

Bell AH-1 Cobra

AH-1 Huey Cobra/Cobra



A Bell AH-1G Huey Cobra

Role	Attack helicopter
Manufacturer	Bell Helicopter
First flight	7 September 1965
Introduction	1967
Status	Active service (USMC)
Primary users	United States Army (historical) Japan Self Defense Forces Republic of Korea Army Israeli Air Force
Produced	1967-present
Number built	1,116
Unit cost	US \$11.3 million (1995) (AH-1 Huey Cobra)
Developed from	Bell UH-1 Iroquois
Variants	Bell AH-1 Sea Cobra/Super Cobra Bell 309 King Cobra

The **Bell AH-1 Cobra** (company designation: **Model 209**) is a two-bladed, single engine attack helicopter manufactured by Bell Helicopter. It shares a common engine, transmission and rotor system with the older UH-1 Iroquois. The AH-1 is also referred to as the **Huey Cobra** or **Snake**.

The AH-1 was the backbone of the United States Army's attack helicopter fleet, but has been replaced by the AH-64 Apache in

Army service. Upgraded versions continue to fly with the militaries of several other nations. The AH-1 twin engine versions remain in service with United States Marine Corps (USMC) as the service's primary attack helicopter. Surplus AH-1 helicopters have been converted for fighting forest fires. The United States Forest Service refers to their program as the **Firewatch Cobra**. Garlick Helicopters also converts surplus AH-1s for forest firefighting under the name, **Fire Snake**.

By June 1967, the first AH-1G Huey Cobras had been delivered. Originally designated as UH-1H, the "A" for attack designation was soon adopted and when the improved UH-1D became the UH-1H, the Huey Cobra became the AH-1G. The AH-1 was initially considered a variant of the H-1 line, resulting in the G series letter.

AH-1 Cobras were in use by the Army during the Tet offensive in 1968 and through the end of the Vietnam War. Huey Cobras provided fire support for ground forces, escorted transport helicopters and other roles, including aerial rocket artillery (ARA) battalions in the two Airmobile divisions. They also formed "hunter killer" teams by pairing with OH-6A scout helicopters. A team featured one OH-6 flying slow and low to find enemy forces. If the OH-6 drew fire, the Cobra could strike at the then revealed enemy. Bell built 1,116 AH-1Gs for the US Army between 1967 and 1973, and the Cobras chalked up over a million operational hours in Vietnam. Out of nearly 1,110 AH-1s delivered from 1967 to 1973 approximately 300 were lost to combat and accidents during the war. The U.S. Marine Corps used AH-1G Cobras in Vietnam for a short time before acquiring twin-engine AH-1J Cobras.

AH-1 Cobras were deployed for Operation Urgent Fury, the invasion of Grenada in 1983, flying close-support and helicopter escort missions. Army Cobras participated in Operation Just Cause, the US invasion of Panama in 1989.

During Operations Desert Shield and Desert Storm in the Gulf War (1990–91), the Cobras and Super Cobras deployed in a support role. The USMC deployed 91 AH-1W Super Cobras and the US Army 140 AH-1 Cobras; these were operated from forward, dispersed desert bases. Three AH-1s were lost in accidents during fighting and afterward. Cobras destroyed many Iraqi armored vehicles and various targets in the fighting.

Army Cobras provided support for the US humanitarian intervention during Operation Restore Hope in Somalia in 1993. They were also employed during the US invasion of Haiti in 1994. US Cobras were also used in operations later in the 1990s.

The US Army phased out the AH-1 during the 1990s and retired the AH-1 from active service in March 1999, offering them to NATO allies. The Army retired the AH-1 from reserves in September 2001. The retired AH-1s have been passed to other nations and to the USDA Forest Service. The AH-1 continues to be in service with the US military, by the US Marine Corps, which operate the twin-engine AH-1W Super Cobra and AH-1Z Viper.



MAPS AH-1S –Serial Number 70-16084

AH-1S (Serial # 70-16084) began its service life in December 1972 as an AH-1G version assigned to Troop C, 7th Squadron, 17th Cavalry which was part of the 6th Air Cavalry Combat Brigade station at Fort Hood, Texas. While at Fort Hood, it was modified to an AH-1Q version on February 22, 1976. On April 16, 1976, it was reassigned to the 235th Attack Helicopter Company located in Fort Knox, Kentucky.

On July 12, 1976, the 235th AHC was deployed overseas to Wurzburg, Germany (APO 09036) as part of the NATO contingent. It remained overseas until March 8, 1978. Upon its return from the OCONUS assignment, it was sent to the Corpus

Christi Army Depot where it was modified to an AH-1S version on March 9th then returned to Fort Hood and C-7/17th Cavalry on March 21st. It stayed in that assignment until July 3, 1984 when it was reassigned to the 4th Squadron, 6th Cavalry also at Fort Hood. It remained with that unit until June 23, 1987.

The Cobra was then assigned to the 1106th Aviation Classification Repair Activity Depot (AVCRAD), part of the California Air Guard, located in Fresno, California. It remained at that location until July 7, 1988 when it was assigned to Troop Q, 4th Squadron, 107th Armored Cavalry Squadron of the Ohio Air National Guard located at the Akron-Canton Regional Airport. Maintenance for this unit was provided by the Army Aviation Support Facility that was located at the facility currently occupied by the MAPS museum.

The airframe was donated for static display to MAPS on May 13, 1996 per letter AMCPM-CO-L letter of conditional donation dated 18 December 1995. The aircraft had a total of 2008.0 hours of flight time at the time of donation.

Variants

Bell 209

Original AH-1G prototype with retractable skid landing gear. This model number is also used by the FAA for the civilian registration of former U.S. Army AH-1s used in firefighting service.



U.S. Forest Service Bell 209 on the Bar Complex Fire in California. USFS photo.

AH-1G Huey Cobra

Initial 1966 production model gunship for the US Army, with one 1,400 shp (1,000 kW) Avco Lycoming T53-13 turboshaft. One helicopter for armament testing including Hellfire missiles and multi-barrel cannon.



JAH-1G Huey Cobra

TH-1G Huey Cobra

Two-seat dual-control trainer.

Z.14 Huey Cobra

Spanish Navy designation of the AH-1G

YAH-1Q

Eight AH-1Gs with XM26 Telescopic Sight Unit (TSU) and two M56 TOW 4-pack launchers.

AH-1Q Huey Cobra

Equipped with the M65 TOW/Cobra missile subsystem, M65 Telescopic Sight Unit (TSU), and M73 Reflex sight. All future versions will be equipped with the TSU and be equipped to fire the TOW missile subsystem.

YAH-1R

AH-1G powered by a T53-L-703 engine without TOW system.

YAH-1S

AH-1Q upgrade and TOW system.

AH-1S

The baseline AH-1S is an AH-1Q upgraded with a 1,800 shp (1,300 kW) T53-L-703 turboshaft engine. The AH-1S is also referred to as the "Improved AH-1S", "AH-1S Modified", or "AH-1S (MOD)" prior to 1988. (Prior to 1988, all upgraded aircraft were referred to as variants of the AH-1S.)



AH-1S

AH-1P

100 production aircraft with composite rotors, flat plate glass cockpit, and improved cockpit layout for nap-of-earth (NOE) flight. The AH-1P is also referred to as the "Production AH-1S", or "AH-1S (PROD)" prior to 1988. These improvements are considered Step 1 of the AH-1S upgrade program.

AH-1E

98 production aircraft with the Enhanced Cobra Armament System (ECAS) featuring the M97A1 armament subsystem with a three-barreled M197 20 mm cannon. The AH-1E is also referred to as the "Ungunned AH-1S", or "AH-1S (ECAS)" prior to 1988. These improvements are considered Step 2 of the AH-1S upgrade program. AH-1E aircraft included the M147 Rocket Management Subsystem (RMS) to fire 2.75-inch (70 mm) rockets.

AH-1F

143 production aircraft and 387 converted AH-1G Cobras. The AH-1F incorporates all Step 1 and 2 upgrades to the AH-1S as well as an M143 Air Data Subsystem (ADS), a laser rangefinder and tracker, an infrared jammer mounted above the engine exhaust, and an infrared suppressing engine exhaust system. The AH-1F is also referred to as the "Modernized AH-1S", "AH-1S Modernized Cobra", or "AH-1S (MC)" prior to 1988.

QAH-1S

A target drone conversion of the AH-1S by Bell-Bristol Aerospace under a joint US and Canadian development program started in 1994. Honeywell further modified the QAH-1S into the *Hokum-X* by installing systems and hardware to allow it to simulate the Russian Kamov Ka-50 attack helicopter. Three Hokum-Xs were completed from 1998-2001.

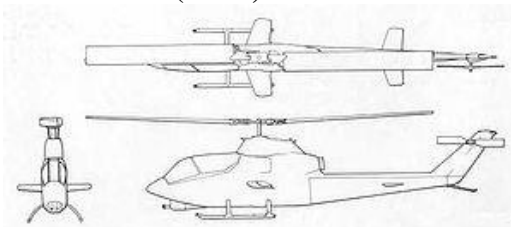
Model 249

Experimental demonstrator version fitted with a four-bladed rotor system, an uprated engine and experimental equipment, including Hellfire missiles.

Bell 309 King Cobra

Experimental version. One of two 309s produced was powered by a Lycoming T-55-L-7C engine

General characteristics (AH-1)



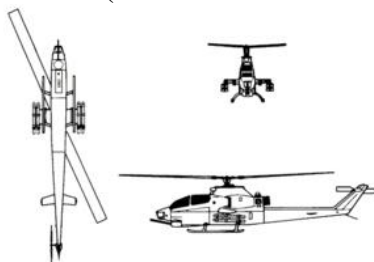
- **Crew:** 2: one pilot, one co-pilot/gunner (CPG)

- **Length:** 53 ft (16.2 m) (with both rotors turning)
 - **Rotor diameter:** 44 ft (13.4 m)
 - **Height:** 13 ft 6 in (4.12 m)
 - **Empty weight:** 5,810 lb (2,630 kg)
 - **Max takeoff weight:** 9,500 lb (4,310 kg)
 - **Powerplant:** 1 × Lycoming T53-L-13 turboshaft, 1,100 shp (820 kW)
 - **Rotor system:** 2 blades on main rotor, 2 blades on tail rotor
 - **Fuselage length:** 44 ft 5 in (13.5 m)
 - **Stub wing span:** 10 ft 4 in (3.15 m)
- Performance**
- **Never exceed speed:** 190 knots (219 mph, 352 km/h)
 - **Maximum speed:** 149 knots (171 mph, 227 km/h)
 - **Range:** 310 nmi (357 mi, 574 km)
 - **Service ceiling:** 11,400 ft (3,475 m)
 - **Rate of climb:** 1,230 ft/min (6.25 m/s)

Armament

- 2 × 7.62 mm (0.308 in) multi-barrel Miniguns, or 2 × M129 40 mm Grenade launchers, or one of each, in the M28 turret. (When one of each was mounted, the minigun was mounted on the right side of the turret, due to feeding problems.)
- 2.75 in (70 mm) rockets - 7 rockets mounted in the **M158** launcher or 19 rockets in the **M200** launcher
- M18 7.62 mm Minigun pod or XM35 armament subsystem with XM195 20 mm cannon

General characteristics (AH-1F "Modernized" Cobra)



- **Crew:** 2: one pilot, one co-pilot/gunner (CPG)
- **Length:** 53 ft. (16.1 m) (with both rotors turning)
- **Rotor diameter:** 44 ft. (13.6 m)
- **Height:** 13 ft. 6 in (4.12 m)
- **Empty weight:** 6,600 lb. (2,993 kg)
- **Max takeoff weight:** 10,000 lb. (4,500 kg)
- **Powerplant:** 1 × Lycoming T53-L-703 turboshaft, 1,800 shp (1,300 kW)
- **Rotor system:** 2 blades on main rotor, 2 blades on tail rotor
- **Fuselage length:** 44 ft. 7 in (13.6 m)
- **Stub wing span:** 10 ft. 4 in (3.15 m)

Performance

- **Never exceed speed:** 170 knots (196 mph, 315 km/h)
- **Maximum speed:** 149 knots (172 mph, 277 km/h)
- **Range:** 274 nmi (315 mi, 510 km)
- **Service ceiling:** 12,200 ft. (3,720 m)
- **Rate of climb:** 1,620 ft./min (8.2 m/s)

Armament

- General Dynamics 20 mm (0.787 in) M197 3-barreled Gatling cannon
- Hydra 70 2.75 in (70 mm) rockets - 7 rockets mounted in the **M260** launcher or 19 rockets in the **M261** launcher^[38]
- TOW Missiles - 4 or 8 missiles mounted in two-missile launchers on each hard point
- **Max takeoff weight:** 10,000 lb. (4,500 kg)