AIM-9X Air-to-Air Missile Upgrade

Executive Summary
- The AIM-9X program continues OT&E of hardware and software upgrades to the fielded missile.
- Hardware and software upgrades now under development are planned to address parts obsolescence problems and provide multiple new capabilities. Operational testing during FY10 assessed the AIM-9X Block II missile with Operational Flight Software (OFS) 9.2 hardware upgrades, as well as surface attack capabilities inherent in the AIM-9X Block I missile with OFS 8.220.
- Operational testing of Block II, OFS 9.2 captive-carry hardware showed those missiles have no degradation relative to the Block I, OFS 8.212 missile. An Operational Utility Evaluation (OUE) of surface attack capabilities suggest that the AIM-9X Block I, OFS 8.220 is effective under a limited set of conditions in which successful target acquisition is attained.
- The Navy rebaselined the program (as a result of service funding, cost, and schedule overruns) and classified as a new program entering pre-Milestone C.

System
- AIM-9X is the latest generation short-range, heat-seeking, air-to-air missile. The currently fielded version of the missile is AIM-9X Block I, OFS 8.212, which includes limited lock on-after-launch, full envelope off-boresight capability without a helmet-mounted cueing system, and increased flare rejection performance.
- AIM-9X is highly maneuverable, day/night capable, and includes the warhead, fuse, and rocket motor from the previous AIM-9M missile.
- AIM-9X added a new imaging infrared seeker, vector controlled thrust, digital processor, and autopilot.
- F-15C/D, F-16C/D and F/A-18C-F aircraft can carry the AIM-9X, and the missile includes a container for storage and maintenance.
- AIM-9X Block II is the latest hardware version and is designed to prevent parts obsolescence and provide processing capability for the upcoming OFS 9.3XX software upgrade. The Block II missile includes a new processor, a new ignition battery for the rocket motor, ignition safety device, data link, and warhead fuze. OFS 9.208 is the current software OFS version completing OT for the Block II missile and provides similar capabilities as the currently fielded Block I, OFS 8.212.
- OFS 9.3XX will be a software-only upgrade to the Block II missile, and will add trajectory management to improve range, data link with the launching aircraft, improved lock-on-after-launch, target reacquisition, improved fuzing, and surface attack.

Mission

Air combat units use the AIM-9X to:
- Conduct short-range offensive and defensive air-to-air combat.
- Engage multiple enemy aircraft types with passive infrared guidance in the missile seeker.
- Seek and attack enemy aircraft at large angles away from heading of the launch aircraft.

Major Contractor

Raytheon, Missile Systems – Tucson, Arizona

Activity
- Operational testing for Block II, OFS 9.2 began in September 2010. Captive-carry missions were flown using the F-18 at the Naval Air Weapons Center, China Lake, California, and using the F-15/F-16 at Eglin AFB, Florida.
- Technical delays in fuze development led to splitting operational testing into two phases. The first phase involves captive-carry missiles only, and will support a decision to field captive air training missiles. A second phase will involve captive-carry missions, as well as four live fire events, to support an operational fielding decision in FY12.
- The Air Force conducted an OUE of the AIM-9X Block I, OFS 8.220 missile for surface attack capability in March and

May 2010. The testing consisted of seven captive carry events and six live fire events. Of those six live fire shots, four scored direct hits of the ground mobile targets, one hit a different target than fired against, and one lost track on the selected target.

- The Navy rebaselined the program and classified it as a new program entering pre-Milestone C. The new program is designated AIM-9X Block II with the first software designated OFS 9.3. This decision was primarily driven by cost per unit increase due to the new DSU-41 fuze, reductions in service funding, the Block II, OFS 9.3XX costs, and schedule overruns. Milestone C is now scheduled for summer 2011.

Assessment

- The OUE results suggest OFS 8.220 is effective under a limited set of conditions in which a successful target acquisition is attained.
- Initial results from operational testing suggest that the Block I (-2), OFS 9.2 captive carry missiles will have no degradation relative to the Block I, OFS 8.212 missile. The Block II, OFS 9.3 development and test schedule is overlapping with the Block I (-2), OFS 9.208 test. A successful OFS 9.3 development may lead to cancellation of the second phase of OFS 9.2 operational testing and cancellation of the Block I (-2), OFS 9.208 missile fielding in favor of the Block II, OFS 9.3 missile fielding.

Recommendations

- Status of Previous Recommendations. The one FY09 recommendation regarding future testing including sufficient captive-carry and live fire shots to demonstrate the new capabilities remains valid.
- FY10 Recommendations. None.