Standard Missile-6 (SM-6) Family of Missiles



In March 2024, a Standard Missile-6 (SM-6) Block IA variant was used in the Missile Defense Agency's Flight Test Aegis Weapon System-32 (FTM-32) event. FTM-32 demonstrated capability to detect, track, engage, and intercept a Medium Range Ballistic Missile (MRBM) target. Details are in the Missile Defense System (MDS) article in this Annual Report and the classified DOT&E MDS Annual Assessment, planned for February 2025. No additional testing of the SM-6 occurred in FY24.

SYSTEM DESCRIPTION

SM-6 is a missile that can defeat a range of targets, including air, surface, and land targets. The SM-6 seeker and terminal guidance electronics derive from technology developed in the Advanced Medium-Range Air-to-Air Missile program, discussed in a separate article in this Annual Report. SM-6 receives midcourse flight control from the Aegis Weapon System (AWS) via the ship's radar.

Current SM-6 variants include Block I and Block IA to deliver overthe-horizon anti-air warfare, antisurface warfare, strike, and ballistic missile defense capabilities. The Navy is developing the SM-6 Block IB variant – a modification of the Block IA missile – to extend its engagement range.

MISSION

The joint force commander/strike group commander employs naval units equipped with the SM-6 to conduct defensive and offensive operations. Missions include: (1) fleet air defense against fixed and rotary-winged aircraft and anti-ship missiles operating at altitudes ranging from very high to sea-skimming, (2) extended range, over-the-horizon anti-surface capability, (3) overland air-defense as a component of the integrated fire control concept, and (4) seabased capability against short- and medium-range ballistic missiles in their terminal phase of flight.

PROGRAM

SM-6 is an Acquisition Category (ACAT) IC program. SM-6 Block I and Block IA are beyond Milestone C. The Navy transitioned Block IB from a Middle Tier of Acquisition program to the SM-6 ACAT IC program in November 2021. The Navy provided a Block IB Milestone B TEMP to DOT&E for approval in FY23 but retracted it later that year due to the Navy reexamining the acquisition pathway and variant end state. The Navy is developing an update to the Guidance Section Electronics Unit to mitigate obsolescence issues and intends to incorporate the update into the missile as part of the SM-6 Block IA upgrade, or Block IAU. No new capabilities are planned.

» MAJOR CONTRACTOR

 Raytheon, a subsidiary of RTX – Tucson, Arizona

TEST ADEQUACY

The Navy did not conduct SM-6 operational test nor submit operational test plans for DOT&E approval. However, the Navy included DOT&E and the Navy's Operational Test Force during test planning and test observation in the SM-6 Missile Defense Agency's FTM-32 event in March 2024. Additional information can be found in the MDS article in this Annual Report and the classified DOT&E MDS Annual Assessment, planned for February 2025. FTM-32 demonstrated capability of SM-6 to detect, track,

engage, and intercept a MRBM target in the terminal phase of flight but was not intended to determine the operational effectiveness, lethality, suitability, or survivability of the SM-6.

PERFORMANCE

» EFFECTIVENESS, LETHALITY, SUITABILITY, AND SURVIVABILITY

Use of the SM-6 during the FTM-32 event does not affect DOT&E's prior assessments of SM-6 variants. Evaluation of SM-6 Block IB operational effectiveness, lethality, suitability, and survivability will be reported upon completion of operational and live fire testing.

RECOMMENDATIONS

The Navy should:

- 1. Address the recommendations from the FY22 Annual Report.
- 2. Submit a Block IB test strategy to DOT&E for approval.