

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

The Advanced Medium-Range Air-to-Air Missile (AMRAAM) Air Intercept Missile (AIM)-120D System Improvement Program (SIP)-3 continued operational testing in CY21, completing eight planned missile flight tests. Assessment of the AIM-120D SIP-3's operational effectiveness, suitability, and survivability is pending FOT&E completion and will be reported on in CY22.



## System Description

The AMRAAM is a radar-guided, air-to-air missile with capability in both the beyond-visual range and within-visual range arenas. A single aircraft can engage multiple targets with multiple missiles simultaneously when using the AMRAAM. F-15C/D/E, F-16C/D, F/A-18C/D/E/F, EA-18G, F-22A, F-35A/B/C, and AV-8B aircraft are capable of employing the AMRAAM. The AIM-120D is the newest variant in the AMRAAM family of missiles, and includes both hardware and software improvements over the AIM-120C3-C7. Four planned follow-on SIPs will provide updates to the AIM-120D to enhance missile performance and resolve previous deficiencies.

## Program

The AMRAAM SIP-3 upgrade is a project under the Acquisition Category I AMRAAM program. DOT&E approved the SIP-3 revision of the Test and Evaluation Master Plan in 2019. The Air Force and Navy plan to field SIP-3 software following the completion of SIP-3 operational testing.

## Major Contractor

Raytheon Missiles and Defense – Tucson, Arizona.

## Test Adequacy

Between February 2020 and November 2021, the Air Force and Navy conducted integrated developmental and operational testing and dedicated operational testing. Testing was conducted in accordance with the DOT&E-approved test plan, and included eight planned missile flight tests. Seven flight tests were successful and an earlier no-test was re-accomplished successfully.

Modeling and simulation runs were conducted to quantify performance across the flight envelope. Details will be provided in the DOT&E report to be released in 2022.

The AIM-120 Cooperative Vulnerability and Penetration Assessment and the Adversarial Assessment are ongoing. Subsequent analysis and reporting are expected to complete in CY22.

## Performance

### Effectiveness

Assessment of the AIM-120D SIP-3's operational effectiveness is pending FOT&E completion and will be reported on in CY22. Given no recent upgrades to the AIM-120D warhead, the AIM-120D SIP-3 maintains the lethality performance of the legacy weapon.

### Suitability

Assessment of the AIM-120D SIP-3's operational suitability is pending FOT&E completion and will be reported on in CY22.

### Survivability

The AMRAAM's survivability in a cyber-contested environment will be provided in CY22 after the completion of the DOT&E-approved Cooperative Vulnerability and Penetration Assessment and Adversarial Assessment.

## Recommendations

None.