

Aegis Modernization Program

Executive Summary

- Operational testing of Aegis Guided Missile Cruisers (CGs 52-58) upgraded with Aegis Warfare System (AWS) Advanced Capability Build 2008 (ACB08) and Aegis Guided Missile Destroyers (DDGs 103-112) upgraded with AWS Baseline 7.1R is expected to complete in 1QFY12.
- The preliminary evaluation of data collected during operational testing of AWS ACB08 suggests that Aegis Cruisers equipped with the AWS ACB08 has not adversely affected Undersea Warfare mission performance. DOT&E expects to issue a formal test report in 2QFY12.

System

- The Navy's Aegis Modernization program provides updated technology and systems for existing Aegis Guided Missile Cruisers (CG 47) and Destroyers (DDG 51). This planned, phased program provides similar technology and systems for new Destroyers.
- The AWS, carried on DDG 51 Guided Missile Destroyers and CG 47 Guided Missile Cruisers, integrates the following components:
 - AWS AN/SPY-1 three-dimensional (range, altitude, and azimuth) multi-function radar
 - SQQ-89 Undersea Warfare suite that includes the AN/SQS-53 sonar, SQR-19 passive towed sonar array (DDGs 51-78, CGs 52-73), and the SH-60B or MH-60R Helicopter (DDGs 79 and newer have a hangar to allow the ship to carry and maintain its own helicopter)
 - Close-In Weapon System
 - Five-inch diameter gun
 - Harpoon anti-ship cruise missiles (DDGs 51-78, CGs 52-73)
 - Vertical Launch System that can launch Tomahawk land-attack missiles, Standard surface-to-air missiles, Evolved SeaSparrow Missiles, and Vertical Launch Anti-Submarine Rocket missiles
- The AWS on Baseline 2 Aegis Guided Missile Cruisers (CGs 52-58) was upgraded with commercial off-the-shelf hardware running the AWS software ACB08.



- The AWS on new construction Aegis Guided Missile Destroyers (DDGs 103-112) is Baseline 7.1R.

Mission

The Maritime Component Commander can employ AWS equipped DDG 51 Guided Missile Destroyers and CG 47 Guided Missile Cruisers to:

- Conduct Anti-Air Warfare, Anti-Surface Warfare, and Anti Submarine Warfare
- Conduct Strike Warfare when armed with Tomahawk missiles
- Conduct offensive and defensive warfare operations simultaneously
- Operate independently or with Carrier or Expeditionary Strike Groups, as well as with other joint or coalition partners

Major Contractors

- General Dynamics Marine Systems Bath Iron Works – Bath, Maine
- Northrop Grumman Shipbuilding – Pascagoula, Mississippi
- Lockheed Martin Maritime Systems and Sensors – Moorestown, New Jersey

Activity

- Commander, Operational Test and Evaluation Force (COTF) conducted all portions of the planned operational test of AWS ACB08 in FY10 with the exception of air defense and suitability testing.
- COTF conducted the testing in accordance with the DOT&E-approved test plan.
- Air defense and suitability testing, originally scheduled for September 2010, are now scheduled for 1QFY12. COTF

- postponed and rescheduled this testing on five separate occasions due to the unavailability of the test ship to support scheduled testing.
- The Navy deployed at least one AWS ACB08-equipped Cruiser in FY11 in advance of operational air defense and suitability testing.

NAVY PROGRAMS

- The Navy repaired critical software faults discovered during earlier developmental testing of AWS Baseline 7.1R. Operational testing is scheduled to be conducted concurrently with ACB08 testing in 1QFY12. The Navy deployed at least one AWS Baseline 7.1R-equipped Destroyer in FY11 in advance of operational testing.
- The Navy continues to update the Test and Evaluation Master Plan to incorporate follow-on AWS baseline ACB 2012 (ACB12). ACB12 is intended as a family of baselines that will include DDG (51-90) with Ballistic Missile Defense (BMD) capability, CG (59-69) without BMD, and CG (67, 70, 72, and 73) with BMD.

Assessment

- The analysis of test data collected during the Undersea Warfare, maintainability, and information assurance portions of AWS ACB08 operational testing is ongoing; however, the preliminary assessment is that Aegis Cruisers equipped with AWS ACB08 has not adversely affected Undersea Warfare mission performance. DOT&E expects to issue a formal test report in 2QFY12.

- Aegis Guided Missile Cruisers upgraded with AWS ACB08 and Aegis Guided Missile Destroyers upgraded with AWS Baseline 7.1R have limited ability to counter high-speed surface threats in littoral waters.

Recommendations

- Status of Previous Recommendations. The Navy satisfactorily addressed two of the previous four recommendations. However, the Navy should continue to improve the AWS ability to counter high-speed surface threats in littoral waters and Standard Missile reliability, and synchronize the conduct and reporting of OT&E with intended ship-deployment schedules to ensure that future AWS baselines complete OT&E prior to deployment.
- FY11 Recommendation.
 1. The Navy should devote increased effort to accomplish all planned key operational tests of AWS ACB08 deferred in FY11 in accordance with the DOT&E approved Test and Evaluation Master Plan and test plan.