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

**Executive Summary**

- The EA-18G program schedule is aggressive.
- The primary areas of risk center on integrating the Airborne Electronic Attack (AEA) weapons system onto the F/A-18F platform, incorporating a new communications countermeasures set, and employing the EA-18G weapons system with a two-person crew.
- The revised Test and Evaluation Master Plan (Revision A) establishes event-based performance assessments prior to each Milestone to adequately assess system and integration maturity growth.
- The Navy needs to continue to support open identification of risks to ensure all core capabilities (Block 1) of the EA-18G are assessed prior to Milestone C.

**System**

- The two-seat EA-18G replaces the Navy's four-seat EA-6B.
- Integration of AEA capability into the F/A-18F includes:
  - Modified EA-6B Improved Capability (ICAP) III ALQ-218 receiver system
  - Advanced crew station
  - Legacy ALQ-99 jamming pods
  - New communications countermeasures receiver set
  - Expanded digital (Link-16)
  - Electronic Attack Unit
  - Voice Interference Cancellation System
- Additional system components include:
  - Active Electronically Scanned Array (AESA) radar
  - Joint Helmet Mounted Cueing System
  - High Speed Anti-radiation Missile (HARM)
  - AIM – 120 Advanced Medium Range Air-to-Air Missile (AMRAAM)

**Mission**

- The EA-18G Growler is a carrier-based radar and communication jammer.
- Combatant commanders use the EA-18G to support friendly air, ground, and sea operations by suppressing enemy radars and communications.
- Specifically, they use the EA-18G to:
  - Jam integrated air defenses
  - 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 strike assets
  - Provide the operators enhanced lethal suppression through better HARM targeting
  - Provide the EA-18G crew air-to-air self-protection with AMRAAM

**Activity**

- The program's current test efforts are focused on supporting the FY07 Milestone C/Low-Rate Initial Production (LRIP) decision. Completion of the Weapon System Critical Design Review marked the Navy's transition from a focus on system design, to one concentrated on building, integrating, and testing the system and platform.
- The Navy conducted early testing in FY05 that included:
  - Aero-mechanical flight testing on a modified F/A-18F with representative AEA forebody antenna shapes, and risk reduction flights on F/A-18E aircraft with ALQ-99 pods installed
  - AEA systems development and integration tests in contractor laboratories
- A Design Advisory Group comprised of fleet operators, test community representatives, and contractors identified and began prioritization of crew mission tasks.
- A revised Test and Evaluation Master Plan (Revision A), to be approved in early FY06, will add more detailed AEA capabilities and integration risk descriptions. It will add event-based objectives to assess system technical and integration maturity prior to each major milestone.
- The Navy and DOT&E have an approved Live Fire test and evaluation alternative strategy that will support the assessment of the susceptibility and vulnerability of the EA-18G. The assessments will be based on EA-18G aircraft unique systems and missions.

**Assessment**

- The schedule for this program is aggressive because the Navy plans to take delivery of the first System Development and Demonstration EA-18G in FY06, and achieve initial operational capability in FY09.
- The EA-18G presents challenging risks associated with integrating the AEA weapons system onto the F/A-18F platform. Primary integration risks for the EA-18G are:
  - Effective operation of the ALQ-99 external jammer pods and ALQ-218 wingtip pods and antenna in the high vibration F/A-18F under-wing and wing tip environments
  - Modified F/A-18E/F mission planning system
  - New communications countermeasures set
  - Revised ALQ-218 receiver (digital auxiliary receiver) design and component modifications to form and fit
  - Operator work load in electronic attack and electronic support operations as performed by the four-person EA-6B
  - Aggressive software development schedule
- 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 two-man crew composition.
- The impact of the integration risks can be mitigated if the Navy continues its aggressive identification and resolution of concerns, while maintaining the early involvement of the test community.
- The first Operational Assessment (OA) designed to support Milestone C will assess the key areas of integration risk, but will not provide assessment of the full EA-18G software functionality. The second OA, scheduled to support the second LRIP, is planned to assess full software functionality of the EA-18G. The second OA will ensure an adequate and timely assessment of the more mature ALQ-218 receiver and ALQ-99 external jamming pod capabilities in the challenging aerodynamic environment early in the acquisition process.
- FY05 testing was conducted in accordance with the DOT&E-approved Test and Evaluation Master Plan.

**Recommendations**

1. The Navy should make the second LRIP, scheduled for FY08, a formal decision point.
2. The Navy should include in-flight assessment of the EA-18G's baseline receiver and jamming capabilities prior to the first LRIP.
3. Continue early evaluation of electronic attack crew tasks and tactics modifications for the two-person EA-18G platform.