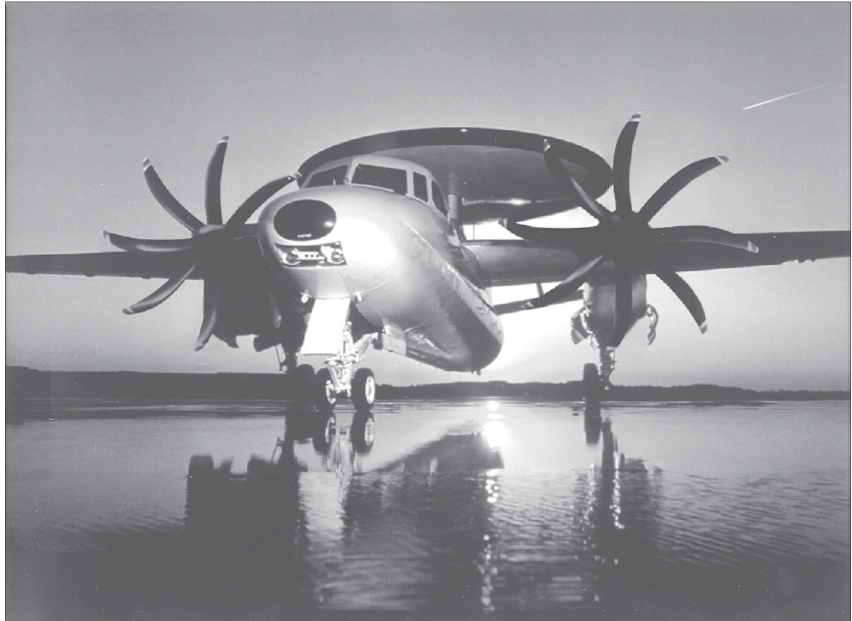


NAVY PROGRAMS

E-2C Advanced Hawkeye (AHE)

SUMMARY

- The Advanced Hawkeye (AHE) includes a major radar replacement that should significantly improve E-2C's littoral and surveillance capabilities.
- The Navy completed technology demonstration testing of the radar on a C-130.
- An important aspect of operational test and evaluation will be verifying that the AHE is interoperable with joint forces and supports the 2010 Test and Evaluation Master Plan architecture that the Joint Theater Air and Missile Defense Office is developing.



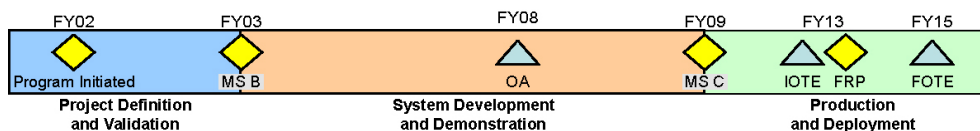
The AHE includes a Radar Modernization Program and a number of other modifications.

SYSTEM DESCRIPTION AND MISSION

There are currently two E-2C configurations in the Hawkeye procurement program: the Hawkeye 2000 and the Advanced Hawkeye (AHE). The Hawkeye 2000 is an umbrella term for multiple improvements to the Group II E-2C, each of which is a separate program. AHE includes a Radar Modernization Program (RMP) and a number of other modifications.

The AHE program completed Program Design Review in April 2004. This program will replace the E-2C's radar with an ultra-high frequency (UHF) Electronically Scanned Array radar via the RMP. This radar will provide significantly increased detection performance over the current radar, particularly in over-land and littoral operations. The other AHE modifications include an upgraded Identification, Friend or Foe system, a modernized tactical cockpit, a new intercom system, upgraded electrical generators and power distribution system, an upgraded liquid cooling system, and Multi-function Information Distribution System upgrades. Additionally, AHE will incorporate mandated safety improvements including Crash Survivable Flight Incident Recorder, Terrain Approach Warning System/Ground Proximity Warning System, Collision Avoidance System, and an Integrated Material Diagnostic System. Finally, a RMP Cooperative Engagement Capability software modification is required.

TEST AND EVALUATION ACTIVITY



- AHE completed a series of test flights using the radar technology demonstration system developed for Mountain Top, a ground demonstration capability installed on a C-130.
- DOT&E approved the AHE Test and Evaluation Master Plan in June 2003.
- Due to its importance to fleet air operations, evaluation of the E-2C will be commensurate with the context of its expected combat missions.

NAVY PROGRAMS

- The Navy developed a comprehensive survivability evaluation plan to ensure the needed data and information is available.

TEST AND EVALUATION ASSESSMENT

The Naval Air Warfare Center Aircraft Division, Patuxent River, Maryland, conducted the AHE radar risk reduction flight-testing on the NC-130H aircraft from December 2002 to June 2003. Integrated into the NC-130H is the Advanced Development Model radar system, used during the demonstrations at the Pacific Makaha Ridge Facility in 1997 and 1999. Specific risk reduction objectives included adaptive computer processing operations and radar system performance. The system operated in over-land and littoral environments, which included ground traffic, clutter, jamming, and casual electromagnetic interference. Radar system assessment included controlled target detection range performance in clutter and jamming environments and system accuracy. Initial analysis of flight test data indicates the program met all system risk reduction objectives. It also achieved all predicted performance capabilities. The E-2C survivability program is adequate to evaluate the survivability of the aircraft.

A critical aspect of E-2C AHE operational testing will be joint interoperability (which was unresolved in the previous operational evaluation of E-2C modification), as well as Information Assurance. There is currently no Information Assurance plan for AHE. The Joint Theater Air and Missile Defense Office is coordinating significant analysis and design reviews for the Single Integrated Air Picture (SIAP) for theater air and missile defense architectures. This effort includes other upgraded systems, such as the Block 40/45 upgrades to the E-3 and new platforms, such as the Joint Land Attack Cruise Missile Defense Elevated Netted Sensor, as well as the AHE. Additionally, the SIAP Engineering Task Force is coordinating efforts to improve the quality of the air picture available to the Joint Forces Air Component Commander and to the forces conducting and fighting the air battle through improvements in the available data links. Joint interoperability is essential to DoD achieving its theater air and missile defense goals. AHE interoperability testing in the joint mission environment will be a critical part of operational test and evaluation.