

Boeing Defense, Space & Security
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737 Airborne Early Warning and Control

Description & Purpose:

737 Airborne Early Warning and Control (AEW&C) EW&C is a state-of-the-art system providing powerful airborne surveillance, communications and battle management.

Customers:

The Australian Defence Force selected the 737 AEW&C system in July 1999. A contract for Project Wedgetail was signed in December 2000 for four 737-700 aircraft and six AEW&C systems plus options for three additional systems. In 2004, Australia exercised options to purchase two additional 737-700 aircraft. Two of the aircraft were modified into the AEW&C configuration at a Boeing facility in Seattle, Wash. The other four were modified by Boeing Defence Australia in a company facility at Royal Australian Air Force (RAAF) base Amberley.



Boeing delivered the first two Wedgetail aircraft to the RAAF in Nov. 2009. Delivery of these aircraft and utilization of the Boeing-provided Operational Flight Trainer, Operational Mission Simulator and Mission Planning System allow the RAAF to begin familiarization training for flight, mission and maintenance crews. The trainer and the simulator are located at the AEW&C Support Centre at RAAF base Williamtown.

Three additional Wedgetail aircraft will be delivered to the RAAF by the end of 2010 including one upgraded in the final AEW&C configuration with Electronic Support Measures (ESM). All aircraft in the Wedgetail fleet will be upgraded in the final configuration in early 2011.

In November 2000, the Republic of Turkey selected a Boeing-led team to begin contract negotiations on developing a new AEW&C system. A contract was signed in June 2002 and officially started in July 2003. The program, known as Peace Eagle, includes four 737 AEW&C aircraft plus ground support segments for mission crew training, mission support and system maintenance support. Developmental Test and Evaluation of the first aircraft is underway in Seattle. Three other aircraft are being modified by Turkish Aerospace Industries in Ankara, Turkey.

Boeing signed a contract in November 2006 to provide four 737 AEW&C aircraft for the Republic of Korea's EX program, known as Peace Eye. The Boeing team's solution also includes ground support segments for flight and mission crew training, mission support and aircraft and system modification support. Modifications of the first Peace Eye are

underway at a Boeing facility in Seattle, Wash. Delivery of the first aircraft is scheduled for 2011. The other three aircraft will be delivered in 2012.

737 AEW&C gives Korea a powerful capability for airborne surveillance, communications and battle management. It also provides increased security for the Korean peninsula against today's threats and threats in the future.

General Characteristics:

- 737-700 increased gross weight (IGW) airframe
- Northrop Grumman "MESA" electronically scanned array radar system
 - 360 degrees/Air and Maritime modes/200 + nmi range/All Weather
 - IFF: 300 nmi
- Open system architecture/COTS
- 6 to 10 multi-role/purpose consoles
- System Track Capacity: >3,000
- Precision Tracker
- Communications include, but are not limited to, (3) HF, (4) VHF/UHF, (4) UHF and Link 11 & 16 (Customer selects encryption capability) (2) Have Quick
- Operational ceiling: 41,000 ft
- Range: 3,500 nm
- Flight Crew: 2
- Mission Crew: 6 to 10

Miscellaneous:

The platform is the Boeing Next-Generation 737-700 featuring 21st century avionics, navigation equipment and flight deck. Because of its high technology, the aircraft requires minimal downtime for maintenance.

The 737 series is one of the most popular and reliable jet aircraft in the world. Its popularity has resulted in a worldwide base of suppliers, parts and support equipment. The Multi-role Electronically Scanned Array (MESA) radar is the critical sensor aboard the 737 AEW&C. The steerable beam, L-band electronically scanned array is designed to provide optimal performance in range, tracking, and accuracy. The radar is able to track airborne and maritime targets simultaneously and can help the mission crew direct the control of fighter aircraft while continuously scanning the operational area.

The so-called 'top hat' portion of the MESA radar provides a practical solution for fore and aft coverage while maintaining the low drag profile of the dorsal array system. This allows the system to be installed on the mid-size 737-700 platform without significant impact on aircraft performance. Another innovation is the integrated Identification Friend or Foe (IFF) sharing of the primary radar arrays to further reduce weight, improve reliability, and simplify target correlation. More than 1200 hours of wind tunnel testing have demonstrated the compatibility of the aircraft and the radar. In addition, the 737 AEW&C has an advanced open system architecture with a standards-based design for cost-effective commonality and maximum flexibility.

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