

OH-58D KIOWA WARRIOR RECONNAISSANCE / ATTACK HELICOPTER, USA



IMAGE SHOWS THE TWO UNIVERSAL QUICK CHANGE WEAPONS PYLONS.

The Armed OH-58D Kiowa Warrior, in service with the US Army, is supplied by Bell Helicopter Textron of Fort Worth, Texas. Around 375 Kiowas are in service and the single engine, double-bladed armed reconnaissance helicopter has been deployed in support of United States armed forces around the world including Haiti, Somalia and the Gulf of Arabia (Desert Storm and Desert Shield). In 2002, Kiowas were deployed as part of NATO's SFOR forces in Bosnia and, in 2003, 120 Kiowas were deployed in support of Operation Iraqi Freedom.

The primary mission of the helicopter is in the scout attack role. The helicopter can be optionally equipped to carry out transport and utility roles using equipment kits installed externally on existing hard points. A cargo carrying hook is rated to carry loads up to 2,000lb. Emergency casualty evacuation can be carried out transporting two casualties on litters (stretchers), plus over 320kg of supplies to an operating radius of more than 185km. The Kiowa can be used for insertion of up to six troops for critical point security missions.

Two Kiowas can be transported in a C-130 aircraft. For air transportation the vertical tail fin pivots, the main rotor blades and the horizontal stabiliser are folded, and the mast mounted sight, the IFF antenna and the lower wire cutter are removed. The landing gear can kneel to decrease the height.

The OH-58D Kiowa Warrior will be replaced in US Army service by the next-generation Armed Reconnaissance Helicopter (ARH). The contract for the ARH, a military version of the Bell 407, was awarded to Bell Helicopter in July 2005. 368 helicopters are to be delivered between 2006 and 2013.

COCKPIT

The Kiowa was the first US Army helicopter to have an all-glass cockpit. The cockpit is supplied by Sperry Flight Systems and is equipped with a multiple target tracking/moving target indicator, an ANVIS (Aviation Night Vision System) Display Symbology System and helmet-mounted display. The

primary multi-function displays provide situation information, communications control and the mast mounted sight video. A video recorder stores television and thermal imagery from the mission and allows playback in the cockpit.

WEAPONS

The OH-58D is equipped with two universal quick change weapons pylons. Each pylon can be armed with two Hellfire missiles, seven Hydra 70 rockets, two air-to-air Stinger missiles or one .50 calibre fixed forward machine gun.

Mission processors control the suite of mission subsystems via a Military Standard 1553B bus. An onboard computer provides laser ranging and target location within 10m.

COUNTERMEASURES

The countermeasures suite includes an AN/ALQ-144 infrared jammer, radar warning receivers against pulsed and continuous wave radars and a laser warning detector.

FIRE CONTROL AND OBSERVATION

The distinctive Mast Mounted Sight (MMS) from Boeing, situated above the rotor blades, enables the Kiowa Warrior to operate by day and night and to engage the enemy at the maximum range of the weapon systems and with the minimum exposure of the helicopter. The mast mounted sight contains a suite of sensors which includes: a high resolution television camera for long range target detection; a thermal imaging sensor for navigation, target acquisition and designation; a laser rangefinder/designator for target location and guidance of the Hellfire missiles and designation for Copperhead artillery rounds; and a boresight assembly which provides in-flight sensor alignment. The laser rangefinder / designator is also employed for handoff to an AH-1 Cobra helicopter for TOW missile engagements.

DRS Technologies is currently responsible for the contract for the sensor suite and, in February 2005, was awarded a contract to upgrade the thermal imaging system on the MMS. The Thermal Imaging Systems Upgrade (TISU) will provide enhanced target detection and range. Deliveries are to be completed by mid-2006.

NAVIGATION AND COMMUNICATIONS

The US Army OH-58D is equipped with an attitude heading reference system (AHRS) from Litton and an integrated global positioning system and inertial navigation system, GPS/INS. A data-loading module allows the pre-mission storing of navigation waypoint data and radio frequencies.

The mission equipment includes an Improved Data Modem for Digital Battlefield Communications, (IDMDBC). The communications system is based on the Have-Quick UHF and SINCGARS FM anti-jam radio.

ENGINE

The OH-58D Helicopter is equipped with a Model 250 485kW turbine engine from Rolls-Royce. The transmission has a transient power level of 475kW. The engine and transmission system have been upgraded to provide high performance levels in high temperature and extreme climates.

SPECIFICATIONS - OH-58D KIOWA WARRIOR RECONNAISSANCE / ATTACK HELICOPTER, USA

Crew 2, pilot and co-pilot/observe

Dimensions

Length, rotors turning 1.2 feet
Width, rotors turning 35 feet
overall height 12.88 feet

Weight

empty weight 3289 pounds
combat mission weight 5189 pounds

Propulsion

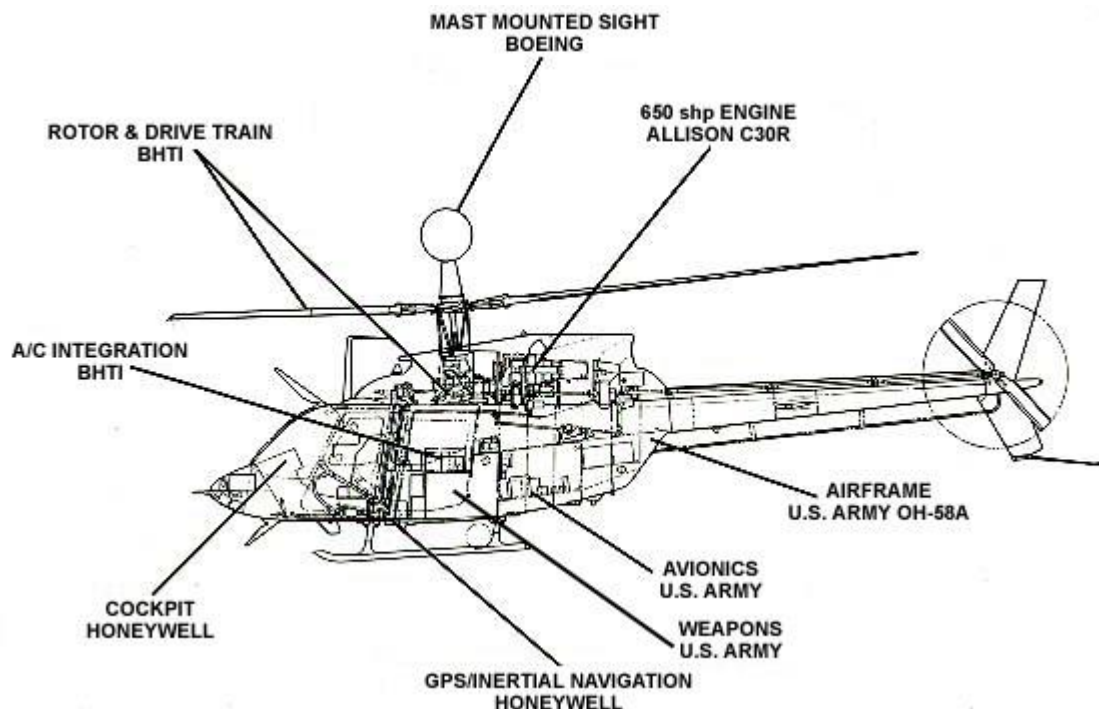
one T703-AD-700 gas turbine engine,
650 hsp

4-blade main rotor

2-blade anti-torque rotor

Performance

flight capability 4,000 feet at 95 degrees F
dash speed 111 knots
vertical rate of climb 100 feet per minute
maximum range, internal fuel 4,000 feet 145 nautical miles
at 95 degrees F



Schematic showing the helicopter's main component suppliers



Two Kiowa Warrior helicopters on patrol.



The mast mounted sight from Boeing situated above the rotor blades enables the Kiowa Warrior to operate by day and night.



The primary multi-function displays provide situation and navigation information, communications control and the mast mounted sight video.