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The Huey Retires

Hundreds of the U.S. Army's UH-1 helicopters will be removed from inventory over the next five years — but they will not go on the civil market.

by

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The United States Army purchased more than 10,000 UH-I Bell Helicopters prior to and during the Vietnam war. These now-aging aircraft, commonly known as Hueys, are not capable of meeting the Army's future needs. The Army has been modernizing its aircraft fleet during the past 12 years by replacing the Huey with the UH-60 Blackhawk, manufactured by Sikorsky, as the basic utility helicopter. The Huey has been the workhorse of the Army, but with the sophisticated modern battlefield, this aircraft is rapidly becoming obsolete for combat. It is a capable aircraft, although its utility has significantly diminished; it must be moved out to make room for the new generation of helicopters. With the Huey still in the active inventory, and the Blackhawk coming in large quantities, the Army is, in addition to having a pure numbers problem, also faced with the enormous cost in money and manpower to maintain these aircraft.

The Army Retirement Plan

According to Col. Ted Orvold of the U.S. Army Aviation System Command (AVSCOM), the Army must reduce the cost of maintaining these aircraft to be able to afford the new generation aircraft. To make space for the new aircraft, the Army must remove a majority of the of UH-1s from service. This will take place over the next several years and involves the retirement of 1,600 aircraft. The motivation to retire the aircraft was in part due to a U.S. Department of Defense (DOD) directive which requires the Army to retire 900 aircraft between October 1989 and September 1992. The Army has developed its own plan, however, which is more ambitious. That plan calls for the retirement of about 400 aircraft per year during the same three-year period and then for continuing the retirement at a slower pace through the year 2008. When implemented, the Army plan will reduce the average age of the active fleet from the current 25 years to 10 to 15 years or less, and identify a large number of Hueys that are residual to Army needs.

Civil Concerns

Traditionally, disposition of excess military aircraft is accomplished by placing them in storage at Davis-Monthan Air Force Base in the Arizona desert near Tucson. "Mothballing" will take place for some of the aircraft; however, a large number will be disposed of in other ways. It is those helicopters not scheduled for storage that are causing concern. Individuals who are directly involved in the manufacture, supply and sales of new helicopters are asking if these surplus Army aircraft will be dumped on the civil market. They feel this would cause such a glut in the numbers of available aircraft that could, for all practical purposes, force the closure of helicopter manufacturing facilities.

Some individuals raise significant safety concerns. Opponents of the Army's plan point out that these aircraft were never certificated because they are what is

termed "public-use aircraft" and, therefore, do not come under the certification rules of the U.S. Federal Aviation Administration (FAA). Additionally, and for the same reason, the aircraft are not maintained in compliance with Federal Aviation Regulations (FARs). If these uncertificated aircraft have no FAR maintenance audit trail and are sold to the public, what will their maintenance condition be? Another issue for the manufacturer is that of product liability; how many times have the aircraft been rebuilt and to whose specifications? Also, what procedures are there to preclude the introduction of bogus parts into the transferred helicopters?

Contractor Support

The aircraft retirement program objective is two-pronged. It is designed to relieve the support burden for aging aircraft so that this money and manpower may be directed to the support of new-technology aircraft and at the same time ensure the Army's long-term readiness and combat capability. The Army's desire is to devise a method of disposition which satisfies, as much as possible, all concerned parties. The plan also ensures that aircraft that are removed from the active inventory and used to satisfy security assistance obligations or mobilization requirements are in top structural and mechanical condition prior to transition.

To accomplish this transition of assets, AVSCOM management envisions establishment and maintenance of multiple pools of aircraft for a variety of contingency purposes. Aircraft in these pools will be rehabilitated and refurbished prior to ultimate disposition.

The pools will support U.S. security interests, foreign military sales, Army war reserves and other requirements from various U.S. government agencies. Priorities for disposal of refurbished helicopters are shown in Table A. Each aircraft inducted into this program will be one that has been identified for retirement.

Plans are being finished to use qualified commercial contractors to overhaul aircraft and associated spares, short- and long-term storage, special modifications to satisfy individual customer needs and field support of the aircraft, and will remove the logistical burden from the Army. This will relieve the support burden for the aging aircraft and open up numerous contracting opportunities in the civilian sector.

Table A
Priority Sequence

- Transfer to U.S. Air Force or U.S. Navy
- Transfer to other DOD activity
- DOD parts reclamation
- Transfer to federal government agency
- Transfer to civil government agency
- Donate to authorized recipients (museums)
- Demilitarize and salvage

Plan Implementation

The first phase of the overhaul program will begin this year. AVSCOM will establish a contractor facility to overhaul and store 20 Hueys for eventual sale to foreign military customers. The successful contractor will be supplied with 20 Hueys and sufficient certified spare parts, to include engines and transmissions, to rebuild the aircraft to the Army standards. The current request for proposal calls for an initial one-year contract for the refurbishment of 20 aircraft (with options for 10 more), followed by annual options over the next four years to refurbish up to 230 more aircraft.

All selected aircraft will be in flyable condition and will be flown to the contractor's facility. Once the initial 20 are rebuilt, they will be replaced with 20 more and the cycle will repeat itself. This system will continue as long as needed by the Army. It is the Army's plan that the contractor will become a secondary supply source that foreign military sales, U.S. Army and U.S. National Guard units can turn to for certified spare parts.

The Army believes that this is a significant change in the way government and industry work together and that these aircraft are a national asset which should be preserved. The assets will be rebuilt or refurbished to high standards prior to sale under security assistance programs. The funds derived from the sale of the overhauled aircraft can be used to offset costs within the Army, will enhance its ability to accomplish the intent and goals of its modernization program, and will minimize the impact on the civilian helicopter community.

The planned aircraft retirement schedule is shown in Table B. Table C contains the disposition and destination of DOD-mandated aircraft losses by the end of September 1989. As can be seen from table C, there are no plans to release aircraft for sale to civilian markets anywhere in the world in the near term.

Table B
Aircraft Retirement Schedule

FY 88	FY 89	FY 90	FY 91	FY 92	FY 93	FY 94	TOTAL
360	150	181	234	46	97	30	1098

As with any government program, this one remains fluid and dynamic. The numbers are changing periodically based on the various factors that influence the program.

However, the aircraft disposal priority will remain constant. An analysis of the number of aircraft available and

Table C
FY 89 Disposition

Aircraft scrapped	46
Aircraft converted into maintenance trainers	43
Aircraft to Davis-Monthan	78
Aircraft sold to foreign countries for military use	27
Aircraft to other U.S. government agencies	98
Total	292

the number of aircraft programmed to go to each designated category shows that, after requirements are satisfied, there will be no aircraft left to be sold to commercial or civilian operators.

Recent conversations with Army representatives indicate that the most recent change is for more than 500 of these aircraft to go to foreign military sales. This, plus the transfer already indicated above, will use all aircraft that will be available for the first years of the program. The Army, according to Col. Orvold, believes it is unlikely that any of these aircraft will ever be sold to civilian markets. ♦

About the Author

Robert H. Vandel is a former U.S. Army helicopter pilot. His total flying time of 4,000 hours includes 3,000 of rotary wing time, of which 2,000 hours were spent as a pilot and instructor in the Bell UH-1 "Huey."

Vandel retired from the Army as a lieutenant colonel in 1988. His last tour in the Army was with the U.S. Federal Aviation Administration, specializing in helicopter operations in the terminal procedures branch of air traffic control. Vandel joined the Flight Safety Foundation as a project director in 1988.

Wires — The Indiscriminate Killer!

just as a fly caught in a spider's web, the helicopter pilot who tangles with wires rarely gets a second chance. There are ways to avoid — or survive — this hazard to the unwary.

by

Glenn A. Leister

An analysis of helicopter accidents reveals wire strikes as one of eight significant categories of accidents. The 1980-86 data, based on six popular light turbine and reciprocating helicopters, comes as no surprise but it highlights the fact that wire strikes account for some five to ten percent of the helicopter accidents that occur every year. For some models in a single year, the figure approached fifteen percent.

Other studies show that wire strikes involve between six and eight percent, respectively, of certain civil and military helicopters. A 1974-79 U.S. Army study indicated that wires accounted for as much as 16 percent of its aircraft fatalities. Data from Mexico described five wire strikes, all fatal, and a follow-up study showed that wire strike protection systems, installed afterwards, were credited with 16 saves out of 16 wire strikes.

While wire strike systems are effective in protecting about 90 percent of the frontal area of the helicopter, protection systems are not available for several popular aircraft used in corporate and Emergency Medical Service (EMS) operations. Weight penalties of wire strike protection systems are minimal (about sixteen pounds installed) and in some aircraft the necessary removal of ballast may reduce the added weight to zero. However, structural designs of some helicopters would require significant reinforcement to support current cutter designs. Systems have been demonstrated effective at angles up to 45 degrees. The mass and speed of the helicopter are design elements, although cutters are said to be effective at low speeds as well. Weight of the wires and lateral tension also work to pull the wires apart during impact. The design goals include wires typical to metropolitan and rural areas with a tensile strength of 15,000 pounds. Systems can cut electrical cables up to 5/16" (7.94 mm) diameter and telephone cables up to 1.5" (38.1 mm) with breaking strength of 6,240 pounds (28.6 kilonewtons) and 13,500 pounds (60.1 kilonewtons).

Conclusions of U.S. Army testing of the OH-58 (Bell 206) proved that wire strike protection systems were

effective. Obviously, there are at least three basic methods for dealing with wires: 1) Preventing the wire strike, 2) Cutting the wires upon impact (may not work on the large, main power transmission systems), and 3) doing nothing and ignoring this indiscriminate killer.

Wire Strike Prevention

Wire strike prevention deserves high priority in every safety program. There are procedures and techniques to avoid wires, yet we see EMS accidents involving wire strikes during departure from pick-up sites, even when there was an awareness of the wires during the landing. Pilot distraction, a sense of urgency, lack of planning, or inadequate power reserve may well have been contributing factors to this type of accident.

Chief executive officers, operations/safety managers, and pilots must be involved. Monthly safety meetings should constantly stress wire strike prevention with emphasis on "cues" or on the absence of "cues" to train pilots how to avoid traps. The Helicopter Association International's Aerial Applications Committee uses a slide presentation to illustrate typical "traps" where telephone poles were out-of-site behind a house, barn or trees. If wires run along a road, be assured that crossovers to houses on the opposite side will be a hazard to the unwary. Another trap involves junctions where wires split or change direction to follow a valley, or go up across a mountain. These and the larger power lines will often have less visible steel support cables well above the large lower wires, and it should be remembered that larger systems may have tensile strengths exceeding wire cutter capabilities.

Civil helicopters should rarely have to rely on map-of-the-earth flying, although the lack of weather information often becomes a trap. In spite of satellite weather technology, weather information is virtually nonexistent where many helicopters operate and it is becoming even more scarce as U.S. National Weather Service and Flight Service Station weather-reporting stations close down.

There are valleys, canyons and (below) bridges in many parts of the world where wires are strung hundreds or thousands of feet above the floor of the valley or river. In the words of one accident investigator, "Accidents are not 'unplanned events,' but a failure on the part of management." Pilots, also, are managers.

What happens when a helicopter strikes wires? In catastrophic accidents, investigators tell us that the helicopter immediately rolls left or right, becomes inverted, and impacts the ground out of control. Without wire cutters, the impact might break small wires with minimal damage, but the break may occur in a manner that allows the wires to wind around the main/tail rotor hubs, subsequently limiting or preventing control linkages from functioning normally.

"See and Avoid," a VFR collision avoidance concept, doesn't work for wires. Even in clear VFR weather conditions, large, shiny wires disappear under certain angles and shadows from the sun. Natural colors or textures of the terrain or sky may camouflage or obscure the wires.

Wire strike prevention must involve top leaders in the aviation and utilities industries. Known wire hazards involving flyways must be identified, reported and marked. Pilots, the individuals who are ultimately responsible for managing the safety of the aircraft and passengers, must exercise sound judgment and take the initiative to prevent wire strikes.

Wires are indiscriminating killers and most fatal wire accidents occur on the first strike. Unless you operate airport-to-airport (and no helicopter does), maintain a flight profile that avoids wires, be prepared for the inadvertent wire strike, and just say no when the visibility and ceiling are too low for a safe flight.

[This material is reprinted from Rotor *magazine in the interest of sharing safety information with the worldwide aviation community. — Ed.]*♦

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