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. Operational testing during FY09 demonstrated the effectiveness and suitability of the Operational Flight Software (OFS) 8.212 upgrade.
- Hardware and software upgrades now under development are planned to address parts obsolescence problems and provide multiple new capabilities. Operational testing during FY10 is intended to assess hardware upgrades, as well as surface attack capabilities inherent in the OFS 8.212 missile.

System
- AIM-9X is the latest generation short-range, heat-seeking, air-to-air missile that reduces the gap in short-range combat capability between U.S. aircraft and primary enemy threat aircraft. The currently fielded version of the missile is OFS 8.212.
- 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/A-18 C/D, and F/A-18 E/F aircraft can carry the AIM 9X, and the missile includes a container for storage and maintenance.
- OFS 8.212 (the latest software version) includes limited lock-on-after-launch, full envelope high off-boresight capability without a helmet-mounted cueing system, and increased flare rejection performance.
- AIM-9X Block II (the latest hardware version) 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 rocket motor battery, ignition safety device, data link, and Active Optical Target Detector fuze. OFS 9.2XX is the current version for the Block II missile and provides similar capabilities as Block I OFS 8.212.
- OFS 9.3XX will be a software only upgrade to the Block II missile, and will add lofting, data link with the launching aircraft, improved lock-on-after-launch, target reacquisition, optimized 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

Prime Contractor
- Raytheon, Missile Systems, Tucson, Arizona

Activity
- The AIM-9X program completed OT&E of a software upgrade (8.212) to the fielded missile. The upgrade addressed a previous deficiency in performance against aircraft employing countermeasures against heat-seeking missiles, and added new interim capabilities to the baseline missile to reduce future development risk.
- Commander, Operational Test and Evaluation Force completed the operational test for OFS 8.212 in October 2008 in accordance with a DOT&E-approved test plan. The test program consisted of captive carriage flights using F-15, F-16, and F/A-18 aircraft, and live shots against target drones evaluating end-to-end system performance in various scenarios.
- The Program Office began developmental testing of version 9.2XX in September 2008. Operational testing for OFS 9.2XX is scheduled to begin in early 2010.
- Technical delays in fuze development have led to splitting operational testing into two phases. The first phase will involve captive carry missiles only, and will support a decision to field captive carry training missiles to the fleet. After the fuze is ready, a second phase will involve captive carry

missions, as well as four live shots, to support a decision to field live rounds to the fleet.
- The Air Force intends to conduct operational testing of OFS 8.220's potential surface attack capability during FY10. This testing will consist of captive carry and live fire missions against surface vehicle targets.

Assessment
- OFS 8.212 operational testing indicates slightly better performance than the previously fielded 8.019 missile.
- DOT&E rates the system effective and suitable. Reliability is rated unsatisfactory because the missile's mean time between failures (MTBF), as measured in operational test, is less than the requirement. However, MTBF was substantially improved over 2003 operational test results.
- Technical delays in Block II fuze development may lead to schedule delays in operational testing and fielding of the full-up OFS 9.2XX missile.

Recommendations
- Status of Previous Recommendations. All of the FY06 and FY07 recommendations have been addressed. The two FY08 recommendations remain valid.
- FY09 Recommendation.
  1. Future testing should have sufficient captive carry and live shots to demonstrate the new capabilities.