

Over-The-Horizon Weapons System (OTH-WS)



In May 2022, the Navy conducted an evaluation of the cyber survivability of the Over-The-Horizon Weapons System (OTH-WS). The Navy delayed completion of IOT&E flight-testing in FY22 due to test asset reallocation in support of U.S. Marine Corps anti-ship missile testing.

SYSTEM DESCRIPTION

The OTH-WS is a long-range, surface-to-surface missile employed by the Navy on either

the Littoral Combat Ship or the future guided-missile frigate. The Navy intends OTH-WS to defeat maritime targets both inside and beyond the firing unit's radar horizon. The OTH-WS is a stand-alone system requiring minimal

integration with the host platform. It consists of an operator interface console, naval strike missile, and a missile launching system. The OTH-WS receives targeting data via tactical communications from combatant platforms or

airborne sensors and requires no firing unit support after launch.

MISSION

The Joint Force Commander/Strike Group Commander employs OTH-WS-equipped platforms to conduct offensive over-the-horizon and within-the-horizon engagements against maritime targets. The U.S. Marine Corps intends to employ naval strike missiles from the Joint Light Tactical Vehicle-based mobile launch platform as a component of a Navy/Marine Expeditionary Ship Interdiction System (NMESIS).

PROGRAM

OTH-WS is an Acquisition Category II, Non-Developmental Item program. In FY18, the Navy awarded a firm-fixed-price contract to Raytheon Missile and Defense to integrate the OTH-WS onto Navy platforms. The Navy commenced operational test in March 2021 in accordance with DOT&E-approved test plans, and DOT&E observed the test. The Navy expects to deliver the Test and Evaluation Master Plan (TEMP) for OTH-WS to DOT&E for approval in 1QFY23. The Navy intended to make a Full-Rate Production decision in FY22; however, the Navy now expects this decision in FY25 due to test asset reallocation to support the Marine Corps NMESIS project.

» MAJOR CONTRACTOR

- Raytheon Missile and Defense – Tucson, Arizona

TEST ADEQUACY

The Navy commenced operational test of the OTH-WS in FY21, but delayed FY22 test events due to reallocation of test resources to support the Marine Corps NMESIS project. In May 2022, the Marine Corps conducted integration testing of the naval strike missile from a JLTV-based mobile launch platform. The Navy and DOT&E are evaluating the ability to use suitability data from this event to support the assessment of the OTH-WS. The Navy expects to conduct remaining IOT&E OTH-WS flight tests in FY24.

In May 2022, the Navy completed cyber survivability testing, specifically an adversarial assessment (AA) and cooperative vulnerability and penetration assessment (CVPA), of OTH-WS on a Littoral Combat Ship. Testing was adequate to assess the resilience of the OTH-WS to cyberattack.

In FY22, the Navy completed the first of seven requisite arena tests to characterize the OTH-WS warhead lethality against representative targets. The Navy expects to complete live fire testing to assess system lethality and survivability within a contested environment in FY24.

PERFORMANCE

» EFFECTIVENESS

Insufficient data are available to determine operational effectiveness of the OTH-WS. The three live firings in FY21

demonstrated that the OTH-WS has potential to provide the Navy with an over-the-horizon capability to defeat surface vessels; however, the Navy has not characterized this capability due to test remaining in progress. DOT&E will report OTH-WS operational effectiveness, including lethality, after the completion of remaining operational and lethality test events.

» SUITABILITY

Insufficient data are available to determine operational suitability of the OTH-WS due to the test remaining in progress. DOT&E will report OTH-WS operational suitability after the completion of remaining operational and lethality test events.

» SURVIVABILITY

Assessment from the Navy's cyber survivability evaluation in May 2022 is classified. DOT&E will report on the cyber survivability of the OTH-WS at the completion of IOT&E.

RECOMMENDATIONS

The Navy should:

1. Provide the OTH-WS TEMP for DOT&E approval.
2. Complete the remaining operational and lethality test events to support an adequate determination of operational effectiveness and suitability of the OTH-WS and inform Navy fielding decisions.