

Chapter 1 : McDonnell Douglas Helicopter Helicopters for Sale | AvBuyer

While greatly eclipsed in the annals of military aviation by the Huey and Huey Cobra combat helicopters with which it served in the Vietnam War, the McDonnell Douglas OH-6A earned a reputation of strength and reliability unmatched by its contemporaries.

Two designs, those submitted by Fairchild-Hiller and Bell , were selected as finalists by the Army-Navy design competition board, but the U. Army later included the helicopter from Hughes as well. OH-6 helicopter in flight The first Model prototype flew on 27 February Army at Fort Rucker, Alabama to compete against the other ten prototype aircraft submitted by Bell and Fairchild-Hiller. Hughes won the competition, [4] and the Army awarded a contract for production in May , with an initial order for that was later increased to 1, with an option on another This would account for some of the price difference. Army deal, with the anticipation that an extended production cycle would eventually prove financially viable. Stanley Hiller complained to the U. Army that Hughes had used unethical procedures; therefore, the Army opened the contract for rebidding by all parties. Hiller did not participate in the rebidding, but Bell did, with their redesigned Model After a competitive fly-off, the Army asked for sealed bids. Operational history[edit] Entry into service[edit] In the U. Department of Defense issued a memorandum directing that all U. Army fixed-wing aircraft be transferred to the U. Air Force, while the U. Army made the transition to rotor-wing aircraft. The pilots dubbed the new helicopter Loach, a word created by pronunciation of the acronym of the program that spawned the aircraft, LOH light observation helicopter. World records[edit] Shortly after production began, the OH-6 began to demonstrate what kind of an impact it would have on the world of helicopters. The OH-6 set 23 world records for helicopters in for speed, endurance and time to climb. He flew without landing for 1, As of , these records still stand. Deployed to a secret base in southern Laos PS in June , one of the helicopters was heavily damaged during a training mission late in the summer. The remaining helicopter deployed a wiretap near Vinh , Vietnam on the night of 5â€™6 December , which provided the United States with useful information during the Linebacker II campaign and Paris Peace Talks. Shortly thereafter, the aircraft were returned to the U. MH-6 Little Bird Following the April failure of Operation Eagle Claw the attempted rescue of American hostages in Tehran , it was determined that the military lacked aircraft and crews who were trained and prepared to perform special operations missions. To remedy this shortcoming, the Army began developing a special aviation task force to prepare for the next attempt to rescue the hostages: Task Force [edit] The architects of the task force identified the need for a small helicopter to land in the most restrictive locations and that was also easily transported on Air Force transport aircraft. They chose the OH-6A scout helicopter to fill that role, and it became known as the Little Bird compared to the other aircraft in the task force, the MH and the MH When the training was completed, C aircraft transported the aircraft and crews to Fort Huachuca , Arizona, for two weeks of mission training. The armed OH-6 aircraft from Fort Rucker joined the training program in the fall of But the Army decided that it would be more prudent to keep the unit in order to be prepared for future contingencies. The task force, which had been designated as Task Force , was soon formed into the th Aviation Battalion. On 1 October , to help meet the increasing demands for support, the th Aviation Battalion from the Oklahoma National Guard, which had 25 AH-6 and 23 UH-1 helicopters, was placed under the operational control of the th. The following two-week mission was to Yuma for night operation training. Crews trained side by side with the th for all operational concepts.

Chapter 2 : Hughes OH-6A Cayuse specifications and photos

The Hughes OH-6 Cayuse (nicknamed "Loach", after the requirement acronym LOH "Light Observation Helicopter") is a single-engine light helicopter with a four-bladed main rotor used for personnel transport, escort and attack missions, and observation.

Twelve companies took part in the competition and Hughes submitted the Model 440, nicknamed the "flying egg" on account of its shape. The Hiller and Bell aircraft were selected as finalists, but the US Army later included the Hughes helicopter as well "which was offered at an exceptionally low price" under the designation OH-6, and five prototypes were ordered in spring. The first of the five prototypes flew on 27 February and was delivered to Fort Rucker air base the following November, to begin trials for the Army. The Hughes aircraft was very interesting from a structural point of view. For example, the fully-articulated rotor had four blades of constant chord, consisting of an extruded light alloy spar, to which a single sheet of light alloy was bonded to form the profile of the blade. The fuselage had a light alloy, semi-monocoque structure and its remarkable robustness afforded the occupants good protection even in heavy landings. The aircraft had an Allison turbine engine, which was very light and compact, with a maximum power derated from 1000 to 800 shp, which afforded obvious advantages in terms of service life and safety. A wide choice of weapons fits was available. Following trials, the choice of the OH-6A for large-scale production was announced in May with an initial order for 100, which was later increased to 150 with an option on another 100. Production reached a maximum of 70 helicopters in the first month. In all 150 were built, the last of which were delivered in August. The Cayuse established no fewer than 23 world records in March-April. Apart from the five prototypes built for the US Army, Hughes built four others for its own research purposes, one of which was converted into a civil version designated Model 440C, which flew at the beginning of 1962. The subsequent Model C variant had a 1000 shp Allison C20 turbine. It introduced a five-blade main rotor, four-blade anti-torque rotor, exhaust silencer and various noise blanketing devices on the air intakes. The HMC was a military export version of the Hughes C, with major improvements including a more powerful main rotor of larger diameter transmission capable of withstanding higher torque values, an all-metal tail rotor and a maximum fuel capacity of 1000 liters. The side windows are also different and high skid landing gear can be fitted. The armament is similar to that of the OH-6A. A later version, the DMD military is distinguished externally from earlier models by a T-tail and five-blade rotor. The powerplant is also different "an Allison C20B delivering an absolute maximum of 1000 shp and 800 shp maximum continuous power. The increase in power and adoption of the new tail unit have led to a general improvement in structural robustness, particularly of the landing gear, the lower part of the cabin and tail boom, plus, of course, the transmission. Current production includes the E, which introduces a lengthened and redesigned cabin among other improvements, and the F which introduces an uprated Allison C30 engine for high altitude operations. Military variants of these new versions were introduced in 1962. One of the most important orders for Hughes helicopters was for 29 of the Model HM built under license by Kawasaki and delivered to the Japanese Army in January 1962. In Italy, Breda-Nardi have held the license to build and market Hughes Model 440 and helicopters since 1962. Its characteristics are the same as those of the American aircraft. Missions specified for this LOH were visual observation and target acquisition, reconnaissance, command control, and utility tasks at company level. Although these requirements were demanding, 12 firms submitted no fewer than 22 proposals as potential orders were expected to be quite substantial. Among manufacturers expressing the greatest interest in this competition was Hughes Tool Company which assigned responsibility for the design and development of the Model 440 to a team led by Malcolm Harned. Convinced that minimum size was all important for the LOH success, the Hughes team aimed its preliminary design studies at determining the minimum possible rotor diameter which could accomplish the mission. They concluded that by minimizing the empty weight and using a four-bladed configuration it would be feasible to use the 7. Later on, the diameter of the main rotor was increased to 8. The team then endeavoured to select a fuselage configuration offering an absolute minimum of parasite drag while providing accommodation for a pilot and five fully-armed troops four of whom sat on the floor in a cramped compartment between the pilot and the diagonally-mounted Allison T63 turboshaft and

adopted the characteristic teardrop-shaped fuselage of the Model 440. Finally, project engineers minimized structural weight by selecting a one-piece tail rotor drive shaft and adopting a simple manual flight control system. Lacking engineering and flight test personnel experienced in aircraft evaluation procedures, the Army requested assistance from the Navy in running the LOH competition. Thus, it was a joint Army-Navy team which selected Bell and Hiller as winners of the design competition in May 1962. Fortunately for Hughes, the Army and Navy evaluators almost immediately added the Culver City firm to the list of those manufacturers requested to build five prototypes each for competitive evaluation. Initially given HO designations, the new observation helicopters received OH designators before being flown, as the Department of Defense established a new system of aircraft designation in September 1962. It then had a broad, upward-canted stabilizer on the starboard side and a fairly large tail boom of flapped aerofoil cross section. Accordingly, before the YOH-6As could be turned over for evaluation by the Army-Navy team, Hughes tested a large number of tail configurations before adopting one characterized by a slimmer tail boom of circular cross section and narrower stabilizer braced to a vertical fin. With this new boom and stabilizer, the YOH-6A exceeded the control margin required by military specifications under all flying conditions. At the end of the seven-month evaluation, during which prototypes from the three competitors were put through comprehensive field and performance tests at Fort Rucker, Alabama, Fort Benning, Georgia, and Fort Ord and Edwards AFB, California, the Design Selection Board determined that the Bell YOH-4A did not meet the specified requirements, that the Hiller YOH-5A met the requirements on the basis of minimum acceptability, and that the Hughes YOH-6A exceeded the minimum requirements in mission capability, speed, economy of operation, and ease of maintenance. Fully satisfied with the performance, handling characteristics, and maintainability of the OH-6A, the Army intended to continue ordering the Hughes light observation helicopter to meet its entire LOH requirements. However, either as the result of a deliberate under pricing of the initial batch of Cayuses or of the rapid manufacturing cost escalation experienced by all contractors during the Vietnam War industrial buildup, Hughes increased substantially the OH-6 unit cost thus prompting the Army to reopen the LOH competition in 1968. By then Hiller was no longer in business, but Bell entered a much redesigned version of its original entry and succeeded in displacing Hughes as the main supplier of LOHs. Fortunately for the California manufacturer, the civil version of its light turboshaft-powered helicopter, the Model 440 which had been announced on 21 April, 1962, 35 days before the YOH-6A was chosen as the winner of the original LOH competition, had become a popular seller. Production history The following versions have been built for the US Army: Redesignated YOH-6As before the first flight on 27 February, 1962, these pre-production vehicles were each powered by a 3000 shp Allison TA-5A turboshaft engine derated to 2500 shp. Side-by-side accommodation was provided in the front cabin for a crew of two and space was provided in the rear compartment for two folding seats or cargo. With the rear seats folded, four fully-armed troops could sit on the floor. Essentially similar to the fully modified YOH-6A with the smaller tail boom and revised stabilizer, the OH-6A was built in three configurations: The Cayuse, when armed, normally carried either a XM27E1 7.62 mm flexible gun could be mounted on the aft door on the starboard side. Over the years, OH-6As have been bailed back to the manufacturer for use in a variety of experimental programmes including one to achieve significant reduction in noise level, one to evaluate a higher harmonic control (HHC) system for helicopter vibration suppression, and one to develop a No Tail Rotor (NOTAR) system. For the noise reduction programme funded in by the Army and the Advanced Research Projects Agency, aircraft was fitted with a five-bladed main rotor, a four-bladed tail rotor, a shrouded engine inlet, and an engine exhaust muffler. For the HHC research programme funded by Hughes, the Army, and NASA, an OH-6A was fitted with a computer-controlled vibration suppression system and high frequency hydraulic actuators to superimpose high frequency feathering on the normal rotor blade feathering motion. In the mid-seventies, company-funded efforts were initiated by Hughes to develop an anti-torque tail boom to dispense of the use of a conventional tail rotor. Flight testing of an externally mounted fan to provide circulation control air and measure the reduction in conventional tail rotor thrust requirement was undertaken in 1975 and led to the award in September of a NOTAR research contract funded by the US Army Applied Technology Laboratory and the Defense Advanced Research Projects Agency. Three were later modified as AH-6Cs. Like subsequent versions ordered for the Special Forces, this

version is characterized by its five-blade main rotor, quiet four-blade tail rotor, mufflers, infrared suppression exhaust system, and advanced avionics. As an alternative to miniguns, rocket pods, and TOW missiles, the AH-6Fs can carry a 30mm M Chain Gun the Hughes-developed anti-armour cannon carried under the fuselage of AHs or two Stinger air-to-air missiles on each side of the fuselage. This version corresponds to the civil Model and differs from the preceding model in being powered by an uprated engine. The following versions have been built or remain in production for civil customers and foreign military operators: Powered by a shp Allison C18A turboshaft civil version of the TA-5 A derated to shp for take-off, the commercial counterpart of the OH-6A was developed under the engineering designation of Model A and marketed as the Model First flown on 13 September, , it differed from the military variant in having non self-sealing fuel tanks with capacity increased from to litres and in being fitted with commercial avionics. Accommodation was provided for a pilot and four passengers in the executive configuration and for a pilot and six passengers or loads of up to kg in the Model U utility version. Intended for single-pilot operations, the Model could be fitted with dual controls as an option. The standard skids could either be supplemented by inflatable floats for use during extended overwater operations from shore bases or by inflated floats for occasional use from water. Taller skids were available to provide added clearance when carrying external loads. For medical evacuation, two stretchers could be accommodated crosswise in the aft compartment with bubble windows being fitted in place of the aft doors. This version was preceded by a modified Model which, fitted with a five-bladed main rotor of slightly increased diameter 8. The first Model D was flown on 9 October, , and deliveries started at the end of Power was provided by a shp Allison C20B engine derated to shp for take-off and fitted with an exhaust muffler. The Model MD Defender was developed for foreign customers and was offered with different armament and electronic equipment for operations in a variety of military roles. Optionally, all Defender versions could be fitted with an infrared suppression system. MD E Model E: First flown on 28 January, , the Model E differed from the D in having a longer and more streamlined nose and enlarged endplate fins. Powerplant installation and accommodation remained unchanged but passenger comfort was increased as the revised cabin offered more legroom and headroom. It was first flown at Mesa, Arizona, on 23 April, Preliminary test results indicated that a 5dB noise reduction could be achieved through the use of variable-speed main and tail rotors. This version, which was introduced in , differed from the MD E in being fitted with a five-bladed main rotor with a diameter of 8. Power is provided by the Allison C20R turboshaft derated to shp. Customer deliveries are to start in MD F Model F: Intended for hot-and-high operations and powered by a shp Allison C30 derated to shp for take-off, the Model F was first flown on 22 October, The diameter of the main rotor was increased by Loads of up to kg can be carried externally. On 30 August, , an MD F flown by Steve Hanvey, MDHC manager of engineering flight test, set records for time to climb to 3, metres of 3 min 15 sec and time-to-climb to 6, metres of 6 min 34 sec in Class E1b helicopters weighing between and 1, kg at Thermal, California. This version, which was certificated in August , differed from the MD F in being fitted with the longer tail boom and larger main and tail rotors of the MD L. A prototype NNT was first flown on 29 December, , and customer deliveries are to begin in Service history Before entering service, the Cayuse demonstrated its performance and reliability when, without the need for a change of engine or major component, a single YOH-6A was used by five Army and two civil pilots to break or set 22 world records during flights from Edwards AFB in March and April Three of these records " distance in a closed circuit 2,km , sustained altitude 8,m ; and speed over a 2,km closed circuit Eight distance, speed, and time-to-height records were set in Class E1b helicopters weighing between and 1, kg and 11 altitude, speed, and time-to-height records were established in Class E1c helicopters weighing between 1, and 1, kg. Flying in the observation role, acting as pathfinders for troop-carrying Hueys , and seeking targets for Cobra gunships, Loaches were more often than not fitted with a pilot-fired 7. During the design phase close attention had been paid to combat survivability and occupant safety requirements. Hence, the Cayuse notably incorporated redundant, damage-tolerant components, and had ample power in reserve through the use of a derated engine. Nevertheless, combat and operational losses where high due to the type of missions flown. Altogether, Cayuses were shot down by AAA or small arms fire, 23 were destroyed on the ground during enemy attacks against their bases, and were lost in operational accidents. Thus, as others were lost in accidents outside the

war zone, fewer than of the 1, production OH-6As remained in service when the Cayuses were withdrawn from Vietnam in March

Chapter 3 : McDonnell Douglas Helicopter E for Sale | AvBuyer

High & Mighty Law Enforcement. Rob Gray, Polk County Sheriff's Office "The Polk County Sheriff's Office chose the MD E helicopter to support our Law Enforcement mission based on its unmatched speed, maneuverability, and performance.

It can cruise at speeds of mph. Hughes developed the Model as a prototype for the U. Army in the early s. In , twelve companies submitted proposals to meet U. Army requirements for a four-seat turbine-powered light observation helicopter LOH. After evaluation, three designs were selected and 5 of each: Hughes Tool Company Aircraft Division submitted their Model to fill a US Army requirement for a Light Observation Helicopter capable of performing a number of secondary duties including escort, attack and casualty evacuation duties. This helicopter was chosen by the US Army over the proposals of a number of other helicopter manufactures, designated the OH-6A Cayuse, and entered service in The small "egg-shaped" design and simplified rotorhead incorporated four rotor blades of constant chord, made of bonded light alloy. The four-passenger teardrop shaped "Flying egg" six-passenger with rear seats folded-down was a small, light, sturdy, maneuverable helicopter, with very low drag. Initially fielded in Vietnam in early , the Hughes OH-6A was used for command and control, observation, target acquisition, and reconnaissance. The Hughes Model M international military version was sold in ten countries and built under license in Italy and Japan. The Cayuse had a single articulated four-bladed main rotor, a metal two-bladed tail rotor, and a V-shaped tail. The Cayuse could absorb an extensive amount of small arms fire and still bring the crew home safely. The OH-6A could be armed with the M27 armament subsystem, the port left side mounting M six-barrel 7. In addition, an M60D 7. The Cayuse was organic to division, brigade, and battalion size units. As the reserve units have continued to move away from the OH-6 as their primary scout aircraft, military technical support of the aircraft has dwindled. USNTPS plans to retain the aircraft indefinitely and continue to improve the safety, reliability, and usefulness of the aircraft in the test pilot training role. EH-6B, a previous version of the Little Bird, was used for command, control and radio relay. Armed with a 40mm grenade launcher in a nose turret, and two tube 2. Unfortunately, the weight of the armament kept the little bird from taking off. Military export version of OH-6 in mids with upgraded shp Allison C18 turboshaft engine, "V" tail. A recontoured nose allowed for greater leg and head room. Modifications were also made to the rotor assembly by way of a five blade main rotor which increased stability. Improved military version of the model with 5 main rotor blades, shp Allison C20B turboshaft engine, and T-tail. Had a more elongated nose for streamlining, and an optional 4x blade tail rotor for reduced acoustic signatures. Has a mast-mounted sight, and incorporated upgrades of all previous variants.

Chapter 4 : - The McDonnell Douglas OH-6A Helicopter - Aero Series 38 by Donald J. Porter

Book Description Posted by Donald J. Porter. From the Back Cover While greatly eclipsed in the annals of military aviation by the Huey and Huey Cobra combat helicopters with which it served in the Vietnam War, the McDonnell Douglas OH-6A earned a reputation of strength and reliability unmatched by its contemporaries.

Chapter 5 : McDonnell Douglas Corporation | American company | calendrierdelascience.com

OH-6A Cayuse AH-6J Little Bird Defender The Boeing (McDonnell Douglas) (formerly Hughes model) OH-6A, was designed for use as a military scout during the Vietnam war to meet the U.S. Army's need for an extremely maneuverable light observation helicopter (LOH program).

Chapter 6 : MCDONNELL DOUGLAS Turbine Helicopters Aircraft For Sale - Used & New

The Hughes OH-6 Cayuse light observation helicopter, later became a McDonnell Douglas product. Its modern-day variant is the U.S. Army's Special Operations' "Little Bird".

Chapter 7 : OH-6 Cayuse Helicopter

McDonnell Douglas Helicopter Company Mug Cup Above all its an MD Aviation. The McDonnell Douglas OH-6A Helicopter - Aero Series 38 by Porter, Donald J.

Chapter 8 : McDonnell Douglas MD

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Chapter 9 : March Field Air Museum In Riverside, CA - OH-6A Cayuse, Hughes

Hughes / McDonnell-Douglas Model / OH-6A "Cayuse" / MD In , the US Department of Defense issued Technical Specification for a Light Observation Helicopter (LOH) capable of fulfilling various roles: personnel transport, escort and attack missions, casualty evacuation and observation.