



# Sikorsky Archives News

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## BLACK HAWK launches a flock of HAWKS



BLACK HAWK



SEAHAWK



KNIGHTHAWK



NIGHT HAWK



INTERNATIONAL HAWKS



STRIKEHAWK



PAVE HAWK

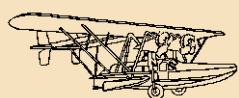


FIREHAWK



JAYHAWK

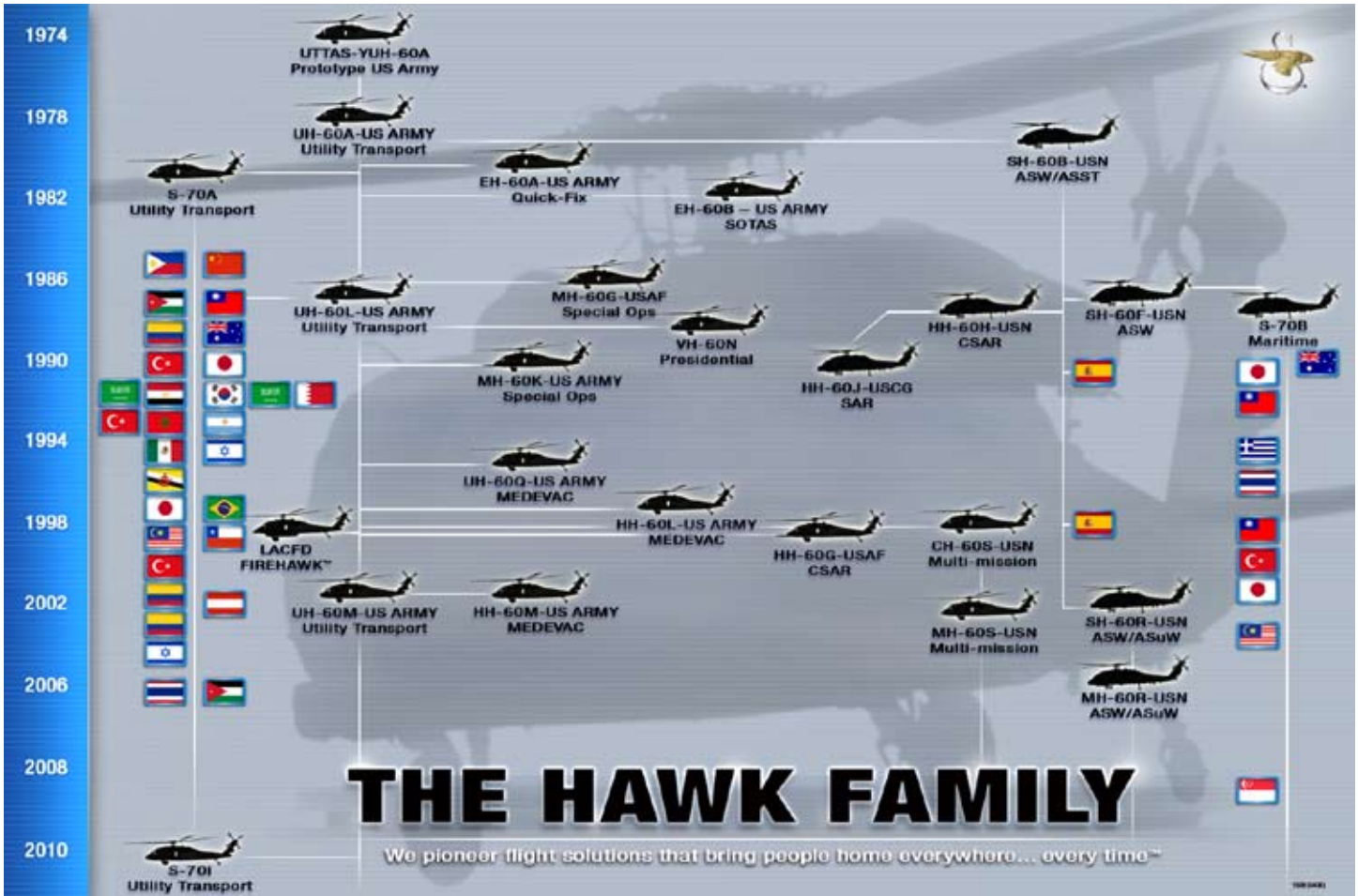
IGOR I. SIKORSKY HISTORICAL ARCHIVES, INC.



(203) 386-4356 | (203) 386-4218

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The Black Hawk lineage chart illustrates the evolution of the most successful helicopter program in the world. Over 3000 Black Hawks and derivative models have been produced for U.S. and international customers. There are over 26 foreign governments and various new hawk models which are in the current worldwide fleet.

## U.S. Army Black Hawk Derivatives

The UH-60A was the first production model produced in the Black Hawk family. It incorporates four generations of advanced helicopter technology since the U.S. Army R-4, built during World War II. The aircraft proved to be extraordinarily adaptable to a broad range of military missions. Its reliability and survivability features were unmatched by any other utility helicopter, and nearly 1000 were built.



UH-60A

R-4

The UH-60L was the first major upgrade to the basic UH-60A configuration. Higher power engines, updated gearbox and strengthened flight controls were installed to improve performance and compensate for weight increases to the “A” model. The UH-60L became the helicopter of choice for many international customers for whom production continues. After approximately 1000 units, the UH-60L production has been superseded by the UH-60M model for the U.S. Army.



UH 60L

Two unique derivatives of the UH-60A were developed by the Army for special electronic missions during the early 1980s. The YEH-60B was configured to carry the Army’s Stand Off Target Acquisition System (SOTAS) featuring a large rotating radar antenna designed to detect moving targets on the battlefield. This configuration was not released for production.



YEH-60B SOTAS

The EH-60A/C Quick Fix was put in production and placed in service to intercept, monitor, locate and jam enemy radio transmissions. It uses four dipole antennas mounted on the tailcone and a retractable whip antenna mounted below the airframe.



EH-60A/C Quick Fix

The MH-60K was developed for the U.S. Army Special Operations Command. The aircraft is similar to the U.S. Air Force MH-60Q. Development started in 1987. Special features for long range operation include enlarged internal fuel cells, aerial refueling probe, and ability to carry the External Tank System (ETS) from the External Stores Support System (ESSS). The aircraft is equipped with terrain-avoidance radar and a Forward Looking Infrared (FLIR) turret. Defensive equipment, missile and radar warning systems are incorporated.



MH-60K



UH-60Q

The UH-60Q DUSTOFF (Dedicated Unhesitating Service To Our Fighting Forces) was placed in service in 1993. The UH-60Q was configured and equipped with high technology medical equipment. There is space for six litter stations for acute care patients and seating for several ambulatory patients. The aircraft's medical systems, range extension fuel system, and all-weather capability enable it to perform disaster and humanitarian relief missions.

The UH-60M is the new U.S. Army model, and the first to incorporate the latest advanced technology rotor blades and vibration control systems. The MEDEVAC version is the HH-60M. The following improvements are incorporated:

- T700-GE-701D engines
- New wide chord blade airfoils and tip geometry
- Composite blade spars
- Improved Infrared suppressors
- Active vibration control system
- High life airframe structure
- Advanced digital avionics system
- Improved crashworthy crew and troop seats



UH-60M

## U.S. Navy Seahawk Derivatives:

The U.S. Navy SH-60B Seahawk was the first naval hawk derivative. It was created in 1978 with unique features and equipment to provide shipboard compatibility and special naval operations. The Seahawk spawned its own lineage of derivative helicopters

The S-60B was developed to perform the Navy's anti-submarine warfare (ASW) and anti-ship surveillance and targeting (ASST) missions. The most significant changes from the Black Hawk included a reduced footprint landing gear system, larger crashworthy fuel cells, folding main rotor blades, stabilator and tail pylon, sonobouy launcher equipment, and sensor operator crew stations and equipment, two weapons pylons for torpedoes, depth charges, air-to-surface missiles, and search radar.



SH-60B

Development of a Combat Search and Rescue / Special Warfare Support helicopter designated HH-60H, was initiated in 1996. The aircraft is equipped with an infrared jamming system, chaff/flare dispensers, radar warning and engine infrared suppression system.



SH-60F

The U.S. Navy initiated development of the SH-60F, in 1985 to provide close-in ASW protection of aircraft carrier groups. The key feature of the "F" model was the installation of a dipping sonar system to detect submarines.



HH-60H

During the 1990s the U.S. Navy initiated a plan to consolidate its requirements into two basic helicopter configurations, MH-60S Knighthawk and the MH-60R Strikehawk. The MH-60S is a combination of the best features of the Black Hawk and Seahawk to create a multi-mission Navy helicopter. Its missions include vertical replenishment of ships and on-board delivery, search and rescue, and special warfare support. The MH-60S utilizes the UH-60L airframe and landing gear system. The Seahawk automatic folding main rotor, engines and drive system, folding tail and flight control systems are retained. The MH-60S became operational in 2002.



MH-60R

The MH-60R initiated in 1999 was configured to perform all Under Sea Warfare (USW) and Anti-Surface Warfare (ASW) missions conducted by the SH-60B and SH-60F Seahawk versions. The aircraft retains the Seahawk landing gear systems to enable operating from the Navy frigates, destroyers, cruisers and aircraft carriers. Deliveries to the fleet began in 2005.

## U.S. Air Force MH-60G/HH-60G Pave Hawk

Development of the USAF MH-60G for its Special Operations Command began in 1986. Missions included long range infiltration, resupply and recovery of special operations forces and downed pilots.

The HH-60G Pave Hawk was assigned the primary mission of search and rescue operations. The Pave Hawks are equipped with an in-flight refueling boom for long range operations plus a FLIR system, weather radar and rescue hoist.



MH-60G / HH-60G

## U.S. Marine Corp VH-60N

The VH-60N entered service in 1988 for the executive transport mission. The aircraft was configured with the best features of the SH-60B/F and the UH-60A. The cabin is configured with an executive style interior. Upgraded avionics systems and a secure world-wide communication capability are included.



VH-60N

## U.S. Coast Guard HH-60J



HH-60J

The U.S. Coast Guard started development of the HH-60J medium range rescue helicopter in 1986. The aircraft's mission is to conduct search and rescue missions out to 300 miles. The Jayhawks are used for law enforcement missions including drug interdiction and environmental surveillance and protection. Although designed to carry up to six rescuees, a single Jayhawk set a record of hauling up and carrying 25 people to safety from a sinking ship in December 2000 for which the crew received many awards.

## S-70A Firehawk

The S-70A Firehawk is a version of the UH-60L Black Hawk. The aircraft's missions include fire fighting, rescue, medical evacuation, and external lift operations. The Firehawk has landing gear extension fittings and an external 1000 gallon water tank and water pump snorkel which is removable for other missions. Its water tank can be refilled in as little as 60 seconds from any body of water over eight inches deep.



## S-70A/S-70B/S-70C International Hawks



S-70A International Hawk

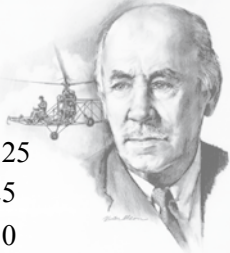
The S-70A International Hawk is a Black Hawk derivative which can be configured to meet various customer mission requirements. Soon after the U.S. Military began operating Black Hawk and Seahawk models, many foreign countries selected them for their services. Currently over 26 countries operate land or sea-based versions and some operate both. Many have been built in country under Sikorsky license using Sikorsky-made dynamic components.

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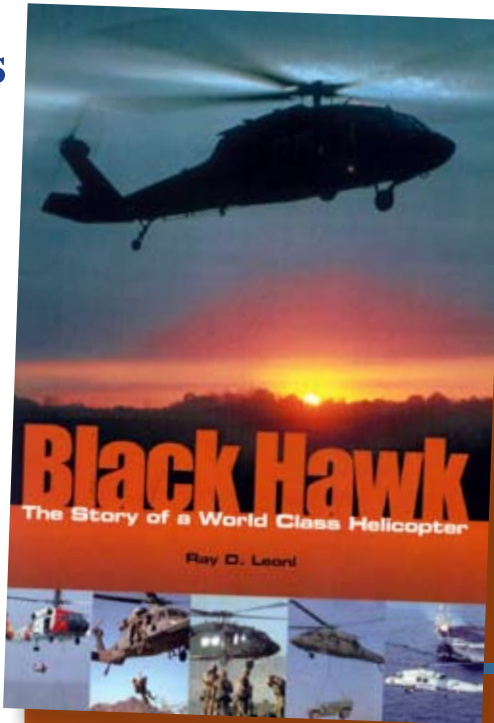
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The story of the Black Hawk written by Ray D. Leoni is available via AIAA, Barnes & Noble, Amazon, the Sikorsky Store, and the Igor I. Sikorsky Historical Archives.

Newsletter designed and edited by Lee Jacobson, John Kowalonek and Edgar A. Guzman with data provided by Ray Leoni.



“There was also the comforting realization that nearly all discoveries were preceded by numerous failures.”

Igor I. Sikorsky

