

EA-18G Growler (Electronic Attack Variant of F/A-18)

Executive Summary

- The Navy conducted Verification of Correction of Deficiencies (VCD) testing on the EA-18G from September 2009 to January 2010 to resolve suitability problems identified during 2008 IOT&E.
- DOT&E evaluated the VCD test results and concluded the EA-18G is operationally effective, but still not operationally suitable. The VCD test results did confirm significant progress on improving suitability, but additional development and testing are needed.
- The Navy has scheduled EA-18G FOT&E in early FY11.

System

- The EA-18G Growler is a carrier-based radar and communication jammer aircraft.
- The two-seat EA-18G replaces the Navy's four-seat EA-6B. The new ALQ-218 receiver, improved connectivity, and linked displays are the primary design features implemented to reduce the operator workload in support of the EA-18G's two-person crew.
- Integration of the Airborne Electronic Attack (AEA) system into the F/A-18F includes:
 - Modified EA-6B Improved Capability III ALQ-218 receiver system
 - Advanced crew station
 - Legacy ALQ-99 jamming pods
 - Communication Countermeasures Set System
 - Expanded digital Link 16 communications network
 - Electronic Attack Unit
 - Interference Cancellation System that supports communications while jamming
 - Satellite receive capability via the Multi-mission Advanced Tactical Terminal
- Additional systems include:
 - Active Electronically Scanned Array radar
 - Joint Helmet-Mounted Cueing System
 - High-Speed Anti-Radiation Missile (HARM)
 - AIM-120 Advanced Medium-Range Air-to-Air Missile (AMRAAM)



Mission

- Combatant Commanders use the EA-18G to support friendly air, ground, and sea operations by countering enemy radar and communications.
- In particular, Commanders use EA-18G to:
 - Jam integrated air defense systems
 - Support non-integrated air defense missions and emerging non-lethal target sets
 - Enhance crew Situational Awareness and mission management
 - Enhance connectivity to national, theater, and tactical strike assets
 - Provide enhanced lethal suppression through accurate HARM targeting
 - Provide the EA-18G crew air-to-air self-protection with AMRAAM

Major Contractor

The Boeing Company, Integrated Defense Systems – St. Louis, Missouri

Activity

- The EA-18G Program was approved for full-rate production (FRP) in November 2009. The program reached initial operational capability (IOC) in October 2009.
- The Navy conducted post-IOT&E VCD testing from September 2009 to January 2010 to resolve suitability problems identified during the 2008 IOT&E. VCD flight

testing included over 150 flight hours and over 89 sorties, and all test objectives were completed.

- The VCD testing primarily assessed software improvements designed to resolve maintainability shortfalls in ALQ-218 built-in-test (BIT) performance and its interface with the legacy ALQ-99 jamming pods.

NAVY PROGRAMS

- In November 2009, DOT&E observed VCD testing at Nellis AFB, Nevada, and performed a site visit to Naval Air Station (NAS) Whidbey Island, Washington, to assess the impact of suitability improvements on EA-18G Fleet introduction.
- In May 2010, DOT&E released a VCD Test Report memorandum to the Navy that assessed the performance of the suitability improvements and provided the Navy with recommendations for FOT&E scheduled for early FY11.
- The Navy conducted testing in accordance with the DOT&E-approved TEMP and test plan.

Assessment

- The EA-18G remains operationally effective, but is still not operationally suitable, although there have been notable improvements.
- The VCD test results provide strong evidence that aircraft software stability is improving, particularly related to BIT maturation, but additional development and flight testing is required to confirm the problems have been resolved.
- EA-18G FOT&E, scheduled to begin 1QFY11, will provide the Navy an additional opportunity to assess efforts to fix these suitability issues, particularly with the latest software load that indicated significant progress with fixing maintainability problems.
- The Navy's ability to conduct problem-solving demonstrated to date is likely to result in maturation of BIT software.

Recommendations

- Status of Previous Recommendations. The Navy is satisfactorily addressing the previous nine recommendations, to include continued testing to resolve EA-18G maintainability shortfalls. However, not all suitability issues have been resolved, and additional testing during FOT&E is required to confirm the issues have been resolved. Recommendations for improving electronic warfare remain from FY09 as well.

- FY10 Recommendations. The Navy should:

EA-18G Aircraft

1. Continue to improve maintainability and BIT software maturity by reporting key suitability parameters during FOT&E, such as Mean Flight Hours Between Operational Mission Failures and Mean Corrective Maintenance Time for Operational Mission Failures to monitor reliability and maintainability.
2. Collect sufficient data during FOT&E to verify that BIT Mean Flight Hours Between False Alarm, percent correct detection, and percent correct false isolation meet or exceed threshold requirements.
3. Continue to improve maintenance documentation and diagnostic tools to assess the ALQ-218 and ALQ-99 pod health.
4. Further assess EA-18G operational performance and effectiveness by collecting ALQ-218 geolocation and Selective Reactive Jamming Response performance data.
5. Evaluate the EA-18G AEA system performance in support of strike aircraft in accordance with the Joint AEA framework.

Electronic Warfare Warfighting Improvements

6. Continue to support ongoing DoD efforts to investigate, evaluate, and make recommendations to improve Enterprise Electronic Warfare test capabilities associated with open-air ranges, test and evaluation facilities, concepts, processes, and procedures.
7. Continue to assess requirements to improve Electronic Warfare modeling and simulation capabilities to support ground testing of future AEA capabilities, to include multi-signal threat environments.
8. Continue to assess the need for and benefits of building a more capable threat range at NAS Whidbey Island, Washington.