

Navy John Lewis (TAO-205) Class Oiler Shipbuilding Program: Background and Issues for Congress

(name redacted)

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Summary

The John Lewis (TAO-205) class oiler shipbuilding program, previously known as the TAO(X) program, is a program to build a new class of 20 fleet oilers for the Navy. The primary role of Navy fleet oilers is to transfer fuel to Navy surface ships that are operating at sea, so as to extend the operating endurance of these surface ships and their embarked aircraft. The first ship in the TAO-205 program was funded in FY2016 at a cost of \$674.2 million and is scheduled to be delivered to the Navy in November 2020.

As part of its proposed FY2018 budget, the Navy is requesting the procurement of the second ship in the class. The Navy estimates the second ship's procurement cost at \$539.1 million. Much of the difference in procurement cost between the first ship and the second is due to the fact that the procurement cost of the first ship included the detailed design/nonrecurring engineering (DD/NRE) costs for the class. Incorporating most or all of the DD/NRE cost for a class of ship into the procurement cost of the lead ship in the class is a traditional budgeting practice for Navy shipbuilding programs. The estimated unit procurement costs of the third and subsequent ships in the class are similar to that of the second ship.

The second ship has already received \$73.1 million in advance procurement (AP) funding that was provided in FY2017. The Navy's proposed FY2018 budget requests the remaining \$466 million in funding needed to complete the second ship's procurement cost. The Navy's proposed FY2018 budget also requests \$75.1 million in advance procurement (AP) funding for the third ship in the class, which the Navy wants to procure in FY2019.

As part of its acquisition strategy for the TAO-205 program, the Navy issued a combined solicitation consisting of separate Requests for Proposals (RFPs) for the detailed design and construction of the first six ships in the TAO-205 class, and for an amphibious assault ship called LHA-8 that the Navy procured in FY2017. The Navy limited bidding in this combined solicitation to two bidders—General Dynamics' National Steel and Shipbuilding Company (GD/NASSCO) and Huntington Ingalls Industries' Ingalls Shipbuilding (HII/Ingalls)—on the grounds that these are the only two shipbuilders that have the capability to build both TAO-205s and LHA-8. On June 30, 2016, the Navy awarded a fixed price incentive block buy contract for the first six TAO-205s to GD/NASSCO, and the contract for LHA-8 to HII/Ingalls.

The Navy was granted authority for using a block buy contract for the first six TAO-205s by Section 127 of the FY2016 National Defense Authorization Act (S. 1356/P.L. 114-92 of November 25, 2015). The Navy estimates that the block buy contract will reduce the procurement cost of the second through sixth TAO-205 by an average of about \$45 million each, compared to costs under the standard or default DOD approach of annual contracting.

Issues for Congress for FY2018 regarding the TAO-205 program include the following:

- whether to approve, reject, or modify the Navy's requests for procurement funding for the second ship and AP funding for the third ship;
- whether to accelerate the procurement of TAO-205 class ships by funding the procurement of two TAO-205s rather than one in FY2018; and
- whether to encourage or direct the Navy to build TAO-205s with more ship self-defense equipment than currently planned by the Navy.

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Introduction

This report provides background information and issues for Congress on the John Lewis (TAO-205) class oiler shipbuilding program, a program to build a new class of 20 fleet oilers for the Navy. The TAO-205 program was previously known as the TAO(X) program. The first ship in the program was funded in FY2016 at a cost of \$674.2 million. The Navy's proposed FY2018 budget requests \$466.0 million in procurement funding for the second ship, which the Navy wants to procure in FY2018, and \$75.1 million in advance procurement (AP) funding for the third ship, which the Navy wants to procure in FY2019.

Issues for Congress for FY2018 regarding the TAO-205 program include the following: whether to approve, reject, or modify the Navy's requests for procurement funding for the second ship and AP funding for the third ship; whether to accelerate the procurement of TAO-205 class ships by funding the procurement of two TAO-205s rather than one in FY2018; and whether to encourage or direct the Navy to build TAO-205s with more ship self-defense equipment than currently planned by the Navy. Decisions that Congress makes regarding the program could affect Navy capabilities and funding requirements and the U.S. shipbuilding industrial base.

For an overview of the strategic and budgetary context in which the TAO-205 program and other Navy shipbuilding programs may be considered, see CRS Report RL32665, *Navy Force Structure and Shipbuilding Plans: Background and Issues for Congress*, by (name redacted) .

Background

Role of Navy Fleet Oilers

The primary role of Navy fleet oilers is to transfer fuel to Navy surface ships that are operating at sea, so as to extend the operating endurance of these surface ships and their embarked aircraft. Fleet oilers also provide other surface ships with lubricants, fresh water, and small amounts of dry cargo. Fleet oilers transfer fuel and other supplies to other surface ships in operations called underway replenishments (UNREPs). During an UNREP, an oiler steams next to the receiving ship and transfers fuel by hose (see **Figure 1**, **Figure 2**, and **Figure 3**).¹

¹ The Navy states that

A typical connected replenishment starts when a warship makes an "approach" on a CLF ship. The CLF ship maintains steady course and speed while the "customer ship" approaches and comes alongside the CLF ship, matching course and speed. The distance between the two ships is usually between 120-200 feet. The CLF ship then passes heavy metal wires, to the customer ship, that are connected at the replenishment stations. These wires are placed under tension to support fuel hoses for refueling operations or trolleys that move pallets of provisions, ammunition, or other cargo from ship to ship. Ships with flight decks can also receive provisions and ammunition via vertical replenishment. During this evolution a helicopter transfers cargo in external sling loads, or in the case of mail or passengers, inside the helicopter.

(Statement of Mr. F. Scott DiLisio, Director, Strategic Mobility / Combat Logistics Division, Office of the Chief of Naval Operations, on the Logistics and Sealift Force Requirements and Force Structure Assessment Before the House Armed Services Committee Seapower and Projection Forces Subcommittee, July 30, 2014, p. 3.)

Figure 1. Fleet Oiler Conducting an UNREP



Source: Navy photo accessed May 5, 2014, at http://www.navy.mil/view_image.asp?id=163895. The Navy states that the photo is dated October 24, 2013, and shows the oiler *Tippecanoe* (TAO-199) extending its fuel probe to the Aegis cruiser USS *Antietam* (CG-54), a part of the *George Washington* (CVN-73) Carrier Strike Group, in the South China Sea.

Oilers are one kind of Navy UNREP ship; other Navy UNREP ships include ammunition ships, dry cargo ships, and multiproduct replenishment ships. The Navy's UNREP ships are known more formally as the Navy's combat logistics force (CLF). Most of the Navy's CLF ships are operated by the Military Sealift Command (MSC).

Navy oilers carry the designation TAO (sometimes written as T-AO). The T means that the ships are operated by MSC with a mostly civilian crew; the A means it is an auxiliary ship of some kind; and the O means that it is, specifically, an oiler.

Although the role of fleet oilers might not be considered as glamorous as that of other Navy ships, fleet oilers are critical to the Navy's ability to operate in forward-deployed areas around the world on a sustained basis. The U.S. Navy's ability to perform UNREP operations in a safe and efficient manner on a routine basis is a skill that many other navies lack. An absence of fleet oilers would significantly complicate the Navy's ability to operate at sea on a sustained basis in areas such as the Western Pacific or the Indian Ocean/Persian Gulf region. The Navy states that

the ability to rearm, refuel and re-provision our ships at sea, independent of any restrictions placed on it by a foreign country, is critical to the Navy's ability to project warfighting power from the sea.

As the lifeline of resupply to Navy operating forces underway, the ships of the Navy's Combat Logistic Force (CLF) enable Carrier Strike Groups and Amphibious Ready

Groups to operate forward and remain on station during peacetime and war, with minimal reliance on host nation support.²

Figure 2. Fleet Oiler Conducting an UNREP



Source: Navy photo accessed May 5, 2014, at http://www.navy.mil/view_image.asp?id=61415. The Navy states that the photo is dated July 13, 2008, and shows the oiler *Leroy Grumman* (TAO-195) refueling the frigate *Underwood* (FFG-36) during an exercise with the *Iwo Jima* (LHD-7) Expeditionary Strike Group in the Atlantic Ocean.

Existing Henry J. Kaiser (TAO-187) Class Oilers

The Navy's existing force of fleet oilers consists of 15 Henry J. Kaiser (TAO-187) class ships (**Figure 4**).³ These ships were procured between FY1982 and FY1989 and entered service between 1986 and 1996. They have an expected service life of 35 years; the first ship in the class will reach that age in 2021. The ships are about 677 feet long and have a full load displacement of about 41,000 tons, including about 26,500 tons of fuel and other cargo. The ships were built by Avondale Shipyards of New Orleans, LA, a shipyard that eventually became part of the shipbuilding firm Huntington Ingalls Industries (HII). HII has wound down Navy shipbuilding operations at Avondale. (HII continues to operate two other shipyards that build Navy ships.)

² Statement of Mr. F. Scott DiLisio, Director, Strategic Mobility / Combat Logistics Division, Office of the Chief of Naval Operations, on the Logistics and Sealift Force Requirements and Force Structure Assessment Before the House Armed Services Committee Seapower and Projection Forces Subcommittee, July 30, 2014, pp. 2-3.

³ The oilers shown in **Figure 1**, **Figure 2**, and **Figure 3** are also Kaiser-class class oilers.

Figure 3. Fleet Oiler Conducting an UNREP



Source: Navy photo accessed May 5, 2014, at http://www.navy.mil/view_image.asp?id=1737. The Navy states that the photo is dated June 19, 2002, and shows the oiler *Walter S. Diehl* (TAO-193), at center, conducting simultaneous UNREPs with the aircraft carrier *John F. Kennedy* (CV-67) and the Aegis destroyer *Hopper* (DDG-70). CV-67, a conventionally powered carrier, has since retired from the Navy, and all of the Navy's aircraft carriers today are nuclear powered. Even so, Navy oilers continue to conduct UNREPs with Navy aircraft carriers to provide fuel for the carriers' embarked air wings.

TAO-205 Program

Program Name

The TAO-205 class program was originally called the TAO(X) program, with the (X) meaning that the exact design of the ship had not yet been determined. On January 6, 2015, then-Secretary of the Navy Ray Mabus announced that ships in the class will be named for “people who fought for civil rights and human rights,”⁴ and that the first ship in the class, TAO-205, which was procured in FY2016, will be named for Representative John Lewis.⁵ The class consequently is now known as the John Lewis (TAO-205) class. (Some Navy documents, however, might continue to refer to the program as the TAO(X) program.) On July 28, 2016, it was reported that

⁴ Valerie Insinna, “Navy to Name Next Generation Oilers for Civil Rights Icons,” *Defense Daily*, January 7, 2016: 4. For more on Navy ship names, see CRS Report RS22478, *Navy Ship Names: Background for Congress*, by (name redacted) .

⁵ “Secretary of the Navy Ray Mabus Names Fleet Replenishment Oiler,” *Navy News Service*, January 6, 2016; Sam LaGrone, “SECNAV Mabus Names First TAO(X) Next Generation Oiler After Rep. John Lewis,” *USNI News*, January 6, 2016.

the Navy will name the second through sixth ships in the class (i.e., TAOs 206 through 210) for Harvey Milk, Earl Warren, Robert F. Kennedy, Lucy Stone, and Sojourner Truth, respectively.⁶

Figure 4. Henry J. Kaiser (TAO-187) Class Fleet Oiler



Source: U.S. Navy image accessed April 14, 2014, at <http://www.navy.mil/management/photodb/photos/130703-N-TG831-240.jpg>. (The oilers shown in **Figure 1**, **Figure 2**, and **Figure 3** are also Kaiser-class class oilers.)

Program Quantity

As part of its previous force-level goal, which called for achieving and maintaining a fleet of 308 ships of various types and numbers, the Navy had originally envisaged procuring a total of 17 new TAO-205s as replacements for the 15 Kaiser-class ships. In December 2016, however, the Navy released a new force-level goal that calls for achieving and maintaining a fleet of 355 ships. The Navy has informed CRS and the Congressional Budget Office (CBO) that this 355-ship force-level goal includes a total of 20 oilers,⁷ implying a planned procurement of 20 TAO-205s. The required number of oilers largely depends on the numbers and types of other surface ships (and their embarked aircraft) to be refueled, and the projected operational patterns for these ships and aircraft.

⁶ Sam LaGrone, "Navy to Name Ship After Gay Rights Activist Harvey Milk," *USNI News*, July 28, 2016. See also "Document: Notice to Congress on 8 Proposed Navy Ship Names," *USNI News*, August 3, 2016. See also "SECNAV to Name Next John Lewis-Class Oiler After Civil and Human Rights Leader Harvey Milk," *Navy Live*, July 30, 2016; "Secretary of the Navy Names Newest Fleet Replenishment Oiler, USNS Harvey Milk," *Navy News Service*, August 17, 2016.

⁷ Source Navy information paper dated February 28, 2017, provided to CRS and CBO March 8, 2017.

Program Schedule

The Navy procured the first TAO-205 in FY2016; the ship is scheduled to be delivered in November 2020. The Navy wants to procure the remaining 19 TAO-205s in FY2018 and subsequent years at a rate of at least one ship per year.

Program Funding

Table 1 shows procurement and advance procurement (AP) funding, annual procurement quantities, and estimated unit procurement costs for the TAO-205 program under the Navy's proposed FY2018 budget. The funding is located in the Navy's regular shipbuilding account, called the Shipbuilding and Conversion, Navy (SCN) account.

Table 1. Procurement Funding, Annual Quantity, and Unit Procurement Cost
(Millions of dollars, rounded to nearest tenth)

	FY16	FY17	FY18 (req.)	FY19 (proj.)	FY20 (proj.)	FY21 (proj.)	FY22 (proj.)
Procurement funding	674.2	0	466.0	445.6	459.5	453.1	461.2
Advance procurement (AP) funding	0	73.1	75.1	75.0	75.1	75.1	76.6
TOTAL	674.2	73.1	541.1	520.6	534.5	528.1	537.8
Procurement quantity	1	0	1	1	1	1	1
Estimated procurement cost of ship being procured that year	674.2		539.1	520.6	534.5	528.1	536.3

Source: Navy FY2018 budget submission.

The estimated procurement cost of the lead ship includes detailed design/non-recurring engineering (DD/NRE) costs for the class. This one-time cost accounts for most of the difference in estimated procurement cost between the first ship and the follow-on ships. Incorporating most or all of the DD/NRE cost for a class of ship into the procurement cost of the lead ship in the class is a traditional budgeting practice for Navy shipbuilding programs.

Ship Capabilities and Design

The Navy anticipates that the TAO-205 class design will have capabilities similar to those of the Kaiser-class ships, and will rely on existing technologies rather than new technologies. To guard against oil spills, TAO-205s are to be double-hulled, like modern commercial oil tankers, with a space between the two hulls to protect the inner hull against events that puncture the outer hull. (The final Kaiser-class ships are double-hulled, but earlier ships in the class are single-hulled.)

Figure 5 shows an artist's rendering of reported design for the TAO-205 class.

Combined Solicitation Limited to Two Builders⁸

On June 25, 2015, the Navy, as part of its acquisition strategy for TAO-205 program, issued a combined solicitation consisting of separate Requests for Proposals (RFPs) for

- the detailed design and construction (DD&C) of the first six TAO-205s;

⁸ Source for this section: Navy briefing for CRS and Congressional Budget Office (CBO), March 23, 2015.

- the DD&C in FY2017 (and also procurement of long lead-time materials in FY2016) for an amphibious assault ship called LHA-8 that the Navy procured in FY2017; and
- contract design support for the LX(R) program, a program to procure a new class of 11 amphibious ships.⁹

Figure 5. Artist's Rendering of TAO-205



Source: “US Navy Picks General Dynamics to Build First Six T-AO 205 Replenishment Oilers,” *NavalToday.com*, July 1, 2016, which credits the image to GD/NASSCO. The background shows the skyline of San Diego, where GD/NASSCO is located.

The Navy limited bidding in this combined solicitation to two bidders—Ingalls Shipbuilding of Huntington Ingalls Industries (HII/Ingalls) and National Steel and Shipbuilding Company of General Dynamics (GD/NASSCO)—on the grounds that these are the only two shipbuilders that have the capability to build both TAO-205s and LHA-8.

Under the Navy’s plan for the combined solicitation, one of these two yards was to be awarded the DD&C contract for the first six TAO-205s, the other yard was to be awarded the DD&C contract (and procurement of long lead-time materials) for LHA-8, and the shipyard with the lowest combined evaluated price was to receive a higher profit on its DD&C contract¹⁰ and was to be awarded the majority of the LX(R) contract design engineering man-hours.

⁹ Press reports describe it as a single RFP; see, for example, Sam LaGrone, “Navy Issues RFP for Oilers and LHA-8 to NASSCO, Ingalls,” *USNI News*, July 10, 2015; Valerie Insinna, “Navy Quietly Issues RFP for LHA-8, TAO(X),” *Defense Daily*, July 14, 2015: 2. For more on the LX(R) program, see CRS Report R43543, *Navy LX(R) Amphibious Ship Program: Background and Issues for Congress*, by (name redacted). Contract design work is intended to develop the design of a ship enough so that a contract can then be awarded for the detailed design of the ship.

¹⁰ The Navy is planning to employ a Profit Related to Offer (PRO) contracting approach within this combined solicitation strategy to encourage competitive pricing by the shipyards. Under PRO bidding, both bidders are granted work, but the bidder with the lower price is given a high profit margin. PRO bidding has been used in other Navy shipbuilding programs, particularly the DDG-51 destroyer program, where it has been used since the 1990s.

Block Buy Contract Awarded to GD/NASSCO

On June 30, 2016, the Navy announced its awards in the above-described combined solicitation, awarding a fixed price incentive block buy contract for the DD&C of the first six TAO-205s to GD/NASSCO. (The Navy awarded the contract for the DD&C of LHA-8 to HII/Ingalls.¹¹ HII/Ingalls was also awarded the majority of the LX(R) contract design engineering man-hours.)¹² The Navy was granted authority for using a block buy contract to procure the first six TAO-205s by Section 127 of the FY2016 National Defense Authorization Act (S. 1356/P.L. 114-92 of November 25, 2015). The Navy estimates that the block buy contract will reduce the procurement cost of the second through sixth TAO-205s by an average of about \$45 million each, compared to costs under the standard or default DOD approach of annual contracting.¹³

FY2018 Procurement Funding Request

As part of its proposed FY2018 budget, the Navy is requesting the procurement of the second ship in the class. The Navy estimates the second ship's procurement cost at \$539.1 million. The second ship has already received \$73.1 million in advance procurement (AP) funding, which was provided in FY2017. The Navy's proposed FY2018 budget requests the remaining \$466 million in funding needed to complete the second ship's procurement cost. The Navy's proposed FY2018 budget also requests \$75.1 million in advance procurement (AP) funding for the third ship in the class, which the Navy wants to procure in FY2019.

Issues for Congress

FY2018 Procurement and Advance Procurement (AP) Funding

One issue for Congress for FY2018 is whether to approve, reject, or modify the Navy's requests for procurement funding for the second ship and AP funding for the third ship. In assessing this issue, Congress may consider, among other things, whether the Navy has accurately priced the work that it is requesting to fund in FY2018.

Impact of CR on Execution of FY2018 Funding

Another potential issue for Congress concerns the impact of using a continuing resolution (CR) to fund DOD for the first few months of FY2018.¹⁴ Division D of the Continuing Appropriations Act, 2018 and Supplemental Appropriations for Disaster Relief Requirements Act, 2017 (H.R. 601/P.L. 115-56 of September 8, 2017) is the Continuing Appropriations Act, 2018, a CR that funds government operations through December 8, 2017. Consistent with CRs that have funded DOD operations for parts of prior fiscal years, DOD funding under this CR is based on funding

¹¹ DOD's contract awards for June 30, 2016, are posted at <http://www.defense.gov/News/Contracts/Contract-View/Article/822083>.

¹² Source: Navy Office of Legislative Affairs email to CRS, July 12, 2016.

¹³ For more on block buy contracts, see CRS Report R41909, *Multiyear Procurement (MYP) and Block Buy Contracting in Defense Acquisition: Background and Issues for Congress*, by (name redacted) and (name redacted).

¹⁴ For an overview discussion of the impact of the CR on FY2018 DOD acquisition programs, including Navy shipbuilding programs, see CRS Report RL32665, *Navy Force Structure and Shipbuilding Plans: Background and Issues for Congress*, by (name redacted). See also CRS In Focus IF10734, *FY2018 Defense Spending Under an Interim Continuing Resolution*, by (name redacted).

levels in the previous year's DOD appropriations act—in this case, the FY2017 DOD Appropriations Act (Division C of the Consolidated Appropriations Act, 2017 [H.R. 244/P.L. 115-31 of May 5, 2017]). Also consistent with CRs that have funded DOD operations for parts of prior fiscal years, this CR prohibits new starts, year-to-year quantity increases, and the initiation of multiyear procurements utilizing advance procurement funding for economic order quantity (EOQ) procurement unless specifically appropriated later. Division D of H.R. 601/P.L. 115-56 of September 8, 2017, does not include any anomalies for Department of the Navy acquisition programs.

A pair of August 3, 2017, tables of CR impacts to FY2018 DOD programs that were reportedly sent by DOD to the Office of Management and Budget (OMB) in August 2017 states that the CR will impact the execution of about \$466.0 million in procurement funding and about \$75.1 million in advance procurement (AP) funding for the TAO-205 program if legislative relief is not provided by January 1, 2018.¹⁵

Whether to Procure Two TAO-205s in FY2018

Another issue for Congress for FY2018 is whether to accelerate the procurement of TAO-205 class ships by funding the procurement of two TAO-205s rather than one in FY2018.

Supporters of procuring two TAO-205s rather than one in FY2018 might argue that it could reduce TAO-205 class unit procurement costs due to improved production economies of scale, permit the Navy to retire single-hulled Kaiser-class oilers sooner, and accelerate the attainment of the force of 20 oilers included in the Navy's 355-ship force-level goal.

Skeptics or opponents of procuring two TAO-205s rather than one in FY2018 might argue that it could reduce FY2018 funding available for other (and possibly higher-priority) Navy or DOD programs, that accelerating the retirement of Kaiser-class oilers would reduce the return on the Navy's investment in the Kaiser class, and that accelerating the attainment of a force of 20 oilers might not make sense if the procurement of surface combatant ships in the Navy's 355-ship force-level goal (i.e., the ships that would be supported by oilers) is not similarly accelerated.

An August 7, 2017, press report states the following:

The Navy can save \$800 million for the John Lewis-class (T-AO-205) program by doubling its annual procurement profile, from one to two, but will require more money to avoid negatively impacting other shipbuilding priorities, according to a [Navy] report....

"Efficiencies and savings are achievable by increasing the John Lewis-class procurement profile to two ships per year," the report said "but additional resources would be required to support growing the future force."...

¹⁵ Tables entitled "New Starts" and "Production Increases," both dated August 3, 2017, posted September 11, 2017, at InsideDefense.com (subscription required). InsideDefense.com states the following about the tables: "In August 2017, the Defense Department sent the White House Office of Management and Budget a detailed list of acquisition program priorities it had hoped to fund at the beginning of fiscal year 2018 in the event Congress passed a stopgap budget measure restricting spending levels and prohibiting new programs. Includes the list of prioritized weapon production increases, a list of approximately 75 significant new-start programs that would be unable to begin in the event of a continuing resolution as well as a 'list of anomalies OMB submitted for the FY-18 CR' provided by a DOD spokesman to Inside Defense." ("DOD's Consolidated Anomaly List for OMB," *InsideDefense.com*, September 11, 2017.)

The report recommends that the lead ship, John Lewis (T-AO-205), “should complete detail design and first of a class construction phases” before proceeding with a two-year profile.¹⁶

Required Number of Oilers

Another issue for Congress concerns the number of oilers the Navy will require in coming years to support its operations. An August 2017 Government Accountability Office (GAO) report states the following:

The readiness of the surge sealift and combat logistics fleets has trended downward since 2012. For example, GAO found that mission-limiting equipment casualties—incidents of degraded or out-of-service equipment—have increased over the past 5 years, and maintenance periods are running longer than planned, indicating declining materiel readiness across both fleets....

The Navy has not assessed the effects of widely distributed operations, which could affect the required number and type of combat logistics ships. The Navy released its new operational concept of more widely distributed operations—ships traveling farther distances and operating more days to support a more distributed fleet—in 2017. The Navy has not assessed the effects that implementing this concept will have on the required number and type of combat logistics ships. These effects could be exacerbated in the event that the Navy is less able to rely on in-port refueling—which has comprised about 30 percent of all refuelings over the past 3 years—placing greater demand on the combat logistics fleet. Given the fleet’s dependence on the combat logistics force, waiting until 2019 or 2020 to conduct an assessment, as planned, could result in poor investment decisions as the Navy continues to build and modernize its fleet. Furthermore, without assessing the effects of widely distributed operations on logistics force requirements and modifying its force structure plans accordingly, the Navy risks being unprepared to provide required fuel and other supplies.¹⁷

TAO-205 Ship Self-Defense Equipment

Another issue for Congress is whether to encourage or direct the Navy to build TAO-205s with more ship self-defense equipment than currently planned by the Navy. The issue relates to how changes in the international security environment might affect how the Navy operates and equips its underway replenishment ships.

During the Cold War, the Navy procured underway replenishment ships to support a two-stage approach to underway replenishment in which single-product “shuttle” ships (such as oilers, ammunition ships, and dry stores ships) would take their supplies from secure ports to relatively safe mid-ocean areas, where they would then transfer them to multiproduct “station” ships called TAOEs and AORs. The TAOEs and AORs would then travel to Navy carrier strike groups operating in higher-threat areas and transfer their combined supplies to the carrier strike group ships. As a result, single-product shuttle ships were equipped with lesser amounts of ship self-defense equipment, and TAOEs and AORs were equipped with greater amounts of such equipment.

¹⁶ Justin Katz, “Navy Can realize \$800 Million in Savings By Accelerating Oiler Procurement,” *Inside the Navy*, August 7, 2017.

¹⁷ Government Accountability Office, *Navy Readiness[:] Actions Needed to Maintain Viable Surge Sealift and Combat Logistics Fleets*, GAO-17-503, August 2017, summary page.

When the Cold War ended and transitioned to the post-Cold War era, threats to U.S. Navy ships operating at sea were substantially reduced. As a consequence, the amount of ship self-defense equipment on the TAOEs and AORs was reduced, and a single-stage approach to underway replenishment, in which oilers and dry stores ships took supplies from secure ports all the way to carrier strike group ships, was sometimes used.

Now that the post-Cold War era has transitioned to a new strategic environment featuring renewed great power competition with countries like China and Russia,¹⁸ and a consequent renewal of potential threats to U.S. Navy ships operating at sea, the question is whether TAO-205s should be equipped with lesser amounts of ship self-defense equipment, like oilers were during both the Cold War and post-Cold War eras, or with greater amounts of ship self-defense equipment, like TAOEs and AORs were during the Cold War. Building TAO-205s with more ship self-defense equipment than currently planned by the Navy could increase TAO-205 procurement costs by tens of millions of dollars per ship, depending on the amount of additional ship self-defense equipment.

Section 1026 of the FY2016 National Defense Authorization Act (S. 1356/P.L. 114-92 of November 25, 2015) required an independent assessment of the Navy's combat logistics force ships. The report was delivered to Congress in February 2016. A copy of the report was posted by the media outlet Politico on March 11, 2016. The report states the following:

The T-AO(X) will only have a limited capability to defeat a submarine launched torpedo attack and no capability to defeat a missile attack. When delivered, the TAO(X) will have:

—[the] NIXIE Torpedo Countermeasure System [for decoying certain types of torpedoes]

—[the] Advanced Degaussing System (Anti-Mine) [for reducing the ship's magnetic signature, so as to reduce the likelihood of attack by magnetically fused mines]

When required, the T-AO(X) will also have ability to embark Navy Expeditionary Combat Command Expeditionary Security Teams (EST). The ESTs will embark with several crew served weapons and are designed to provide limited self-defense against a small boat attack.

The T-AO(X) will have Space, Weight, Power and Cooling (SWAP-C) margins for future installations of the following systems:

—[the] Close In Weapon System (CIWS) or SeaRAM (Rolling Airframe Missile) [for defense against missile attack]

—[the] Anti-Torpedo Torpedo Defense System (ATTDS) [for destroying torpedoes]

Even after the installation of a CIWS or ATTDS, if the T-AO(X) was to operate in anything other than a benign environment, the ship will require both air and surface escorts.

The decision to rely on [other] Fleet assets to provide force protection [i.e., defense against attacks] for the T-AO(X) was validated by the JROC [in June 2015].¹⁹

¹⁸ For more on this transition, see CRS Report R43838, *A Shift in the International Security Environment: Potential Implications for Defense—Issues for Congress*, by (name redacted) .

¹⁹ Department of the Navy, *Report to Congress on Requirements for the Fleet Replenishment Oiler, T-AO(X)*, February 2016 (with cover letter dated February 12, 2016), p. 8. The report was posted by Politico on March 11, 2016, at <http://static.politico.com/1e/e0/f26a9fb1471aacd5358c420fcf10/navy-oiler-report.pdf>, and accessed by CRS on March 15, 2016.

Legislative Activity for FY2018

Summary of Congressional Action on FY2018 Funding

Table 2 summarizes congressional action on the Navy's request for FY2018 procurement funding for the TAO-205 program.

Table 2. Congressional Action on FY2018 Procurement and Advance Procurement (AP) Funding

Millions of dollars, rounded to nearest tenth

	Request	Authorization			Appropriation		
		HASC	SASC	Conf.	HAC	SAC	Conf.
Procurement	466.0	466.0	466.0	466.6	449.4		
Advance procurement (AP)	75.1	75.1	75.1	75.1	75.1		

Source: Navy FY2018 budget submission and committee and conference reports on FY2018 National Defense Authorization Act and FY2018 DOD Appropriations Act.

Notes: **HASC** is House Armed Services Committee; **SASC** is Senate Armed Services Committee; **HAC** is House Appropriations Committee; **SAC** is Senate Appropriations Committee; **Conf.** is conference agreement.

FY2018 National Defense Authorization Act (H.R. 2810/S. 1519)

House

The House Armed Services Committee, in its report (H.Rept. 115-200 of July 6, 2017) on H.R. 2810, recommended the funding levels for the TAO-205 program shown in the HASC column of **Table 2**.

Section 862 of H.R. 2810 as reported states the following:

SEC. 862. Requirement that certain ship components be manufactured in the national technology and industrial base.

(a) Additional procurement limitation.—Section 2534(a) of title 10, United States Code, is amended by adding at the end the following new paragraph:

“(6) COMPONENTS FOR AUXILIARY SHIPS.—Subject to subsection (k), the following components:

“(A) Auxiliary equipment, including pumps, for all shipboard services.

“(B) Propulsion system components, including engines, reduction gears, and propellers.

“(C) Shipboard cranes.

“(D) Spreaders for shipboard cranes.”.

(b) Implementation.—Such section is further amended by adding at the end the following new subsection:

“(k) Implementation of auxiliary ship component limitation.—Subsection (a)(6) applies only with respect to contracts awarded by the Secretary of a military department for new construction of an auxiliary ship after the date of the enactment of the National Defense Authorization Act for Fiscal Year 2018 using funds available for National Defense Sealift Fund programs or Shipbuilding and Conversion, Navy.”.

Senate

The Senate Armed Services Committee, in its report (S.Rept. 115-125 of July 10, 2017) on S. 1519, recommended the funding levels for the TAO-205 program shown in the SASC column of **Table 2**.

Conference

The conference report (H.Rept. 115-404 of November 9, 2017) on H.R. 2810 recommended the funding levels for the TAO-205 program shown in the authorization conference column of **Table 2**.

FY2018 DOD Appropriations Act (Division A of H.R. 3219)

House

H.R. 3219 as reported by the House Appropriations Committee (H.Rept. 115-219 of July 13, 2017) was the FY2018 DOD Appropriations Act. H.R. 3219 as passed by the House is called the Make America Secure Appropriations Act, 2018. H.R. 3219 as passed by the House includes the FY2018 DOD Appropriations Act as Division A and four other appropriations acts as Divisions B through E. The discussion below relates to Division A.

The House Appropriations Committee, in its report (H.Rept. 115-219 of July 13, 2017) on H.R. 3219, recommended the funding levels for the TAO-205 program shown in the HAC column of **Table 2**. The recommended reduction of \$16.573 million in procurement funding is for “Engineering services cost growth.” (Page 161)

Section 8109 of H.R. 3219 as reported states the following:

Sec. 8109. None of the funds provided in this Act for the T-AO Fleet Oiler or the Towing, Salvage, and Rescue Ship programs shall be used to award a new contract that provides for the acquisition of the following components unless those components are manufactured in the United States: Auxiliary equipment (including pumps) for shipboard services; propulsion equipment (including engines, reduction gears, and propellers); shipboard cranes; and spreaders for shipboard cranes.

Author Contact Information

(name redacted)
Specialist in Naval Affairs
[redacted]@crs.loc.gov7-....

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