

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

Executive Summary

- The Air Force and Navy completed FOT&E of the AIM-120D Advanced Medium-Range Air-to-Air Missile (AMRAAM) in July 2014 and fielded the system in January 2015.
- AIM-120D System Improvement Program (SIP)-1 operational test activities began in FY15 and are expected to be completed in FY16. 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 Basic Electronic Protection Improvement Program (EPIP), a software upgrade to AIM-120C3-C7 variants, under a separate Basic EPIP Test and Evaluation Master Plan that DOT&E approved in April 2012.
- The Air Force and Navy are in the final stages of test planning to conduct cybersecurity testing for all variants of the AMRAAM missile.

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.
- F-15C/D/E, F-16C/D, F/A-18C/D/E/F, EA-18G, and F-22A aircraft are capable of employing the AMRAAM.
- The AMRAAM program periodically develops and incorporates phased upgrades. The AMRAAM Basic EPIP is a software upgrade to AIM-120C3-C7. An Advanced EPIP software upgrade is planned to add additional capabilities.
- A SIP-2 upgrade is currently in planning.
- As of October 14, 2015, Raytheon has delivered a total of 1,405 AIM-120Ds.



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 Subcontractor: Nammo (Nordic Ammunition Group) – Raufoss, Norway

Activity

- The Air Force and Navy conducted all testing in accordance with the DOT&E-approved test plan.

AIM-120D

- AIM-120D FOT&E, which the Air Force and Navy completed in July 2014, consisted of multiple live missile shots and captive-carry events. The missile was fielded in January 2015.
- The Program Office conducted SIP-1 integrated testing with two live missile shots in March and May 2015. Operational testing for SIP-1 began in January 2016.
- As of October 14, 2015, Raytheon has delivered a total of 1,405 AIM-120Ds for the Air Force and Navy.

AMRAAM EPIP

- In September 2014, the Air Force completed Basic EPIP operational testing for AIM-120C-7 missiles.

- In October 2014, the Air Force and Navy began Basic EPIP operational testing for AIM-120C-3, -4, -5, and -6. Reporting on Basic EPIP operational test is expected to be completed in FY16.

AMRAAM SIP

- The Air Force identified deficiencies in the AIM-120D 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.

Cybersecurity

- The Air Force and Navy are in the final stages of test planning to conduct cybersecurity testing for all variants of the AMRAAM missile.

FY15 AIR FORCE PROGRAMS

Assessment

- AMRAAM continues to be operationally effective and suitable.
 - Based on FY15 testing, the AIM-120D SIP-1 missile appears to be meeting performance and reliability requirements, although a final assessment will not be available until after completion of SIP-1 operational testing in FY16.
 - Missiles equipped with Basic EPIP software appear to be meeting performance requirements, based on testing to date. A final assessment of Basic EPIP will be available in FY16.
- FY15 Recommendations. The Air Force should:
 1. Complete SIP-2 and Advanced EPIP operational testing to achieve the Services' desired mission effectiveness improvements for AMRAAM.
 2. Complete cybersecurity testing for all variants of the AMRAAM missile in accordance with the August 1, 2014 DOT&E policy memorandum.

Recommendations

- Status of Previous Recommendations. The Air Force satisfactorily addressed the previous recommendations.