

Offensive Anti-Surface Warfare (OASuW) Increment 1

Executive Summary

- The Navy plans to complete a Quick Reaction Assessment (QRA) of the Offensive Anti-Surface Warfare (OASuW) Increment 1 program for weapon employment on the B-1B aircraft in FY18 and the F/A-18E/F aircraft in FY19.
- The OASuW Increment 1 program conducted limited testing in FY17 with partially successful results. Modeling and simulation (M&S) performance is at risk with more details available at higher classification.
- The Integrated Test Event-1 (ITE-1) Long Range Anti-Ship Missile (LRASM), employed from a B-1B aircraft, successfully engaged the mobile ship target.

System

- The OASuW Increment 1 program is the first program in 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 a near-term U.S. Pacific Fleet capability gap in 2018 by leveraging the Defense Advanced Research Projects Agency (DARPA) LRASM.
- LRASM, the weapon system for the OASuW Increment 1, is a 2,400-pound, long-range, conventional, air-to-surface, precision standoff missile. The Navy's F/A-18E/F or the Air Force's B-1B aircraft will launch LRASM.
- LRASM, designated the AGM-158C, is derived from the Joint Air-to-Surface Standoff Missile Extended Range (JASSM-ER) and will use the same 1,000-pound penetrator/blast fragmentation warhead and anti-jam GPS guidance system as JASSM-ER. Additionally, LRASM incorporates a radio frequency sensor (RFS) to guide to the target and an infrared (IR) seeker to locate specific aim points on the target.
- The launch platform(s) will launch LRASM against a target ship. LRASM will guide towards an initial target cue



provided to the missile by the launch platform until the RFS identifies and locates the target ship. The missile will then home on the target ship until the IR seeker is able to detect and track the target. The IR seeker will provide terminal guidance to the selected aimpoint on the ship. LRASM is designed to operate individually or as part of a salvo.

- The Navy plans to pursue a competitive acquisition strategy for the OASuW Increment 2, which is intended to be an offensive system of systems solution leveraging OASuW Increment 1 technologies to meet future maritime threats beyond 2024. Due to removal of funding for Increment 2 in the 2018 President's Budget, the Navy is reevaluating its strategy for OASuW Increment 2.

Mission

Combatant Commanders will use units equipped with LRASM to destroy high-value, well-defended ships from standoff ranges.

Major Contractor

Lockheed Martin Missiles and Fire Control – Orlando, Florida

Activity

- DOT&E approved the Navy's test plan in August 2017 as adequate to assess QRA performance; however, DOT&E also directed the Navy to provide a detailed M&S accreditation plan and cybersecurity test plan for DOT&E review and approval.
- The Navy began flight testing and end-to-end M&S runs of the LRASM system in FY17.
- In FY16, the Navy completed the four planned Missile Avionics Suite (MAS) test events. MAS testing incorporated a helicopter-mounted IR seeker and Mission Control

Unit (MCU) to facilitate IR seeker algorithm development and data collection to support M&S development.

- The Navy completed the last two Flying Test Bed (FTB) events in FY17 for a total of 54 test runs of the RFS, IR seeker, and MCU mounted in a Sabreliner 65 aircraft. The FTB testing will be used for technology maturation and in-flight data collection to support M&S activities.
- The Air Force completed two captive carry events on a B-1B aircraft to evaluate weapon integration, with a third planned for FY18.

FY17 NAVY PROGRAMS

- The Navy completed integrated modeling test event-1 (ITEM-1), which is the first end-to-end M&S test of the Kill Chain Testbed (KCT).
- The Navy and Air Force conducted the first free flight test of LRASM during ITE-1.
- In FY16, the Navy completed the sled tests to demonstrate the required warhead fuze delay and to assess the penetration and behavior of the weapon against intended ship targets. Analysis is ongoing to characterize the damage to the target as a function of weapon hit location.
- The Navy and Air Force conducted all testing in accordance with the DOT&E-approved Master Test Strategy.
- The Navy plans to complete a QRA of the OASuW Increment 1 program and declare Early Operational Capability (EOC) for weapon employment on the B-1B aircraft in FY18 and the F/A-18 aircraft in FY19. DOT&E will deliver an Early Fielding Report on both EOC decisions.

Assessment

- The OASuW Increment 1 program conducted limited testing in FY17, including the recent ITE-1 free flight test. All testing was done in accordance with the DOT&E-approved test plan and with partially successful results.

- Sled tests confirmed satisfactory interaction between the missile and the ship structure, including proper warhead fusing. A more detailed assessment of weapons effects and residual target mission capability will be provided after the completion of the lethality analysis in FY18.
- M&S goals for EOC are currently at risk due to difficulties in correctly modeling RFS performance and incomplete plan for accreditation. M&S outcomes will validate Key Performance Parameter achievement in this program. Further details are classified.
- The ITE-1 LRASM, employed from a B-1B aircraft, successfully engaged the mobile ship target.

Recommendations

- Status of Previous Recommendations. This is the first annual report for this program.
- FY17 Recommendation.
 1. The Navy should accomplish cybersecurity testing of the weapon system in accordance with a DOT&E-approved cybersecurity test plan prior to EOC.