

E-2D Advanced Hawkeye (AHE) to include Radar Modernization Program (RMP)

Executive Summary

- The E-2D Advanced Hawkeye lacks a coherent test strategy.
- The Navy has not updated the Test and Evaluation Master Plan (TEMP), as recommended last year.
- The Navy must develop an adequate full-scale aerial target.
- Critical design review completed in October 2005. Production of the first System Development and Demonstration aircraft is approximately 65 percent complete.
- Milestone C is scheduled to occur during FY09 with IOT&E in FY12.

System

- The E-2D Advanced Hawkeye is a carrier-based Airborne Early Warning and Command and Control aircraft.
- Significant changes to this variant of the E-2 include replacement of the radar system, the communications suite, the mission computer, and the incorporation of an all-glass cockpit.
- The radar upgrade replaces the E-2C mechanical scan radar with a radar array that has combined mechanical and electronic scan capabilities.
- The upgraded radar provides significant improvement in Hawkeye littoral, overland, clutter management, and surveillance capabilities.

Mission

The combatant commander, whether operating from the aircraft carrier or from land, uses the E-2D Advanced Hawkeye to accomplish the following missions:

- Theater air and missile sensing and early warning



- Battlefield management, command, and control
- Acquisition, tracking, and targeting of surface warfare contacts, in addition to the ability to prosecute targets over land
- Surveillance of littoral area objectives and targets
- Tracking of strike warfare assets

Activity

- Critical design review completed in October 2005.
- The Joint Staff certified the E-2 Information Support Plan in September 2006.
- Production of the two System Development and Demonstration aircraft is approximately 65 percent complete and on track for first flight in the fourth quarter of FY07.
- The Advanced Hawkeye program office completed calibrated loads evaluation on an E-2C aircraft as risk reduction for the increase in the gross weight of the E-2D airframe.
- Additional risk reduction flights, using the Advanced Development Model radar system aboard the NC-130H, were scheduled to begin in the fourth quarter of FY06, but have been moved to the second quarter of FY07.

Assessment

- Due to the extensive changes in the E-2C Hawkeye 2000 beyond the Radar Modernization Program, a TEMP update is needed to address testing of the entire aircraft. An update to the E-2D Advanced Hawkeye TEMP was due February 2004. Currently, there is no Joint Requirements Document that covers the entire platform. Additionally, there is no Concept of Operations that outlines how the expanded capability of the E-2D Advanced Hawkeye will be employed. Both are needed to ensure an adequate test strategy is formulated. The Navy initiated development of these documents with a delivery goal of the third quarter of FY07.
- Critical aspects of E-2D Advanced Hawkeye operational testing will include joint interoperability and information

assurance. The current TEMP does not include the joint interoperability and information assurance aspects outlined in the updated Information Support Plan, nor does it include the resources to test them adequately. The current TEMP does not outline the specific test strategy or resources to adequately assess the E-2D Advanced Hawkeye's increased capabilities, including a full-scale aerial drone target, that adequately represents fifth generation threat aircraft characteristics. The strategy and resources are required to conduct an adequate operational test.

Recommendations

- Status of Previous Recommendations.
FY05 #1, 2, 3: DOT&E recommended that the Navy update the TEMP to include plans for addressing information

assurance, joint interoperability, and adequate resourcing of test assets. These recommendations are still valid.

- FY06 Recommendations. The Navy must:
 1. Complete a Joint Requirements Document that encompasses the entire E-2D Advanced Hawkeye.
 2. Complete a Concept of Operations.
 3. Ensure the TEMP update includes an integrated test strategy per direction from Commander, Operational Test and Evaluation Force.
 4. Develop an adequate full-scale aerial target.