

## E-2D Advanced Hawkeye

### Executive Summary

- The first E-2D FOT&E period (OT-D1) started in 2QFY14 to evaluate the E-2D Advanced Hawkeye Initial Operational Capability hardware/software configuration, Delta System/Software Configuration (DSSC) Build 1, as well as carrier suitability. Testing is scheduled to complete in 1QFY15.
- The E-2D Advanced Hawkeye has been designated an Acquisition Category 1C program. On August 8, 2014, the Deputy Assistant Secretary of Defense for Developmental Test and Evaluation (DASD(DT&E)) approved the developmental test and evaluation plan within the E-2D Test and Evaluation Master Plan (TEMP) and removed the E-2D from active DASD(DT&E) oversight.
- The E-2D TEMP revision D supports the FOT&E, but does not state requirements or resources for integrated or operational testing of Naval Integrated Fire Control-Counter Air (NIFC-CA) From-The-Air (FTA). Change 1 to revision D is expected to address this in DSSC Build 2. Change 1 to revision D will be published to address NIFC-CA FTA areas relevant to E-2D only, and to support DSSC Build 2 FOT&E in FY16.
- Commander, Operational Test and Evaluation Force (COTF) conducted a Verification of Correction of Deficiencies (VCD) assessing the program's progress in addressing deficiencies found during IOT&E. The VCD completed in 1QFY14. Not all of the problems identified in the DOT&E IOT&E report were resolved during the VCD. The Navy intends to address many of the problems through a series of hardware and software changes that will be incorporated and tested through FY19.
- USD(AT&L) approved the E-2D for a multi-year procurement contract after successful VCD completion in 1QFY14.

### 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 upgraded engines to provide increased electrical power and cooling relative to current E-2C aircraft; a strengthened fuselage to



support increased aircraft weight; replacement of the radar system, the communications suite, and the mission computer; and the incorporation of an all-glass cockpit, which permits the co-pilot to act as a tactical fourth operator in support of the system operators in the rear of the aircraft.

- The radar upgrade replaces the E-2C mechanically-scanned radar with a phased-array radar that has combined mechanical and electronic scan capabilities.
- The upgraded radar provides significant improvement in littoral and overland detection performance and Theater Air and Missile Defense capabilities.
- The E-2D Advanced Hawkeye System includes all simulators, interactive computer media, and documentation to conduct maintenance, as well as aircrew shore-based initial and follow-on training.

### 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 – Melbourne, Florida

### Activity

- The E-2D Advanced Hawkeye has been designated an Acquisition Category 1C program. On August 8, 2014, the DASD(DT&E) approved the developmental test and evaluation plan within the E-2D TEMP and removed the E-2D from active DASD(DT&E) oversight.
- In 4QFY13-1QFY14, COTF conducted a VCD to assess the program's progress in addressing deficiencies found during IOT&E at Naval Air Station (NAS) Patuxent River, Maryland; NAS Fallon, Nevada; and Point Mugu, California. DOT&E reported the results of the VCD in March 2014 to inform the

# FY14 NAVY PROGRAMS

Defense Acquisition Board decision on Full-Rate Production Lot 2.

- USD(AT&L) approved the E-2D for a multi-year procurement contract after successful VCD completion in 1QFY14.
- In 3QFY14, COTF started the E-2D's first FOT&E period (OT-D1 phase) to assess the E-2D's operational effectiveness and suitability to support the Theater Air and Missile Defense mission. Testing also evaluated the operational effectiveness and suitability of hardware and software changes incorporated in DSSC Build 1. The Navy conducted testing at NAS Patuxent River, Maryland; Holloman AFB, New Mexico; White Sands Missile Range (WSMR), New Mexico; and Point Mugu, California. FOT&E will complete in FY15.
- Limited E-2D carrier testing was conducted in IOT&E. Carrier testing to determine carrier suitability was conducted as part of FOT&E in September and October 2014.
- Not all of the problems identified in the DOT&E IOT&E report were resolved during the VCD. The Navy intends to address many of these problems through a series of hardware and software changes that will be incorporated and tested through FY19.
- The Navy continued to correct deficiencies with E-2D-Cooperative Engagement Capability performance with a plan to have deficiencies remedied in FY17 with fielding of DSSC Build 3.

## Assessment

- DOT&E provided a classified assessment of the VCD results in March 2014. Testing was limited and the data collected were insufficient to resolve major problems stated in the classified February 2013 E-2D Advanced Hawkeye IOT&E report. However, the VCD data did provide information on training not assessed during IOT&E. Complete training on all parts of the E-2D system was not satisfactory. A full assessment of E-2D operational capabilities will require future operational tests and systematic updates.
- The E-2D TEMP revision D supports the FOT&E, but does not state requirements or resources for integrated or operational testing of NIFC-CA FTA. Change 1 to revision D is expected to address this in DSSC Build 2.
- FOT&E testing is not complete. DOT&E is currently observing test events and analyzing data from the testing.

## Recommendations

- Status of Previous Recommendations. The Navy continues efforts to improve radar and mission system performance, and radar and overall weapon system reliability and availability as previously recommended.
- FY14 Recommendation.
  1. The Navy should provide complete training on all components of the E-2D system and missions.