

AIM-120 Advanced Medium-Range Air-to-Air Missile (AMRAAM)

Executive Summary

- The Air Force and Navy completed FOT&E of the AIM-120 Advanced Medium-Range Air-to-Air Missile (AMRAAM) in July 2014 with the intent of making a production go-ahead decision in December 2014.
- The AMRAAM Program Office initiated System Improvement Program (SIP)-1 testing in September 2014. SIP-1 is one of several follow-on programs designed to enhance AIM-120D performance.
- The Air Force continued integrated testing on AIM-120 AMRAAM Electronic Protection Improvement Program (EPIP), a software upgrade to AIM-120C3-C7 variants, under a separate EPIP Test and Evaluation Master Plan that DOT&E approved in April 2012.

System

- AMRAAM is a radar-guided, air-to-air missile with capability in both the beyond visual-range and within visual-range arenas. A single-launch aircraft can engage multiple targets with multiple missiles simultaneously when using AMRAAM.
- The latest fielded version, the AIM-120C7, incorporated an upgraded antenna, receiver, signal processor, and new software algorithms to counter new threats. The use of smaller system components created room for future growth.
- The AMRAAM program periodically develops and incorporates phased upgrades. The AMRAAM EPIP is a software upgrade to AIM-120C3-C7.
- The AIM-120D is currently in development and the Air Force and Navy intend for it to deliver performance improvements beyond the AIM-120C7 using an internal GPS, enhanced datalink, improved kinematics, and new software. Following

Activity

- The Air Force and Navy conducted all testing in accordance with the DOT&E-approved Test and Evaluation Master Plan.
- ### AIM-120D
- AIM-120D operational testing consisted of multiple live missile shots and captive-carry events. The Air Force and Navy completed AIM-120D FOT&E in July 2014.
 - The Program Office plans to conduct SIP-1 integrated testing with two live missile shots during 2QFY15. Operational testing for SIP-1 is scheduled to begin in 3QFY15.
 - The Air Force plans to make a production go-ahead decision on AIM-120D by December 2014.



FOT&E, the contractor will execute a series of SIPs that will consist of software upgrades to AIM-120D.

Mission

- The Air Force and Navy, as well as several foreign military forces, use various versions of the AIM-120 AMRAAM to shoot down enemy aircraft.
- All U.S. fighter aircraft use the AMRAAM as the primary, beyond visual-range air-to-air weapon.

Major Contractors

- Raytheon Missile Systems – Tucson, Arizona
- Rocket Motor Subcontractors:
 - Alliant Techsystems (ATK) – Arlington, Virginia
 - Nammo (Nordic Ammunition Group) – Raufoss, Norway

- As of October 2, 2014, Raytheon had delivered a total of 1,031 AIM-120Ds for the Air Force and Navy.

AMRAAM EPIP

- In October 2014, the Air Force completed EPIP Basic Phase III operational testing for AIM-120C-7 missiles.
- The Air Force and Navy began EPIP Basic Phase II operational testing for AIM-120C-3, -4, -5, and -6 missiles in October 2014.

Lot Acceptance Test/Rocket Motors

- The Weapon System Explosives Safety Review Board completed acceptance and concurrence for fleet release for the ATK baseline rocket motor in June 2014. Alliant

FY14 AIR FORCE PROGRAMS

Techsystems is delivering rocket motors to the Navy and Foreign Military Sales customers. Nammo is delivering rocket motors for U.S. AIM-120D and AIM-120C-7 Foreign Military Sales customers.

Assessment

- AMRAAM continues to be operationally effective and suitable.
- AIM-120D captive-carry performance, as measured during FOT&E, exceeded the Mean Time Between Failure requirement with 452.5 hours, exceeding the requirement of 450 hours desired two years after Initial Operational Capability.
- The Air Force identified deficiencies in missile performance that did not significantly degrade overall effectiveness. The

Air Force and Raytheon Missile Systems developed solutions for specific deficiencies and will assess them during SIP-1 testing.

- The shortage in rocket motors due to unacceptable Lot Acceptance Test performance did not significantly affect AIM-120D testing, despite creating a backlog in production.

Recommendations

- Status of Previous Recommendations. The Air Force satisfactorily addressed the previous recommendations.
- FY14 Recommendation.
 1. The Air Force should complete SIP-1 operational testing to achieve the Service member's desired mission effectiveness improvements for AIM-120D.