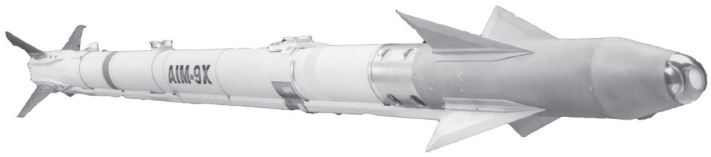
AIM-9X Air-to-Air Missile

SUMMARY

- AIM-9X demonstrated effectiveness and lethality against a representative target and threats during multi-Service operational test and evaluation (MOT&E).
- AIM-9X experienced several failures during operational testing and the Service operational testers rated it not suitable.
- AIM-9X conducted additional captive carriage missions using corrected missiles and operational units. This testing was not formal operational testing, but was adequate to show improved weapon performance (exceeding user requirements).
- After reviewing the additional captive carriage evaluation, DOT&E rated AIM-9X as operationally effective and operationally suitable.
- DOT&E approved the Milestone III Test and Evaluation Master Plan, detailing follow-on operational testing, in April 2004.



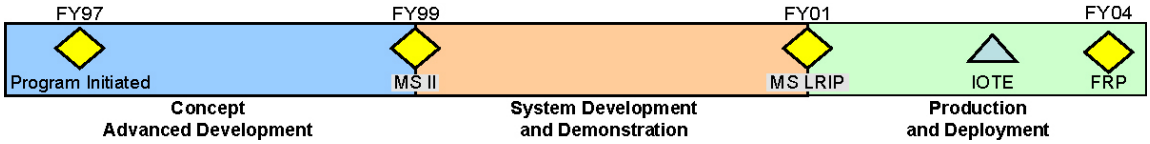
AIM-9X is a highly maneuverable, launch and leave missile that uses passive infrared guidance to engage multiple types of targets.

SYSTEM DESCRIPTION AND MISSION

The AIM-9X Air-to-Air Missile Program is the latest-generation short-range missile. It builds on capabilities of the existing AIM-9M short-range missile and is used interchangeably on Air Force and Navy/Marine Corps fighter aircraft. AIM-9X is a highly maneuverable, launch and leave missile that uses passive infrared guidance to engage multiple types of targets. It will provide day/night capability with improved countermeasures resistance and improved high off-bore sight (the angle between the launching aircraft flight path and the enemy aircraft) relative to the AIM-9M. AIM-9X works with any onboard aircraft cueing source, including the Joint Helmet-Mounted Cueing System, a parallel development program that enhances high off-boresight capability.

The AIM-9X missile retains the warhead, fuze, and rocket motor of the AIM-9M missile. A new imaging infrared seeker, a thrust-vectored tail-control actuation system, and a state-of-the-art signal processor/auto pilot provide the missile with significant performance improvements. The F-15C/D and F/A-18C/D will be the initial platforms for AIM-9X operational capability. The Services intend to integrate AIM-9X on the F-16, F/A-18E/F, F-15E, and F-22.

TEST AND EVALUATION ACTIVITY



The Air Force and Navy completed 22 missions during operational testing - seven missions used live warheads. The missions attacked a representative drone target in a variety of air combat scenarios. The scenarios verified missile performance and validated a model prediction for the scenario. The modeling and simulation validated and verified missile performance across the entire employment envelope.

Testers conducted weapon load demonstrations for each live launch mission. These demonstrations identified concerns with the F/A-18 carriage equipment and time between failures for carried missiles (both addressed during low-rate

production). Operational loaders can load AIM-9X within user requirement times.

AIM-9X was not suitable after MOT&E. To prove capability of the AIM-9X, the Navy conducted an additional captive carry program, using improved missiles carried on operational training missions. This testing included the evaluation of newer production-representative missiles and carriage equipment to see if time between failures increased. This effort completed more than 2,300 hours and showed a marked increase in time between failures compared to MOT&E.

TEST AND EVALUATION ASSESSMENT

AIM-9X is highly effective against the primary threat aircraft. It is capable of achieving kills at much higher off-bore sight angles than currently fielded missiles. It also provides increased range and target acquisition over current missiles. AIM-9X provided increased capability against countermeasures, but not as much as intended.

Operational testers rated AIM-9X as not suitable due to short times between failures. After evaluating additional captive carry missions using improved missiles, DOT&E rated AIM-9X as suitable in the beyond low-rate initial production report.

AIM-9X reduces support equipment from the AIM-9M since seeker servicing is no longer required. Since the AIM-9X is a digital system, updates and improvements can be made much more easily.

AIM-9X is lethal against the primary threat aircraft. The use of an imaging seeker (vice the contrast seeker in legacy missiles) could improve AIM-9X lethality compared to legacy missiles.

AIM-9X continues the development of seeker software to improve countermeasures capability. The program conducted captive flights and one development shot in June to assess these improvements. Test results discovered problems that are important enough to delay FOT&E (originally planned for 1QFY05) until development is complete. The developer will address the problems found during testing and merge the corrections into the next version of the software. FOT&E will likely take place in FY07. There is little operational impact to the delay since the fielded software is capable of meeting the user's requirements.