

CH-60S FLEET COMBAT SUPPORT HELICOPTER



Navy ACAT IC Program

Total Number of Systems:	237
Total Program Cost (TY\$):	\$4200M
Average Unit Cost (TY\$):	\$19.000M
Full-rate production:	2QFY01

Prime Contractor

Sikorsky Aircraft

SYSTEM DESCRIPTION & CONTRIBUTION TO JOINT VISION 2010

The CH-60S Fleet Combat Support Helicopter is the replacement for the current Navy CH-46D. The CH-60S is designed to provide the Navy's Combat Logistics Force with: (1) responsive vertical replenishment; (2) vertical onboard delivery; and (3) airhead support as well as day/night Amphibious Task Force search and rescue (SAR) services. Secondary missions include Special Warfare (overwater) Support (SWS), aeromedical evacuations, and noncombatant evacuation. A future configuration of the CH-60S is also being designed to add the following missions: Combat Search and Rescue/Special Warfare (overland) Support (CSAR/SWS), Anti-surface Warfare (ASUW), and aircraft carrier plane guard/SAR. The multi-configured CH-60S supports the operational concepts of *focused logistics* and *full-dimensional protection*.

The CH-60S is an ARMY UH-60L Blackhawk airframe incorporating Navy Seahawk marinated GE T-700 engines, folding rotorhead and tail pylon, transmission/drive train, and flight controls. The CH-60S will share, in part, with the Navy SH-60R helicopter a "common cockpit" which consists of multi-functional displays, keysets, and a complex client-server based tactical data processing system.

The CH-60S avionics will include: (1) dual UHF/VHF transceivers; (2) inertial, Doppler, and Global Positioning System navigation; (3) night vision device-compatible heads-up displays; and (4) a ground proximity warning system. The aircraft will have provisions installed to incorporate a future CSAR mission kit consisting of tactical moving maps, FLIR with a laser range finder/designator, crew-served side suppression weapons, HELLFIRE missiles, forward firing guns/rockets, and an integrated self defense system.

BACKGROUND INFORMATION

The current CH-46D Navy helicopters are over 25 years old and a large fraction of them are nearing or have exceeded their original service life. An OA of the prototype CH-60S helicopter was conducted in response to a congressional mandate to demonstrate the concept of using a modified UH-60L Blackhawk to perform the Fleet Combat Support (HC) mission as a replacement for the aging CH-46D. The CH-60S ORD and TEMP were approved in April and May 1998, respectively.

Combined compliance testing (CT), developmental testing (DT), and operational testing (OT) was conducted from November 1997-January 1998 at Sikorsky's Stratford, Conn., facility and with the Combat Stores Ship, USS Saturn, 30 miles south of Long Island, NY. Each flight had either a DT or OT co-pilot and a Sikorsky test pilot during the 45 hours flown. The OT portions of the tests were conducted in accordance with a DOT&E approved test plan as an early OA and supported a June 1998 LRIP decision for initial production lots of the CH-60S. The assessment found the CH-60S to be potentially operationally effective and potentially operationally suitable for the HC mission. Due to the commonality of predecessor H-60 variants, the assessment was bolstered by historical data from Army and Navy files, where applicable.

Deficiencies noted during the assessment were categorized as: (1) insufficient fuel capacity without use of auxiliary tanks to meet specified range requirements in the ORD for amphibious SAR and plane guard SAR; (2) structural deficiencies which would preclude more stringent landing and deck handling requirements aboard small decked combatants; and (3) incompatibility of the internal roller-based cargo handling system.

The CH-60S has been designated a covered system for Live Fire Test under 10-USC-2366. The finding that full-up live fire testing would be unreasonably expensive and impractical was made by USD(A&T) on July 8, 1998. An alternative LFT&E plan was approved at that time and Congress was notified.

TEST & EVALUATION ACTIVITY

The U.S. Navy has made the decision to develop and deploy an Organic Airborne Mine Countermeasures (AMCM) sensor system capability. The CH-60S is being considered for the AMCM mission and proof of concept testing commenced in August 1999 with the prototype CH-60S, the YCH-60. The first phase of this testing was a static pull test where the aircraft was suspended and pull forces up to 11,500 pounds were applied to the tow point of the aircraft at various angles. The objective of this phase was to evaluate structural integrity, dynamic component life degradation and preliminary aircraft flight qualities. Phase II dynamic tow flight tests are scheduled to commence in 1QFY00; Phase III tow tests using actual counter-mine systems will be conducted in 4QFY00.

Compliance Testing, TECHEVAL, and OPEVAL of the CH-60S are currently scheduled for January 2000-January 2001, with a Milestone III Decision set for March 2001. Test events for the “Common Cockpit” and data processing sub-systems, common to both the SH-60R and the CH-60S, are being coordinated to reduce total test time required for each program. Operational testing of the CSAR kit configured aircraft is scheduled to occur in FY03 and FY04.

The LFT&E strategy for the CH-60S required assessment of its combat survivability and potential for crew casualties, and included a recommendation of whether additional tests would be required. A panel of Navy, Army and OSD experts convened a meeting in March of 1999 in which relevant Joint Live Fire and combat data for the H-60 series of aircraft was used to assess the survivability of the CH-60S. After the March 1999 meeting, the Naval Air Warfare Center conducted a component by component vulnerability assessment of the CH-60S using Navy mission scenarios. The Navy has determined that important data voids exist when employing the CH-60S in Combat Search and Rescue (CSAR) missions, and is working with OSD to develop a plan of action to provide the required data.

TEST & EVALUATION ASSESSMENT

Based on the results of the proof of concept testing, integration of the AMCM sensor systems into the CH-60S could become a major element of the CH-60S test program. Although the five AMCM sensor systems development and procurement are each ACAT II programs, DOT&E intends to exercise oversight of the AMCM sensor integration and mission as a program element of the CH-60S program.

The Navy and DOT&E are reviewing the results of the LFT&E vulnerability assessment and the findings of the expert review panel with the intent of establishing a plan of action. DOT&E recognized that the identified data voids are common to other H-60 aircraft variants such as the Navy’s SH-60R and the Army’s UH-60L upgrade. DOT&E is proposing a coordinated effort among these Service programs to cost effectively satisfy the total LFT&E data requirement. An evaluation plan that identifies test assets and resources required to accomplish this task will be developed.

