

Angle of Attack: Apache Attack Helicopters in Unmanned Skies

Description

United States Army Aviation, at a crossroads of equipment and identity as aerial warfare increasingly emphasizes unmanned systems, faces a difficult reckoning akin to a historical quote by [General \(Ret.\) Eric Shinseki](#), “if you don’t like change, you’ll like irrelevance even less.” To maintain utility in modernizing skies, attack helicopters are under pressure to evolve their critical role or quickly risk obsolescence. Witnessing the ongoing use of helicopters [in Ukraine](#) and [Israel](#), global military leaders’ observations polarize future defense acquisitions, with some nations deciding to instead [invest in unmanned technologies](#) and others, such as Poland, [deepening their commitment](#) to modernizing their attack helicopter fleets.

As the [largest operator](#) of attack helicopters globally, the U.S. Army is forced to face this strategic debate over the future relevance of manned attack helicopters. As a result, the Army is at an inflection point for its fleet of AH-64 Apache helicopters: the Army’s [recent restructuring guidance](#) cut 50 percent of AH-64 formations within each divisional combat aviation brigade, and [with corresponding reductions in pilot billets](#). Simultaneously, these changes prioritize the increased integration of drone swarms and other unmanned aerial systems (UAS). Despite these shifts, the Army [continues to invest](#) in upgraded variants of the Apache, signaling some level of ongoing commitment to the platform.

Any comprehensive analysis of military systems begs several foundational questions: What is the mission of the current platform? Does that mission retain operational relevance within contemporary and evolving operational environments? Can operators innovate existing resources to enhance relevance across the spectrum of conflict? If not, what are the alternative systems capable of performing the mission more effectively or efficiently? In evaluating the future of attack aviation, it is imperative to consider the enduring utility of current assets through the lens of cost-efficiency, operational capability, and survivability. Candid and honest analysis is essential if rotary-wing attack aviation is to evolve and remain lethal, survivable, and relevant on the future battlefield.

The Evolution of Attack Aviation

The origins of dedicated attack aviation trace back to the introduction of the [AH-1 Cobra in 1967](#), during the Vietnam War. Although the Cobra proved effective in low-intensity conflicts, its limited survivability in the high-intensity environments envisioned for AirLand Battle during the 1990s led to the

development of the AH-64A Apache.

Distinct from operational-level platforms employed by the U.S. Air Force, Army attack helicopters serve as tactical assets designed for direct integration with ground maneuver forces. According to Army doctrine, [the attack mission](#) serves to destroy, dislocate, disintegrate, or isolate enemy formations. After the Army [divested the](#) OH-58D Kiowa scout helicopters in the 2010s, the Apache also filled the role of [aerial reconnaissance](#) until the advent of unmanned systems that increasingly subsumed the mission.

While originally designed for [deep attack](#), the Apache became part of the joint air attack team that was integral to [AirLand Battle doctrine](#) at the end of the Cold War. During the Global War on Terror, the Apache [adapted](#) to the counterinsurgency environments of Iraq and Afghanistan, excelling as a direct fires and armed overwatch platform. Looking forward, the return of high intensity conventional combat appears to realign with the Apache's original design philosophy. Yet, the complexity of modern, contested airspace in conflicts of all intensities renders the mission far more demanding than in past eras, and thus the weapon system and the tactical employment of that weapon system must continue to evolve if it is to remain relevant.

Today's Attack Platform: The AH-64E Apache

First engineered as a Cold War tank-destroyer, the AH-64 Apache has proven its versatility across a range of conflict environments, including Operations Desert Storm, Iraqi Freedom, and Enduring Freedom. [Armed with](#) a 30mm chain gun, 2.75-inch rockets, and a suite of radar- and laser-guided missiles, the Apache is capable of conducting both direct and indirect fire missions, either in close proximity with, or separate from ground forces. When equipped with its fire control radar, it can detect, track, and engage targets with minimal exposure to enemy fire. It is entirely integrated into the Army's [multi-domain operations](#) concept which enables real-time data exchange with ground forces, friendly air assets, and other Apaches via internal internet protocols.

The current version of the Apache, the AH-64E, is also capable of [manned-unmanned teaming](#) (MUM-T), providing the ability to operate alongside and control unmanned aerial platforms. As part of the Army's [Launched Effects](#) (LE) experimentation, future Apaches will integrate with a variety of ground and air-launched unmanned systems to improve and expand ground commanders' abilities to see, track, and strike enemy formations. The recent certification of the Spike Non-Line of Sight [long range precision munitions](#) (LRPM) will extend future Apaches' lethality and increase the system's survivability on the future battlefield. More importantly, the LRPM program provides a launchpad for development of extended range autonomous and remotely piloted small unmanned aerial systems.

The Development of Modern Unmanned Systems

In parallel with upgrades to the AH-64Es, the Army is also investing billions of dollars into the research, development, and acquisition of unmanned aerial systems for every echelon. Empowered by the recent Executive Order [“Unleashing American Drone Dominance,”](#) the Army is actively collaborating with nearly 300 industry partners across the aerospace and technology industries to bring forth new systems and capabilities.

Army UAS strategy seeks to increase the capability of unmanned systems in the [“air-ground littoral”](#)—the airspace within a few thousand feet above the battlefield—where rotary wing assets traditionally operate. The Army intends to [have UASs of varying sizes, capabilities, and endurance at each echelon](#), ranging from soldier-borne sensors at the squad level to LE and endurance UASs at the division and corps levels. Across the spectrum of UASs, nearly all designs include electro-optical and infrared sensors, with added specialties of electronic warfare, retransmission of communications, strike capabilities, and more. Some smaller systems are intended to be [attritable](#), while others are to be repeatedly launched and recovered.

The desired end state of the proliferation of unmanned systems is to provide soldiers and [formations with flexible capabilities](#), with the option for artificial intelligence-driven autonomous breaching and reconnaissance or pilot-controlled missions. [Payload attachments and software](#) will be standardized across the industry, while low-level commanders retain agency for the selection and testing of UAS they feel fit for their formations.

By increasing the availability and utilization of unmanned aerial systems, ground force commanders are able to extend their reach beyond the footprint of their formations. Doing so, however, complicates both physical airspace and the distinction in mission of manned systems.

Competing Capabilities

An understanding of the designed mission and capabilities of both manned and unmanned systems is critical to the analysis of the potential future of the Apache. In return to some of the critical lines of questioning: how might UASs and attack helicopters complement each other?

The original mission of the Apache was deep attack and armed reconnaissance. These missions will still be relevant in the operational environments of tomorrow, but how these missions are executed will be different. The question then becomes how Army attack aviation should evolve to retain its relevance. Whether drones can do these missions better, and if not better, cheaper with acceptable compromises, remains to be battlefield-tested in the types of future conflicts the United States

anticipates.

The AH-64E Apache, as with any manned system, garners its advantage through human situational awareness and decision-making. While not an autonomous operator, an Apache crew can act independently through disciplined initiative well beyond the range of radio communications with a tactical operations center. In its present state, the Apache's weapons payload is larger than most UASs; however, far more limited in range, while on-board electro-optical and infrared sensing capabilities are comparable between the two.

Unmanned systems hold many of their advantages in the obvious: they do not put a pilot at risk, nor are they burdened by the demands of high training costs and crew rest, or the risk of deadly human error in the cockpit. Smaller or higher-altitude systems are potentially less detectable and lack the consequences of loss of life if interdicted. The procurement and sustainment of the Apache requires immense resources, while drones can be produced across a spectrum of price points, ranging from inexpensive tactical systems to advanced platforms in smaller numbers. Loiter time can stretch to over a week, while a helicopter is limited to single-digit hours of fuel.

At its core, UAS equipment provides a critical resource to commanders: information. The Army [realized the value in pairing](#) drones and helicopters for this purpose years prior to the Ukrainian conflict with developments in MUM-T. While historically an underutilized capability due to the cumbersome nature of the technology and lack of interoperability, pairing unmanned systems with attack helicopters is the future of the Apache.

Lethality in Partnership: The Pairing of Manned and Unmanned Systems

In a future contested environment, where the enemy has farther reach and stronger air defenses, range and survivability of any aerial platform is paramount. For the Apache to maintain relevance, continued investment into MUM-T capability, LRPM, cockpit updates, and aircraft survivability equipment is critical. [Recent testing demonstrates](#) the capability of the Apache to counter UASs with existing weapons systems, guided by onboard electro-optical and radar sensors. Adding purpose-built air-to-air weapons [systems to target both drones](#) and other manned aircraft would increase overall utility and survivability—a capability currently fielded by [Ukrainian helicopter units](#). As it has throughout its lifespan, the Apache's mission and technology must continue to evolve to address the changing character of conflict—especially in the asymmetric realm of irregular warfare, where adversaries can field "poor men's air forces" and challenge conventional air forces' traditional dominance of the battlespace.

The enduring utility of attack helicopters is found in their ability to evolve. The development and testing of launched effects technology is the future: instead of replacing the Apache, UASs are able to enhance its role on the battlefield. Launched Effects, which involves deploying drones off of manned platforms, is capable of extending the reach of [target acquisition and identification](#), reducing the workload of pilots and providing out-front detection in a modernized version of MUM-T. Drones act as forward reconnaissance for manned attack, improving pilot survivability while also maintaining the payload capability and combat power of the Apache.

In contrast with fully-autonomous UAS platforms, maintaining the “human-in-the-loop” with launched effects preserves aircrew situational awareness while taking advantage of the range, low-cost, and sensing capabilities of drones. Combined with long-range munitions, the marriage of manned and unmanned systems provides unparalleled flexibility to the ground force commander. Critically, it allows for the sustained execution of the attack mission in a disparate fashion across the spectrum of conflict—from high-end combat against peer competitors to irregular warfare scenarios, all the while maintaining the capability of mission command far from a command post.

The future development of attack helicopter systems mandates both an open architecture for industry partners and a focus on [levels of interoperability](#). Many of the shortcomings of legacy MUM-T systems resulted from their complexity of integration into the Apache cockpit and mission software. For UAS technology to provide the situational awareness it promises, it must work seamlessly to share targeting, threat, and mission data without adding workload to the pilot or ground observer.

The Writing on the Wall

As the proponent of unmanned aerial systems, the Army Aviation Center is able to control much of the policy and acquisitions processes that integrate drones into formations across the force. However, the branch must consequently foot much of the bill: in the [FY2026 Defense Budget Overview](#), the justification of slashing all Air Cavalry Squadrons across the Army (and all Army Reserve rotorcraft) is to “reallocate these savings toward a more effective mix of next-generation rotary and unmanned platforms” with no mention of manned attack. In contrast with other Army and Air Force airframes, no new AH-64E Apaches are listed for purchase in FY26, signaling a shift from procurement to sustainment of the current fleet.

The danger of treating defense capabilities as a zero-sum game—letting current capabilities atrophy to fund others—is that it will inevitably leave an exploitable gap. Given a fixed budget, the Department of War must simultaneously innovate without deteriorating readiness. The reality of Large Scale Combat Operations and reported statistics from Ukraine present dangerously attractive “shiny objects” to distract decision-makers. The unintended consequence is potential knee-jerk reactions

that prematurely divest missions or systems rather than exploring innovative concepts to repurpose proven investments and adapt to the future operating environment. Until there is a complete replacement for the capabilities of manned aviation—its range, disciplined initiative, and payloads—current and future Apaches still belong in the sky.

While the current fad of a UAS arms race is attractive, completely divesting the Apache fleet prior to UASs becoming attack aviation's complete technological successor will prove to be a dangerous overcorrection by policymakers—especially because [predictions](#) of future conflicts are seldom accurate. The AH-64E is a proven entity in combined arms combat across the spectrum of conflict and has demonstrated its ability to adapt to the ever-changing character of warfare for over four decades in ways that drones might never do. Until unmanned platforms or combined manned-unmanned systems are capable of matching the effects of traveling hundreds of nautical miles without communications, analyzing and developing an engagement area, and carrying out an attack mission while following appropriate rules of engagement, the Apache still has a prominent and necessary place on the Army's multi-domain operations team.

Hannah Lamb is an active duty Army Aviation officer and AH-64E pilot. She is a graduate of the United States Military Academy where she studied Civil Engineering and Counterterrorism. Her previous work includes projects on the implementation of special operations in the Ukrainian conflict and the impacts of U.S. infrastructure reconstruction policy on the radicalization of terrorists in Iraq and Afghanistan.

Main Image: An AH-64E Apache helicopter from the United States Army Aviation Center of Excellence completes a flyover of the NCAA Beach Volleyball National Championship on May 5th, 2024 ([U.S. Army Photo by 2nd Lt. Hannah Lamb](#)).

The views expressed are those of the author and do not reflect the official position of the Irregular Warfare Initiative, Princeton University's Empirical Studies of Conflict Project, the Modern War Institute at West Point, or the United States Government.

If you value reading the Irregular Warfare Initiative, please consider [supporting our work](#). And for the best gear, check out the [IWI store](#) for mugs, coasters, apparel, and other items.

Date Created

2026/01/06