

## MH-60S Fleet Combat Helicopter

### Executive Summary

- The MH-60S Armed Helicopter (Block 3A) variant underwent IOT&E in FY07.
- The Navy's Operational Test and Evaluation Force (OPTEVFOR) found the Armed Helicopter operationally effective for Carrier Plane Guard, Maritime Interdiction Operations, and daytime Surface Warfare missions. The helicopter was not operationally effective in Combat Search and Rescue and Special Warfare Support missions due to a significant number of Mission Planning deficiencies.
- OPTEVFOR found the Armed Helicopter operationally suitable for the Carrier Plane Guard and Maritime Interdiction Operations missions. The helicopter was not operationally suitable for the Combat Search and Rescue, Special Warfare Support, and Surface Warfare missions due to deficiencies in safety, compatibility, and human factors.
- IOT&E for the Block 2A Airborne Mine Countermeasures (AMCM) variant is scheduled for the first quarter of FY08.

### System

- The MH-60S is a helicopter modified into three variants (Blocks) from the Army UH-60 Blackhawk. It is optimized for operation in the shipboard/marine environment.
- The Blocks share common cockpit avionics and flight instrumentation with the MH-60R.
- Installed systems differ by Block based on mission:
  - Block 1 – Vertical Replenishment: precision navigation and communications, maximum cargo, or passenger capacity
  - Block 2 – Airborne Mine Countermeasures (AMCM): AMCM systems operator workstation, tether/towing system, any one of five available mine countermeasure systems



- Block 3 – Armed Helicopter: Tactical moving map display, forward-looking infrared with laser designator, crew-served side machine guns, Hellfire air-to-surface missiles, and defensive electronic countermeasures
- Pre-Planned Product Improvements add tactical data link (Link 16) and related upgrades to both Block 2 and Block 3.

### Mission

The Maritime Component Commander can employ variants of MH-60S from ships or shore stations to accomplish the following missions:

- Block 1: Vertical replenishment, internal cargo and personnel transport, medical evacuation, Search and Rescue, and Aircraft Carrier Plane Guard
- Block 2: Detection, classification, and/or neutralization of sea mines depending on which AMCM systems are installed on the aircraft
- Block 3: Combat Search and Rescue, Anti-Surface Warfare, Aircraft Carrier Plane Guard, Maritime Interdiction Operations, and Special Warfare Support

### Activity

- OPTEVFOR conducted dedicated IOT&E for the Armed Helicopter from April through June 2007. The IOT&E consisted of 57 sorties for a total of nearly 173 flight hours. The test covered all of the Armed Helicopter missions. Salvo launch and nighttime HELLFIRE capability were not evaluated due to insufficient HELLFIRE missile availability.
- OPTEVFOR conducted some events under Integrated Testing using mixed developmental and operational testing flight crews. These events included testing of the Integrated Self-Defense systems at Eglin Air Force Base, Florida, and the live fire of HELLFIRE missiles.
- Due to the non-availability of fleet aviation capable ships, VX-1 flew all airborne missions from shore establishments.

The only shipboard operations conducted were onboard USS *Harry S. Truman* (CVN 75) while pierside at Naval Station Norfolk, Virginia. These operations assessed the carrier's ability to handle, store, and service the Armed Helicopter.

- The Armed Helicopter requirements were set in the Operational Requirements Document (ORD) Change 1, dated June 2006. Recognizing the aircraft would not meet many of those requirements, the Navy drafted ORD Change 2, modifying, lowering, and deleting some thresholds. Change 2 was unsigned as of the end of FY07. At the January 2007 Operational Test Readiness Review, the MH-60S Program Office (PMA-299) acknowledged that it did not expect to meet the Change 1 requirements. In view of this acknowledgement,

# NAVY PROGRAMS

OPTEVFOR and VX-1 designed the operational test to encompass both Change 1 and Change 2 mission profiles.

However, with Change 2 remaining unsigned, the only valid changes to the original ORD are those contained in Change 1.

- The Navy Vulnerability Assessments for the Armed Helicopter and AMCM variant have been received by DOT&E and are under consideration in drafting the DOT&E combined OT&E/LFT&E Report.

## Assessment

- In October 2007, the Navy issued a report finding the Armed Helicopter not effective in Combat Search and Rescue and Special Warfare Support (Overland). In addition, the Navy found the Armed Helicopter not suitable in Combat Search and Rescue, Special Warfare Support (Overland), and Surface Warfare. The effectiveness assessment was due to the helicopter's inability to meet mission radii (all of these are Key Performance Parameters). In addition, many mission planning deficiencies were noted.
- For suitability, the Armed Helicopter failed to meet its Full Mission Capability threshold (a Key Performance Parameter),

and exhibited other reliability, safety, and human factors deficiencies.

- DOT&E regards the IOT&E as inadequate because of its limited scope, particularly the failure to conduct any tests aboard ship as called for in the DOT&E-approved test plan, and the restricted number and type of HELLFIRE shots.
- DOT&E finds that the Armed Helicopter meets its survivability requirements.

## Recommendations

- Status of Previous Recommendations. There were no recommendations made in FY06.
- FY07 Recommendations.
  1. Future testing must include actual embarked shipboard operations as appropriate. When properly structured, the operational test events can provide an excellent training opportunity for the fleet.
  2. The Navy should conduct Pre-Planned Product Improvement testing for the MH-60S and MH-60R during FY08, making use of surface ship assets as needed.