

# No Longer Swinging Behind the Pitch: A Historical Case Study of Doctrinal Transitions in US Army Aviation

A Monograph

by

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## Abstract

Swinging Behind the Pitch: A Historical Case Study of Doctrinal Transitions in US Army Aviation, by MAJ Ian H. Benson, US Army, 49 pages.

Following sixteen years of counterinsurgent warfare, the US Army is in the midst of doctrinal transition. This transition is a response to emergent characteristics of potential adversaries. For the last thirty years, the US Army has benefited from a technological disparity with the conventional militaries of competing nations. Within the last ten years, this technological gap has closed significantly. This development, along increasing anxiety for the potential of large-scale combat operations, corresponds to an uneasiness with the preparedness of US forces to combat such a threat.

This monograph examines the preparation and role of army aviation in future conflict specifically in the context of concerted preparations consistent with the army's transition to Unified Land Operations. To evaluate these preparations, the author examines characteristics of previous periods of doctrinal transition in army aviation's history. Paralleling a historical review of changes in the army at large, this monograph, examines aviation's efforts in the development of Air Mobility doctrine during the Vietnam War era, AirLand Battle in the 1980s, and Full Spectrum Operations in the early 2000s. Identifying characteristics of each model, the author contends that, historically, aviation branch has typically swung behind the pitch in attempting to define its role within capstone doctrine; however, aviation's endeavors to synchronize the efforts of aviation branch with Unified Land Operations exceed those made in past transitions.

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## Acronyms

ADP	Army Doctrine Publication
ADRP	Army Doctrine Reference Publication
BCT	Brigade Combat Team
CAB	Combat Aviation Brigade
FM	Field Manual
ROAD	Reorganization Objective, Army Divisions
TRADOC	Training and Doctrine Command
ULO	Unified Land Operations

## Introduction

For war is not waged against an abstract enemy, but against a real one who must always be kept in mind.

— Carl von Clausewitz, *On War*

The US Army is in the midst of transitioning from sixteen years of counterinsurgent warfare to preparations for the next significant conflict. To prepare for this encounter, the army has deliberately chosen to train in preparation for a hybrid threat defined as a “diverse and dynamic combination” of near-peer conventional forces, irregular forces, insurgent groups, and criminal elements aligned to achieve a single unified goal.<sup>1</sup> According to doctrine, the diverse nature of this proposed threat model and the “sophisticated, comprehensive, and multi-dimensional” strategy it employs reflects the evolution of the complexity of conflict and the army’s anticipated requirement for fighting “a range of conflicts.”<sup>2</sup>

The identification of this threat model corresponds with the introduction of Unified Land Operations (ULO) in 2011. ULO describes the Army’s role in joint operations and identifies decisive action, or simultaneously conducting offensive, defensive, and stability operations against conventional and hybrid enemy forces, as the means to achieve military goals established by strategic policy.<sup>3</sup> A recent 2017 revision solidifies this doctrinal approach as the army’s operational concept for fighting future conflicts.

To prepare for this next conflict against an anticipated hybrid threat in an unidentified operating environment, army aviation must prepare for future operations, training to support US ground forces against this threat model. Preparations mark a departure from employment strategies utilized in the operational environments of Iraq and Afghanistan characterized by air

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<sup>1</sup> Department of the Army, Training Circular (TC) 7-100, *Hybrid Threat* (Washington, DC: Department of the Army, 2010), v.

<sup>2</sup> *Ibid.*, v, 2-1, 3-1.

<sup>3</sup> Department of the Army, Army Doctrinal Publication (ADP) 3-0, *Unified Land Operations* (Washington, DC: Department of the Army, 2011), 5.



supremacy, a low threat of enemy air defense systems, and a technologically overmatched enemy. As army aviation organizes for future conflict against near-peer adversaries armed with comparable air defense capabilities, training strategies must include preparation for missions characterized by deliberate planning, synchronization with combined arms capabilities, and time-driven execution. Currently, few senior aviators have combat experience that precedes the Iraq and Afghanistan conflicts. As a result, the aviation branch must hone the skill sets required to employ aviation in a more dynamic and kinetic environment.

As the army continues this transition to ULO, the question begs how the army's evolving doctrine has anticipated the role of army aviation and whether this transition has considered successful practices utilized in previous transitions to set conditions for success. The more important questions are whether practitioners understand this role in the future operational environment and if the aviation training strategy properly prepares aviation forces to combat the anticipated threat. The answers to these questions may be unique to this current period of transition, but reason suggests that previous transition periods may hold answers that practitioners can apply to ensure the combat readiness of aviation forces in future conflict.

This transition and the potential difficulties associated with facilitating this shift, however, do not constitute an unprecedented event. Doctrinal modification and the evolution of army aviation in supporting operations is iterative in US Army Aviation's history. Since its introduction in the Korean War, army aviation has served as a combat multiplier for US Army ground forces. While this purpose has remained the same, changes to doctrine over time have modified the employment and efforts of army aviation to achieve that purpose. The development of Air Mobility doctrine during the Vietnam War, the utilization of attack helicopters in AirLand Battle doctrine in the 1980s, and the employment of aviation forces in support of counterinsurgency operations in the early 2000s each serve as models for periods of transition in army operations. The model of each of these transitions has shown that the US Army attempts, with varying levels of success, to identify the next potential threat to national security. After

identifying and analyzing the capabilities of that potential enemy, the army develops a force structure to integrate new technologies and tactics to defeat those capabilities or validate previously fielded capabilities. The introduction of doctrine then serves as a means to describe the envisaged employment methodologies of that technological force. Subordinate doctrine and training directorates then develop training strategies to ensure each army branch trains requisite skills and capabilities needed to compliment employment methodologies. Ultimately, combat serves as the evaluation metric for the success of doctrine implementation and training strategies.

Predominantly, aviation has trailed army efforts during periods of transition. Context for these delays typically involved efforts in the development of tactics, techniques, and procedures in the continuous quest to provide advantageous support to the ground force commander. The introduction of rotary wing operations in army doctrine prior to the Vietnam War clearly established this precedence. The following transition to AirLand Battle in the 1980s, however, serves as a successful model for transition, depicting a defined role and employment methodology for aviation forces. Nevertheless, following the defeat of the Iraqi Army in 2003, the unsuccessful transition to Full Spectrum Operations resulted in an incomplete concept for the doctrinal employment of aviation. This current transition to ULO, however, appears to replicate many of the characteristics associated with the successful AirLand Battle model and goes further by providing a vision for the future of aviation operations and establishing an aviation training strategy to address the anticipated role of army aviation in the future operational environment.

## Airmobility

Following the Korean War (1950-1953), the United States Army initiated major adaptations to the force as it prepared for future conflict. Understanding driving forces in global politics, the army identified that the threat would most likely consist of a conventional force modeled on its recent experience against North Korea, a guerilla force modeled on French experience in Indochina, and potentially insurgencies supported by the Soviet Union. Due to the

diverse geographic nature of these threats and the rough terrain in anticipated conflict locations, the Army recognized the need to harness technology capable of strengthening mobility.<sup>4</sup>

Although army aviation introduced rotary wing aircraft to its inventory during the Korean War as vehicles for casualty evacuation and logistics movement, real consideration for the implementation of helicopters as a force multiplier did not occur after the war. Limited numbers of helicopters in the Korean War had demonstrated the capability to traverse difficult terrain and rapidly move logistics to positions of tactical advantage. Furthermore, French utilization of the helicopter in Algeria and British operations in Malaya revealed the growing potential of this budding technology on the battlefield.<sup>5</sup> Ultimately, the helicopter appeared to have the capability of delivering supplies to troops on the frontlines in a capacity that airplanes could not without developed airfields.<sup>6</sup>

Recognizing the potential for an expanded purpose for army aviation in future conflict, Lieutenant General James Gavin, Chief of Research and Development, proposed reinventing the cavalry function by introducing helicopters as the platform to accomplish this role. Gavin stated that reconnaissance, screening operations, and blocking the movement of enemy forces were vital capabilities needed on a highly mechanized battlefield. Gavin argued that helicopters would provide the “mobility differential” required to win.<sup>7</sup> In 1956, the commander of the US Army Aviation School, Brigadier General Carl Hutton, along with Colonel Jay Vanderpool, a Fort Rucker combat developments officer, began testing the capability of helicopters to serve in a cavalry capacity. Colonel Vanderpool began developing organizational models and tactical

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<sup>4</sup> J.A. Stockfisch, *The 1962 Howze Board and Army Combat Developments* (Santa Monica, CA: RAND, 1994), 12, 15-16.

<sup>5</sup> John J. Tolson, *Vietnam Studies: Airmobility 1961-1971* (Washington, DC: Department of the Army, 1999), 4.

<sup>6</sup> Stockfisch, *The 1962 Howze Board and Army Combat Developments*, ix-x.

<sup>7</sup> *Ibid.*, 7-8.

employment techniques to support this initiative.<sup>8</sup> However, due to fiscal restraint and no immediate directive to implement such an organization, the army effort slowly ground to a halt.

In 1962 with the emergence of Vietnam as a potential place for the escalation of military action, Secretary of Defense Robert McNamara sent two memorandums to the army stating his belief that extreme tactical and fiscal conservatism had prevented movement in fully developing new technologies in response to the issue of mobility.<sup>9</sup> Understanding that the Soviets had already developed an attack helicopter, McNamara believed the army needed a similar capability.<sup>10</sup> McNamara explained that technology offered a means to break “traditional ties to surface mobility” and strongly suggested the army develop “fresh and perhaps unorthodox concepts which will give us a significant increase in mobility” rather than provide recommendations that continued to focus solely on logistical support capability.<sup>11</sup>

In response, Lieutenant General Hamilton Howze convened the Army Tactical Mobility Requirements Board, commonly referred to as the Howze Board. The Howze Board evaluated a six-week test program, employing a ground force and aviation task force in scenario-based training environments in Georgia, Virginia, and North Carolina.<sup>12</sup> As the board’s mandate to evaluate the tactical applicability of helicopters in combat scenarios had no historical or experiential precedence upon which to rely, the board settled on subjective assessment criteria, comparing “speed of reaction, destruction rates, economy of force, and eventual compatibility

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<sup>8</sup> Stockfish, *The 1962 Howze Board and Army Combat Developments*, 9-10.

<sup>9</sup> Tolson, *Vietnam Studies: Airmobility 1961-1971*, 18.

<sup>10</sup> United States Continental Army Command, *Army Tactical Mobility Requirements Board: Final Report*, report to the Commanding General of United States Continental Army Command (Fort Bragg, NC, August 20, 1962), 23.

<sup>11</sup> Tolson, *Vietnam Studies: Airmobility 1961-1971*, 18-19.

<sup>12</sup> Stockfish, *The 1962 Howze Board and Army Combat Developments*, 13-16.

with our economic and industrial capability” to contemporary, competing concepts.<sup>13</sup> The board ultimately found that while rotary wing aircraft were vulnerable to air defense capabilities of a peer enemy, the employment of helicopters followed the same logic as employing ground forces: “the survival of a soldier and his equipment, whatever its form, depends on proper assessment of the threat and proper employment in the face of that threat.”<sup>14</sup> Despite this vulnerability, the board suggested that aircraft reconnaissance and target acquisition capabilities provided a benefit to the ground force.<sup>15</sup> The board concluded that the Army should establish an air assault division and augment ground forces with several distinct types of aviation brigades, a proposal that would cost the army \$4.2 billion to establish. The army instead chose to activate the same organization used during testing for the Army Tactical Mobility Requirements Board as the aviation component of the 11th Air Assault (Test) Division.<sup>16</sup>

Activated in February 1963 at Fort Benning, Georgia, the 11th Air Assault (Test) Division began a rigorous training regimen designed to fully understand the advantages and limitations of rotary wing aviation. From September 1963 to early 1965, the organization conducted air assaults of battalion-sized infantry units in force-on-force exercises in a number of military installations, demonstrating the advantage in being able to rapidly mass friendly forces at a decisive point to destroy enemy forces. While a majority of these exercises focused on fighting conventional forces, the promising results highlighted a capability that could potentially prove instrumental in the Vietnamese war effort characterized by a constant escalation of force.<sup>17</sup>

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<sup>13</sup> United States Continental Army Command, *Army Tactical Mobility Requirements Board: Final Report*, 5-6.

<sup>14</sup> *Ibid.*, 27-28.

<sup>15</sup> *Ibid.*, 78.

<sup>16</sup> Stockfisch, *The 1962 Howze Board and Army Combat Developments*, 22-24, 26.

<sup>17</sup> *Ibid.*, 26-28.

The 11th Air Assault (Test) Division established that helicopters could be used not only to transport logistics rapidly to the front lines to sustain troops in contact but also as a maneuver platform to assist in seizing the initiative by reinforcing outnumbered friendly forces or exploiting tactical advantages. While the Howze Board and the 11th Air Assault's exercises tested the fundamentals of this initial air-ground doctrine, by no means had the army fully determined how helicopters would perform in combat. Despite only having a conceptual model for employment, the army reflagged the organization as the 1st Cavalry (Airmobile) Division and deployed the unit to Vietnam in 1965.<sup>18</sup>

The Howze Board and investigation into the expansion of army aviation only constituted a part of a larger Army restructuring initiative during this period. Between 1962 and 1964, the US Army restructured its ground forces under the Reorganization Objective, Army Divisions (ROAD) program. This initiative rejected the army's pentomic division model and placed the division structure, supported by subordinate brigades, as the primary war fighting organization. Intended to modernize the force by increasing mobility, ROAD placed the division as the tactical headquarters, commanding three organic maneuver brigades. In addition to infantry, airborne infantry, mechanized infantry, and armor brigades, newly developed airmobile brigades also constituted one of these maneuver organizations.<sup>19</sup>

The development of aviation doctrine and training strategies occurred simultaneously with the exercises and testing conducted. As early as 1954, Colonel Jay Vanderpool began determining organizational structures for proposed units as well as developing flying techniques, such as nap-of-the-earth flight, to facilitate employment of aircraft on a modern battlefield.<sup>20</sup> The concept of integrating ground force operations and helicopter operations became the doctrine of

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<sup>18</sup> Stockfish, *The 1962 Howze Board and Army Combat Developments*, x.

<sup>19</sup> John L. Romjue, *The Army of Excellence: The Development of the 1980s Army* (Fort Monroe, VA: US Army Training and Doctrine Command, 1993), 4-5, 8.

<sup>20</sup> Stockfish, *The 1962 Howze Board and Army Combat Developments*, 10.

Airmobility, published in 1960 as Field Manual 57-35. It emphasized that airmobile forces would conduct operations similar to ground forces but noted that airmobile forces were more vulnerable to armor forces and heavily defended areas. This doctrine established airmobile forces as maneuver units working directly in conjunction with the lowest echelon capable of coordinating mission requirements.<sup>21</sup> However, as one would expect from a document introducing a new concept, this 1960 field manual merely outlined elementary employment tactics, planning procedures, and individual, crew, and unit level training progressions rather than experientially-based descriptive and prescriptive guidance in mission tasks associated with moving ground troops tactically on the battlefield.<sup>22</sup>

Experience and doctrinal refinement came as a result of combat employment. As the Vietnam War escalated, operations tested aviation doctrine, leading to the revisions of aviation's FM 1-100, *Army Aviation* five times between 1963 and 1971. This document served as the aviation's capstone manual, providing doctrinal tenets for the employment of aviation forces, guidance, and evolving tactics, techniques, and procedures to describe army aviation's role in supporting larger doctrinal concepts. Although the revisions of FM 1-100 reflected the experiential growth of the branch through combat, aviation's mission remained relatively unchanged over the course of these revisions, echoing the tenets of the 1966 mission statement, "to augment the capability of the Army to conduct prompt and sustained combat incident to operations on land. It accomplishes its mission by augmenting other organic means of mobility and firepower through use of aircraft capable of avoiding concentrations of enemy firepower and ground obstacles."<sup>23</sup> While this definition belies the utilization of aviation forces as a combat

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<sup>21</sup> Department of the Army, Field Manual (FM) 57-35, *Airmobile Operations* (Washington, DC: Department of the Army, 1960), 4.

<sup>22</sup> *Ibid.*, 77, 79-80.

<sup>23</sup> Department of the Army, Field Manual (FM) 1-100, *Army Aviation Utilization* (Washington, DC: Government Printing Office, 1967), 4.

multiplier rather than a true maneuver formation, it also reflects the recognition of aviation as a multi-functional operator.

Recognizing the advantage of employing aviation assets on the battlefield early in the war, the army began developing and fielding AH-1 Cobra attack helicopters in 1967 to enhance aviation's role in supporting ground forces. While these aircraft underwent trial by fire in Vietnam, Cobra crews increased the firepower and versatility of aviation forces. To incorporate this new platform, the Army revised airmobile doctrine, describing the AH-1 as a direct fire support, escort, reconnaissance, and security operations platform.<sup>24</sup> Although defined as a fires asset in support of ground forces, the capability of this aircraft to work independently of ground forces as a team or paired with a smaller reconnaissance helicopter resulted in its employment as a maneuver asset.

Once deployed to Vietnam, commanders readily integrated aviation organizations into operations. The contributions of airmobile units in Vietnam enabled ground forces to extend operational reach and sustain tactical action through the rapid movement of logistics. Airmobility enabled ground forces to respond rapidly to enemy activity, massing troops to prevent enemy exploitation of offensive operations against dispersed American forces. Following the conflict, Lieutenant General Arthur Collins, a commander of both 4th Infantry Division and I Field Force in Vietnam, echoed the same observations as North Vietnamese soldiers, describing airmobility's fundamental weakness as the helicopter's vulnerability to ground-to-air fire; however, he recognized that airmobility's benefit to the soldier on the ground and the flexibility generated at the operational level far outweighed the risk.<sup>25</sup>

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<sup>24</sup> Department of the Army, Field Manual (FM) 57-35, *Airmobile Operations* (Washington, DC: Department of the Army, 1971), 23.

<sup>25</sup> Tolson, *Vietnam Studies: Airmobility 1961-1971*, 27, 254-255, 257.



## Summary

The doctrinal transition constituted by the introduction of airmobility established a precedence in the development of aviation doctrine to support army capstone doctrine. While all participants involved in the Howze Board recognized that conditions were not optimal for simultaneously building new organizations and testing employment concepts, the ability of this test organization to experiment, challenge the status quo, and develop new capabilities served to model the mission of many of the army's current research and development institutions.<sup>26</sup> Regardless of the process, the army established a precedent for the introduction of aviation doctrine. Firstly, the army identified a potential threat. Understanding that a conventional force like North Korea or a Soviet-sponsored insurgent group would serve as the next adversary, the Army identified a technological capability that could enhance ground operations. Identifying the capability of a utility helicopter, and later the attack helicopter, to increase mobility of ground forces and serve as a force-multiplier, the Army developed doctrine to employ that asset and organizations to train proficiency.

From a broader perspective, aviation's actions directly supported army-instituted change across the broader formation. Aviation administrators' timely development of nested, subordinate doctrine described how aviation would support army capstone doctrine, providing a framed, descriptive approach for the employment of assets. This descriptive approach served to inform newly organized aviation units on training strategies and tactics, techniques, and procedures that ultimately provided aviation personnel with guidance and expectations.

### AirLand Battle Doctrine

By the end of the Vietnam War, the US Army had been in combat for over a decade. The While the United States had focused primarily on combatting the North Vietnamese threat, traditional challengers of the United States had made significant technological gains in

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<sup>26</sup> Stockfish, *The 1962 Howze Board and Army Combat Developments*, 34, 37.

conventional warfare. The US military observed these advancements during the 1973 Yom Kippur War as Egyptian and Syrian forces employed Soviet doctrine and Soviet-made equipment against Israeli forces. While ultimately losing the war, the Egyptian and Syrian militaries demonstrated a lethal balance of speed and firepower that illustrated Soviet capability.<sup>27</sup> This strategy, employed against a well-equipped Israeli force, resulted in the two sides losing approximately 50 percent of their total armored forces in less than two weeks of combat. The US military saw that modern tanks, anti-tank weapons, air defense systems, and night vision devices contributed to an increased lethality of conventional forces on the battlefield. These revelations constituted a potential crisis as this Middle Eastern conflict highlighted the possibility that modern weapons could destroy an incorrectly employed force in its entirety within a short period.<sup>28</sup> The US Army's reduction in manpower following the Vietnam War only compounded the problem of recognizing that speed and firepower would play dominant roles in future conflict.<sup>29</sup>

Identifying the rise of military adversaries and the potential for proxy war against less sophisticated Soviet-sponsored insurgent groups, the army initiated another significant transformation. Beginning by requesting an increase in force by three divisions, Army Chief of Staff General Creighton Abrams also issued guidance for the publication of doctrine to address immediate concerns.<sup>30</sup> The 1976 FM 101-5, *Operations*, the doctrine of Active Defense outlined a US shift to the primacy of defense, emphasizing the decisive nature of the first battle in conventional warfare. Devised in response to Soviet strategy using the contemporary force structure, this strategy quickly came under scrutiny as it concretely tied US forces to terrain and

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<sup>27</sup> Romjue, *The Army of Excellence: The Development of the 1980s Army*, 7, 9.

<sup>28</sup> John L. Romjue, *From Active Defense to AirLand Battle: The Development of Army Doctrine 1973-1982* (Fort Monroe, VA: United States Army Training and Doctrine Command, 1984), 6-7.

<sup>29</sup> Romjue, *The Army of Excellence: The Development of the 1980s Army*, 25.

<sup>30</sup> Ibid.

underemphasized the importance of offense and maneuver. This foundational shift from the primacy of offensive warfare and further analysis of Soviet doctrine and operational maneuver revealed that Active Defense imposed severe limitations on US field forces and was counterintuitive to characteristics needed to win on the battlefield. Debates concerning Active Defense led leaders to conclude that the army needed new technology and tactics to overcome the Soviet threat.<sup>31</sup>

In response to the need to modernize equipment, the army initiated the Army of Excellence program in the mid-1970s. This program ultimately overhauled doctrine, organizational structure, and fielded new equipment, remaining the army's priority effort until the late 1980s with the fall of the Soviet Union. The Army of Excellence program directed the development and fielding of modern weapons platforms including the Abrams tank, the Bradley Fighting Vehicle, Multiple Launch Rocket Systems, Stinger and Patriot missile systems, and the Apache and Blackhawk helicopters. With the passing of the 1983 Strategic Defense Initiative, defense resources rose significantly, enabling the development of heavy divisions, division aviation brigades, and in 1986, the fielding of the AH-64A Apache helicopter.<sup>32</sup>

The introduction of this new equipment as well as organizational restructuring made massing firepower through maneuver possible, modernizing the force and addressing the immediate concerns derived from the Yom Kippur War. Training and Doctrine Command's (TRADOC's) introduction of the AirLand Battle concept in 1980 centered on the idea of rapidly deploying light infantry formations in a "corps-directed battle," while integrating newly fielded modern weapons systems as combat multipliers.<sup>33</sup> In 1983, Army Chief of Staff General John Wickham married TRADOC's AirLand Battle concept with the idea of implementing a smaller,

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<sup>31</sup> Romjue, *From Active Defense to AirLand Battle*, 6, 14-16, 21.

<sup>32</sup> Romjue, *The Army of Excellence*, 2-4, 7, 91.

<sup>33</sup> *Ibid.*, 1, 3, 7, 27.

mobile force. Reducing the number of soldiers in a division to 10,000, Wickham increased the number of divisions to 18 while remaining under the army's 780,000 soldier cap. Wickham, a former battalion commander in 1<sup>st</sup> Cavalry Division during the Vietnam War, also appreciated the importance of incorporating aviation into operations, especially lift aviation in the movement of light divisions.<sup>34</sup>

With Wickham's additions to the AirLand Battle concept, Lieutenant Colonel Huba Wass de Czege authored the 1983 FM 101-5, *Operations* introducing revised AirLand Battle concepts as army doctrine. AirLand Battle provided a response to the Soviet Deep Operations doctrine. AirLand Battle outlined employment of combined arms teams utilizing techniques to simultaneously engage powerful Soviet battle groups in depth with both army and air force capabilities. However, only the modernization and technological advancement of American weaponry solidified this doctrinal reform and provided the actual capability needed to employ this doctrinal approach.<sup>35</sup>

Accompanying the adoption of AirLand Battle, the army adopted the Army of Excellence division structure, placing all army aviation forces under a brigade structure. Aviation brigades assigned to divisions altered in structure dependent on assignment to light, heavy, or air assault division. Corps level aviation brigades also had different force structure designs.<sup>36</sup> However, the integration of aviation at different echelons provided resources to commanders in echelon to shape respective deep fights within each's area of operations.

AirLand Battle served primarily as a response to the Soviet strategy of deep attack. Offensive in nature, one of the doctrine's key characteristics was the utilization of fires and aviation to attack the second echelon to attrite a numerically superior enemy. AirLand Battle

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<sup>34</sup> Romjue, *The Army of Excellence*, 24-26.

<sup>35</sup> *Ibid.*, 27, 123, 126-127.

<sup>36</sup> *Ibid.*, 92.

relied on combined arms teams and the integration of joint combat systems to rapidly shift and concentrate fire and maneuver effects at the decisive point. This concept for defeating an enemy force emphasized the conduct of simultaneous offensive operations across the entire area of operation. AirLand Battle doctrine reinstated the corps level command as an operation headquarters, emphasizing division formations and below as maneuver organizations responsible for tactical actions. This doctrine also developed the framework that defined close, deep, and rear operations as interrelated space of one battle. Relying on initiative, agility, depth, and synchronization, tactical commanders focused on destroying enemy forces in the close fight.<sup>37</sup> This close fight equated to approximately 30 km in front of friendly forces or 24 hours of planned operation while corps commanders assumed responsibility of shaping out to 150 km or 72 hours.<sup>38</sup> The corps' purpose was to delay or attack enemy reserves for the purpose of disrupting the enemy's plan and create favorable conditions for divisions.<sup>39</sup>

Reflective of this new doctrine, the 1984 FM 1-100, *Combat Aviation Operations* defined aviation as a maneuver branch. Following the implementation of the force structure changes, the 1986 FM 1-100 further defined the aviation brigade's responsibility as shaping the deep fight at both corps and division echelon. While military practitioners argued that emphasis placed on shaping the deep fight "seemingly separated attack aviation from the very forces the army designed them to support," FM 1-100's identification of purpose provided the organizational guidance required to focus training and effort.<sup>40</sup>

Aviation served as a critical element in this employment methodology. Lift assets provided the capability to rapidly move light infantry and logistical supply to support the close

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<sup>37</sup> Department of Defense, *Final Report to Congress: Conduct of the Persian Gulf War* (Washington, DC: Government Printing Office, 1992), 291-292.

<sup>38</sup> Romjue, *From Active Defense to AirLand Battle*, 36.

<sup>39</sup> Department of Defense, *Final Report to Congress: Conduct of the Persian Gulf War*, 291-292.

<sup>40</sup> Russell Stinger, "Army Aviation: Back to Its Roots," Strategy Research Project (US Army War College, 2009), 16.

fight, a mission set similar to that employed during the Vietnam War. The fielding of the AH-64A, however, provided another capability previously unseen. With the capacity of a single airframe to carry 16 laser-guided missiles, a company of Apaches had the capability to destroy a Soviet armor regiment. At the corps level, Apaches served as one of the primary assets to attack the enemy's second echelon and shape the close fight for divisions.

The decision to employ the AH-64 Apache for the corps level deep fight operations, however, was not necessarily the intended purpose of the aircraft during initial research and development. Designed for reconnaissance and the direct support of ground forces, Lieutenant General Crosbie Saint, the commander of III Corps and the senior commander of the first AH-64 equipped unit, developed the idea of using the AH-64 as a deep attack weapons platform. In 1986, Saint began evaluating the Apache through a series of field exercises to determine its capabilities and to determine how to employ the aircraft as a corps level asset. Rather than simply using the AH-64 in direct support of ground troops, Lieutenant General Saint orchestrated tests to determine the functionality of the Apache helicopter, enabled by forward looking infrared (FLIR) sensors, to find, fix, and destroy enemy armor formations in the deep fight. To address concerns regarding aircraft survivability in the deep fight, Saint's exercises made a critical assumption that enemy air defense systems were ineffective, either due to artillery fires designed to suppress enemy air defense systems or that the systems lacked the ability to shoot on the move. Under these conditions, the AH-64 proved incredibly efficient destroying armor columns on the move.<sup>41</sup>

Although the fall of the Soviet Union in 1989 precluded AirLand Battle from being employed directly against the Soviet Army, the Persian Gulf War served as a loosely comparable examination of the effectiveness of aviation forces against Iraq's Soviet-modeled army. In response to Saddam Hussein's invasion of Kuwait in August 1990, the US Army, along with

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<sup>41</sup> Douglas T. Lindsay, "US Army Attack Aviation in a Decisive Action Environment: History, Doctrine, and a Need for Doctrinal Refinement" (monograph, Fort Leavenworth, KS: US Army Command and General Staff College, 2015), 18.

other members of a coalition, deployed to the Persian Gulf to combat the fourth largest military in the world. Iraq had demonstrated its lethality in fighting a defensive war against Iran. Possessing T-72 main battle tanks, modern aircraft, ballistic missiles, and a sophisticated air defense system, in theory, the Iraqis posed a formidable force.<sup>42</sup>

While the result of the war would suggest deficiencies within the Iraqi military, it is important to note that prior to the war, many considered the Iraqi Army the premier military in the region. A veteran force, it boasted an air defense system consisting of a sophisticated, dense, and dangerous mix of air defense gun and missile systems integrated by a computerized system. Anti-air artillery and surface-to-air missiles constituted a dangerous threat to army aviation.<sup>43</sup>

In accordance with AirLand Battle, coalition aircraft, artillery, and cruise missile attacks fractured the Iraqi integrated air defense system. While air defense systems remained in place, coalition strikes destroyed critical stations responsible for linking these individual systems prior to the movement of ground forces. As ground forces began maneuvering against an Iraqi defense in depth, aviation served an integral role in the ground commander's scheme of maneuver. While flying traditional missions such as reconnaissance, attack, and security operations to set conditions for ground forces, attack helicopters also flew counter-battery and counter reconnaissance missions, and coordinated with fire support units to maximize the effectiveness of both systems.<sup>44</sup>

Moreover, the Persian Gulf War marked the first implementation of the AH-64 as a deep attack platform. In September 1990, Lieutenant Colonel Richard Cody received notification that his 1st Battalion, 101st Aviation Regiment would conduct a deep attack against two early warning radar systems located twenty miles with Iraq, enabling coalition air forces to target key

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<sup>42</sup> Department of Defense, *Final Report to Congress: Conduct of the Persian Gulf War*, 18-19.

<sup>43</sup> *Ibid.*, 204.

<sup>44</sup> *Ibid.*, 204, 293, 303.

nodes within the Iraqi air defense system. Prior to the movement of ground forces into Iraq, 1-101 Aviation Regiment launched its attack against these two early radar warning systems successfully, eliminating the targets, enabling air forces to effectively destroy the Iraqi air defense system, and validating the Apache as a deep attack weapons platform.<sup>45</sup>

Overall, 274 AH-64As flew over 18,700 hours, conducting deep attacks against armor and artillery formations, movement to contact, and armed reconnaissance in support of both the close and deep fights while maintaining a 90% operational readiness rate. While contributing to the suppression of air defense sites and having lethal effects against enemy artillery and ground personnel, Apaches proved extremely effective against the Iraqi armored formations consisting of T-55 and BMPs. Additionally, 489 Blackhawks and 163 Chinooks flew over 57,700 hours, proving essential to the movement of personnel, equipment, and logistical resupply needed to prevent culmination of the coalition offensive.<sup>46</sup>

With the loss of only a single AH-64 and two UH-60s to enemy action, army leaders lauded the contributions of army aviation in the Persian Gulf War. Tactics and doctrine proved valuable to the operational plan and facilitated effects across the width and breadth of the battlespace. Additionally, the survivability of the aircraft proved as beneficial as the versatility of the aircraft on the battlefield. Following the ground campaign, the only negative comments regarding the performance of aviation regarded observations of the impact of sand and obscurants on airframe mechanics, the requirement for more sophisticated navigation and radio systems, and a request for more Chinook support to heavy divisions.<sup>47</sup>

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<sup>45</sup> Lindsay, "US Army Attack Aviation in a Decisive Action Environment: History, Doctrine, and a Need for Doctrinal Refinement," 20-21.

<sup>46</sup> Department of Defense, *Final Report to Congress: Conduct of the Persian Gulf War*, 304, 312-313, 322-323, 759, 769, 814-815.

<sup>47</sup> *Ibid.*, 304, 759, 770, 780, 815-816.



The resounding success of aviation in the Persian Gulf War also provided the branch's leaders with an opportunity to contribute to the discussion of aviation's role in future conflict. Following the war, several articles in professional journals and a four part series titled "Design for Tempo," authored by the Army Aviation Center Chief of Staff, suggested that aviation's capability and lethality on the battlefield made aviation a superior maneuver element on the battlefield.<sup>48</sup>

## Summary

Army leadership implemented AirLand Battle in response to a crisis. The Yom Kippur War had demonstrated the killing power and capability of technological advancements on the battlefield. As such, the United States Army identified the need to modernize equipment and doctrine. Recognizing that the Soviet Army had superior weapons systems and a strategy to synchronize those systems on the battlefield, the United States rapidly tested and fielded weapon systems that closed the technological gap between US and Soviet forces. In addition to fielding technology, the army also developed a doctrinal strategy to employ this technology. Continuing to understand the value of aviation formations as maneuver elements on the battlefield, commanders developed mission sets to maximize a maneuver capability that could both directly support the ground force as well as shape the close fight by setting conditions beyond the close fight. By clearly defining the role of aviation forces within different stages of the fight or at separate echelons within the fight, aviation units developed training programs to ensure proficiency. Based on a nested understanding of how aviation would contribute to the tactical and operational level fight, aviation formations developed training strategies to build the competencies needed to support the ground force commander. As such, AirLand Battle stands as a successful model for doctrinal transition.

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<sup>48</sup> Patrick J. Bodelson and Kevin B. Smith, "Design for Tempo," *US Army Aviation Digest* (March/April 1991): 2-16.

## Full Spectrum Operations

With the fall of the Soviet Union, the United States remained as the sole world superpower. Moreover, while appearing to be a significant threat, the quick, decisive victory over the Iraqi Army left little doubt as to the military dominance of the United States. No longer imminently fearing a peer adversary in 1991, Chief of Staff General Gordon Sullivan anticipated that the next conflict would be unlike previous conflicts, simply because the global strategic context had changed. The rise of political insurgencies, terrorism, and transnational entities, suggested a rise in asymmetric warfare.<sup>49</sup> Not one to dismiss the potential for conventional conflict, General Sullivan examined the potential for the army to conduct diverse mission sets in an unforeseen area of the world against an unknown enemy.<sup>50</sup>

General Sullivan, familiar with advancements in communication and information systems, prioritized efforts to modernize the force. In late 1993, Sullivan, at the behest of General Frederick Franks, TRADOC commanding general, initiated the Army Warfighting Experiment and Army XXI programs in an effort to integrate new information systems within command nodes and weapons platforms and exercise methodologies for employing the army in a number of diverse mission sets.<sup>51</sup>

One of the experiments under this program, Force XXI, tested concepts to redesign heavy divisions; however, the significance of this study rested in the validation of a tactical internet, an information system that greatly promised to increase shared intelligence and awareness across the battlefield. The study revealed that in conventional warfare, increased situational awareness enabled maneuver units to exploit advantages in the close fight, potentially increasing distances

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<sup>49</sup> Military History Office, *Transforming the Army: TRADOC's First Thirty Years, 1973-2003* (Fort Monroe, VA: US Army Training and Doctrine Command, 2003), 30.

<sup>50</sup> Combat Studies Institute, *Sixty Years of Reorganizing for Combat: A Historical Trend Analysis* (Fort Leavenworth, KS: US Army Command & General Staff College, 1999), 55.

<sup>51</sup> Military History Office, *Transforming the Army: TRADOC's First Thirty Years, 1973-2003*, 30.

they could traverse, and ultimately increasing their battlespace dimensions. The use of tactical internet interfaces showed the potential to change the way brigade-level maneuver units fought. However, this benefit also exposed potential risk. In traversing increased distances, brigade high value assets (HVAs) were vulnerable to attack by light, maneuverable enemy forces. This risk forced commanders to consider using combat forces in a security role. The 1999 final report of this study predicted, “As the nature of the division becomes better defined, this tension between HVA, security, and combat maneuver forces will be an important issue.”<sup>52</sup>

The concepts developed under Force XXI also caused a significant shift in doctrine. In 1993, the army rewrote its FM 100-5, *Operations*. Deliberately removing the title “AirLand Battle,” this field manual intended to mark the change of a “new, strategic era” in which the army anticipated conducting “stronger joint operations” within an environment that scaled the “full dimensions of battlefield.”<sup>53</sup> Full-Dimension Operations still encapsulated the conventional battlefield framework of AirLand Battle in conventional conflict but provided insight into the expanding role of the military into operations other than war.<sup>54</sup> This FM also outlined the role of attack aviation as an asset that could “favorably influence the battle when ground forces are decisively engaged,” recommending employment as a reaction force or in areas where ground maneuver is restricted.<sup>55</sup> This purpose differed from previous editions, and this limited role did not align with aviation doctrine, indicating a potential deviation of thought.<sup>56</sup>

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<sup>52</sup> Combat Studies Institute, *Sixty Years of Reorganizing for Combat: A Historical Trend Analysis*, 55, 59.

<sup>53</sup> Department of the Army. Field Manual (FM) 100-5, *Operations* (Washington, DC: Government Printing Office, 1993), vi.

<sup>54</sup> *Ibid.*, 2-0- 2-1.

<sup>55</sup> *Ibid.*, 2-23.

<sup>56</sup> Darren Buss, “Evolution of Army Attack Aviation: A Chaotic Coupled Pendulums Analogy” (monograph, Fort Leavenworth, KS: US Army Command and General Staff College, 2013), 24.

Following the Persian Gulf War, army aviation also reviewed operational concepts in relation to evolving doctrine. Aviation branch conducted studies to address force structure issues, resulting in the 1993 Aviation Restructuring Initiative, a program designed as an attempt to improve support to ground forces. In retiring the UH-1 Huey, AH-1 Cobra, aviation branch redistributed lift assets between division and corps level organizations while increasing the number of Apache battalions at division level organizations. As the Persian Gulf War had validated deep attack operations, ARI ultimately facilitated a continued capability to execute deep attacks and enable both divisions and corps to shape the deep fight at their respective echelons.<sup>57</sup>

Serving to further show a potential disconnect between TRADOC's concept of the employment of aviation forces, aviation branch's "U.S. Army Operational Concept for Aviation" revealed an adherence to past concepts. Revalidating AirLand Battle, "U.S. Army Operational Concept for Aviation" highlighted that "the role of combat aviation is to locate and destroy enemy ground forces and support elements," prioritizing "against deep targets and on flanks, secondarily in support of ground maneuver elements in the close fight."<sup>58</sup> This firm observance of AirLand Battle tactics throughout aviation organizations dominated training and simulation exercises, affirming attack aviation's role as a maneuver force, but reflecting a disconnect with army capstone doctrine.<sup>59</sup>

Throughout the 1990s, aviation organizations, at both corps and division level, continued training for deep attack as the primary mission set. Corps commanders continued to view attack aviation, as a supplemental force to artillery and as their primary means to shape the deep fight.<sup>60</sup>

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<sup>57</sup> Richard A. Martin, "Army Aviation and Unified Land Operations: Renewing Army Aviation's Role and Doctrine to Dominate the Third Dimension of Land Warfare" (monograph, Fort Leavenworth, KS: US Army Command and General Staff College, 2012), 5, 24.

<sup>58</sup> Charles M. Burke and Donald C. Presgraves, "US Army Operational Concept for Aviation," *US Army Aviation Digest* (September/October 1993): 2-11, 11.

<sup>59</sup> Buss, "Evolution of Army Attack Aviation: A Chaotic Coupled Pendulums Analogy," 28.

<sup>60</sup> Department of the Army, Field Manual (FM) 100-15, *Corps Operations* (Washington, DC: Government Printing Office, 1996), 5-12.

Reemphasizing commitment to this model, the 1996 *Corps Operations* manual commands organized deep operation coordination cells to synchronize intelligence, attack aviation, and fires.<sup>61</sup> However, without a clear symbiosis between army and aviation doctrine, commanders began examining the idea that “corps aviation battalions ought to be optimized for deep attack missions and the divisional aviation battalions ought to be optimized for close in, over-the-shoulder support of division operations.”<sup>62</sup> While division commanders also recognized the advantage of shaping the deep fight, CTC rotations began to reveal a lack of proficiency in attack aviation support in the close fight. As a result, several divisional level aviation organizations began placing a heavier emphasis on direct support to ground troops, reflecting recognition that full dimensional operations required multi-functional aviation units capable of both supporting the close and deep fight.<sup>63</sup>

The 1996 *Division Operations Manual* mirrors this contemporary debate regarding the employment of aviation and the potential expansion of the aviation mission set. Referring to the aviation brigade specifically as a maneuver force, the manual states that aviation forces are effective when concentrating to destroy enemy units and recommends employment to “strike the enemy throughout his depth and from multiple directions” and can be integrated “as part of the combined arms effort into deep, close, and rear operations.”<sup>64</sup> Interestingly, this 1996 manual also recommends that “with proper support or augmentation, the aviation brigade headquarters is

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<sup>61</sup> US Army, FM 100-15 (1996), 4-10- 4-11.

<sup>62</sup> Charles E. Kirkpatrick, “*Ruck it Up!*” *The Post-Cold War Transformation of V Corps, 1990-2001* (Washington, DC: Department of the Army, 2006), 69.

<sup>63</sup> Buss, “Evolution of Army Attack Aviation: A Chaotic Coupled Pendulums Analogy,” 31-32, 47.

<sup>64</sup> Department of the Army, Field Manual (FM) 71-100, *Division Operations* (Washington, DC: Government Printing Office, 1996), 1-9 – 1-10, 2-13.

capable of planning for, employing, and controlling a task-organized combined arms force,” enabling an aviation command to seize and retain land as other maneuver forces do.<sup>65</sup>

The period of transition following the Gulf War marked a period of indecisiveness as to the direction of aviation. While the war had validated army and aviation doctrine, a shift in strategic context forced the army to reframe the question of the next potential conflict. Aviation branch’s hardline adherence to AirLand Battle tactics initially seemed to conflict with changes in doctrine. As a result, division commanders in the mid-1990s weighed in to develop capabilities as they felt appropriate and trained proficiencies they required of their aviation formations to leverage those capabilities across the ‘full dimension’ of military operations.

Prior to the final study and completion of Force XXI, General Eric Shinseki, assuming the position of Chief of Staff of the Army in 1999, called a halt to the nearly decade long modernization process. Shinseki announced his plans to transform the army into a “responsive, deployable, agile, versatile, lethal, survivable, and sustainable” force.<sup>66</sup> Seen as radical shift in direction, Shinseki’s “Transformation” led a reformation intended to change the way the army operated in the post-Cold War world and “across the full spectrum of conflict on the twenty-first century battlefield.”<sup>67</sup> Shinseki’s agenda consisted of modernizing ground forces with the wheeled Stryker and creating responsive brigades capable of deploying anywhere in the world within 96 hours.<sup>68</sup>

To accompany this sweeping change, the TRADOC commanding general John Abrams held Seminar Wargames in the summer of 2001 to analyze the employment of army forces in wartime scenarios. The outcome of these seminars was a revision of the FM 3-0, *Operations*

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<sup>65</sup> US Army, FM 71-100 (1996), 1-10.

<sup>66</sup> Military History Office, *Transforming the Army: TRADOC’s First Thirty Years, 1973-2003*, 20.

<sup>67</sup> *Ibid.*, 31.

<sup>68</sup> *Ibid.*, 20.

manual in June 2001.<sup>69</sup> This manual introduced full spectrum operations as capstone doctrine, defining the army as the dominant land component of a joint force.<sup>70</sup> FM 3-0 laid the foundations for the army's expectation to simultaneously or sequentially conduct offensive, defensive, stability, and support operations to resolve conflict and promote peace.<sup>71</sup> Additionally, this manual described the role of aviation as maneuver asset capable of "attack[ing] enemy throughout an area of operations" and "striking against uncommitted forces and reserves to isolate current engagements, shape future battles, and deny the enemy options."<sup>72</sup>

The publication of this capstone doctrine occurred only months before the attacks of 11 September 2001. In response to these attacks, US forces deployed to Afghanistan, conducting a systematic, two-month campaign to dislodge the Taliban from power. In 2003, US forces also invaded Iraq to remove Saddam Hussein and the Baathist party from power, accomplishing this task after three weeks of heavy fighting.<sup>73</sup> While this campaign proved to be an operational success, this conflict revealed potential flaws in the aviation deep attack doctrine that had proven so critical to the early phases of the Persian Gulf War.

On 23 March 2003, the 11th Attack Helicopter Regiment, an ad hoc formation, conducted an attack to destroy artillery and armor elements of the Medina Division located in the Karbala Gap. The purpose of this attack was to shape the corps battle space and facilitate freedom of maneuver for 3rd Infantry Division. During the operation, the 11th Attack Helicopter Regiment had one aircraft shot down while the remaining 29 aircraft sustained significant battle damage.

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<sup>69</sup> Military History Office, *Transforming the Army: TRADOC's First Thirty Years, 1973-2003*, 31-32.

<sup>70</sup> Department of the Army, Field Manual (FM) 3-0, *Operations* (Washington, DC: Department of the Army, 2001), vii.

<sup>71</sup> *Ibid.*, 1-16.

<sup>72</sup> *Ibid.*, 5-16, 7-25, 7-27.

<sup>73</sup> Geoffrey Parker, *The Cambridge Illustrated History of Warfare: The Triumph of the West* (New York: Cambridge University Press, 1995), 376, 380.

Moreover, the organization did not decisively engage the Medina Division, did not accomplish any of the assigned tactical objectives, and required 30 days to restore combat power, further affecting subsequent operations.<sup>74</sup>

In an after action review, the regiment concluded that this failed mission was the result of “a classic ‘first battle’ dynamic.”<sup>75</sup> Anticipating a similar Iraqi Army disposition as in the Persian Gulf War, the regiment failed to analyze changes made by Iraqi forces to deny helicopter deep attack operations. The Iraqi military had anticipated helicopter attacks following initial air force sorties. Rather than relying solely on a heavy integrated air defense system, Iraqi tactics relied on the employment of low-tech warning systems, light air defense cannons, and small arms deployed in depth. Ground observers using cell phones and low power radios warned fixed positions on the impending arrival of American aircraft and rather than concentrating air defense weapons, the Iraqis dispersed both heavy and light weapon systems to prevent tracking and suppression. A complete underestimation of the effects of small arms and light ADA resulted. The 29 aircraft that returned from mission averaged 15-20 bullet holes per aircraft. While unable to achieve the mission, this damage reflected the survivability of the AH-64.<sup>76</sup> However, because of Iraqi preparations, aviators of the 11th Attack Helicopter Regiment “flew against these defenses using tactics, techniques, and procedures inappropriate to the combat environment.”<sup>77</sup>

The 11th Attack Helicopter Regiment shared these vital lessons learned with other aviation elements in Iraq. In candidly sharing its misperceptions and analysis of actual events, the 11th Attack Helicopter Regiment was able to effectively assist the 101st Attack Brigade prepare

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<sup>74</sup> Gregory Fontenot, E.J. Degen, and David Tohn, *On Point: The United States Army in Operation Iraqi Freedom Through 01 May 2003* (Fort Leavenworth, KS: Combat Studies Institute Press, 2004), 179-181, 189.

<sup>75</sup> *Ibid.*, 179.

<sup>76</sup> *Ibid.*, 183, 185, 191.

<sup>77</sup> *Ibid.*, 179.



for a second deep attack operations against the 14th Brigade of the Medina Division. Smaller in scale, this operation utilized combined sequential fires of air force sorties and artillery prior to helicopters engaging elements of the 14th Brigade. Changing employment techniques, 101st aircraft used constant movement and varying altitudes and speeds to decrease the effectiveness of Iraqis tracking their movement. This operation did achieve limited success, but the loss of two aircraft as a result of crashing during a brownout condition takeoff diminished the achieved effects.<sup>78</sup>

Despite the failed deep attack of 23 March 2003, operations during the initial invasion marked an “unprecedented degree of air-ground coordination and integration.”<sup>79</sup> The dominance of American forces demonstrated the “effective integration of artillery and army attack aviation” to achieve “the kind of synergy conceived in joint manuals.”<sup>80</sup> Despite the success of the invasion to achieve the rapid defeat of Iraqi conventional forces, the United States has since found itself engaged in a counterinsurgent conflict in both Iraq as well as Afghanistan.

As efforts in Iraq and Afghanistan continued, military thought and doctrine focused solely on addressing the issues faced by the force: force generation, counterinsurgency, and small unit tactics.<sup>81</sup> To support force generation, army aviation reviewed its force structure in 2003, identifying that its current structure was unable to adequately support the high operational tempo of ground operations. As the modularity concept gained acceptance across the army with the development of brigade combat teams, aviation formed division-level Combat Aviation Brigades (CABs) in response. Comprised of two battalions of attack/reconnaissance helicopters, one air assault battalion, one general support aviation battalion, and one aviation support battalion, CABs

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<sup>78</sup> Fontenot, Degen, and Tohn, *On Point*, 179, 192-193.

<sup>79</sup> *Ibid.*, vii.

<sup>80</sup> *Ibid.*

<sup>81</sup> Lindsay, “US Army Attack Aviation in a Decisive Action Environment: History, Doctrine, and a Need for Doctrinal Refinement,” 1.

had the capability of deploying tailorable, multi-functional battalion level task forces to support up to five brigade combat teams.<sup>82</sup>

To address counterinsurgency operations, the army published the 2006 Field Manual 3-24, *Counterinsurgency*. Intending this manual to fill a doctrinal gap, the army disseminated lessons learned from previous counterinsurgent wars and contemporary operations. While the manual described the context for the operational environment, describing the relationships between US forces, host nation forces, insurgent forces and the populace, the manual did not direct a role specific for aviation except to state that precision fires are necessary and that aviation forces must be readily available to support operations.<sup>83</sup> Not until the 2009 publication of FM 3-24.2, *Tactics in Counterinsurgency* was the role of aviation in counterinsurgency operations more thoroughly defined.

Revising aviation doctrine over a decade old, aviation branch also published the Field Manual 3-04.126, *Attack Reconnaissance Helicopter Operations*.<sup>84</sup> Developed to inform commanders and staffs how to “operate and employ army aviation attack reconnaissance units,” this regulation “furnish[ed] a foundation for attack reconnaissance helicopter doctrine [and] force design.”<sup>85</sup> This manual heavily referenced attack aviation’s commitment to the synchronization of combined arms as well as its commitment to operations directly in support of ground forces through reconnaissance, security, and security operations.<sup>86</sup> While also discussing the capability to conduct attack operations independently of ground forces, the manual reiterated the need for

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<sup>82</sup> Martin, “Army Aviation and Unified Land Operations: Renewing Army Aviation’s Role and Doctrine to Dominate the Third Dimension of Land Warfare,” 26-27, 30.

<sup>83</sup> Department of the Army, Field Manual (FM) 3-24, *Counterinsurgency* (Washington, DC: Government Printing Office, 2006), vii, 6-23- 6-24.

<sup>84</sup> Buss, “Evolution of Army Attack Aviation: A Chaotic Coupled Pendulums Analogy,” 32.

<sup>85</sup> Department of the Army, Field Manual (FM) 3-04.126, *Attack Reconnaissance Helicopter Operations* (Washington, DC: Government Printing Office, 2007), vii.

<sup>86</sup> *Ibid.*, 1-1.

using a balanced approach when employing attack platforms, capturing the fundamentals of planning and executing interdiction attacks but focusing primarily on the employment of teams in support of ground forces in attack and security roles.<sup>87</sup> To address the role of attack aviation in stability and civil support operations, the manual highlights the necessity of understanding the operational context and rules of engagement in theater to serve as a metric for deliberate, precision fires to aid in counterinsurgent operations. However, the manual also specifically states that attack reconnaissance units perform the same mission sets regardless of operating in either large scale operations or counterinsurgent operations.<sup>88</sup> Of note, this manual does not reference deep attack, a distinct difference for the 1997 FM 1-112, *Attack Helicopter Operations* that prioritized the destruction of massed armor formations and attacking enemy forces in depth over “reinforcing ground forces by fire.”<sup>89</sup>

In 2008, the army again published a FM 3-0, revising the capstone doctrine to align with ongoing operations in Iraq and Afghanistan. The *Operations* manual stated that as the army could not determine the length of the Long War, this field manual “promulgate[d] doctrine for army operations in [this] conflict.”<sup>90</sup> While noting that the United States’ global strategy required the army to remain flexible in the prosecution of war, this document also specifically recorded that “no one can accurately predict the nature, location, or duration of the next conflict.”<sup>91</sup> This capstone defined the army’s operational concept known as Full Spectrum Operations. Full Spectrum Operations was similar to Full Dimensional Operations with the slight deviation that

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<sup>87</sup> US Army, FM 3-04.126 (2007), 1-1, 3-63.

<sup>88</sup> *Ibid.*, 3-95- 3-96.

<sup>89</sup> Department of the Army, Field Manual (FM) 1-112, *Attack Helicopter Operations* (Washington, DC: Government Printing Office, 1997), 1-3.

<sup>90</sup> Department of the Army, Field Manual (FM) 3-0, *Operations* (Washington, DC: Government Printing Office, 2008), vii.

<sup>91</sup> *Ibid.*

offense, defense, and stability operations would require continuous and simultaneous, rather than a sequential, application. The premise of Full Spectrum Operations reverberated Carl von Clausewitz's ideas that war is never over and the results are never final; war and peace serve as transitions that require constant attention.<sup>92</sup>

Describing the role of aviation, this manual identified aviation as a movement and maneuver force but described aviation primarily as an augmentation force to brigade combat teams. Although describing the CAB as a divisional asset capable of supporting a corps acting as joint task force or land component command, Full Spectrum Operations does little to define the role of aviation outside of the context of counterinsurgency.<sup>93</sup>

## Summary

Shifts in operational concepts and direction characterized the roughly twenty-year period following the Persian Gulf War through 2010. With no near-peer threat, the army ascertained that the next conflict would most likely take the form of non-state insurgencies. In the early 1990s, General Sullivan attempted to modernize the army by investing in technologies as a means to shape the force structure already in place, ultimately, increasing the capabilities of divisions and brigades to operate independently within larger battlespace dimensions. These enhancements, however, caused aviation practitioners to modify aviation doctrine after identifying a need for attack aviation assets to contribute more directly to the near fight. While doctrine outlining the division fight recognized the need to employ aviation in a balanced approach, aviation branch would not contribute to the dialogue formally until the publication of FM 3-04.126 in 1997, more than ten years after its last major publication.

General Shinseki's rise to the position of Army Chief of Staff in 1999 caused a major paradigm shift in the army's modernization effort. With a different understanding of future

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<sup>92</sup> Carl von Clausewitz, *On War*. ed. and trans. by Peter Paret and Michael Howard (Princeton, NJ: Princeton University Press, 1984), 80.

<sup>93</sup> US Army, FM 3-0 (2008), 4-7, C-6, C-10.

conflict, Shinseki transformed the army, initiating a completely separate program from Force XXI, concentrating on the brigade as the primary warfighting echelon and fielding Strykers as the primary infantry weapons platform. However, the attacks of 11 September 2001 interrupted this transformation and forced the United States into war with an army still in the midst of transition.

While doctrine inherently retained guidance to fight conventional forces, a quick, decisive defeat over Iraqi conventional forces in 2003 did little to validate the doctrine of Full Dimensional Operations largely in part to the operational approach modeling that of the Persian Gulf War. The shift of the army capstone doctrine from Full Dimensional Operations in 2001 to Full Spectrum Operations in 2008 did little to contribute to the army's perceived capability to defeat conventional threats, instead highlighting a decided need to focus operations in unconventional theater of operations.

This period also marked the rise of the division and brigade combat team as the army's primary tactical warfighting element. Following the initial invasion of Iraq in 2003 and in an effort to sustain force generation for the conflicts in Iraq and Afghanistan, the army moved to a brigade centric model, using the brigade combat team as the combined arms headquarters for non-contiguous battle spaces in Iraq and Afghanistan. This movement, however, reflected a necessity for sustaining an unconventional theater, a decision driven by circumstance rather than deliberate posturing for future large-scale conflict.

As these changes transformed the army, so too did these changes alter role of aviation. Although doctrinally defined as a maneuver force, close support of ground troops and the delivery of precision munitions against single targets resulted in a general understanding of attack aviation as an effects-based weapons platform. As a result, many practitioners viewed attack aviation assets as fires platforms and lift and utility aircraft as logistic or support platforms. This perspective corresponded with the decline of interdiction attack operations during this period both due to both the ineffectiveness of its application early in the war and then the diminished necessity for that mission set later in the war.

The ineffectiveness of interdiction attack missions during the initial invasion of Iraq in 2003 highlighted the risk and the enemy's ability to adapt. However, the ineffectiveness of these attacks also highlighted aviation's complacency in assuming dominance on the battlefield. Failure to understand the enemy as well as failure to coordinate combined effects provided by long-range artillery and electronic warfare platforms negated achieving conditions necessary for attacks within the deep area of the battlefield to be effective. Moreover, due to the changing nature of the war in Iraq and Afghanistan, attack aviation reprioritized direct support to ground troops rather than revisit interdiction attack doctrine.

Experience through combat solidified the idea that aviation practitioners needed to find a balanced approach for the employment of army aviation as prescribed by practitioners in the late 1990s. However, the 2008 FM 3-0 failed even to define the role of aviation as anything other than an augmentation force to be utilized at a brigade commander's discretion within a very specific operational context. Only the 2007 FM 3-04.126 retained reference to aviation's employment in conflict other than counterinsurgency. While the primary focus of the army remained fighting the wars in Iraq and Afghanistan, the army capstone Full Spectrum Operations neglected to provide guidance outside of a specific context and, ultimately, limited expectations of army aviators to train for operations outside of the context of counterinsurgency.

### Unified Land Operations (ULO)

After nearly a decade of counterinsurgent warfare, the army acknowledged the need to restructure doctrine. The 2008 *Operations* manual was significantly weighted towards the conduct of unconventional warfare, reflecting a disparity in the army's approach to warfare. Initiating steps to rebalance this approach, in 2011, the army initiated the Doctrine 2015 concept, reorganizing capstone manuals as Army Doctrinal Publications (ADP) and Army Doctrine Reference Publications (ADRP), utilizing Field Manuals and Army Technique Publications as a means to provide detailed explanations of doctrine and capture contemporary tactics, techniques,

and procedures.<sup>94</sup> However, this clerical reform underpinned a much larger change in cognitive thought.

Recognizing the potential for hybrid model adversaries consisting of both regular and irregular forces, revised doctrine devised combined arms maneuver and wide area security as the army's core competencies required to address this model. These competencies examined the role of the military in defeating an enemy or applying force to protect a local population and infrastructure from the enemy.<sup>95</sup> The examination of this evolving threat and the army's focus to rebalance the approach to warfare corresponded with the army's reemphasis on the need to train large-unit operations.<sup>96</sup>

In 2011, ADP 3-0 introduced ULO as the first manual published under the 2015 Doctrine Initiative. The central concept of ULO is that the simultaneous combination of offensive, defensive and stability operations would enable US forces to gain a position of relative advantage over enemy forces to facilitate conflict resolution.<sup>97</sup> This simultaneity of action could apply to high intensity conflict as well as unconventional warfare. The ADP also provided a description and the tenets associated with the doctrine of ULO but, like the previous capstone doctrine, lacked explanation of the integration of aviation within operations. While clearly identifying the necessity for combined arms, the requirement to define integration fell to subordinate doctrine.<sup>98</sup>

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<sup>94</sup> Department of the Army, Army Doctrine Publication (ADP) 1-01, *Doctrine Primer* (Washington, DC: Government Printing Office, 2014), v.

<sup>95</sup> Department of the Army, Army Doctrine Publication (ADP) 3-0, *Unified Land Operations* (Washington, DC: Government Printing Office, 2011), 6.

<sup>96</sup> Lindsay, "US Army Attack Aviation in a Decisive Action Environment: History, Doctrine, and a Need for Doctrinal Refinement," 3.

<sup>97</sup> US Army, ADP 3-0 (2011), ii, 5-9.

<sup>98</sup> Lindsay, "US Army Attack Aviation in a Decisive Action Environment: History, Doctrine, and a Need for Doctrinal Refinement," 40.

In conjunction with the army's emphasis on improving operations conducted at levels beyond brigade, doctrinal updates replaced the aging 1996 FM 71-100, *Division Operations* in 2014 with FM 3-94 *Theater Army, Corps, and Division Operations*. FM 3-94 discussed the army's 2003 transformation to a modular force centered on a brigade-based force but reemphasized the role of the division headquarters as the primary tactical headquarters of the US Army, responsible for "control[ing] and synchroniz[ing] tactical actions (of subordinate organizations)."<sup>99</sup> Adhering to the concept of brigade modularity, FM 3-94 described the division's control of the CAB while also referring to the corps' prerogative to "retain control of those brigades or smaller units which can directly affect the outcome of division operations in time and space."<sup>100</sup> Specifically regarding the role of the CAB, FM 3-94 outlines the CAB's responsibility to "prepare to fight as a whole, support BCTs using pure or task-organized units, and accomplish multiple, independent missions." The manual identified some specific missions such as screening the division, coordinating with fires and ground forces to conduct guard missions, and supporting BCTs conducting cover force operation as examples of how aviation would support large-scale operations.<sup>101</sup> The description of these missions alludes to conventional force-on-force maneuver but noticeably fails to identify out-of-contact attack operations, the redefined term for deep attack or interdiction attack. However, in describing division-shaping operations, the manual identifies the CAB as a force capable of shaping operations through offensive maneuver to "set conditions for the decisive operation," the purpose of interdiction attacks in the deep area of the battlespace.<sup>102</sup>

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<sup>99</sup> Department of the Army, Field Manual (FM) 3-94, *Theater Army, Corps, and Division Operations* (Washington, DC: Government Printing Office, 2014), 1-1- 1-2, 1-9.

<sup>100</sup> *Ibid.*, 5-4- 5-5.

<sup>101</sup> *Ibid.*, 6-6- 6-7.

<sup>102</sup> *Ibid.*, 7-18.



In 2015, army aviation published FM 3-04, *Army Aviation* as the branch's capstone doctrine to deliver "context for employing and integrating army aviation into ULO." FM 3-04 provided branch's vision specifically for aviation support to "ground maneuver units conducting decisive action across the range of military operations."<sup>103</sup> Referring to itself as the "aviation maneuver force of the combined arms team," aviation branch definitively defined aviation's role in the army's doctrinal revision. While retaining the small unit tactics found in the 1997 *Attack Reconnaissance Helicopter Operations*, the manual also provided planning and execution doctrine for interdiction operations similar. Defining attack capabilities as an application of force against enemy forces "in contact or out of contact with friendly forces," this doctrine reemphasized aviation's commitment to assist ground commanders achieve effects in both deep and close areas of the battlefield.<sup>104</sup> Moreover, the 2016 Army Training Publication 3-04.1, *Aviation Tactical Employment* further "facilitate(d) the implementation of the doctrinal concepts discussed in FM 3-04," outlining missions for all airframes and describing the capability of all aviation assets to perform all missions across the breadth and width of the battlespace and across a wide range of military operations.<sup>105</sup>

Due to the evolution of strategic context and potential emergent threats, the army revised FM 3-0, *Operations* in October 2017. Specifically identifying Russia, China, Iran, and North Korea as adversaries capable of overmatching or achieving parity to American capabilities in the land and air domains, Lieutenant General Michael Lundy, US Army Combined Arms Center commanding general, warned of the potential for "large-scale combat operations in highly

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<sup>103</sup> Department of the Army, Field Manual (FM) 3-04, *Army Aviation* (Washington, DC: Government Printing Office, 2015), vii, ix.

<sup>104</sup> *Ibid.*, 1-1, 1-3, 1-6.

<sup>105</sup> Department of the Army, Army Training Publication (ATP) 3-04.1, *Aviation Tactical Employment* (Washington, DC: Government Printing Office, 2016), xi.

contested, lethal environments.”<sup>106</sup> Describing the role of aviation in large-scale conflict, FM 3-0 outlines the role of aviation as heavily involved in the division’s close fight through either direct support to the BCTs or through shaping operations in the deep fight to affect the division’s close fight. This manual also describes CABs as executing operations under either corps or division control, highlighting the advantage of the current modular force structure to scale upward to support large-scale operations in a high intensity fight.<sup>107</sup> The nested guidance in FM 3-0, FM 3-04, and FM 3-94 constituted the first time in recent history where structurally, organizationally, and operationally, army and aviation capstone doctrine provided clear and consistent guidance as to the role, capacity, capability, and expectations of subordinate aviation units.

## Summary

The transition to ULO initially represented an attempt to rebalance the army’s approach to warfighting. Recent revisions to ULO and subordinate doctrine, however, have also provided an aligned vision and guidance not evident since the implementation of AirLand Battle. The general theme found in these documents indicated a growing concern in confronting near-peer, hybrid threats. This doctrine also belies recognition that US forces no longer hold the technological advantage previously held over potential adversaries. As such, capstone doctrine and branch doctrine directly defined the desired capabilities of aviation forces on the battlefield to drive expectations of readiness. Unlike in Iraq and Afghanistan where aviation enjoyed air dominance, potential threats possess air defense systems capable of significantly impacting US operations. However, the onus falls on aviation forces to understand relative capabilities and determine potential gaps in order to mitigate risk while delivering the effects required by ground force commanders. To mitigate risk, aviation forces must train to hone proficiencies required to support ground forces across the breadth and width of the battlefield.

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<sup>106</sup> Michael D. Lundy, Foreword, Department of the Army, Field Manual (FM) 3-0, *Operations* (Washington, DC: Government Printing Office, 2017).

<sup>107</sup> *Ibid.*, 1-31, 2-16, 2-32.

## Training Strategy

In 2016, aviation branch published *Army Aviation Training Strategy*, communicating that the rise of peer threats and emerging technology will challenge aviation dominance on the battlefield. In response, the document charges CABs to prepare the force and train tactical proficiency in all mission sets, develop innovative techniques to overcome an intelligent enemy, and continue to develop adaptive and flexible leaders at all levels.<sup>108</sup> With a defined doctrinal role within ULO and a greater understanding of threat capabilities, the matter of aviation combat readiness became paramount. The 2017 *Operations* manual identified that peer threats’ “significant air defense capabilities, will force Army aviation to operate in novel ways, leveraging all domains to conduct effective attack, reconnaissance, aerial medical evacuation, and air assault operations in high threat environments.”<sup>109</sup> This reference to novel ways spoke of a need to develop new tactics, techniques, and procedures to employ aviation while synchronizing combined arms capabilities in both the close and deep fight. This shift represented a significant pivot from the competencies displayed on the battlefields of Iraq and Afghanistan. A transition to large-scale operations requires aviation units to employ larger formations within a battlespace designed to synchronize the effects of combined arms teams over breadth and width of an area of operation. Developing the competencies to accomplish these operations necessitates the implementation of a deliberate training strategy.

Guidance within 2016 *Army Aviation Training Strategy* reiterates the role of aviation on the battlefield as a maneuver force that can either work as a synchronized member of a combined arms team or simultaneously employed maneuver asset to achieve “combined or complementary effects.” Either of these employment methods attempts to present “the enemy with multiple

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<sup>108</sup> US Army Aviation Center of Excellence. *Army Aviation Training Strategy: Training Aviation Warfighters for Decisive Action* (Fort Rucker, AL: Government Printing Office, 2016), 1.

<sup>109</sup> US Army, FM 3-0 (2017), 2-60.

dilemmas” and assist the ground force in achieving a position of relative advantage.<sup>110</sup> However, to achieve proficiency in the core competencies that would enable success, the *Aviation Training Strategy* places the responsibility of “progressively and systematically” building task proficiency on the commander, referencing the commander’s understanding of mission sets and the prioritization of mission essential tasks as critical components of training capability. The *Training Strategy* also dictates that commanders are responsible for maximizing training strategies by incorporating virtual, constructive, and gaming capabilities with live training iterations to strengthen the aspects of interoperability and combined arms integration to strengthen the value of training experiences.<sup>111</sup> To implement effective training strategies at the unit level, commanders at multiple echelons must communicate intent for the application of aviation operations to focus training objectives. The next hurdle requires effective measures by which to evaluate readiness.

To assess combat readiness, the army analyzes several key components of a brigade’s capability. One of these components is training readiness. Prior to the implementation of Objective T in 2017, the army utilized a subjective method, placing the brigade commander as the primary judge of an organization’s demonstrated ability to accomplish mission essential tasks. While periodic external evaluations served as a means to validate a commander’s assessment, studies conducted by the US General Accounting Office determined that subjective assessments had the potential to be unreliable. This potential for unreliable reporting significantly undermined trust in the proficiency of army units.<sup>112</sup> To provide a means to measure training readiness accurately, the army G3/5/7 introduced Objective T, an objective assessment policy used to

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<sup>110</sup> US Army Aviation Center of Excellence. *Army Aviation Training Strategy: Training Aviation Warfighters for Decisive Action*, 1.

<sup>111</sup> *Ibid.*, 3, 6, 11, 13.

<sup>112</sup> United States General Accounting Office, *Army Training: Evaluations of Units’ Proficiency Are Not Always Reliable*, Report to the Chairman, Subcommittee on Readiness, Committee on Armed Services, House of Representatives, February 1991, 2.

evaluate training readiness. Designed to serve as a “disciplined and objective” system to gauge proficiency, Objective T outlines a prescriptive guide to assess individual and crew proficiency, mission essential task proficiency, and collective live fire task proficiency. To achieve levels of proficiency, units must conduct training operations against independent, capable opposing forces in “dynamic and complex” environments with certain percentages of personnel participating in the event. The key component of these training iterations is an external evaluator, a subject matter expert, responsible for assessing unit actions in relation to established performance measures. Based on objective metrics, the external evaluator then determines the proficiency rating of the organization.<sup>113</sup>

For aviation units, the most valuable aspect of this new training assessment strategy is the ability of commander to designate the training environment, either live, virtual, or constructive training, to assess proficiency.<sup>114</sup> As live fire scenarios cannot adequately present the threat of air defense, simulation devices and the utilization of the Longbow Apache Tactical Engagement Simulation System and Man Portable Aircraft Survivability Trainer can greatly contribute to training tactics, techniques, and procedures required to combat peer threat air defense capabilities.<sup>115</sup> While these systems are limitedly available to facilitate home station training, an understanding of aviation employment and the enemy capabilities that necessitate training various

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<sup>113</sup> Headquarters, Department of the Army G/3/5/7, *Leader’s Guide to Objective Assessment of Training Proficiency* (Washington, DC: Government Printing Office, 2017), 5-7, 20, 25.

<sup>114</sup> *Ibid.*, 20.

<sup>115</sup> US Army Aviation Center of Excellence. *Army Aviation Training Strategy: Training Aviation Warfighters for Decisive Action*, 26-27; the Longbow Apache Tactical Engagement Simulation System (LBA TESS) is a system that provides instrumentation to support force-on-force and force-on target training. Consisting of installation kits for the aircraft, these kits modify the aircraft to enable realistic targeting to simulate tactical engagements, providing casualty assessments as well as simulated battle damage assessments. This system, paired with ground-based Man Portable Aircraft Survivability Trainer (MAST) as well as ground-based vehicle installation kits, provide aircrews with a force-on-force training opportunity that can simulate peer and near-peer lethality. The system additionally provides a video feedback capability to facilitate after action reviews and engagement replays.

employment techniques by higher echelons should assist in lower echelon units requesting the use of these training aids.

## Conclusion

From the introduction of the helicopter in the US Army, traditionally, army aviation has traditionally lagged behind in doctrinal transitions. While the AirLand Battle transition marked the first successful model for doctrinal transition, subsequent transitions failed to derive the same systematic approach. This most recent transition to ULO, however, has improved upon that model, exceeding past models in terms of completeness and depth. In defining the role of combat aviation, ensuring doctrinal continuity, and developing nested training strategies, aviation stands postured to serve as the combat multiplier upon which ground forces depend. This improved model comes at a time when the army has identified the advancement of near-peer adversaries and the potential large-scale conventional warfare. While operations in Iraq and Afghanistan reflected the tactical advantage of US forces relative to insurgent forces, aviation practitioners cannot assume the same level of technological disparity if confronted by Russia, China, Iran, or North Korea. The potential for technological parity presents a significant issue for US ground forces, specifically for army aviation, and makes this period of doctrinal transition critical to the success of the US Army in future conflict.

Additionally, the army's introduction of Objective T and the aviation training strategy also represent a significant measure to contribute to the aviation's preparation for future, large-scale conflict. Although very prescriptive in criteria established for objective evaluation, the latitude provided for constructing challenging training scenarios will ultimately contribute to rebalancing the capability of army aviation to support both the close and deep fights.

With the doctrinal foundation and way forward established, the most significant challenge faced by aviation practitioners will be relearning competencies lost during years of combat against an enemy that did not possess near-peer air defense and long-range artillery capabilities. Aviation practitioners should not complacently underestimate the capability of

potential threats or overestimate aviation's technological advantage. The anticipated role of army aviation in the future operational environment may exceed its current capability unless aviators train diligently, acquiring the skill sets needed to win on the modern battlefield.

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