpose, or role, in executing Decisive Action, remains undefined.

### **Army Aviation: Defining a Role**

To define the role of Army Aviation, and ensure it nests with Army's current operating concept, requires a look at the larger institution of the Army including its purpose, organization and the way it operates. According to *FMI, The Army*, Title 10 of the U.S. Code states, "that the Army includes land combat and service forces, and organic aviation and water transport."<sup>93</sup> The Army transformed to a brigade-based modular force in order to "be quickly assembled into strategically responsible force packages able to rapidly move wherever needed."<sup>94</sup> Accordingly, the Brigade Combat Team is the principle "modular organization that provides the division, land component commander (LCC), or joint task force (JTF) commander with close combat capabilities."<sup>95</sup> This is why the Brigade Combat Team exists.

A role explains an existence in terms of purpose. To carry the idea of a defined role slightly further, *JP 1, Doctrine for the Armed Forces of the United States* uses the term "role" to describe "broad and enduring purposes," specific to the military services.<sup>96</sup> This is implicit in *FM 3-90.6 Brigade Combat Team*, which defines the role of the BCT as "the Army's combat power building block for maneuver, and the smallest combined arms units that can be committed independently. BCTs conduct offensive, defensive, stability and civil support operations." In short, this describes the reason for the Army's BCTs existence.

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<sup>93</sup> *The Army*, 2-8.

<sup>94</sup> *Ibid.*, 2-10.

<sup>95</sup> Department of the Army, *FM 3-90.6, Brigade Combat Team* (Washington, DC: U.S. Army Publication Directorate, 2010), 1-1.

<sup>96</sup> U.S. Joint Staff, *JP 1, Doctrine for the Armed Forces of the United States* (Suffolk, VA: Joint Staff, J-7 Joint and Coalition Warfighting, 2007), II-3.

As stated earlier, the CAB embodies many of the lessons learned throughout Army Aviation's history. The CAB creates a standard aviation organization capable of conducting the full array of Army Aviation missions within a division. Seemingly, one would expect to find similar language of the BCT within aviation doctrine. Yet, in keeping with many of the mistakes throughout aviation's history, current Army doctrine significantly limits the role that Army Aviation plays in the modular force. *FM 3-04.111 Aviation Brigades* falls short when it states that the "[r]ole of the aviation brigade is to conduct and/or support ground maneuver through aviation operations."<sup>97</sup> This rather nebulous definition does not speak to the inherent capabilities of a CAB, nor does it specify a core mission, like that of the BCT.

"The Concept of Operations for Combat Aviation Brigade 2030" attempts to redefine the role of the CAB for the future force. It states that Army Aviation "improves the maneuver advantage of the United States Army by providing capabilities to overcome the constraints of limiting terrain and extended distances." It continues to describe Army Aviation as an element of landpower, developing situations out of contact, extending reconnaissance reach, and providing responsive and precise fires.<sup>98</sup> As a conceptual document, it is focused long term on 2030, not today. Because of Aviation's inextricable link to Army ground forces, and given the pending force structure and budget decisions, it is imperative to codify the role of Army Aviation now, to ensure that the Army recognizes the total force when making the hard decisions on division and BCT structures and future capability requirements.

To that end, the foregoing analysis leads to the following proposed role of Army Aviation: In the execution of Unified Land Operations, the role of Army Aviation is to dominate the vertical dimension of land-domain operations. As an enterprise, Army Aviation includes all aspects of aerial operations, including incorporating the Army air ground system (AAGS) into the

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<sup>97</sup> *FM 3-04.111, 2007*, 1-3.

<sup>98</sup> U.S. Army Aviation Center of Excellence, "Concept of Operations for Combat Aviation Brigade 2030," (Ft. Rucker, AL: Concepts, Experiments and Analysis Directorate, USAACE, 2011), 1.

theater airspace control system (TACS), airspace command and control (AC2), airfield management, and inputs into the joint ACP for traditional aviation operations as well as all Army UAS integration. Army Aviation maneuver elements, in the form of CABs, are capable of projecting combat power forward, countering anti-access or aerial denial threats, providing a land-force commander with a decisive mobility advantage bridging all warfighting functions.

The CAB is the Army's combat power building block for aerial maneuver that provides a land commander with the means to overcome the constraints of terrain and extended distances. It is the principle headquarters to optimize the employment of aviation assets across a division area of operation or within a joint theater of operation, including manned and unmanned Army aircraft as well as joint aviation assets. During combat operations, the CAB is primarily focused on locating, closing with and destroying enemy forces by means of fire and maneuver. The CAB can operate independently without augmentation, as well as tailored to meet the precise needs of its mission, including receiving operational control of additional aviation units, ground units or joint forces. The CAB might be required to detach subordinate elements to other brigades within the division; however, these organizational changes should be for short durations and for specific operations due to the inherent complexities of aviation sustainment.

## **Doctrinal Changes: Aviation and Unified Land Operations**

Defining the role of Army Aviation, much like changing an organization in structure and equipment, requires an assessment of necessary doctrinal changes. Similarly, to understand the importance of doctrine, one must understand its role. *ADP 3-0, Unified Land Operations* says the following about doctrine.

Army doctrine is a body of thought on how Army forces operate as an integral part of a joint force. Army leaders who employ forces in operations under the guidance suggested by the doctrine are its primary audience. Doctrine acts as a guide to action rather than a set of fixed rules. Capstone doctrine establishes the Army's views of the nature of operations, the fundamentals by which Army forces conduct operations, and the methods by which commanders exercise mission command. Capstone doctrine also serves as the basis for decisions about organization, training, leader development, material, Soldiers,

and facilities. *FM 1, The Army* and *ADP 3-0, Unified Land Operations* represent capstone doctrine.<sup>99</sup>

Capstone doctrine refers to the 2011 United States Army Training and Doctrine Command revision of the way in which it will publish Army doctrine as a “way of establishing a foundation for training, educating and equipping through a common professional language.”<sup>100</sup> Along with the Army’s evaluation of the BCT and divisional structures, Army Aviation must assess how it publishes its own doctrine, and fully integrate into this comprehensive renewal of Army doctrine, in order to regain initiative and relevance as a maneuver force.

Future Army doctrine will be broken into four categories: fundamentals, tactics, procedures and techniques.<sup>101</sup> Beginning with *ADP 3-0 Unified Land Operations*, the Army will publish fifteen capstone publications defining the fundamental principles of Decisive Action, the Army’s core competencies of combined arms maneuver and wide area security as well as the six war fighting functions. Supporting the capstone publications will be fifteen Army Doctrine Reference Publications (ADRP) to provide the detailed information on each of the fundamentals.<sup>102</sup>

In accordance with *ADP 3-0*, Army Aviation is not a separate war fighting function.<sup>103</sup> However, its criticality in the execution of ULO by providing the decisive maneuver advantage, as well as the complexities inherent for a ground commander to dominate the third dimension of land-domain warfare, is sufficient enough to substantiate another document, *ADP 3-04 Army Aviation*, as the capstone aviation doctrinal publication. Army Aviation’s contributions on the

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<sup>99</sup> *Unified Land Operations*, 1.

<sup>100</sup> Robert W. Cone, "Doctrine 2015 Guidance Memorandum," (Fort Eustis, VA: U.S. Army TRADOC, 2011), 1.

<sup>101</sup> *Ibid.*

<sup>102</sup> Details of the Doctrine- ADPs, ADRPs U.S. Army Training and Doctrine Command, "Doctrine 2015 Information Briefing," U.S. Army Combined Arms Center, <http://usacac.army.mil/cac2/adp/Repository/Doctrine%202015%20Briefing%2027%20Oct%202011.pdf> (accessed February 19, 2012).

<sup>103</sup> *Unified Land Operations*, 13-14.

battlefield require detailed integration among commanders at every echelon and across branches. An aviation ADP, supported by an ADRP, will provide commanders and planners at all levels with the broad appreciation of employing Army Aviation through a “detailed explanation of all doctrinal principles which provide the foundational understanding so everyone in the Army can interpret it the same way.”<sup>104</sup> This capstone doctrine will then precipitate the further revision of all maneuver doctrine across all maneuver branches.

There is precedent for a capstone aviation doctrine, but it is surprisingly outdated. The Army last updated *FM 1-100 Army Aviation Operations* in 1997. To say that many changes occurred within Army Aviation since then would be an understatement. Current aviation doctrine uses *FM 3-04.111, Aviation Brigades* as its top-level doctrine, saying that it is “intended for all aviation commanders, staffs, and any United States (U.S.) military personnel expecting to conduct operations with Army Aviation units.”<sup>105</sup> In reality, the authors of current aviation doctrine appear to have made aviation commanders their primary audience, ignoring the ground commander. More importantly, the devaluing of the aviation brigade as a maneuver headquarters begins in the preface when it says that the doctrine “expands employment...for aviation units and describes considerations for forming aviation battalion task forces (ABTFs).”<sup>106</sup> *FM 3-04.111* does little to substantiate the significance of the entire aviation enterprise on the modern battlefield.

Currently, to meet the intent of TRADOC’s Doctrine 2015 guidance, the Aviation Branch plans to package eight former field manuals into one new document, *FM 3-04, Army Aviation*. If the Aviation Branch had a capstone doctrine, it could avoid this unnecessary aggregation of its doctrine in a single manual. This would allow Army Aviation to develop the necessary field

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<sup>104</sup> ———, “Doctrine 2015 Information Briefing”, 4.

<sup>105</sup> *FM 3-04.111, 2007*, viii.

<sup>106</sup> *Ibid.*

manuals to address all aspects of the enterprise properly and comprehensively. One massive document like the planned *FM 3-04, Army Aviation* would be so large that leaders within the aviation community and the Army might not read it. More importantly, an Army Aviation ADP and supporting ADRPs and FMs would promulgate the essential doctrine to fix several of the shortcomings of the CAB and current aviation operations, including AC2 operations, BAE structure and operation, and especially, the overreliance on ABTF operations.

A BCT does not parse its combat power into separate battalion task forces and OPCON them to different BCTs; neither should a CAB. More to the point, today's CABs often support more than five BCTs, and up to the equivalent of eight BCT-sized units. Because of the limited amount of aviation and the immense expense associated with their operations, efficient and effective mission command is imperative. As history shows, this is best when centralized within one command. Centralized command and control still allows for decentralized execution through supporting roles such as direct support or general support. The long-term operational control (OPCON) and direct support of ABTFs to other BCTs subverts the benefits of centralized command as learned in Vietnam, such as standardization, maintenance and mission synchronization. It also negates the benefit of employing the CAB as a maneuver brigade – a role it possesses the capability to fulfill but often cannot due to the habitual long-term formation of ABTFs

The precedent for Army Aviation units operating as maneuver brigades, fulfilling a role equivalent to that of ground combat forces, dates to the Army's adoption of ALB doctrine. Just as in 1989, today's CABs "have the capability to exercise [command and control] over tasked organized armor, infantry, artillery, air defense, and other support forces- as necessary for limited operations."<sup>107</sup> Under modularity, the versatility, adaptability, and agility of CABs make them

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<sup>107</sup> Department of the Army, *FM 1-100, Army Aviation in Combat Operations* (Washington, DC: U.S. Army Aviation Center, 1989), 2-4.

ideal to serve as the maneuver headquarters within a division that is responsible for executing the divisions targeting efforts for shaping the deep fights, whether linear depth or temporal depth. As seen in recent combat operations, BCTs are responsible for increasingly larger areas of operations. If divisions lose a ground BCT and each BCT regains a third maneuver battalion with an independent reconnaissance squadron, the only headquarters within a division that will be capable of synchronizing the reconnaissance and security requirements of the division and between maneuver formations is the CAB.

Regardless of the form of doctrine, one thing remains clear. As the Army rethinks its modular force, in terms of the structures of divisions and BCTs and requisite maneuver capability, the Army must consider the CAB at the same time, and not separately. To be sure, the Army needs to redefine its brigade modularity in terms of four types of maneuver brigades, the armor BCT, Stryker BCT, infantry BCT and the Combat Aviation Brigade. Army Aviation must use its doctrine to reestablish its critical function in executing Unified Land Operations by clarifying and emphasizing the aviation brigade as the primary headquarters for the optimized employment of aviation assets. To be more specific, it is only through updated doctrine, that the aviation brigade will truly be capable of maximizing aviation's flexibility, integration, depth, synchronization, lethality, and adaptability.<sup>108</sup>

### **Aviation and the Tenets of ULO: Recommendations for Future Study**

In spite of several shortcomings, Army Aviation remains an indispensable asset to ground commanders in any theater of operation. Due in large part to the last two aviation studies, Army Aviation's equipment modernization efforts continue to progress providing the most modern aircraft available. To suggest that the Army needs to procure new aircraft in the near term, given the current fiscal constraints of our nation would be moot. As well, with the significant cost

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<sup>108</sup> These are the tenets of Unified Land Operations. *Unified Land Operations*, 7-9.

associated with large-scale organizational changes, recommending wholesale change within CABs would be moot as well. However, using the tenets of ULO, a few considerations warrant future research in light of the proposed new doctrine.

When aviation brigades return to operating as maneuver brigades, ground commanders will gain additional maneuver flexibility. For example, as the Army assesses its contributions to the Joint Operational Access Concept, it could employ an aviation brigade as a maneuver headquarters for a forward based, forced entry capable force. Army Aviation brigades are fully capable of conducting operations from sea-based platforms, enabling a joint-force commander to project decisive combat power without the interim staging bases typically required of aviation task forces.

To improve Aviation's capabilities of integration, synchronization and depth within land-domain operations, the Army should consider three organizational changes. First, the Army should provide the CAB with the additional staff and headquarters personnel commensurate with the ground maneuver brigades. During operations in Iraq and Afghanistan, a few aviation brigades conducted divisional-level intelligence fusion and targeting operations to attack enemy networks, with resounding success. Their greatest limitation was the lack of equipment and personnel similar to that available in the targeting and intelligence sections of a ground maneuver BCT. Given the right people and tools, the CAB could easily serve as a division's primary reconnaissance and targeting force, shaping the battlefield in time and space for the ground BCT commanders.

The second change for aviation brigades includes enhancing the ATS capability within a CAB. The ATS company currently lacks adequate personnel and equipment to control airspace for an entire CAB, especially if operating from more than one airfield. More importantly, there is more to air traffic services than just airspace control. A CAB should also have organic airfield management capabilities, given the inclusion of both manned and unmanned aircraft within a CAB. Typically, where Army Aviation units cannot rely on U.S. Air Force units to perform these

functions, they must place people with no training to serve as airfield managers. The Aviation Branch started an ATS assessment in 2010, and this must continue with these considerations in mind.

The third organization change involves the BAE. The Army and Aviation Branch should reconsider the assignment of BAEs to BCTs versus CABs. As stated earlier, the BAE is the CABs primary liaison within a BCT. Often misused and disconnected, the BAEs need to return to the CAB structure. As a maneuver headquarters, the CAB commander should attach a BAE to a BCT when required by the mission. The BAE provides subject-matter expertise regarding the aviation unit's techniques and procedures, standardization, and command systems. The CAB commander must then ensure that the best-qualified personnel serve in the BAEs as his unit's representative to the BCTs they support, while ensuring the proper utilization and career management of personnel assigned to the BAEs.

As stated earlier, to advocate large growth in the aviation community in a time of fiscal constraint is irresponsible. Therefore, if the Army wishes to improve the lethality of CABs, it should consider how it organizes and employs the eight National Guard AH-64D battalions. The current force structure maintains two AH-64D battalions as part of fully sourced heavy CABs, while six are part of the six partially sourced medium CABs. The partially sourced CABs do not have the Attack Reconnaissance Squadrons (ARS) due to OH-58D aircraft resourcing limitations. It is conceivable that the six separate security and support (S&S) battalions, equipped with UH-72 light utility helicopters (LUH) could more than adequately perform the Title 32 reconnaissance and security functions for each state. Therefore, Army Aviation should align the UH-72 battalions with the six CABs. This provides a full CAB, with habitual relationships, for use in DSCA operations.

In the event of a Title 10 mobilization, the requisite CAB, minus the S&S battalion and ARS, is capable of serving as a theater aviation brigade headquarters, providing additional mobility assets within a theater. Therefore, there may be opportunities to realign the AH-64D

battalions as the six separate battalions instead of the UH-72 equipped battalions, having them readily deployable to reinforce the active component CABs with additional attack aircraft. This would provide additional lethality and capability without sourcing a CAB headquarters and negatively affecting ARFORGEN.

In terms of adaptability, CABs demonstrated their immense organizational capabilities in recent operations. However, with minor doctrinal changes, the Army can further increase both the CAB's adaptability and capability. By redefining the CAB as a maneuver headquarters, the Army could assign the CAB non-traditional missions such as serving as a sea-based force entry task-force headquarters. Additionally, the Army should expect to employ aviation assets in DSCA operations, such as disaster relief operations. In cases such as these, a CAB rather than a BCT would most likely serve as the task force headquarters, and exercise operational control of ground forces.

## **Conclusion**

Army Aviation absorbs a significant share of the U.S. Army's budget, but it justifies this cost by providing a critical role in ensuring the mission success of the nation's campaign land force. Without a robust, organic, divisional aviation capability, the Army will be unable to seize and retain the initiative and mobility advantage gained through dominating the third dimension of land warfare.

This modern domination did not just happen. The past sixty years of growth for the Aviation Branch created the most modern, flexible, adaptable and lethal aviation force possible. Army Aviation grew from a small company sized organization, providing limited mobility and sustainment functions, to a decisive maneuver brigade in the modular division. At times, aviation struggled to find the right mix of equipment, organization and command structure, and at others struggled to remain connected with the ground combat forces. The most recent attempt to

optimize the mix of aviation units to support current operations further refined the current CABs and created two new ones – and further changes loom on the horizon.

As Army Aviation addresses how to make the CAB more enduring, the Army has adopted ULO as its operating concept. More importantly, the Army now faces possible significant force reductions, highlighting the importance of reevaluating the entire Army force structure, including the division and the BCT. Therefore, Army Aviation must again evaluate how best to support the ground force commander. This repeats a familiar cycle within the aviation community.

History shows that Army Aviation implemented its most enduring adaptations when the Army implemented them in concert with reorganization of ground combat forces. The most unsuccessful transitions failed to codify aviation's role in land warfare or identify necessary changes in aviation doctrine. Today, Aviation Branch finds itself in this situation once again. Army Aviation cannot continue to experiment and evolve indefinitely. The need has never been greater than now to codify the role of Army Aviation and to publish a doctrine to support the Army and Joint Force's operational doctrine for years to come.

Major General Anthony Crutchfield, the commanding general of the U.S. Army Aviation Warfighting Center of Excellence, issued his Army Aviation Vision 2030 to examine "Army Aviation's roles, missions, organization, capabilities, and how we train our professional Aviation Soldiers to ensure that we maintain a superbly trained and ready force the Army and the Nation require."<sup>109</sup> He expressed a simple yet critical vision:

[No later than] 2030, the Army achieves the operational capability of an Aviation Force that is able to meet future reconnaissance, attack, and vertical maneuver mission demands, is organized into rapidly deployable and adaptable formations, equipped with a new generation of multi-mission manned and unmanned aircraft with a greatly reduced

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<sup>109</sup> Anthony G. Crutchfield, "Army Aviation 2030 Vision," (Ft. Rucker, AL: U.S. Army Aviation Center of Excellence, 2011), 2.

sustainment footprint in order to provide the Operational force command with an unmatched decisive action capability in support of Unified Land Operations.<sup>110</sup>

Aviation Branch will face a far easier task in accomplishing Major General Crutchfield's vision if the Army establishes a defined role for the branch that stresses aviation's contribution to land warfare, and develops updated doctrine guiding the entire force on the employment of the aviation enterprise. Armed with this role, and new doctrine, Army Aviation can make significant strides in capability by implementing minor organization changes, at relatively little cost, further improving its flexibility, integration, and adaptability.

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<sup>110</sup> Ibid.

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