

# Air/Ground Integration And the Combined Arms Concept

by Captain Charles Dalcourt

The complementary manner in which the U.S. Army's components function and fight is one of the principal reasons it is the best army in the world. Teamwork, cooperation, and the effective and timely synchronization of resources and assets creates synergistic effects that cripple the enemy and lead to success. This interdependence is tied to the pulse of every soldier, the success of every battle — it is the crux of our Army's combined arms concept.

Combined arms is the synchronized and/or simultaneous application of several arms — such as infantry, armor, artillery, engineers, air defense, and aviation — to achieve an effect on the enemy which is greater than if each arm was used sequentially.<sup>1</sup> The combined arms concept has long surpassed the dreams of its developers, but still has not fully exploited the capabilities at its core. To accomplish this, combined arms officers must be experts, not only in the employment of their own branch, but in the doctrinal employment of all elements of maneuver and fire support.

The purpose of this article is to discuss the capabilities and uses of attack aviation assets, highlight challenges associated with the integration of air and ground forces, and provide recommendations to improve future operations. All too often units at the Combat Training Centers (CTCs) demonstrate that there is a lack of familiarization by armored/mechanized force leaders with the missions and roles attack aviation assets can perform in concert with or in support of ground tactical operations.<sup>2</sup> This article focuses on how U.S. Army attack aviation and armored/mechanized forces can integrate to form one of the most effective forces on the battlefield.

## Capabilities

Army Aviation bridges the gap between aerial and ground combat. To the

ground commander, it offers speed, mobility, and flexibility in one hand and a lethal mix of firepower and versatility in the other. Army Aviation maneuvers its aerial firepower for optimal engagements, concentrates and disperses forces rapidly, and converges on objectives from multiple directions to support combined arms operations.<sup>3</sup> Although unable to occupy or seize terrain, attack helicopters can deny the enemy terrain for a limited time by dominating it with direct and indirect fires.<sup>4</sup> The helicopter's exclusive ability to use and interact with surrounding terrain serves as a defining characteristic of the advantages it offers to the ground commander.

Unencumbered by terrain and ground obstacles, attack helicopters can cover large areas of ground quickly. This allows the maneuver force commander to simultaneously attack threat forces — at almost any time, under almost any conditions — with significantly concentrated masses of combat power.<sup>5</sup>

When allocated by division or corps, an attack helicopter battalion (ATKHB) placed under the operational control of a ground maneuver brigade provides the commander with a highly mobile and lethal antiarmor, antipersonnel, antimate-

riel, and air-to-air destruction capability, both during the day and at night. The lethality of an AH-64-equipped ATKHB is extraordinary. The AH-64 Apache's weaponry includes Hellfire antitank missiles, a wide array of 2.75-inch (70mm) folding fin aerial rockets (FFAR), and a 30mm gun (See Figure 1). It is equipped with a target acquisition and designation sight (TADS) which provides the crew with day and night target acquisition by means of a direct view optical (DVO) telescope, a day television (DTV), and a forward looking infrared (FLIR) sensor system.<sup>6</sup> These acquisition systems, operating individually or in combination, elevate the commander's view of the battlefield to the third dimension.

## Uses

Army Aviation performs myriad roles both in concert with and in support of ground forces on the battlefield. Ground maneuver commanders must understand not only the capabilities of aviation assets, but how to employ them as well. A maneuver brigade may receive an ATKHB OPCON for a specific mission or for a certain amount of time. The battalion, because of sustainability and other issues, is the smallest unit that is

AH-64				
Armament:	Effective Range	Maximum Range	Quantity (STD)	Quantity (HVY)
Hellfire	500m - 8 km	8(+) <sub>km</sub>	8	16
2.75" Rocket	7.5km	9km	38	0
30mm (API,HEI)	3km	4km	1200	1200
Optics (TADS):	Detection	Recognition	Identification	Magnification
DTV	10(+) <sub>km</sub>	8-10km	5-7km	14.3-127X
DVO				3.5-18.2X
FLIR	10(+) <sub>km</sub>	5-6km	900m - 1.2km	1.2-39.8X

Figure 1. AH-64 weapon/optical capabilities



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placed OPCON to a brigade. The ATKHB executes its missions using the attack helicopter company (ATKHC) to engage and destroy enemy forces. To do this, the ATKHB commander applies one of the following three methods of employment: continuous attack, phased attack, or maximum destruction.

ATKHBs are capable of conducting a variety of missions, to include reconnaissance, counter-reconnaissance, and security missions within the unit's capabilities. They conduct tactical offensive operations such as movements to contact and attacks to destroy, attrit, and disrupt enemy forces. ATKHBs can be used to overwatch and suppress, assist in obscuring, and provide security for breach operations; and additionally, serve as the commander's reserve or tactical combat force (TCF).

An AH-64 ATKHB can be extremely effective when employed in a reconnaissance role and can provide information that can have a significant impact on the ground commander's scheme of maneuver. Reconnaissance, performed before and during other combat operations, provides combat intelligence used to confirm or modify the commander's concept of the operation.<sup>7</sup> Equipped with clear and concise guidance, a thorough understanding of the critical tasks of the mission, and a prioritized list of reconnaissance objectives, the ATKHC can gather detailed information about the activities and resources of an enemy force. On-board equipment that enhances the ATKHC's ability to conduct reconnaissance include the TADS and the video recorder subsystem. The video recorder system has the capability of recording up to 72 minutes of selected video. With the proper equipment on hand, or using the aircraft itself to play back the video, the ground commander or S3 can view near-real-time video footage of enemy locations and other reconnaissance objectives before departing the attack position.

During a movement to contact, commanders may employ attack helicopters forward of ground maneuver elements to establish contact with and destroy the enemy's first echelon forces. Although usually a division cavalry mission, the ATKHB can accomplish this task when and where the situation requires or permits its execution. Leading combat actions with attack helicopters establishes momentum and sets a rapid tempo for offensive operations. This action by the ground commander exploits the speed and mobility of his aviation assets and allows them to set the pace of the battle, versus responding to the pace of ground-based combat. Once contact is made and the situation developed, a battle hand-over is conducted with the ground maneuver force, which then assumes the fight. Attack assets may also be employed during a movement to contact as part of the covering force or advanced guard. Given this mission, attack aviation assets support the ground commander by extending the range of observation (thus, increasing reaction time) forward and to the flanks of the force, provides additional combat power to defeat an enemy force upon contact, and facilitates the rapid, aggressive action characteristic of a movement to contact. Additionally, the ATKHB may operate as part of the main body during this operation. Operating from successive forward assembly areas, the ATKHB remains prepared to exploit enemy weaknesses and attack counterattacking forces.

Whether close or deep, attack helicopters answer the call to strike. As part of the ground unit's attack, be it hasty or deliberate, the ATKHB can attack the enemy's flanks, diverting his attention and forcing him to fight in more than one direction. Coordinated properly, this increases the survivability of all assets involved and greatly enhances the paralyzing effect of our armor. In a deliberate attack, aviation assets can be used to de-

stroy enemy second-echelon maneuver forces, logistical assets supporting enemy first-echelon forces, or the enemy's counterattack force. An ATKHB is capable of destroying an enemy armor/mechanized regimental-sized element. As an example, let's look at the capability of one ATKHC during a deliberate attack.

Assume that the enemy has formed a reserve force using a tank battalion from the Motorized Rifle Division's tank regiment. Given a 75 percent operational readiness rate (6 of 8 aircraft) and a standard configuration of eight Hellfire missiles, 38 2.75-inch FFARs, and 30-mm rounds, an AH-64-equipped ATKHC is capable of destroying an enemy tank battalion, assessed to be approximately 83 percent strength. The ATKHC departs its attack position with a total of 48 Hellfire missiles. Assuming a 60 percent probability of hit ( $P_H$ ), which reduces the number of probable hits to 29, and a 90 percent probability of kill ( $P_K$ ), the ATKHC can destroy 26 of the 31 tanks in the battalion. Using the same battlefield calculus, but modifying the configuration to reflect 16 Hellfire missiles on each aircraft, the ATKHC can be expected to destroy up to 52 point targets.

During breaching operations, the AH-64 serves as an ideal platform from which attack aviation assets can assist the ground force. Using a tailored mix of missiles, rockets, and 30mm ammunition, the AH-64 can assist in reducing the loss of mobility assets at the breach site.<sup>8</sup> Supporting the ground force through all four breaching fundamentals (suppress, obscure, secure, and reduce), attack aviation assets prove to be an immeasurable asset during this type of operation. First, using their optics to view the obstacle, the aircraft can forward information to validate and refine obstacle intelligence, such as the obstacle's location and orientation, composition, and size, to the ground force or breach force

commander. If a bypass is available, they can reconnoiter the route, eliminate enemy resistance along the route, and overwatch the movement of ground assets along the bypass. Second, attack aircraft can suppress and destroy enemy forces overwatching the breach site. This task is accomplished by using on-board weaponry as well as through calls for indirect fire from the direct support artillery assets and the maneuver unit's organic mortars. Third, aviation can assist in obscuring the breach site. Again, aviation assets supporting the breach can call for, observe, and adjust indirect fires, as well as monitor and protect the movement of smoke assets at the breach site. The AH-64 is also capable of providing security, both near and far side, for the entire breach force. Additionally, the helicopters can impede or destroy enemy counterattack forces, or forces repositioning, before they get within direct-fire range of the breach site. In support of the reduction effort, the attack helicopter unit supporting the breach cannot directly affect the reduction of the breach site, but assists indirectly by providing the security necessary to protect the breach force.

To this point, we have outlined some of the capabilities and uses of attack aviation assets during the various forms of tactical offense, as well as in support of specific missions. The attributes of attack aviation mentioned are great, in and of themselves, but the full exploitation of these strengths rests in their integration and synchronization with the capabilities of other maneuver forces. With this in mind, let's discuss three key issues that can prevent the success of this merger.

### Problems

One problem identified in the orchestration of air and ground assets is the integration of aviation assets into the ground unit's tactical decision-making process (TDMP). It is during the planning process that the commander determines the best use of the additional maneuver assets given to him. Understanding and considering the inherent limitations and capabilities of attack helicopters allows the commander to make prudent decisions about the decisive point or critical time in which these



assets will be employed. This opens the door to the next issue; the capabilities of the aviation liaison officer (LNO).

The inexperience of some aviation LNOs assigned to ground units, coupled with their inability to articulate the capabilities of the aviation unit they represent, is another issue impeding the synchronization of air and ground forces. The aviation LNO is the critical link between the ground commander and the aviation unit. The LNO makes recommendations to the ground commander and facilitates the exchange of information critical to mission success. The presence of an LNO neither negates the need for the ground maneuver unit's S3 to coordinate with his aviation counterpart nor rescinds the requirement for the S3 to be familiar with the proper employment of aviation assets. What the LNO's presence should provide is a credible resource, an experienced hand, capable of assisting the ground maneuver commander in properly employing aviation assets to suit his scheme of maneuver.

A third dilemma is the employment of aviation assets under the operational control of armor/mechanized commanders. Due to the aforementioned problems, aviation assets are very often not employed throughout the ground unit's scheme of maneuver. Commanders do not exploit the agility, mobility, and versatility of aviation assets under their control. Attack assets are conceptually bound to the traditional roles of attacking second echelon forces, serving as the tactical combat force, or as the ground maneuver unit's reserve, thus opportunities to capitalize on the helicopter's strengths are overlooked. Too often, aviation assets are placed in this capacity (TCF or reserve) because of deficient planning, and are required to provide support anywhere on the battlefield without required planning and synchronization. Assigning an ATKHB a reserve mission, without a clear task and purpose, results in numerous branches with no detailed planning, and the result is that it very seldom works. More often, the quick reaction force/reserve mental-

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ity results in destroyed aircraft and a high probability of fratricide because of their rapid employment into areas where the enemy and friendly situations are unclear.

## Recommendations

So, what steps do we take to reverse these trends? The integration of aviation assets into the tactical decision making process (TDMP) is a simple problem to correct — do it. In the early stages of the command estimate process, coordinating staff members from both units (air and ground) should meet to exchange information and discuss, by battlefield operating system, the general requirements of each. The ground commander should identify critical times and places where attack aviation will assist his scheme of maneuver. After doing so, the aviation unit commander or S3, through the aviation LNO, confirms the aviation unit's ability to accomplish the desired task. This leads us to the next step; the integration of the aviation LNO into the ground planning process.

The Aviation LNO is the critical link that facilitates the continuous integration of aviation assets available to the ground commander during the planning, preparation, execution, and consolidation phases of the mission. The aviation unit has the responsibility of providing a competent LNO to the ground unit. LNOs must be knowledgeable in all aspects of aviation employment and must ensure that the planned employment is within the capabilities of the unit. This individual must be able to provide the ground commander with:

- Recommendations on the employment of the aviation unit
- Recommendations on the location of tentative support-by-fire positions, attack-by-fire positions, and battle positions in support of the ground commander's scheme of maneuver
- Facts regarding the capabilities and limitations of the aircraft and its weaponry, based on environmental conditions as well as mission constraints
- Updates regarding the aviation unit's status.

Additionally, the LNO must keep his parent unit informed, notifying them as soon as possible of changes that occur in the ground unit's mission or timeline.

In prescribing a solution to the lack of familiarization in employing aviation assets, one may consider it a matter of professional development. Soldiers are trained to be tactically proficient and exhibit an overall adeptness in the mission of their particular branch. Our branch schools/centers do a great job of training warfighters to meet this requirement, but where do we train warfighters to *fight* as they would during *war*? That is, where do the doctrinal principles learned in school meet with the practical application needed to produce that valuable resource called experience?

We no longer have the luxury of training as a single arm because we are not going to fight as a single entity. The onus for training leaders to operate with and alongside other members of the combined arms team rests on maneuver unit commanders. Commanders should seek ways to cross-train personnel in spite of budget constraints. Officer professional development sessions conducted by members of the other branches, exchange programs, and efforts such as sending leaders to the field with other arms to observe their training are all inexpensive methods of familiarizing leaders with the capabilities and limitations of other arms.

## Conclusion

As we outgrow the ways in which we have fought in the past, we must also embrace the need to impart in each leader a true understanding of the combined arms concept. By ensuring that we promote interdependence among combined arms team members, we can collectively reverse the trends that tend to isolate an arm, thus reducing the effect of the team. As a team we should conduct tough, realistic training at every opportunity. Through innovative thinking and an aggressive approach, we can, in spite of budget constraints, familiarize our leaders with the doctrinal employment, capabilities, and limitations of fellow team members. Combined arms warfare is the simultaneous application of combat, combat support, and combat service support toward a common goal.<sup>9</sup>

There will never be a war that a single arm can or will win alone. It is when we work in concert with one another — synchronizing both efforts and effects — that we are most capable of delivering such a crushing blow, from which no opponent could recover.

## Notes

<sup>1</sup>FM 100-5-1, *Operational Terms and Graphics*.

<sup>2</sup>Conversation with LTC(P) E.J. Sinclair, Jan 6, '97.

<sup>3</sup>FM 1-100, *Doctrinal Principles For Army Aviation In Combat Operations*, February 1989, p. 1-18.

<sup>4</sup>FM 1-112, *Attack Helicopter Battalion*, 21 February 1991, p. 1-3.

<sup>5</sup>FM 1-100, p. 1-18.

<sup>6</sup>TM 1-1520-238-10 (Change 2), *Operator's Manual For Helicopter, Attack, AH-64A Apache*, 31 August 1994, p. 4-40.

<sup>7</sup>CPT(P) Ronald F. Lewis, "AH-64 in the Reconnaissance Role."

<sup>8</sup>FM 90-13-1, *Combined Arms Breaching Operations*, February 1991, p. 2-4.

<sup>9</sup>FM 100-5, *Operations*, 14 June 1993, p. 2-3.

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