

E-2D Advanced Hawkeye

Executive Summary

- The E-2D Advanced Hawkeye continues to improve in aircraft and radar system performance as well as resolving outstanding deficiency reports.
- The Commander, Operational Test and Evaluation Force (COTF) began an operational assessment in August 2010.
- The Navy's E-2D Integrated Test Team (ITT) is performing development and integration testing at Naval Air Station (NAS) Patuxent River, Maryland.
- The E-2D program is integrating Cooperative Engagement Capability (CEC) hardware and software into the E-2D.

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, and the mission computer, as well as 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.

Activity

- Air Test and Evaluation Squadron One (VX-1) performed the first set of operational assessment OT-C1 flights from August 15-21, 2010 at NAS Jacksonville, Florida, and the remaining events from November 1-9 at NAS Fallon, Nevada, and NAS Point Mugu, California. Results from the operational assessment will support the acquisition decision in 2QFY11 for E-2D Low-Rate Initial Production Lots 3 and 4. COTF is conducting the operational assessment in accordance with the DOT&E approved TEMP and test plan.
- DOT&E approved the E-2D TEMP page change. The page change added a description of and clarified entrance and exit criteria for the FY10 operational assessment.
- CEC Engineering Test and Evaluation on E-2D, a precursor to Development Test and Evaluation (DT&E), was initiated July 2010. E-2D CEC DT&E is scheduled to begin February 2011. Two E-2D test aircraft are currently CEC-equipped.
- The E-2D program developed a radar reliability growth program and growth curves.



Mission

The Combatant Commander, whether operating from the aircraft carrier or from land, will use 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
- Surveillance of littoral area objectives and targets
- Tracking of strike warfare assets.

Major Contractor

Northrop Grumman Aerospace Systems – Bethpage, New York

Assessment

- Until DOT&E can analyze the complete data from the operational assessment OT-C1, a comprehensive assessment of E-2D performance cannot be provided. Based upon developmental test data, radar detection and accuracy performance have the potential to be operationally adequate.
- Completion of CEC integration and testing may delay the start of IOT&E currently scheduled for 1QFY12. CEC is necessary for E-2D to demonstrate its Net-Ready Key Performance Parameter.
- The radar system reliability, specifically radar mean time between failures (MTBF), does not currently meet established requirements (46.7 hours MTBF as of November 2010), and must continue to improve to meet the interim requirement of 65 hours MTBF by March 2011 and threshold requirement of 81 hours MTBF by IOT&E. However, radar reliability has been improving, and as of June 2010, is tracking on the reliability growth curve established in 2010.
- As a result of the delivery schedules for the Hawkeye Integrated Training System for Aircrew and Maintenance

NAVY PROGRAMS

(HITS-A and HITS-M), operational test personnel will not be able to completely resolve the Maintainability and Training Critical Operational Issues during IOT&E. However, HITS-A and HITS-M will be available for operational evaluation during FOT&E.

Recommendations

- Status of Previous Recommendations. The Navy satisfactorily addressed the FY09 recommendation.
- FY10 Recommendations.
 1. The E-2D program office should continue to improve radar reliability.
 2. The Navy and E-2D program office should take all necessary steps to ensure CEC integration is completed in time to support adequate DT&E prior to the start of IOT&E.