

H-60: An All-Purpose Helo for the Future

By LCdr. Rick Burgess, USN (Ret.)

The Navy's Helicopter Master Plan prescribes reducing the variety of operational helicopters in fleet service to one primary aircraft. Plans to remanufacture and upgrade the current fleet of Sikorsky-built H-60 *Seahawks* and to procure Sikorsky's CH-60 utility helicopter are putting the Navy closer to achieving that goal. Within the next two decades, anyone flying in a U.S. Navy fleet helicopter will almost assuredly be flying one of two H-60 versions—the SH-60R or the CH-60.

SH-60R Roadmap

The Navy currently operates SH-60B Light Airborne Multi-Purpose System (LAMPS) MK III antisubmarine warfare (ASW) versions of the *Seahawk* from the decks of cruisers, destroyers and frigates. These aircraft are fitted with radar, sonobuoys, magnetic anomaly detection (MAD) gear, infrared detection sets and electronic surveillance measures (ESM) systems to detect submarine and surface threats. Antisubmarine torpedoes or anti-shiping missiles give the SH-60B an attack capability.

On aircraft carriers, the Navy deploys a mix of SH-60F ASW helicopters and HH-60H strike rescue helicopters. The SH-60F has no radar or ESM system; it uses dipping sonar and sonobuoys to detect

and track submarines, and can attack with antisubmarine torpedoes. The HH-60H, used to insert and extract special warfare forces and to rescue downed aircrew personnel in hostile territory, is also flown by two reserve helicopter combat support special squadrons.

The Helicopter Master Plan





This SH-60B *Seahawk* from HSL-43 is equipped with a forward looking infrared and laser designation pod, making this helo Hellfire capable. Photo by Ted Carlson.



Left, an artist's concept of the SH-60R *Seahawk*. Below, an Army *Black Hawk* and a Navy *Seahawk* were joined to create this prototype of the CH-60, shown conducting initial shipboard demonstrations in November 1997. Opposite, an SH-60B *Seahawk* launches an AGM-119 Penguin anti-shiping missile, which will be standard armament on the SH-60R.

calls for the remanufacture of SH-60B, SH-60F and HH-60H *Seahawks* into a common, more versatile SH-60R configuration that will meet Navy requirements through 2015. The SH-60R will combine the traditional mission areas of the SH-60B and SH-60F, but will be more capable.

High-Tech Weapons Platform

The SH-60R program will give *Seahawks* a life extension to 20,000 flight hours. Improvements include the addition of two stores stations, a data bus, advanced low-frequency sonar, acoustic processor, multimode radar, Forward-Looking Infrared (FLIR) sensor, upgraded ESM system and integrated self-defense system. The MAD gear will be deleted.

Cockpit mission system improvements include the addition of an upgraded mission computer, improved communications suite, high-resolution displays, programmable keysets and tactical aids. The SH-60R will carry AGM-119 Penguin antishipping missiles and AGM-114 Hellfire anti-armor missiles, as well as the current MK 46 and MK 50 ASW torpedoes and a door-mounted 7.62 mm machine gun.

Remanufacture of the SH-60B fleet has started and will continue through FY 2009. Remanufacture of the SH-60F and HH-60H fleets will begin in FY 2004 and continue through FY 2012. Lockheed Martin is the prime contractor for low-rate initial production of four SH-60Rs,

with Sikorsky as major subcontractor. The SH-60R is scheduled to reach operational capability in 2002.

With the Navy's helicopter antisubmarine (HS) and helicopter antisubmarine light (HSL) squadrons operating the same helicopter, opportunities for adjustments in the force structure will emerge, such as reducing the number of fleet readiness squadrons that support the SH-60 fleet. The distinction between the HS and HSL communities may even disappear altogether.

CH-60: The Fleet's New Truck

The CH-60 configuration evolved to fill the Navy's need for a comprehensive, rugged utility helicopter to replace the helicopters engaged in vertical replenishment (CH-46D, UH-46D and HH-46D), amphibious assault ship search and rescue (HH-46D), strike rescue and special warfare (HH-60H), station search and rescue (HH-1N and UH-3H), utility transport and target recovery (UH-3H), and VIP transport (VH-3A and UH-3H). The CH-60 will also be capable of carrying FLIR and Hellfire missiles, making it an even more versatile platform.

The Navy needed a *Seahawk* variant but could not afford a utility version. Since the Army *Black Hawk* was much less expensive, the



solution was to build a hybrid—a “navalized” *Black Hawk* that would meet the cost constraints but could be modified to operate in a shipboard environment. This takes advantage of the existing H-60 support infrastructure and reduces the number of different types of aircraft in the inventory. The Navy will save an estimated \$20 billion in life-cycle costs over the life of the program.

YCH-60 Demonstrator Program

After Congress approved the CH-60, the Army transferred a UH-60L *Black Hawk* to the Navy; it and an SH-60F *Seahawk* went to Sikorsky to blend into a “YCH-60” prototype. The YCH-60 made its first flight on 6 October 1997. Navy test pilots joined the YCH-60 evaluation in November and helped complete the flight testing by 10 January 1998.

With a large cabin, double cargo doors and external stores support system winglets, the aircraft externally resembles a *Black Hawk*. Most of its *Seahawk* features are

internal: engines, rotor brake, folding tail pylon, automatic flight control system, rescue hoist and a more durable gearbox. The production version of the aircraft will be equipped with reversible floorboards on the cabin cargo floor, and one side will be fitted with rollers to handle up to two standard four-foot-square cargo pallets.

Sikorsky is currently in the process of tooling up for CH-60 production, and configuration options and a cockpit common with the SH-60R are being engineered. The first major assemblies of the CH-60 will enter production later this year; first deliveries are scheduled for late 1999.

Reducing the types of helicopters in the fleet inventory to two airframes may enable the Navy to consolidate its HS and HC (helicopter combat support) squadrons. One possibility now being considered is for a carrier battle group to deploy with SH-60Rs and CH-60s on board the carrier, with other CH-60s detached to the battle group's logistics ship.

SEALs and Mines

The CH-60 has several advan-

tages over the HH-60H *Seahawk* as a strike rescue and special warfare helicopter. The *Black Hawk*-style tail wheel, positioned further aft, allows for a steeper landing approach to a confined area. The CH-60's larger cabin will enable it to carry more troops; its two larger cargo doors will allow more rapid deployment of the rigid inflatable boats for Navy sea-air-land team members (SEALs). The CH-60 also will be more crash-worthy, and will be fitted with better self-sealing fuel tanks capable of withstanding rounds up to 7.62 mm. The external stores support system installed on the CH-60 will allow more fuel and weapons to be carried.

The YCH-60 is being programmed for an evaluation of its mine countermeasures potential later this year. The Navy hopes that the CH-60 will be able to meet its biggest challenge—replacing the gigantic Sikorsky-built MH-53E *Sea Dragon* minesweeping helicopter. Although the CH-60 is too small to tow the heavy MH-53E minesweeping sleds, lightweight towed systems

and laser imaging detection and ranging systems promise to make the CH-60 a capable mine hunter.

Seahawk or Black Hawk?

Because it is a hybrid of the *Black Hawk* and the *Seahawk*, the CH-60 presents a quandary for Sikorsky's marketing strategy: what does one call the CH-60? A possibility being considered, partly in tribute to the H-46 *Sea Knight* that the CH-60 will replace, is *Knighthawk*.

The Navy still has not assigned a type/model/series designation to the CH-60; the next letter available in the H-60 series is "S." If used, the aircraft's official designation would be CH-60S.

When the master plan becomes reality, the H-60 will be the Navy's all-purpose helicopter for the 21st century.

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Photo by PH1 Spike Call