

Tomahawk Missile and Weapon System

Executive Summary

- The Navy continues to conduct Operational Test Launches to verify reliability and performance of fielded Baseline II, III, and IV Tomahawk missiles; their associated weapon control systems; and the Tomahawk Command and Control System (TC2S). DOT&E considers the planned Operational Test Launch program to be adequate for continued verification of system reliability and accuracy.
- Based on FY09 test flights, the Tomahawk Weapon System continues to meet Navy standards for reliability and performance.
- The Navy conducted FOT&E OT-IIIIE from September to October 2008 to evaluate upgrades to the TC2S, corrective action for deficiencies identified during earlier operational testing, and the ability to conduct Tomahawk strikes at the SECRET classification level. Based on the FOT&E results the Tomahawk Weapon System continues to be effective and suitable.

System

- The Tomahawk Land Attack Missile is a long-range, land attack cruise missile designed for launch from submarines and surface ships.
- Tomahawk Baselines II and III completed production. There are currently three fielded variants, delivering a nuclear warhead (Baseline II only, not deployed), a conventional warhead, or a conventional warhead with submunitions.
- Tactical Tomahawk (Baseline IV) is currently in production as the follow-on to the Baseline III conventional warhead variant. These missiles are produced at lower cost and provide added capability, including the ability to communicate with and retarget the missile during flight.



- The Tactical Tomahawk Weapons System (TTWCS) also includes the Tomahawk Command and Control System (TC2S) and the shipboard Tomahawk Weapon Control Systems (TWCS). The TC2S and TWCS provide for targeting, mission planning, distribution of Tomahawk tactical data, and in-flight control of Baseline IV missiles.

Mission

The Maritime Force Commander can employ the Tomahawk missile for long-range, precision strikes against land targets.

Prime Contractor

- Raytheon Missile Systems, Tucson, Arizona

Activity

- The Navy continues to conduct Operational Test Launches to verify reliability and performance of fielded Baseline II, III, and IV Tomahawk missiles; their associated weapon control systems; and the TC2S. The Navy conducted a total of 13 Tomahawk missile test launches during FY09.
- The Navy utilized the Tomahawk flight test program to verify correction of a Baseline IV missile engineering deficiency (Armed Fire Device) that had the potential to reduce missile reliability on some vertical launched missiles. The Navy plans to implement this correction for affected Fleet Missiles in FY10.
- The Navy utilized the Tomahawk flight test program for final validation of a new Anti-Jam GPS Receiver-4. In addition to resolving obsolescence issues, this receiver introduces improved performance and Selected Availability/Anti-Spoofing Module capability to the missile.
- The Commander, Operational Test and Evaluation Force conducted OT-IIIIE from September to October 2008. OT-IIIIE evaluated upgrades to the TC2S, as well as corrective action for deficiencies identified during previous operational testing. Additionally, OT-IIIIE evaluated the ability to conduct Tomahawk strike operations at the SECRET classification level (“Strike over Secret”), vice the TOP SECRET level used for all previous Tomahawk operations. Operational Fleet Commands are implementing the Strike over Secret network.
- DOT&E has been participating with the Tomahawk program’s T&E Integrated Product Team to update the Test and Evaluation Master Plan and develop a test plan to support the

NAVY PROGRAMS

next phase (OT-IIIF) of Tomahawk Weapon System FOT&E. This phase includes improvements to TTWCS and TC2S as well as correction of deficiencies remaining from OT-IIIE.

Assessment

- Based on FY09 test flights, the Tomahawk Weapon System continues to meet Navy standards for reliability and performance.
- DOT&E considers the current Operational Test Launch program for all Tomahawk missile variants to be adequate for continued verification of system reliability and accuracy. However, the Navy has not funded Baseline II and Baseline III test launches after FY12. The Baseline III missiles are to remain in operational use until 2020. DOT&E places high value on continuing to collect flight data to evaluate end-to-end system performance and reliability for all deployed and deployable Tomahawk missile variants.

- Due to differing weapon control systems configurations, Strike over Secret will not be available on all Tomahawk firing platforms; therefore, all users must retain the ability to revert to TOP SECRET. When non-Strike over Secret and Strike over Secret users combine for a strike mission, all users must guard against cross-contamination of classification levels, increasing the difficulty of strike coordination.
- Based on the 2008/2009 FOT&E results, the Tomahawk Weapon System continues to be effective and suitable.

Recommendations

- Status of Previous Recommendations. The one FY07 recommendation remains valid.
- FY09 Recommendations. None