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TITLE: **Army Attack Aviation Shift of Training and Doctrine to Win the War of Tomorrow Effectively**

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Title: Army Attack Aviation Shift of Training and Doctrine to Win the War of Tomorrow Effectively

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Thesis: Army attack aviation leaders, through Training and Doctrine Command, should re-focus its primary mission in doctrine from the strategic/operational deep attack operations or deep interdiction attacks to close combat attacks (CCA) in order to support the ground commander's operational objectives in the current and future irregular warfare and conventional operations.

Discussion: Since the introduction of the AH-64A Apache Helicopters in the mid-1980s, the tank-killing Apaches trained to conduct deliberate deep attack operations 80 to 100 kilometers across the forward line of troops (FLOT) to destroy Soviet second echelon forces in order to prevent re-enforcement to the first echelon forces. This coincided with the Army's new AirLand Battle doctrine. The first battle in which the AH-64A Apache helicopter fought the deep attack mission was in Operation Desert Storm in 1991 against the Iraqi anti-aircraft radar systems to "close the eyes" of the enemy in order for the Air Force to conduct strategic attacks deep in Iraq. Since 2001, in Operation Enduring Freedom, the Apaches are fighting against an asymmetric warfighting enemy. This is a similar enemy where the first armed helicopter fired its first weapons platform against an insurgent enemy in Vietnam in 1962. The first armed helicopters provided close-armed protection in Vietnam and in today's battles, the attack aviation units are providing CCA. The Army conducted a deep attack mission during Operation Iraqi Freedom in 2003 during the initial phase to destroy elements of the Medina Division, but the lack of updated intelligence, bad weather, and misuse of SEAD ending up many aircraft damaged and one aircraft shot down with two POWs. The friction and fog of war will ultimately prevent the units from conducting the high-risk mission of crossing the FLOT deep into enemy territory. The fixed-wing assets by other services, along with the new advancements in the Unmanned Aerial Systems should conduct attacks in the deep battle area to shape the battlefield for the Joint Task Force commanders and the Army attack aviation units need to continue to support ground commanders with CCA to assist in achieving their operational objectives.

Conclusion: There is a need for the Army to be ready to conduct any mission against any adversary, conventional or asymmetric in the future in support of "full spectrum operations." In today's wars and the future's battles, nevertheless, the focus should be on training Army attack aviation aircrews CCA techniques, tactics, and procedures to ensure victory at all levels of war.

Preface

Is the U.S. Army Attack Aviation community preparing to fight future threats throughout the world or maintaining the AirLand Battle concept created in the early 1980s during the Cold War? I think that U.S. Army Training and Doctrine Command, more specifically, the attack aviation section should analyze the past conflicts and prepare for future threats. History shows that Army attack aviation units conducted more close combat attacks, reconnaissance, and security missions than conducting attacks deep into the enemy's second echelon forces to destroy armored and mechanized forces. The most recent doctrine better identifies the close combat attack (similar to joint close air support) but fails to explain the future threat of irregular forces or insurgent forces. Furthermore, past operations against fixed sites and smaller units are more related to raids and air interdiction operations. The attack aviation community created a new term of Interdiction Attack where the definition is very similar to the old term of air interdiction. We need to use terms that the joint community already understands to prevent confusion and incorporate into the next generation of doctrine.

Introduction

As the U.S. Army continues its transformation, Army Aviation continues to change as well. Not only is the Army changing the structure and organization of its units, but also the way it trains and fights in future wars. Consequently, Army Aviation doctrine should continue to reform and use tactics, techniques, and procedures that focus on types of conflict from conventional war to asymmetric enemies, which will most likely be the future conflicts for the U.S. military. From the counterinsurgency battle in Vietnam to the Soviet threat of the Cold War, Army leaders continued to evolve Army doctrine to the future threats. Since the Vietnam War, Army doctrine has continued to change and develop from three dynamics: "the reorientation of the American national security focus from Indochina to Europe; the increased range, accuracy, and lethality of direct-fire weapons evident in the 1973 Middle East War; and the personal energy and determination of U.S. Army Training and Doctrine Command's (TRADOC) first commander, General William E. Dupuy."[1] These three dynamics, in turn, led to five major developments and incorporation of technology into the Army to assist in the possible destruction of the Warsaw Pact in Europe. These new technologies and equipment led the new TRADOC commander, General Don A. Starry, to write the new FM 100-5 *Operations* and create the AirLand Battle concept, which identified the need for air power to help provide the ground commanders room to maneuver on the battlefield.[2]

Since the introduction of the AH-64A Apache Helicopters in the mid-1980s, the tank-killing Apaches trained to conduct deliberate deep attack operations 80 - 100 kilometers across the forward line of troops (FLOT) to destroy Soviet second echelon forces in order to prevent re-enforcement to the first echelon forces. The first battle in which an AH-64A Apache helicopter fought in the deep operations area was in Operation DESERT STORM in 1991; although some

within and out of the Army argued that the mission was a raid. Although the Army requested development of the new AH-64A Apache helicopter to destroy armored and mechanized forces, attack aviation units provided direct support to ground units in low-intensity conflicts as in 2001 for Operation ENDURING FREEDOM. Apache crews are fighting against an asymmetric warfighting enemy effectively; a scenario similar to that when the first armed helicopter fired its organic weapons platform against an insurgent enemy in Vietnam in 1962.

Since the development of armed helicopters during the Vietnam War, the tactics used were to defeat an irregular threat except for two wars: Operation DESERT STORM and Operation IRAQI FREEDOM I. In all other battles or engagements, the Army armed helicopters fought against an irregular enemy, insurgent or other non-state actor, where the helicopter provided close-armed protection or close combat attacks (CCA) in support of the ground commander. In accordance with FM 3-04.126 *Attack Helicopter Operations,* the definition of a CCA is "a coordinated attack by Army aircraft against targets that are in close proximity to friendly forces. Due to capabilities of the aircraft and the enhanced SA (situational awareness) of the aircrews, terminal control from ground units or controllers is not necessary. Close combat attack is not synonymous with CAS (close air support)."[3] As history has shown, the U.S. attack helicopter proved successful in the conventional fight against fixed targets and in direct support of ground commanders, losing very few aircraft. Nevertheless, the majority of the conflicts since the mid-1980s were against an irregular threat that could easily hamper helicopter operations with small arms and rocket-propelled grenade (RPG) launchers, vice the threat of surface-to-air missiles (SAM) from vehicles or man-portable missiles (MANPAD).

While the Army continues to transform, it is imperative that Army Aviation transform to fight the current and future battles in direct support of ground commanders through close combat

attacks. In the new Army Field Manual (FM) 3.04-126, *Attack Reconnaissance Helicopter Operations*, it does not state that the Army attack helicopters units will conduct deep attack operations, but it does state the new term of Interdiction Attack (IA):

> An IA is an attack by Army aircraft to divert, disrupt, delay, degrade, or destroy enemy combat power before it can be used effectively against friendly forces. It can take place at any point in the operational environment and can be hasty or deliberate. *IA is conducted at such a distance from friendly forces that detailed integration with ground forces is not needed.* IA combines ground based fires, attack aviation, unmanned systems, and joint assets to mass effects, isolate and destroy key enemy forces and capabilities. Deliberate IAs are focused on key objectives and fleeting high value targets such as enemy C2 elements, AD systems, mobile, long-range surface missiles, surface-to-surface missiles (SSMs), artillery, and reinforcing ground forces.[4] (Emphasis added)

With such a mindset in the Army attack aviation community, it could fail to improve upon existing tactics, techniques, and procedures (TTPs), as well as prepare for the future battle. Moreover, IA is not a new concept in the Army or in Army aviation. This definition of IA seems to be very similar to a raid and the air interdiction definition in the 1982 Army doctrine. Army aviation should not create new terms that define operations that exist. The joint community does not recognize the new terms in the new Army attack aviation doctrine, so the Army needs to revisit its recently published field manual.

Furthermore, with the new technology of Unmanned Aerial Systems (UAS), satellite operations, long range indirect fire support, and the use of the Air Force, Marine Corps, and Navy fixed-wing assets, Army attack aviation needs to re-focus on supporting the ground combat commanders in direct support or as a maneuver force and provide over-the-shoulder close combat attacks to help affect their battlespace and shape the battlefield. As stated in the 2008 National Defense Strategy, "U.S. dominance in conventional warfare has given prospective

adversaries, particularly non-state actors and their state sponsors, strong motivation to adopt asymmetric methods to counter our advantages."[5]

This paper will identify the failure of Army doctrine to update from past and current conflicts and to look ahead to future threats. In so doing, it will also identify the need for Army Aviation's doctrine to change to provide the correct tactics, techniques, and procedures to meet the future threats the U.S. military will face. While the U.S. Army, as a whole, and specifically Army aviation, continues to transform to fight the future's battles, army attack aviation needs to re-focus its primary mission. The shift from strategic/operational deep attack operations or deep interdiction attacks to close combat attacks (CCA) in order to support the ground commander's operational objectives in the current and future irregular warfare and conventional operations will maximize the contribution of Army aviation to the overall Army mission.

The future warfare the U.S. will face exemplifies the battles of the past. The U.S. military will likely face an asymmetric or irregular threat in the counterinsurgency battle of Vietnam to the small-scale low-intensity battles of Grenada, Panama, and Somalia. The next section of this paper will briefly examine the creation of attack helicopters against past threats and the evolution of the TTPs.

Army Attack Aviation: A Historical Overview

The history of the U.S. attack helicopter began during the buildup in the mid 1960s in Vietnam(see Appendix A). As the concept of Air Mobility evolved to transport the South Vietnamese soldiers around the battlefield, so did the evolution of the armed helicopter. The first armed helicopter was the UH-1A Huey with "two fixed forward-firing 0.30-calibre M37 machine guns and 16 2.75-inch folding fin aerial rockets, procured from the Air Force."[6] As the U.S. combat forces continued to arrive in Vietnam, the Army decided that they required an

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aircraft that will provide security during all phases of troop air transport. Bell Helicopters gained the contract and developed the AH-1 Cobra for this mission.[7] There was no doctrine or TTPs for the pilots to train, so they had to create the TTPs while conducting combat missions. As the Vietcong and North Vietnam Army (NVA) forces continued to harass the Army of South Vietnam (ARVN) and U.S. forces in South Vietnam, the attack helicopters continued to acquire more missions to include reconnaissance, close air support, and other security missions. The Cobra's multi-purpose role in Vietnam did not pave the way for the future Army attack helicopter in the early 1980s. The Army decided to use their new attack helicopter primarily for Corps and division deep operations areas.

After the Vietnam War, the U.S. senior leaders switched their focus and efforts toward preparing for the Cold War. In 1982, the U.S. Army released FM 100-5, *Army Operations,* to outline their new approach to defeat the Soviet threat in Europe.[8] The Army called this new approach the AirLand battle. This concept was to look at the deep battle with the new technology, both on the ground and in the air. The AH-64A Apache helicopter was the new aircraft to affect the deep battle area for the Army. Although the Air Force believed this was their battlespace, the Army leaders continued to move the "no bomb line," also called the Fire Support Coordination Line (FSCL), deeper into the enemy's zone.[9] The Apache's mission was to conduct a deep attack against the enemy's second echelon forces so the enemy could not affect the main battle area. The primary targets within the second echelon forces were the mechanized and armored vehicles. The design of the Apache was to attack these targets 80 – 100 kilometers across the FLOT. The Army believed the acquisition of the A-10 by the Air Force would provide the close air support required for Army units.[10]

Although the Army did not use the Apache helicopter as a deep attack aircraft in the smaller conflicts in the 1980s, the helicopter units did receive the mission to participate in smaller, irregular conflicts, such as Operation JUST CAUSE in Panama. The primary mission for the Apache crews was to conduct reconnaissance and provide security for the Airborne Rangers at an airfield, not as a deep attack platform. The first time the Apache units received such as mission was to attack deep against fixed radar sites during Operation DESERT STORM in 1991.[11] This operation, called Task Force NORMANDY, was more of a raid by definition against fixed radar sites that would open a path for the Air Force bombers to Baghdad from Saudi undetected.[12] The remainder of the missions in Operation DESERT STORM by the Apache helicopter units were providing reconnaissance, security, and conducting close combat attacks for ground units.

Finally, in 1999, the Army called on the Apache helicopter units to conduct deep attacks across the Albania border into Kosovo to destroy small armored units in the southern area of Kosovo during Operation ALLIED FORCE. The mission, called Task Force HAWK, required Apache helicopters to conduct detailed planning, linking the intelligence, suppression of enemy air defense (SEAD) fires, and engagement area (EA) planning to cross into Kosovo against a very small and clever enemy. The Apache units never conducted a combat mission in Task Force HAWK but 11th Aviation Regiment did lose two pilots and two aircraft during exercises up to the border. The Army attack aviation community received another chance to continue the doctrine of the 1980s of AirLand battle and deep attacks in 2003 in Operation IRAQI FREEDOM. First, though, the helicopter crews had to fight against an irregular force after the September 11 attacks in the United States.

Low-intensity Conflicts in the 21st Century

As the Taliban hid in caves, used multiple trail networks in the mountains of Afghanistan, and lived in the local villages within the country, there were no unit boundaries for close, deep, and rear battle areas as in the AirLand Battle concept. This is true today throughout the GWOT fight and will remain for years to come until terrorist and insurgent networks cannot affect the world's population and economics.

When 10th Mountain Division assumed control of Combined Joint Task Force (CJTF) in Afghanistan in 2001, there were no unit boundaries to set the battlespace. The eight Apache helicopters the unit had assigned did not have to cross a FLOT 100 kilometers deep into enemy territory to destroy radar systems or large armored forces. Their mission was to provide CCA for the units on the ground to support in the destruction of the Taliban and Al-Qaeda forces hidden in the mountains.[13] Tactics used by the Army attack aviation unit had to adjust from the deep attack mentality to providing consistent over-the-shoulder firepower from the air when the ground commander requested it.

Although, the Army initially saw the Air Force A-10s as CAS support, along with the other fixed wing assets in the Air Force, Navy and Marine Corps, the use of Apaches in these mountain valleys and passes allowed the helicopters to fly lower and closer to engage enemy targets close to friendly forces. Many would argue that the slower, low-flying Apache is susceptible to small arms and RPG fire, but the Apache construction is very forgiving and survivable against this threat.

As the war grew on, so did the numbers of Apache helicopters entering the war in support of OEF. There are very few deep attack targets for the Apaches as they continue to conduct search and destroy and CCA missions in support of the ground commander's operational objectives. These search and destroy missions are due to a lack of intelligence of known enemy

locations or targets. These missions provide the ground commander with real-time intelligence that did not require funneling through a series of intelligence analysis, allowing the ground commander to make operational decisions based on these reports from the Apaches. Furthermore, with the Apaches in a supporting role, the ground commander has immediate access to CCA assets to support his subordinate units with air firepower and not rely on CFACC for push CAS in a delayed decision process.

Mid- to High-intensity Conflicts in the 21st Century

In 2003, when the U.S. military prepared for the invasion of Iraq, Army attack helicopter units were preparing to fight a battle they have not seen for twelve years. The attack units conducted deep attack operations that required all the detailed planning from lessons learned during the operation of Task Force HAWK and Operation DESERT STORM. Finally, the Army Aviation's doctrine created for the AirLand battle concept was not out of date and the units could attack the armored Iraqi forces.

During Operation IRAQI FREEDOM I, as the 3rd Infantry Division (ID) continued to attack north towards the Karbala Gap, the senior leaders decided that a deep attack mission to destroy the air defense forces of the Medina Division was necessary to effectively continue the ground attack and have fixed-wing air support. This was to be the first deep attack mission beyond organic artillery range since DESERT STORM with Apache helicopters. Task Force HAWK planned, prepped, and conducted rehearsals in Albania to conduct a deep attack operation, but they never executed the mission tactically. Now, the enemy, the Medina Division, began to send its fighting forces into the villages and suburbs outside of An Najaf to intermingle their units with the local populace. The 3rd ID said that this tactic by the enemy would be "most difficult to find and destroy by high-performance aircraft."[14]

The 11th Attack Helicopter Regiment (AHR) would receive the mission to attack the Medina Division Air Defense Artillery (ADA) systems. As the planning continued for the attack, many things began to go wrong. The unit established a Forward Arming and Refueling Point (FARP) southwest of An Najaf on Objective RAMS.[15] This area was susceptible to brownout conditions when aircraft would land due to the talcum powder-like sand.[16] The fuel arrived late, intelligence of the Medina Division arrived late, and the number of attack helicopters decreased by a third of the original plan, so this attack did not target an entire brigade of the Medina Division.[17] Furthermore, the suppression of enemy air defense (SEAD) conducted by long range of ATACMS and the Air Force did not receive the delay of the attack, so the SEAD executed on the original time.[18] This did not effectively close the enemy's eyes while the Apaches attacked across the Forward Line of Troops (FLOT). The detailed planning, timing, and execution to conduct a deep attack mission broke down during operation which resulted in a majority of aircraft damaged and one shot down.

After this deep attack mission against the Medina Division, the attack aviation units conducted more CCA in support of the ground commanders. They continued to provide aerial security for lift aircraft, Forward Operating Bases (FOB) security missions, convoy security, and over-the-shoulder CCA missions. From the time the military secured the Baghdad International Airport (BIAP) through today, the Army attack aviation units conduct security, counter-missile, MANPAD, and rocket interdiction (CM2RI), and CCA missions throughout Iraq. These missions will continue until the final unit departs a stable and free Iraq.

Army Attack Helicopter Deep Operations

As seen in the preceding examples from history, the deep attack mission for Army Apache helicopters was to affect Corps' and division deep battle area and to shape the second

echelon Warsaw Pact forces as it attacked into Europe. This doctrine developed from the AirLand Battle concept in 1982 and twenty years later, with new technology and different enemy and battlefield, the Army aviation community still trains this mission. The first real deep attack operation conducted by Army attack aviation was TF NORMANDY of the 1-101 BN attacking Iraqi radar sites. This operation was more of a raid than a deep attack operation per Army doctrine. The deep attack operation per doctrine is to attack armored and mechanized forces to prevent the enemy of affecting the ground commander's scheme of maneuver. Although TF NORMANDY was a successful deep operation mission in 1991 in Operation DESERT STORM, the deep attack operation would not be so successful twelve years later in 2003 in Operation IRAQI FREEDOM I. The enemy adapts from lessons learned and technology continues to move the deep areas even deeper. TF HAWK was another lesson in a mountainous environment with extremely heavy helicopters trying to conduct deep attack operations. The training missions during TF HAWK in Albania resulted in two aircraft destroyed and two fatalities, without firing a single shot. The technique of hovering with a full complement of armament to destroy armored forces in a mountainous environment proved costly.

The Army recently published the new *Attack Reconnaissance Helicopter Operations*, FM 3-04.126, and changed one of its missions from deep attack to interdiction attack. As per FM 1-112, *Attack Helicopter Operations* (April 1997 document), states that deep attack operations is "high-risk, high-payoff operations that must be executed with the utmost care. Planning and IPB must be detailed and as precise as possible to allow the ATKHB (attack helicopter battalion) to accomplish its mission with the least amount of risk."[19]

The employment of Army attack helicopters in the deep attack must have precise intelligence, capable command, control, and communications deep, and SEAD to allow the

attack helicopters to cross the FLOT and have the enemy's eyes closed. These requirements are essential for the deep attack operations for the destruction of high-payoff targets. Once the planning staff receives the target set and possible location, the units then plan extensive air routes for ingress and egress, and provide back-ups in the event those routes become compromised. The planning staff then evaluates battle positions (BP) or attack by fire positions (ABF) to acquire, identify, and engage the targets. Finally, the unit plans the engagement area (EA) which is most likely where the targets will be travelling through or are currently located. The EA is broken into sectors by the aircrews so not to engage the same targets.

All the above requirements and planning factors must be met to effectively complete a deep attack mission. Other factors involved are the enemy's integrated air defense system (IADS) coverage, weather, to include atmospheric conditions in the EA, and the location of the target set (i.e.: urban, jungle, desert, mountainous). If one of the conditions or requirements is a NO-GO, the mission will slide until the requirements are all a 'GO.' This was the case for Task Force HAWK and is a waste of time and assets in combat.

Army Attack Helicopter Close Combat Attack (CCA)

The history of the Army conducting close-armed support dates back to the Vietnam War with armed UH-1 Huey and the AH-1 Cobra helicopters. Throughout the Cold War, as the Army transitioned to the AirLand Battle concept, they relied solely on the Air Force, Navy, and Marine Corps to provide CAS to ground commanders while the AH-64A Apache aircrews would shape the Corps deep battle area with deep attacks. However, in the late 1980s, the first Army Apaches deployed to combat was in Panama to support the 82nd Airborne troopers. The Apaches and OH-58A/C Kiowa model helicopters provided close combat attacks, sometimes over urban areas, such as in today's battles.[20]

In Iraq and Afghanistan, the Army attack units continue to provide CCA in support of all the ground commanders in both theaters. The Army's new doctrine manual for *Attack Reconnaissance Helicopter Operations*, FM 3-04.126, defines CCA as "a coordinated attack by Army aircraft against targets that are in close proximity to friendly forces."[21] These missions occur from "ten meters to a few thousand meters from friendly forces" that is coordinated and planned by any element from team to company-level ground units using a standard CCA brief.[22] For these attacks, "terminal control from ground units or controllers is not necessary."[23] Some of the characteristics of CCAs are:

- Conducting fire and maneuver in close support of ground forces
- Continuing development of dynamic situation
- Presenting the enemy with multiple/simultaneous dilemmas from which it cannot escape
- Providing extended acquisition range and lethality to the force after contact is made
- Aviation OPCON to ground forces as situation dictates[24]

The planning and training with ground units is important to both aircrews and the units on the ground. The more comfortable the ground units are with requesting CCA, the more fluid and effective the fires will be against enemy targets, and the same is true with the aircrews. The more aircrews conduct simulated CCA with ground units during training, the better they can provide the effect the ground unit is looking for. The CCA should be a pre-planned asset within the ground commander's scheme of maneuver; however, immediate CCA is just as effective. The pre-planning is possible with the structure of the organization. Each ground Brigade Combat Team (BCT) is authorized a Brigade Aviation Element (BAE) consisting of an aviation major, captain, chief warrant officer, and non-commissioned officer (NCO) to provide the brigade commander with technical aviation knowledge for all aviation operations. The BAE and

the supporting Combat Aviation Brigade (CAB) operations officer should coordinate the training and planning.

There are many risks associated with CCA missions, both to the ground units and the aircrews. The ground units' ability to provide a detailed layout of friendly forces will assist in preventing fratricide. In addition, the brief on the friendly locations will also provide information to the aircrews on the direction of attack and possible break actions after the attack. As for the aircrews, CCA requires tremendous situational awareness by the aircrews to prevent fratricide, use of the mass effect range of the weapon systems, and to stay out of range of the enemy weapon systems. Furthermore, as the helicopters fly closer to the ground units in contact, the more enemy small arms and MANPADs become a viable threat to the aircrew. Obviously, the risks are much greater when unit requests "danger close" fires. Although the risk is higher, a successful "danger close" CCA mission can assist ground units that may need additional firepower to escape a possible disaster.[25] "Danger close" missions require a great emphasis on friendly locations, positive identification, and the overall situational awareness by all involved. Danger close ranges depend on weapon platform fired and the range the attack aircraft is from the target area. FM 3-04.126 states that the danger close ranges for each type of ordinance is as follows:

- Hellfire – 105 meters
- Rockets – 240 meters
- 30-mm cannon – 40 meters[26]

This type of mission is the future for Army attack aviation units and needs to continue to be the key training mission while preparing for future combat missions.

Joint Doctrine for Close Air Support

As the Army prepares for future battles, there is some debate on whether Army attack aviation can provide Close Air Support (CAS). More importantly, can the Army Apache helicopters be utilized across the battlefield to support the Joint Forces Commander in a joint environment? Although Army attack aviation does not consider their close support in attacking enemy targets close to friendly ground units as CAS, it does provide the close support needed by ground commanders.

The Joint Publication 3-9.03 defines CAS as "air action by fixed- and rotary-wing aircraft against hostile targets that are in close proximity to friendly forces and that require detailed integration of each air mission with the fire and movement of those force."[27] Based on this definition in the joint publication, Army aviation units do provide CAS; however, this definition leaves out an important part because other services, other than the Army, require CAS missions to have a terminal attack controller through a Joint Terminal Attack Controller (JTAC) or a Forward Attack Controller (Airborne) (FAC(A)). These services require a school trained qualified / certified terminal controller, recognized by the Department of Defense, to control the aircraft onto the target.[28] The Army attack aviation does not require a qualified / certified terminal controller to conduct close support for the ground commander. In accordance with FM 3-04.126, "due to capabilities of the aircraft and the enhanced SA of the aircrews, terminal control from ground units or controllers is not necessary."

The process for Army ground commanders to receive CAS from other services must go through a myriad of command elements prior to approval for pre-planned CAS. Furthermore, the Army units must have an Air Force Air Liaison Officer (ALO) or an FAC(A) to control the aircraft during the support. If a ground unit needs immediate CAS, they must request it through

the Air Force air request net (AFARN) at the air support operations center (ASOC) to receive immediate CAS support.[29]

The Army can provide all of this support, minus the speed of fixed-wing aircraft, to the ground commanders throughout their area of operation and without much interference from higher headquarters. The joint publication does not recognize Army attack aviation as a CAS platform, but it states that:

> Army aviation units are organic to corps, division, and regiments and perform missions as part of a combined arms team. Army helicopter units normally receive mission-type orders and execute as an integral unit/maneuver element. Special situations may arise where attack helicopters are employed in smaller units. The Army does not consider its attack helicopters a CAS system, although they can conduct attacks employing CAS JTTP when operating in support of other forces. The preferred employment method is as an integral unit, operating under the control of a maneuver commander executing mission-type orders.[30]

The Army attack aviation community prefers to support the ground commander through pre-planned mission-type orders, but with today's battles, it is imperative that they train with the ground units to directly support their operational objectives on the ground. This will support the DoD and the President's NDS for 2008 to prepare for the asymmetric battles of tomorrow.

Air Technology

As the Air Force continues to transform, it is increasing its technological capability with the F-22 Raptor. The Air Force, along with the Marine Corps and Navy fixed-wing assets own the mission of providing air interdiction, precision bombing, and CAS. The F-22 provides the Air Force with a stealth capable long-range precision bombing platform that can conduct deep attacks in corps and CJTF deep battle areas. The F-15 and F-18 of the Air Force and Marine Corps and Navy, respectively, can provide this function as well. The future battles need to be coordinated, joint efforts to use all assets available to defeat a conventional threat effectively.

With other services providing the deep attack assets, the Army attack units can support the ground commander.

To assist the intelligence collection and targeting for these fixed-wing platforms are the Unmanned Aerial Systems (UAS). The Army is transforming its UAS organization as well. The mission of the UAS previously fell under the Military Intelligence branch, but recently, switched over to Aviation branch.[31] The UAS provide "real-time information" to ground commanders and to aircrews directly into the AH-64D Longbow.[32] This intelligence could assist the fixed-wing aircrews for the deep attack and still provide ground commanders information for the close fight. Furthermore, these UAS can provide laser designating of a target or can carry its own precision guided munitions to engage targets. The UAS is a combat multiplier for all services and will continue to provide support at all levels of war.

Analysis

In today's battles, the military will more than likely face an enemy that uses irregular warfare techniques. Whether it is tribal gangs in Africa or rogue states of Iran and North Korea, the U.S. military will face more of an irregular warfare threat. The heavy military power of the rogue states may start as conventional warfare, but with the U.S. military primarily dominant through this aspect of war, the adversaries will quickly transform into irregular warfare. This combination ensures that the U.S. must be ready for "Full Spectrum Operations:" fight initial conventional battle and transition to counterinsurgency or irregular warfare techniques. This asymmetric warfare must utilize all U.S. dominance assets through joint tactics with the use of increased technology, planning, training, and execution.

How can Army attack aviation support this future warfare? Army attack aviation can still be a maneuver unit when necessary. These units or platform can still conduct a screen or cover

mission, but its main focus should be supporting the ground combat commander's scheme of maneuver through CCA techniques. Increased technological advances such as the multiple UAS, new fixed wing aircraft used by the Air Force, Navy, and Marines, satellite imagery capabilities, and more precise and longer range indirect fire platforms have changed the way the U.S., specifically Army aviation, needs to train and prepare for war. The Army attack aviation organization needs to re-focus their main training mission and provide close combat attacks for the ground commanders. The attacks deep across the FLOT should now be a joint effort with the use of UAS, artillery, and fixed wing platforms.

Recent history shows that the deep attack by Army attack helicopters is high risk and low cost without definitive intelligence. The 11th Attack Helicopter Regiment's deep attack mission against the Republican Guard Medina Division in OIF I proved that, in certain environments, the Army attack aircraft should provide the ground commander with close support rather than trying to affect unknown enemy deep across the FLOT.[33] Even though the hovering tactics used were a poor decision in the open desert environment, the high-altitude diving fire technique would have drawn attention to the air defense systems of the Iraqi Republican guard.

The deep attack or interdiction attack should not be completely removed from Army attack aviation doctrine, but the mentality of the attack community needs to lean toward conducting CCA. More value and trust from ground commanders toward CCA will provide the Army a more lethal capability to reach tactical and operational objectives in support of the overall strategic goals. Another helicopter designed to destroy armored vehicles was the Soviet made "Hind." They used this helicopter as a very successful CAS platform in the Afghanistan war in the 1980s.[34] They were better suited to fly in the steep valley and at lower airspeeds than the fixed-wing aircraft and were better able to acquire the small teams of Mujaheddin rebels.[35]

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The importance of the helicopter to support the ground commanders in CAS, "according to the Mujaheddin, very few Soviet or Afghan ground operations went ahead without helicopter CAS."[36] The Apache, like the Hind, can conduct this role as an over-the-shoulder support aircraft for the commander on the ground.

Furthermore, the Army should not invest time and resources to change its CCA mission to CAS missions. The requirement for a DoD recognized qualified/certified JTAC or FAC(A) to conduct CAS missions is not a suitable option for the Army. The resources to train and certify these officers are too great during the operational tempo strain from the GWOT. To train the Army officers, extra instructors and aircraft are required. If every Brigade Combat Team in the Army required a JTAC, then a requirement of forty-two additional seats would initially provide the requirement for a brigade level; however, every battalion, and even company, would require a certified JTAC. The training seats and resources are not available. Furthermore, the Marines and Air Force still have the requirement for these officers while the Army does not. Finally, this officer could be a single point failure within the unit. If a stray rocket or mortar wounds this officer, there would not be a replacement to provide the terminal control required during DoD defined CAS mission.

Finally, with the new stealth fighter aircraft, F-22 Raptor, the Air Force can provide a deep attack capability at higher speeds with less risk than attack helicopters. These aircraft will not be able to destroy an enemy battalion-sized armor unit based on sorties and aircraft ability, but it could disrupt or delay prior to re-enforcing the first echelon forces. Furthermore, the UAS with munitions can provide real-time intelligence, conduct an attack, and provide immediate battle damage assessment (BDA) from the same platform without any crewmembers' lives endangered.

Conclusion and Recommendations

Throughout its short history, the Army attack helicopter executed many missions, from deep attack operations against radar sites to CCA providing over-the-shoulder support to ground commanders. The attack helicopter emerged in the 1960s to support air mobility missions in the Vietnam War and provides the same support in today's GWOT. Attack aviation units' first mission was providing aerial security and LZ security, and they still complete those missions, along with many others, today in Iraq and Afghanistan.

The Army requested an attack helicopter during the Cold War Era that could destroy Warsaw Pact armored forces crossing into Europe within the corps deep area to support its AirLand Battle doctrine. The designed helicopter was the Army attack helicopter, the AH-64A Apache. Its mission was to conduct deep attack operations across FLOT into the corps' deep area. Since its arrival into the Army toward the end of the Cold War until now, it only had one successful deep attack mission: TF NORMANDY in Operation DESERT STORM that destroyed the radar sites to allow Air Force fixed-wing assets to fly from Saudi to Baghdad without the threat of enemy acquisition radar systems. The few other deep attack missions, planned or executed, proved to be much more cumbersome in the planning and gathering of sources to be effective. The aircraft damaged and destroyed in OIF I unveils the high risk associated with conducting deep attack operations. These risks are not tactical but more strategic, and the enemy knows how to exploit this risk with major Western populations. They understand that U.S. aircraft are high-payoff / high-value targets and try to exploit this whenever possible.

Therefore, the question is should the Army completely expel this deep attack or interdiction attack mission from its doctrine? The answer is no; however, the attack aviation community should use terms to identify mission types that the entire joint community

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understands. For example, interdiction attack definition in the new FM 3-04.126 is very similar to air interdiction in FM 1-02. Furthermore, the deep attack operation is more of a raid, by definition, than any new term created by the Army Attack Aviation. Finally, Army Attack Aviation doctrine should identify the threats of future wars and train the tactics needed to defeat these threats. There is a need for the Army to be ready to conduct any mission against any adversary, conventional or asymmetric in the future. Nevertheless, with today's and the future wars and the improved technology of UAS and fixed-wing assets, the Army's focus should be on training Army attack aviation aircrews CCA techniques, tactics, and procedures to ensure victory at all levels of war.

To meet Army Attack Aviation's mission responsibilities of today and tomorrow's battles, this study recommends three areas for further research: 1) realign with joint doctrine using existing terms and definitions that the joint community understand and acknowledge (i.e. raid and air interdiction compared to interdiction attack); 2) identify the more relevant threats that Army aviation will face in future years and the tactics, techniques, and procedures required to defeat those threats; and 3) ensure that the Army Attack Aviation doctrine is nested with the overall Army doctrine of "full spectrum operations" in accordance with the Army's *Operations* field manual.

Appendix A – History and Evolution of Army Attack Aviation

History of Attack Helicopters in Combat – Vietnam War

During the early advisory years of Vietnam, the utility helicopters in service became vulnerable to small arms fire during all phases of assault and resupply missions, which prompted the Army to form the Utility Tactical Transport Helicopter Company (UTTHCO) and deploy it to Vietnam in 1962.[37] This unit was a test bed for armed helicopters providing protection for lift helicopters. The Chief of Staff of the Army designed the Army Concept Team to overlook the testing and data of the armed Huey in Vietnam.[38] Brigadier General Edward L. Rowney just finished providing analysis on the Howze Board, which created and tested the first Air Mobile Division, and was to lead this new team to evaluate new methods of countering insurgency in actual combat.[39] The Team had other areas to evaluate but the most important reports from the team was their analysis of the effectiveness of the armed helicopter company during the period 16 October 1962 through 15 March 1963.[40] The evaluation of the testing occurred during actual combat while providing data to the evaluators. The helicopters initially were UH-1A helicopters armed with "two fixed forward-firing 0.30-calibre M37 machine guns and 16 2.75-inch folding fin aerial rockets, procured from the Air Force."[41] They made an immediate impact on the success of missions as an "escort" for the transport aircraft. The escort role meant it would escort the transport aircraft during the enroute, the approach phase, and the landing and take-off phases while returning fire if any allied forces received fire, first.[42] The transport helicopter pilots and the assault ground forces seemed to like the suppressive fires on the landings zones, as it disrupted the enemy and prevented them from mass firing on the assault helicopters and troops.[43] The new aircraft and tactics brought a new dimension to firepower that created great results as it led to trying to achieve its operational goal of the destruction of the Viet Cong.

With the introduction of armed helicopters in the Vietnam, the Air Force believed they were for defensive fires only, and the Air Force fixed-wing assets would conduct the offensive airpower.[44] Major General Richard G. Weede, USMC, Chief of Staff, Military Assistance Command, Vietnam said:

> All incidents mentioned occurred in the immediate battle areas of the ground units. These are not subjects for ASOC/TOC coordination but rather matters for the ground commander to handle as he deems appropriate. Direct support aviation is controlled by the ground element commander and requires no supervision or control by a tactical air control system far removed from the ground battle.

> U.S. Army aviation when employed in a combat support role is normally under the operational control of the Corps Senior Advisors. Therefore, incidents of the type reported are of mutual concern of the ARVN Corps Commander and his U.S. Advisor. Request future incidents be referred to Corps Senior Advisors by your Air Liaison Officers for resolution at the operating level.[45]

A platoon from the UTTHCO worked with Marine H-34s in the I Corps sector of Vietnam. The Marines adopted their joint rotary-winged aircraft as an integral part of their operations "and few, if any, H-34 pilots elected to fly without the armed Hueys nearby."[46]

During this time, as well, to reduce the required planning for air assaults, some early helicopter units stood up a task force named "EAGLE FLIGHT." This was the first really air Quick Reaction Force (QRF) that is commonly used today. The EAGLE FLIGHT consisted of one armed Huey command post with U.S. aviation commander and ARVN troop commander aboard, seven 'Slicks,' five gunships and one Huey for casualty evacuation. Its mission was on-call to react to a withdrawaling enemy force and cut it off until ground forces could capture the enemy, or it would undertake other missions against targets of opportunity.[47] As the battle continued in Vietnam and U.S. combat units began arriving in theater, the Army continued to research for a dedicated gunship. In 1964, the Lockheed AH-56A Cheyenne won a contract for development; however, it proved to have flaws and a long projected end date.[48] Bell filled the

gap with a variant of the UH-1C and created the AH-1G Cobra. The Army ordered this more

maneuverable, faster, and more survivable aircraft in 1966 and on 1 September, 1967, the first

Cobra reached South Vietnam.[49] With this new technology, tactics, techniques, and procedures

changed to incorporate the reconnaissance without door gunners, not being able to hear incoming

fire, and use of the new weapon systems. The Cobra provided better close armed support in

Vietnam with greater speed, better armored protection, and better weapon systems to conduct

aerial escort and provide LZ preparation and security for the assaults.[50]

The attack helicopters, whether the armed Huey or the Cobra, proved very effective and

efficient in providing close armed protection in direct support of the ground units. The units and

aircrews created tactics throughout the many battles in Vietnam. From 1967 until the final

Army's Cobra departed in 1973, the attack helicopter "had thoroughly proved that the attack

helicopter had a place on the modern battlefield."[51]

Cold War Era Decisions, AirLand Battle Doctrine, and Low-intensity Conflicts

After the Vietnam War ended, the Army re-focused its effort to the Cold War. With the

Air Force focused on the strategic bombing, air interdiction, and CAS missions in Europe, Army

aviation redefined its mission. In the fifteen years after its last combat operation in Vietnam, the

Army revised Field Manual (FM) 100-5, *Operations*, twice in the evolution of its doctrine for

combat operations in the event of a Soviet attack in Western Europe.[52]

The first time the Army looked at the Deep Battle concept was in the 1982 revision of

FM 100-5 that described its new AirLand Battle concept.[53] From the doctrine and the realization

that manpower was more expensive than technology, "five big systems" produced and aided in

this AirLand Battle concept.[54] The Army planned to have its own aircraft that could conduct

deep attack operations to shape its deep battle area effectively. The Air Force's A-10 fixed-wing

aircraft would provide CAS for the ground units.[55] The Army looked to the Air Force for air interdiction and CAS to shape the ground commander's battlespace. With Apaches and the new Army Tactical Missile System (ATACMS) that could reach 30-100 kilometers across the FLOT, the Army's deep battle concept began to unfold.[56] The Air Force saw this as a concern due to how much battlespace they would not be able to shape. The Army would move the Fire Support Coordination Line (FSCL), used to be called the "no bomb line," out 100 kilometers to control all operations within their area of operations. If the Air Force targeted enemy forces or infrastructure within this FSCL, they needed approval from the controlling Army unit.[57] The control of the battlespace has been, and will remain, a conflict between the Army and Air Force, as the Army holds the right to shape its battlespace with air interdiction (deep attack operations) deep within its battle area.

The next conflict the U.S. Army participated in was Operation URGENT FURY that kicked off in 1983 where a coup toppled the existing government and the U.S. invaded Grenada against these guerrillas with about 8,000 U.S. Army soldiers.[58] This operation did not use the AH-64A Apache, but the Army's 160th Special Operations Aviation Regiment and U.S. Marines provided helicopter support for this low-intensity conflict. The U.S. Marines' Cobras provided close air support for the Rangers who secured airfields and other key sites in the St. Georges area.[59] The small guerrilla forces and their ability to place AAA systems throughout the St. Georges area proved useful against the Cobras.[60] Another issue for consideration with the complications of this operation was the rules of engagement (ROE) and limitations of collateral damage that further hindered the aircrews' successful use of the capabilities of the attack helicopter.[61] This is similar to many non-conventional warfare operations of GWOT, today.

Another low-intensity conflict occurred in December 1989. Operation JUST CAUSE

consisted of special operations forces and 82nd Airborne Division Paratroopers that launched an

assault against many targets in Panama due to General Manuel Noriega's reckless Panama

Defense Force (PDF) killing of a U.S. Marine serving in the Panama Canal Zone.[62] Although

this conflict targeted state actors, it was not a contiguous battlefield. This was the first battle that

the AH-64A Apaches would participate in any type of conflict. The targets for the Apache crews

were not against armor or mechanized forces but were to attack fixed buildings or support the

units on the ground. The initial missions for the Apaches of the 1st Battalion, 82nd Aviation

Regiment, 82nd Airborne Division was to conduct reconnaissance using its Forward Looking

Infrared (FLIR) sensor and the video recorded to identify possible barracks for the PDF

soldiers.[63] The first combat mission was to provide security for the assault forces at Rio Hato

where General Noriega's personal aircraft was located.[64] Although the mission saw no gunfire

between U.S. and Panamanian forces as well as the absence of Noriega who continued to elude

U.S. forces, the ground forces secured the airfield to prevent Noriega from escaping by air.

Another mission for the aircrews of 1-82nd was to support ground forces fighting in an urban

environment at Tinajitas where "use of air support in such close quarters requires exceptional

coordination, and the ongoing fighting in and around Tinajitas was taking place at extremely

close quarters."[65] Enroute to this location, the Apache received twenty-three hits from 5.56mm

rounds fired from the PDF's M16 rifles.[66] This Apache was flying twenty-four hours later,

which shows the survivability of the Apache in a close combat fight. As the fighting in

Operation JUST CAUSE continued, it became more of an urban fight and this limited the

Apache's effectiveness in order to prevent collateral damage.[67] Nowhere in the 1983 doctrine

manual of *Combat Aviation Operations* did it mention that the Apaches would provide close-armed support from the air. The Army still believed that this was an Air Force mission.

Throughout the late 1980s and early 1990s, the Army failed to follow its own doctrine of using its deep operating Apache to destroy tanks but used the aircraft in the direct support of ground units in a close combat support role. The Army stated in its manuals that fixed wing aircraft would provide CAS and conduct the strategic air interdiction support required by Army ground commanders, but the Army Attack Aviation units did provide the required close support needed for the ground units throughout these operations while the Air Force bombers provided the strategic attacks against installations.

Conflicts in the 1990s

Shortly after the Apache's first combat action, the aircraft would face a more conventional war against the Iraqi Army. As Operation DESERT SHIELD kicked off the first Gulf War in 1990, and the Iraqi invasion of Kuwait in 1991 to drive the Iraqi forces out of Kuwait, the U.S. Military planned six military objectives to be completed in four phases and air power played a significant role throughout all four phases.[68] This war would present the first test of the Apache helicopter as an armored tank killer, but first, it had to conduct a deep attack operation against two radar sites leading into Baghdad.[69] The deep attack mission, Task Force NORMANDY, was to destroy enemy radar systems in order to allow a radar-free site from Saudi to Baghdad for the fixed-wing aircraft of the Air Force.[70] This mission seemed to follow the definition of a raid in accordance with Army doctrine. The 1983 version of *Combat Aviation Operations,* states, "a raid differs from other attacks because it includes a withdrawal plan. When aviation forces are used, this plan must be as detailed as the initial assault plan."[71] Furthermore, the Department of Defense's definition of a raid is "an operation, usually small

scale, involving a swift penetration of hostile territory to secure information, confuse the enemy,

or to destroy installations. It ends with a planned withdrawal upon completion of the assigned

mission."[72] Although considered a successful mission by 1st Battalion, 101st Airborne Division

(Air Assault), this still was not the mission associated with the tank-killing Apache helicopters.

This attack launched at H-Hour to begin the ground assault of Operation DESERT STORM.[73]

The attack, or raid, was the only successful mission that operated outside of organic

indirect artillery fire (usually 105 or 155 mm Howitzers). The remainder of the war for the

attack helicopters consisted of providing direct support for the ground commander's scheme of

maneuver. They conducted screen missions, aerial security, Forward Operating Base (FOB)

security, and close combat attacks extending no more than thirty kilometers in front of the

ground forces which is in range of ground units' organic artillery systems.

The reality of conflicts throughout the 1990s proves that the U.S. Army and other

military forces would need to adjust from the Cold War mindset. The conflict in Somalia in

1993 is just the beginning of the threats that aviation units will face in the near future. As the

United Nations provided troops as peacekeepers in Somalia, aid was flowing into the country

and militia were stealing the food and other aid and using it to make a profit. The UN could no

longer provide the required security needed for the helpless, so the U.S. decided to intervene and

restore "political stability throughout the country.[74] As the U.S. took over a more combat role in

Mogadishu, so did U.S. helicopter support for ground commanders. While U.S. Rangers planned

a mission to capture senior leaders within the insurgency chain of command, helicopter support

from Army special operations, 10th Mountain Division, and Marine units were planning to

provide air support over the urbanized terrain.[75] As the mission of air assaulting the Rangers

commenced, a special operations Blackhawk received fire from an RPG after dropping off the

Rangers in the city.[76] This created the friction of war that led to attack helicopters conducting close air support in an urban environment against a lesser technological aided enemy. The AH-6 special operations helicopters and the Marine Cobras conducted CAS for the Rangers on the ground. There were many lessons learned in the aviation community, but "overall, the AH-1 Cobra proved in Mogadishu that it could be effective during periods of limited visibility, and 20mm fire had the greatest utility because of its superior accuracy."[77] This is the future fight of the U.S. military and the attack helicopter community needs to continue to train for this warfare.

The next conflict occurred in Kosovo during Operation ALLIED FORCE in 1999. Although no conventional ground forces attacked into Kosovo, the Apache units deployed to Albania in support of Task Force HAWK. The Apaches would attack in four to six ship missions to destroy a platoon sized armored threat with three additional lift helicopters to provide all the requirements of the detailed planning involved with the deep attack operations. The planning involved with this operation consisted of a Corps level staff called the Deep Operations Coordination Center (DOCC) required detailed information from the intelligence to the communications cells. As the DOCC continued to figure out the intelligence piece and the Air Force was bombing daily, "the Task Force developed detailed mission 'go/no-go' and abort criteria. The 'no-go' criteria included:

- Target not approved
- Mission rehearsal not completed
- Key communications inoperative
- Target and engagement area (EA) not current (more than four hours old from time of Forward Line of Troops (FLOT) crossing
- Suppression of Enemy Air Defense (SEAD) not available for enroute and in EA for known air defense positions
- Weather less than 1000 foot ceiling and two miles in-flight visibility
- Restricted operating zone (ROZ) not approved by the CAOC
- Combat search and rescue (CSAR) not approved by CAOC[78]

These criteria set many restrictions on the Attack aviation units. The units would plan, rehearse, and conduct mission up to the border, but never received clearance to attack into Kosovo. Many experts say that the "risks outweighed the potential benefits."[79]

Appendix B - Army Attack Aviation Doctrine Evolution, or still AirLand Battle mentality

The Army's 1983 edition of *Combat Aviation Operations,* FM 1-100 states, "the maneuver speed that aviation brings to the battle is absolutely critical to success in the fast-moving fight that is expected in the AirLand Battle."[80] Although the Army did not receive their first AH-64A Apache helicopters until 1983, FM 1-100 suggests the mindset of senior leaders and their support of the AirLand Battle concept. Furthermore, the manual states that "the primary purpose of the attack helicopter is to attack and destroy enemy armored and mechanized forces" and the preferable use of these helicopters is to attack in battalion strength.[81]

The manual does not use the term "deep attack" but discusses the deliberate attack during deep operations. As Army aviation units trained to attack in the division and corps deep areas, smaller conflicts in the non-traditional format kept occurring throughout the world, more specifically in Central America.

During this time, the Army released the new FM 1-112, *Attack Helicopter Operations,* which still used the foundation of the AirLand Battle concept. The manual stated, "success on future battlefields depends on how well the tenets of AirLand Battle doctrine are applied. These tenets are initiative, depth, agility, and synchronization."[82] This doctrine still stated that attack helicopter battalions (ATKHB) will be used in mass against heavy armor and mechanized forces and that the "fire support provided by artillery and CAS is important to the ATKHB."[83] Although the Cold War was over and the threat of large Warsaw Pact forces would attack through the Fulda Gap no longer existed, the Army aviation community continued to plan to attack armored forces in the deep operations area. The FM fails to continue projecting the intensity of future battles by stating that "attack helicopters are not well-suited to fight over urbanized terrain" and "the ATKHB should not be used piecemeal as pairs of aircraft responding to calls for fire" which was required through the 1990's conflicts. Finally, the Army fails to use

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history to update doctrine as history shows that more low-intensity conflicts will require more time and resources from the military, than mid- to high-intensity conflicts.

Army aviation published its updated version of FM 1-112 in 1997 with the same foundation of attacking large armored forces. The doctrine stated that "to take advantage of its speed and mobility against armored forces, the ATKHB fights pure."[84] The Army as a whole was moving on from the AirLand Battle concept with the fall of the Soviet Union and recognized the military forces would be operating in operations other than war (MOOTW). This 1993 version of FM 100-5, *Operations,* focused more on peacetime and low-intensity conflicts and realized the need for more joint operations; however, the aviation community stilled relied on its deep operations concept and did not plan or train to provide CCA to ground commanders.[85] This support tends to happen throughout most conflicts and the attack aviation community did not write it into its doctrine and did not train on the close support using high-energy tactics that are required in CCA.

As discussed above, the Army's Attack Aviation doctrine from 1997 was still the current doctrine leading into Operation Enduring Freedom. Units were still training to attack in mass against armored and mechanized forces. The Army aviation units had to adjust their tactics, techniques, and procedures to fight an irregular threat on a non-contiguous battlefield against Taliban and Al Qaeda forces in the mountains of Afghanistan.

Appendix C – Terms and Definitions *

Air Interdiction (AI) – (DOD, NATO) Air operations conducted to destroy, neutralize, or delay the enemy's military potential before it can be brought to bear effectively against friendly forces at such distance from friendly forces that detailed integration of each air mission with the fire and movement of friendly forces is not required.

Ambush – A form of attack by fire or other destructive means from concealed positions on a moving or temporarily halted enemy.

Area Reconnaissance – A form of reconnaissance operations that is a directed effort to obtain detailed information concerning the terrain or enemy activity within a prescribed area.

Area Security – A form of security operations conducted to protect friendly forces, installation routes, and actions within a specific area.

Attack – An offensive operation that destroys or defeats enemy forces, seizes and secures terrain, or both.

Attack By Fire – A tactical mission task in which a commander uses direct fires, supported by indirect fires, to engage an enemy without closing with him to destroy, suppress, fix, or deceive him.

Attack By Fire Position (ABF) – A position that designates the general position from which a unit conducts that tactical mission task of attack by fire.

Battlefield Air Interdiction (BAI) – Air action against hostile surface targets nominated by the ground commander and in direct support of ground operations. It is the primary means of fighting the deep battle at extended ranges. It also destroys, delays, or disrupts follow-on enemy units before they can enter the close battle. (FM 100-5 1982, 7-11)

Battle Position (BP) – For attack helicopters, an area designated in which they can maneuver and fire into a designated engagement area or engage targets or opportunity.

Close Air Support (CAS) – (DOD) Air action by fixed- and rotary-wing aircraft against hostile targets that are in close proximity to friendly forces and which require detailed integration of each air mission with the fire and movement of those forces.

Close Combat Attack (CCA) – A hasty or deliberate attack by Army aircraft providing air-to-ground fires for friendly units engaged in close combat. Due to the close proximity of friendly forces, detailed integration is required. (FM 3-04.126, 1-4)

Close Operations – Comprise the current activities of major committed combat elements, together with their immediate combat support and combat service support. (FM 100-5 1986, 19)

Counterinsurgency – (DOD) Those military, paramilitary, political, economic, psychological, and civic actions taken by a government to defeat insurgency.

Cover – A form of security operation whose primary task is to protect the main body by fighting to gain time while also observing and reporting information and preventing enemy ground observation of and direct fire against the main body. Unlike a screening or guard force, the covering force is a self-contained force capable of operating independently of the main body.

Covering Force – (DOD, NATO) A force operating apart from the main force for the purpose of intercepting, engaging, delaying, disorganizing, and deceiving the enemy before the enemy can attack the force covered.

Danger Close – (DOD) In close air support, artillery, mortar, and naval gunfire support fires, it is the term included in the method of engagement segment of a call for fire which indicates that friendly forces are within close proximity of the target. The close proximity distance is determined by the weapon and munition fired.

Decisive Operation – The operation that directly accomplishes the task assigned by the higher headquarters. Decisive operations conclusively determine the outcome of major operations, battles, and engagements.

Deep Operations – Comprise activities directed against enemy forces not in contact designed to influence the conditions in which future close operations will be conducted. (FM 100-5 1986, 19)

Defeat – A tactical mission task that occurs when an enemy force has temporarily or permanently lost the physical means or the will to fight. The defeated force's commander is unwilling or unable to pursue his adopted course of action, thereby yielding to the friendly commander's will, and can no longer interfere to a significant degree with the actions of friendly forces. Defeat can result from the use of force or the threat of its use.

Delay – A form of retrograde in which a force under pressure trades space for time by slowing the enemy's momentum and inflicting maximum damage on the enemy without, in principle, becoming decisively engaged.

Deliberate Attack – (DOD, NATO) A type of offensive action characterized by preplanned coordinated employment of firepower and maneuver to close with and destroy or capture the enemy.

Destroy – 1. A tactical mission task that physically renders an enemy force combat-ineffective until it is reconstituted. 2. To damage a combat system so badly that it cannot perform any function or be restored to a usable condition without being entirely rebuilt.

Disrupt – A tactical mission task in which a commander integrates direct and indirect fires, terrain, and obstacles to upset an enemy's formation or tempo, interrupt his timetable, or cause his forces to commit prematurely or attack in piecemeal fashion.

Engagement Area (EA) – An area where the commander intends to contain and destroy an enemy force with the massed effects of all available weapons and supporting systems.

Fix – A tactical mission task where a commander prevents the enemy from moving any part of his force from a specific location for a specific period of time.

Full Spectrum Operations – The range of operations Army forces conduct in war and military operations other than war.

Guard – (DOD) A form of security operation whose primary task is to protect the main force by fighting to gain time while also observing and reporting information and to prevent enemy ground observation of and direct fire against the main body by reconnoitering, attacking, defending, and delaying. A guard force normally operates within the range of the main body's indirect fire weapons.

Hasty Attack – (DOD, NATO) In land operations, an attack in which preparation time is traded for speed in order to exploit an opportunity.

Insurgency – (DOD, NATO) An organized movement aimed at the overthrow of a constituted government through the use of subversion and armed conflict.

Interdiction Attack – A hasty or deliberate attack by Army aircraft to divert, disrupt, delay, degrade, or destroy the enemy before they can be used effectively against friendly forces. IA is conducted at such a distance from friendly forces that detailed integration with ground forces is not required. (FM 3-04.126, 1-4)

Irregular Forces – (DOD) Armed individuals or groups who are not members of the regular armed forces, police, or other internal security forces.

Joint Air Attack Team (JAAT) – A combination of U.S. Army attack and scout aircraft and fixed-wing close air support aircraft operating together to locate and attack high priority targets, such as tanks and other targets of opportunity. The joint air attack team normally operates in a coordinated effort with fire support, air defense artillery, and ground maneuver forces against enemy armored formations, command vehicles, and enemy air defense weapon systems.

Meeting Engagement – A combat action that occurs when a moving force engages an enemy at an unexpected time and place.

Military Operations Other Than War – (DOD) Operations that encompass the use of military capabilities across the rang of military operations short of war. These military actions can be applied to complement any combination of other instruments of national power and occur before, during, and after the war.

Movement to Contact – (DOD) A form of the offensive designed to develop the situation and to establish or regain contact.

Neutralize – (DOD) 1. As applies to military operations, to render ineffective or unusable. 2. To render enemy personnel or material incapable of interfering with a particular operation.

Offensive Air Support – That part of tactical air support of land operations that consists of tactical air reconnaissance and close air support, which are conducted in direct support of land operations.

Paramilitary Forces – (DOD) Forces or groups distinct from the regular armed forces of any country, but resembling them in organization, equipment, training, or mission.

Raid – (DOD, NATO) An operation, usually small scale, involving a swift penetration of hostile territory to secure information, confuse the enemy, or to destroy installations. It ends with a planned withdrawal upon completion of the assigned mission.

Rear Operations – Comprise activities rearward of elements in contact designed to assure freedom of maneuver and continuity of operations, including continuity of sustainment and command and control. (FM 100-5 1986, 20)

Reconnaissance – (DOD, NATO) A mission undertaken to obtain, by visual observation or other detection methods, information about the activities and resources of an enemy or potential enemy, or to secure data concerning the meteorological, hydrographic, or geographic characteristics of a particular area.

Route Reconnaissance – A directed effort to obtain detailed information of a specified route and all terrain from which the enemy could influence movement along that route.

Route Security Operations – A specialized kind of area security operations conducted to protect lines of communication and friendly forces moving along them.

Screen – A form of security operation that primarily provides early warning to the protected force.

Search and Attack – A technique of conducting a movement to contact that shares many of the characteristics of an area security mission.

Security Operations – Those operations undertaken by a commander to provide early and accurate warning of enemy operations, to provide the force being protected with time and maneuver space within which to react to the enemy, and to develop the situation to allow the commander to effectively use the protected force.

Stability Operations – Operations that promote and protect U.S. national interests by influencing the threat, political, and information dimensions of the operational environment through a combination of peacetime developmental, cooperative activities and coercive actions in response to crisis.

Support By Fire – A tactical mission task in which a maneuver force moves to a position where it can engage the enemy by direct fire in support of another maneuvering force.

Suppress – A tactical mission task that results in temporary degradation of the performance of a force or weapons system below the level needed to accomplish the mission.

Suppression of Enemy Air Defense (SEAD) – (DOD) That activity which neutralizes, destroys, or temporarily degrades surface-based enemy air defenses by destructive and/or disruptive means.

Zone Reconnaissance – A form of reconnaissance that involves a directed effort to obtain detailed information on all routes, obstacles, terrain, and enemy forces within a zone defined by boundaries.

Note * All terms and definitions above are from FM 1-02, *Operational Terms and Graphics*, unless otherwise noted after definition.

Appendix D – Briefing Formats

CLOSE COMBAT ATTACK BRIEF (Ground to Air)
1. Observer/Warning Order: "_____. THIS IS _____. FIRE MISSION. OVER."   (Aircraft)   (Observer C/S)
2. Friendly Location/Mark: "MY POSITION _____. MARKED BY _____."   (TRP, Grid, etc.)   (Strobe, Beacon, IR Strobe, etc.)
3. Target Location: "_____."   (Bearing [magnetic] & Range [meters], TRP, Grid, etc.)
4. Target Description/Mark: "_____. MARKED BY _____. OVER."   (Target Description)   (IR pointer, Tracer, etc.)
5. Remarks: "_____."   (Threats, Danger Close Clearance, Restrictions, At My Command, etc.)
AS REQUIRED: 1. Clearance: Transmission of the CCA brief is clearance to fire (unless Danger Close). Danger close ranges are in accordance with FM 3-09.32. For closer fire, the observer/commander must accept responsibility for increased risk. State "CLEARED DANGER CLOSE" on line 5. This clearance may be preplanned. 2. At my command: For positive control of the gunship, state "AT MY COMMAND" on line 5. The gunship will call "READY FOR FIRE" when ready.

Figure 1. Close Combat Attack (CCA) Briefing Format

CAS BRIEFING FORMAT (9-LINE)

(Omit data note required, do not transmit line numbers. Unit of measure are standard unless otherwise specified. *Denotes minimum essential in limited communications environment. BOLD denotes readback items when requested.)

Terminal controller:"_____ this is _____"

     (Aircraft Call Sign)   (Terminal Controller)

*1. IP/BP:"_____"

*2. Heading :"_____" (Magnetic)

              (IP/BP to Target)

Offset "_____(Left/Right)

*3. Distance:_____"

    (IP-to-Target in Nautical Miles/BP-to-Target in Meters)

*4. Target Elevation:_____"

          (in Feet/MSL)

*5. Target Description:_____"

*6. Target Location:"_____" (Latitude/Longitude or Grid Coordinates or Offsets or Visual)

*7. Type Mark:"_____" Code: "_____"

    (WP, Laser, IR Beacon)   (Actual Code)

Laser to Target Line:"_____ Degrees"

*8. Location of Friendlies:_____"

Position Marked By:_____"

9. Egress:_____"

Remarks (as appropriate):_____"

   (Threats, Restrictions, Danger Close, Attack Clearance, SEAD, Abort Codes, Hazards)

*TOT:"__" or TTT: "Stand by __ plus ____, Hack."

Note: When identifying position coordinates for joint operations, include the map datum data.

Figure 2. Close Air Support (CAS) Briefing Format

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