

THE AH-64 APACHE, ITS VARIANTS AND FUNCTIONS

Despite existing for a seemingly-interminable four decades since its birth, the AH-64 Apache remains the flagship helicopter of the United States military and continues in active service in Egypt, Japan, the UK, Saudi Arabia and countless more countries around the globe. Designed both to support ground operations and launch intensive attacks in the air itself, the Apache series is crucial for Boeing's supply and logistical contract with America and AH-64s are the favored combat chopper of choice. Many countries around the world use Apache variants as their main form of aerial attack aircraft. The British Army, to state one example, are provided with the AugustaWestland Apache – a unique, modified version of the AH-64D Longbow which features two T700-GE-701C engines, allowing it to reach speeds of up to 180mph. Additionally, British Apaches have been powered by Rolls-Royce Turbomeca engines – still recommendable alternatives.



In 1967, the Lockheed AH-56 Cheyenne, prototyped and designed in response to the threat of heavily-armed Soviet vehicles in Europe, was test-flown. The Cheyenne was a powerful and worthy helicopter, but it still couldn't meet the needs of the army. Ultimately, it was abandoned in favor of something quicker and more agile and sleek. This would allow them considerably more conflict and logistical flexibility, which was extremely important for their missions in the late 20th century. The United States

Army wanted an “Advanced Attack Helicopter” – a chopper to carry the same, primary role as a Tactical Attack Aircraft – which would prove to be rigorous in tough, intensive combat situations and support ground operations by simultaneously utilizing advanced tracking and pilot-sighting systems.

Hence, America initiated their AAH program in 1972 by calling for proposals to suggest a new helicopter model; this request received great interest from numerous notable manufacturers, including Bell, Lockheed and Hughes. One design, the Model 77 (YAH-64A), submitted by Hughes Helicopters, made its first flight on the 30th of September 1975. Overwhelmed by a considerably large number of responses to their initial demand, the USA was unable to provide a response until the next year; this coincided with the death of Howard Hughes – the founder of Hughes Helicopters – in 1976, who left no will.

Understandably, the company was sent into a bitter dispute over who should take over leadership of planning and manufacturing. Despite this, Hughes was chosen as the winner for the AAH design contest as the army preferred the YAH-64A instead of its Bell counterpart, mainly because of the advantages of the YAH-64’s landing gear arrangement over the Bell organization.



A development contract was formed in 1976 and the American Army finally approved all plans in 1982.

The plains of Mesa, Arizona have often been considered an excellent place to produce and test helicopters. Thus, the first Army AH-64 rolled out of Hughes' facility and made a flight in 1983, being named "Apache". Military helicopters in the USA were frequently given the names of Native American tribes because Indians had served honorably in the army during American history. Securing a \$470 million deal with McDonnell Douglas in 1984, the AH-64 Apache was brought into full-scale development and became a primary feature of the production line. McDonnell Douglas were in turn bought out by Boeing, who laid claim to the Apache series and remain the main manufacturer of AH-64s today.

Powered by the T700 twin turbo-shaft engine - supplied by the General Electric and Pratt & Whitney partnership – Apache variations were able to output up to (and over) 2,000 shaft horsepower, with the T6A Model accelerating to a staggering 2,768 SHP. T700 turbo-shafts were able to continue operating in

extremely intense and stressful situations, making it a revered and ideal solution for a combat engine. After being delivered to at least fifty nations, the T700 has powered aeroplanes and helicopters for 40 years. Most notably, it supplies a modified Black Hawk UH-60 known as the “Firehawk” with its admired and awe-striking speed. Despite the immense speed of the AH-64, it is still highly agile and can make beautiful, quick and sloping turns to conduct a follow up strike of its target. Not only this, but its navigational systems allow it to find the operation location with complete ease and return to base, hassle-free.

Weighing between 400 and 500 pounds, the AH-64 Apache has a tandem cockpit for two; the copilot gunner being situated at the front with the pilot controlling the aircraft from the rear. Due to the limited crew-size, the loss of one chopper does not matter as much in terms of casualty/death rate as a larger, highly-manned craft. It also sports a set of excellent laser-targeting and night-vision systems mounted on the nose of the helicopter. These sensors and equipment allow the AH-64 Apache to continue operating at both night and day and it can withstand countless weather situations. Highly armored and easily maneuverable, the USA’s “most loved chopper” can fight through heavy enemy fire striking critical points on its body and return shots using a 30mm M230 chain gun hung beneath the fuselage, between the landing gears. Additionally, the AH-64D can carry approximately 22,000 pounds at maximum-load. All these upgrades and functionality features make the AH-64 and its counterparts extremely dangerous and effective weapons – one of the reasons they are loved so much. Although other helicopter models

may be chosen over the Hughes' design for certain circumstances and operations, the Apache is the ultimate multi-purpose (helicopter) aircraft, which is able to efficiently track and take out targets.



During Desert Storm – the primary operation of the Gulf War – the Apache was used as the main constituent for the air attack force body, with the purpose of shattering enemy radar positions, tanks and armored posts. Boeing remains in a position of contract with the United States and continues to deliver Apaches to armies across the globe. Until a manufacturer designs a new helicopter or weapon to one-up the AH-64, the Apache series will remain the most formidable, tactical air helicopter in the world and will forever be loved by aircraft enthusiasts, mechanists and engineers.