Standard Missile 2 (SM-2) Block IIIC and Block IIICU

In March 2024, DOT&E delivered an early fielding report (EFR) for the Standard Missile 2 (SM-2) Block IIIC that detailed demonstrated operational capability of the delivered rapid prototype. Subsequently, the Navy fielded the SM-2 Block IIIC in 4QFY24. The Navy plans IOT&E of the follow-on variant, SM-2 Block IIICU, in FY31.

SYSTEM DESCRIPTION

The SM-2 Block IIIC and Block IIICU are medium-range, surface-to-air missiles with active radio frequency seekers. Both missiles are modifications to legacy SM-2 Block III/IIIA/IIIB missiles. The most significant modification is replacement of the legacy semi-active missile seeker with a dual-mode semi-active and active missile seeker based on SM-6 Block I technology. The SM-2 Block IIIC and Block IIICU have a new dorsal fin design and a thrust vectoring jet tab assembly that control trajectory as the missile egresses the launcher.

The Navy's Guidance Section Electronics Unit (GS EU)

replacement program is making hardware changes to the SM-6 Block IA Guidance Section and Target Detection Device to address obsolescence issues. The upgraded GS EU will be qualified on the SM-6 Block IA missile as the SM-6 Block IAU. Integration of the upgraded GS EU on the SM-2 Block IIIC results in the SM-2 Block IIICU.

MISSION

The joint force commander will use SM-2 Block IIIC and Block IIICU missiles from *Arleigh Burke*-class and *Constellation*-class ships to provide medium-range air defense, both self-defense and area air defense, against anti-ship cruise missiles and tactical aircraft. The joint force commander will use SM-2 Block IIIC and Block IIICU missiles in Naval Integrated Fire Control – Counter Air engagements from ships with this capability.

PROGRAM

The SM-2 Block IIIC was developed as a Middle Tier of Acquisition program for rapid prototyping. The Navy fielded the SM-2 Block IIIC in 4QFY24. This decision was informed by DOT&E's classified EFR submitted March 2024.

The Navy plans acquisition program baseline approval for the SM-2 Block IIICU as an Acquisition Category II program on the major capability acquisition pathway, post Milestone B, in FY25. DOT&E approved the SM-2 Block IIICU Milestone B TEMP in January 2024. SM-2 Block IIICU IOT&E is planned to commence in FY31. There are no changes to the legacy warhead or fusing method used on the SM-2 Block IIIC and Block IIICU missile. However, the packaging of the warhead within a modified airframe should be assessed by the Navy with analysis provided to DOT&E.

» MAJOR CONTRACTOR

- Raytheon, a subsidiary of RTX – Tucson, Arizona

TEST ADEQUACY

In March 2024, the Navy's Operational Test Force accredited modeling and simulation for operational assessment of the SM-2 Block IIIC, specifically for general missile performance characterizations and identifying operational risks. The results of the missile performance study, the cyber risk assessment reported in the FY23 Annual Report, and the live fire test events reported in the FY22 Annual Report informed DOT&E's EFR. Testing supported operational demonstration of SM-2 Block IIIC but not determination of operational effectiveness, operational suitability, or cyber survivability.

PERFORMANCE

» EFFECTIVENESS, SUITABILITY, AND SURVIVABILITY

Operational effectiveness, suitability, and survivability observations are provided in the classified EFR.

RECOMMENDATION

The Navy should:

1. Assess the effect of missile airframe modifications on SM-2 Block IIICU lethality and provide associated analysis to DOT&E as recommended in the EFR and the FY23 Annual Report.