

## MH-60S Fleet Combat Support Helicopter

The MH-60S Fleet Combat Support Helicopter is replacing the CH-46D, most of which have exceeded their original service life. The primary mission of the baseline (Block I) MH-60S configuration is to provide the Navy's Combat Logistic Force with responsive vertical replenishment, vertical onboard delivery, ship-to-shore airhead support, and Amphibious Task Force search and rescue. Secondary missions include Special Warfare Support, aero-medical evacuation, and noncombatant evacuation. A Block II MH-60S configuration will support the organic Airborne Mine Countermeasures mission. A Block III MH-60S configuration, the Armed Helicopter, will support combat search and rescue, anti-surface warfare, and aircraft carrier plane guard missions. A Milestone III decision in late FY02 led to full-rate production of Block I aircraft in FY02. DOT&E submitted a Beyond Low-Rate Initial Production (BLRIP) report to Congress in August 2002. Fleet introduction of the Block II configuration is scheduled early in FY06 and the Block III late in FY06.

The MH-60S is an Army UH-60L Black Hawk airframe incorporating Navy Seahawk GE T700-401C engines, transmission/drive train, stabilator, flight controls, and a folding rotor head and tail pylon. It uses the digital Common Cockpit design, also used in the MH-60R, which has multi-functional displays and a complex tactical data processing system. MH-60S avionics include dual UHF/VHF transceivers, dual embedded Global Positioning System/inertial navigation systems, and night vision device-compatible heads-up displays. The Airborne Mine Countermeasures configuration will incorporate a Sensor Data Link, a sensor workstation, a winch and tether/towing system, and one of two mine detection sensors or one of three mine destructor systems currently under development. The Armed Helicopter configuration will include tactical moving maps, a forward-looking infrared sensor with a laser range finder/target designator, crew-served side suppression weapons, Hellfire missiles, forward firing guns/rockets, and an integrated self-defense system.

DOT&E placed the MH-60R on oversight for LFT&E in 1998. The Assistant Secretary of the Navy, Research, Development, and Acquisition (ASN(RDA)) granted a waiver from full-up system level live fire test of the MH-60R under an extension of a July 1996 memorandum. The Army and Navy established a joint LFT&E test program for the UH-60M, MH-60S, and MH-60R development programs to address data voids at reduced costs. The joint effort recognized the high degree of commonality among the H-60 variants' structural and dynamic components. Both Services provided airframe components and the prototype YCH-60S aircraft to be used as test articles for static and dynamic testing that began in 2001. The joint LFT&E program will continue into FY05.

### TEST & EVALUATION ACTIVITY

The Navy revised the Operational Requirements Document (including Appendix A- Armed Helicopter, and Appendix B- Airborne Mine Countermeasures) in August 2002 for Milestone III. The Test and Evaluation Master Plan is being revised to support development and testing of the Armed Helicopter and Airborne Mine Countermeasures-configured aircraft.

Verification testing for correction of some of the deficiencies identified during operational evaluation (OPEVAL) of the baseline configuration occurred in July 2003.

The Army and Navy joint LFT&E test program conducted both static and dynamic tests on aircraft components and on the YCH-60S test aircraft while operating at hover. Testing continued throughout the year at the Army's Aberdeen Proving Grounds, Maryland, and at the Naval Air Warfare Center, Weapons Division, China Lake, California.



*The baseline-configured MH-60S successfully accomplished its primary and secondary missions.*

# NAVY PROGRAMS

## TEST & EVALUATION ASSESSMENT

OPEVAL results showed that the MH-60S is operationally effective and survivable, but not operationally suitable. The baseline-configured MH-60S successfully accomplished its primary and secondary missions, constrained only by a 350 gallon fuel capacity. DOT&E recommended in the August 2002 BLRIP report to Congress that sufficient quantities of 200 gallon internal auxiliary fuel tanks be procured by the Navy to accomplish current missions requiring extra fuel, as directed by Task Force Commanders.

The MH-60S was not operationally suitable due to excessive delay time in obtaining spare parts. The aircraft was reliable during OPEVAL. However, when failures occurred, needed parts were not readily available. DOT&E recommended in the BLRIP report that the Navy act to correct the deficiency and ensure adequate logistics were available to support the planned rapid introduction of the MH-60S to the Fleet.

Verification of Correction of Deficiency testing in July 2003 confirmed that operator-systems software interface defects identified during OPEVAL have been corrected. Deliveries of MH-60S-unique spare parts began in April 2003 and should resolve interim inventory shortages. Over 50 baseline MH-60S aircraft were in Fleet service by the end of FY03 and have exceeded the Chief of Naval Operations' Fleet readiness goals. The Navy's Operational Test Agency found the MH-60S to be operationally suitable after completing several follow-on test and deficiency correction periods. Additional follow-on testing, in conjunction with the Airborne Mine Countermeasures Mission, will continue to monitor and verify deficiency correction.

The retrofit of 35-pound centrifugal vibration dampers on the rotor mast to bring the MH-60S aircraft within vibration specifications has not yet occurred. Testing of the vibration dampers is complete and production installation is planned to start in 1QFY04. Crews will experience increased fatigue and potentially decreased mission effectiveness until this repair is made.

The LFT&E results and legacy H-60 databases indicate that the MH-60S is operationally survivable in its intended operational environment for the baseline configuration missions. The MH-60S is a damage-tolerant aircraft that can withstand multiple small caliber projectile hits, continue to fly, and often complete its mission in spite of incurred damage. The data from the joint LFT&E program was adequate to evaluate the survivability of the Block I MH-60S configuration while conducting its wartime missions. The joint LFT&E program will extend into FY05 and consider Block II and Block III configurations of the aircraft.