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

Executive Summary
- DOT&E completed its EA-18G IOT&E Report in September 2009, assessing the EA-18G as operationally effective, but not operationally suitable based upon poor maintainability and built-in test performance, as well as system integration challenges with the legacy ALQ-99 jamming pods.
- During the 2011 FOT&E for Software Configuration Set (SCS) H6E, the Navy flew 115.2 EA-18G flight hours over 69 test sorties.
- Emerging 2011 FOT&E results suggest the EA-18G remains operationally effective, while operational suitability has notably improved. DOT&E analysis of test data is ongoing and a complete operational assessment will be published in early FY12.
- The Navy conducted testing in accordance with the DOT&E-approved Test and Evaluation Master Plan (TEMP) and test plan.

System
- The EA-18G Growler is a land- and carrier-based, radar and communication jamming 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:
  - APG-79 AESA radar

  - Joint Helmet-Mounted Cueing System
  - High-Speed Anti-Radiation Missile (HARM)
  - AIM-120 radar-guided missiles

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 the AIM-120

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

Activity
- The Navy FOT&E for SCS H6E on the Growler occurred between November 2010 and June 2011. During the FOT&E, the Navy flew 115.2 EA-18G flight hours over 69 test sorties. This testing included the evaluation of the Civilian Instrument Landing System integration into the EA-18G, a capability that enhances mobility in the expeditionary (non-aircraft carrier) operating environment.
- The Navy conducted testing in accordance with the DOT&E approved TEMP and test plan.

Assessment

- Emerging 2011 FOT&E results suggest the EA-18G remains operationally effective, while operational suitability has notably improved. Emerging results suggest the EA-18G system met the threshold for operational availability. The point value for reliability met the 14-hour threshold, but the 80 percent confidence level (lower bound) fell below the threshold. Maintainability did not meet the threshold level but only by a small measure, and built-in test performance was largely improved since IOT&E. Maintenance documentation was improved from IOT&E, but Navy personnel still rated the system as difficult to use and incomplete in some areas.
- DOT&E analysis of test data is still ongoing and a complete assessment will be published in early FY12.

Recommendations

- Status of Previous Recommendations. The Navy is satisfactorily addressing the previous nine EA-18G recommendations, to include continued testing to resolve EA-18G maintainability shortfalls. However, DOT&E analysis of 2011 FOT&E is ongoing to confirm whether the problems have been resolved. Recommendations for improving electronic warfare remain from FY09 as well.
- FY11 Recommendations. The Navy should:

EA-18G Aircraft

1. Continue to improve maintainability and built-in test software maturity by evaluating key suitability parameters during future FOT&E, such as Mean Flight Hours Between Operational Mission Failures and Mean Corrective Maintenance Time for Operational Mission Failures.
2. Continue to improve maintenance documentation and diagnostic tools to assess the ALQ-218 and ALQ-99 pod health.
3. Conduct a program "deep-dive" assessment of AEA maintainability and supportability problems using experience and lessons learned from recent operational deployments.
4. Evaluate the EA-18G AEA system performance in support of strike aircraft in accordance with the joint AEA framework.

Electronic Warfare Warfighting Improvements

5. Continue to support ongoing DoD efforts to investigate, evaluate, and make recommendations to improve Enterprise Electronic Warfare test capabilities associated with open-air ranges, T&E facilities, concepts, processes, and procedures.
6. 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.
7. Continue to assess the need for and benefits of building a more capable threat range at Naval Air Station (NAS) Whidbey Island, Washington.