

# T-AO 205 *John Lewis*-Class Fleet Replenishment Oiler



Between April and November 2024, the Navy's Operational Test and Evaluation Force (OPTEVFOR) continued IOT&E aboard USNS *Harvey Milk* (T-AO 206). The *John Lewis* (T-AO 205)-class has successfully demonstrated capability to deliver fuel and cargo, including vertical replenishment with multiple aircraft types, for supported ship classes tested to date. The Navy plans to provide all required reports for assessment of platform survivability in FY25. The Navy expects to complete T-AO 205 IOT&E in early FY25.



## SYSTEM DESCRIPTION

---

The T-AO 205 *John Lewis*-class of fleet replenishment oilers will replace the 15 ships in the T-AO 187 *Henry J. Kaiser*-class currently in the fleet today. T-AO 205 has port and starboard refueling stations, an astern fuel delivery station, connected cargo transfer stations, and a vertical replenishment station from the flight deck.

The T-AO 205-class has an advanced degaussing system, the Nixie torpedo countermeasure system, and mounts for security team machine guns. The ship has the space and weight reservations for defensive weapons system installation. The T-AO 205-class is designed to commercial standards for a crew of 95 civilian mariners and accommodations for an additional 34 personnel.

## MISSION

---

Combatant commanders will use T-AO 205-class ships to replenish ships within carrier strike groups and expeditionary strike groups during peacetime and combat operations. T-AO 205-class ships will serve as the primary logistics platform, linking Navy ships and embarked aircraft with logistics nodes ashore. The T-AO 205-class ships deliver fuel, food, supplies, and spare parts.

## PROGRAM

---

The T-AO 205-class replenishment oiler is an Acquisition Category IB program that achieved Milestone B/C in September 2017. The Assistant Secretary of the Navy for Research, Development, and Acquisition increased the low-rate initial production (LRIP) to 12 ships in June 2022. The Navy plans a total buy of 20 T-AO 205-class ships.

General Dynamics, National Steel and Shipbuilding Company (NASSCO) delivered T-AO 205 in July 2022, T-AO 206 in July 2023, and T-AO 207 in May 2024. Three ships (T-AO 208 through T-AO 210) are under construction.

DOT&E approved the TEMP Revision 1 in September 2021 and IOT&E test plan in October 2022.

### » MAJOR CONTRACTOR

---

- General Dynamics NASSCO  
– San Diego, California

## TEST ADEQUACY

---

The Navy evaluated cyber survivability of T-AO 205 in FY23. Testing to assess T-AO 205's cyber survivability posture and the crew's ability to conduct their mission in a cyber-contested environment was conducted in accordance with the DOT&E-approved test plan and observed by DOT&E. Between April 2024 and September 2024, OPTEVFOR conducted IOT&E aboard USNS *Harvey Milk* (T-AO 206) in accordance with the

DOT&E-approved test plan and with DOT&E observation. This testing continued IOT&E detailed in the FY23 Annual Report. The Navy expects to complete IOT&E in FY25. Testing could not demonstrate transfer to all ship classes within the IOT&E test design due to their unavailability during test execution, as well as limited T-AO 206 crew manning that could not support one test. Some remaining test events may move to FOT&E after sufficient data are available to determine overall operational effectiveness and suitability.

In September 2024, the Navy provided a verification and validation report for the modeling and simulation (M&S) tool used to predict the vulnerability of the ship to threat weapons. As part of the accreditation of the M&S used in assessing ship survivability, the Navy identified that modeling limitations prevent a representative prediction of damage from underwater weapons. The Navy plans to provide a Total Ship Survivability Trial (TSST) Report in FY25. TSST is a shipboard trial which simulated the damage from weapon events to evaluate the ability of the ship to implement effective damage control and maintain mission capability. TSST was conducted aboard USNS *John Lewis* in July of 2023.

The Navy plans to issue the Final Survivability Assessment Report (FSAR) for T-AO 205 in FY25. The FSAR is a compilation report that details the findings from all T-AO 205 LFT&E tests and analysis over the

course of the program, including TSST and predictions from M&S. As identified above, the M&S tool could not be fully accredited for its use in LFT&E analysis.

## PERFORMANCE

---

### » EFFECTIVENESS AND SUITABILITY

---

Insufficient data are available to determine operational effectiveness and suitability of the TAO-205-class. T-AO 205-class has successfully demonstrated the capability to deliver fuel and cargo, including vertical replenishment with multiple aircraft types, to a subset of Navy ship classes within the IOT&E test design. Ship manning has not yet been sufficient to evaluate the most stressing operations for the T-AO 205-class. DOT&E will report operational effectiveness and suitability after completion of IOT&E that the Navy expects to occur in FY25.

### » SURVIVABILITY

---

Analysis of platform survivability is ongoing. The M&S limitations are expected to constrain determination of ship survivability against underwater weapons. However, the findings of the FSAR and associated testing are expected to still support determination of LFT&E critical issues for the T-AO 205-class, including recommendations for potential design improvements for ship survivability against threat weapons. DOT&E will report platform and cyber survivability

within a classified IOT&E report after completion of IOT&E that the Navy expects to occur in FY25.

## RECOMMENDATION

---

The Navy should:

1. Complete the remaining IOT&E as soon as feasible in FY25.