Offensive Anti-Surface Warfare (OASuW) Increment 1

Executive Summary
- DOT&E released a classified report for the Quick Reaction Assessment (QRA) of the Offensive Anti-Surface Warfare (OASuW) Increment 1 program, also referenced as the Long Range Anti-Ship Missile (LRASM) 1.0 program, in 2QFY20, covering FY17-19 LRASM integrated testing. DOT&E recommended the Navy conduct IOT&E on the final LRASM configuration (1.1) to stress the system by using the full set of expected operational conditions.
- The OASuW Increment 1 program continues development improvements of missile hardware and software to enhance targeting capabilities as an incremental upgrade, LRASM 1.1.

System
- The OASuW Increment 1 program is the first weapon of an incremental approach to produce an OASuW capability in response to a U.S. Pacific Fleet Urgent Operational Need generated in 2008.
- The OASuW Increment 1 is an accelerated acquisition program to procure a limited number of air-launched missiles to meet this near-term U.S. Pacific Fleet requirement by leveraging the Defense Advanced Research Projects Agency LRASM.
- LRASM, the weapon system for the OASuW Increment 1, is a long-range, conventional, air-to-surface, precision standoff weapon. The Navy's F/A-18E/F or the Air Force's B-1B aircraft can launch LRASM.
- LRASM, designated as the AGM-158C, is derived from the Joint Air-to-Surface Standoff Missile Extended Range (JASSM ER). An anti-jam GPS guidance system, radio frequency sensor (RFS), and an infrared sensor support guidance and targeting.
- Once launched, LRASM guides to an initial point and employs onboard sensors to locate, identify, and provide terminal guidance to the target.

- OASuW Increment 2 will deliver long-term anti-surface warfare (ASuW) capabilities to counter future threats. The DOD continues to plan for OASuW Increment 2 to be developed via full and open competition, and Initial Operational Capability is anticipated FY28-30. Due to congressional budget reductions for OASuW Increment 2, the Navy funded an incremental upgrade – LRASM 1.1 – to bridge the gap until an OASuW Increment 2 program of record is established. This upgrade incorporates missile hardware and software improvements to address component obsolescence issues and enhance targeting capabilities.

Mission
Combatant Commanders will use units equipped with LRASM to destroy ships from standoff ranges.

Major Contractor
Lockheed Martin Missiles and Fire Control – Orlando, Florida

Activity
- An Early Operational Capability (EOC) for LRASM 1.0 was fielded for the Air Force B-1B in December 2018 and the Navy F/A-18E/F in November 2019.
- DOT&E published a classified QRA report in 2QFY20 covering FY17-19 LRASM 1.0 integrated testing.
- FY20 component-level testing of LRASM 1.0 continued development of missile hardware and software to enhance targeting capabilities of LRASM 1.1.
- The Navy conducted a LRASM 1.1 cybersecurity table top exercise in January 2020. DOT&E approved a Master Test Strategy (MTS) for LRASM 1.1 on January 30, 2020. This included an independent operational test period consistent with the number of assets planned for purchase. LRASM 1.1 integrated testing and a subsequent QRA are planned for FY21-22. DOT&E will release a classified report once testing is complete.
- The Navy conducted a live firing of a LRASM 1.0 during Valiant Shield in September 2020.

Assessment
- Based on the FY17-19 LRASM 1.0 integrated testing, DOT&E assessed the following:

  - The LRASM 1.0 QRA had limited operational realism.
  - Multiple hardware and software failures occurred in the QRA program that the Navy continues to address.
  - The Navy should conduct an IOT&E on LRASM 1.1, stressing the system by using the full set of expected operational conditions.
- Accreditation of the modeling and simulation (M&S) environment to fully assess LRASM operational performance is incomplete due to limitations presented by the live Integrated Test Event environment. An accurate M&S environment is required to determine whether the system will meet key performance parameter requirements and demonstrate mission capability in operationally realistic environments. Further details are classified.

Recommendations

The Navy should:

1. Conduct IOT&E on the final LRASM configuration (1.1), stressing the system by using the full set of expected operational conditions.
2. Complete the development and validation of the M&S environment to facilitate the operational effectiveness evaluation.