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Navy Constellation (FFG-62) and FF(X) Class Frigate Programs: Background and Issues for Congress

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SUMMARY

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Navy Constellation (FFG-62) and FF(X) Class Frigate Programs: Background and Issues for Congress

Constellation (FFG-62) class program. The Navy began procuring Constellation (FFG-62) class frigates in FY2020. Prior to November 2025, Navy plans called for procuring a total of at least 20. Six were procured through FY2025, including one per year in FY2020-FY2023, two in FY2024, and none in FY2025. The Navy's proposed FY2026 budget did not request the procurement of any additional FFG-62s.

FFG-62s are being built by Fincantieri/Marinette Marine (F/MM) of Marinette, WI. The FFG-62 design is derived from the design of an Italian-French frigate. Subsequent to the Navy's April 2020 contract award to F/MM for designing and building up to 10 FFG-62s, the program fell years behind schedule due in large part to delays in completing the FFG-62 design. In June 2025, Secretary of Defense Pete Hegseth (who is using "Secretary of War" as a "secondary title" under Executive Order 14347 dated September 5, 2025) indicated that the FFG-62 program was being reviewed as one of several "difficult decisions" to be made by the Department of Defense (DOD) (which is "using a secondary Department of War designation" under Executive Order 14347) during a review of its acquisition programs.

Announced FF(X) program. In a series of announcements from November 25 to December 19, 2025, the Navy stated that it wants to restructure its frigate acquisition effort by (1) truncating the FFG-62 program to no more than two ships and (2) initiating a new program to procure a different class Navy frigates, called FF(X)s, whose design would be based on that of the National Security Cutter (NSC), a frigate-like ship that has been built for the Coast Guard by Huntington Ingalls Industries/Ingalls Shipbuilding (HII/Ingalls) of Pascagoula, MS.

Under the Navy's desired new approach, the third through sixth FFG-62s (which have not begun construction) would be cancelled; the first two FFG-62s (construction of which is underway) would remain under review; the first FF(X) would be awarded to HII/Ingalls on a sole-source basis and be launched (i.e., put into the water for the final stages of its construction) by 2028; and one or more additional U.S. shipyards would later be brought into the FF(X) program to expand the FF(X) production rate and compete with HII/Ingalls for future ships in the program.

In announcing its desired new approach for acquiring frigates, Secretary of the Navy John Phelan stated that "the Constellation-class frigate was canceled because, candidly, it didn't make sense anymore to build it. It was 80% of the cost of a [larger DDG-51 class] destroyer and 60% of the capability. You might as well build destroyers." The continuation, for now at least, of construction work on the first two FFG-62s reportedly is intended to support F/MM in the near term, while policymakers assess how F/MM's shipbuilding capability could be used over the longer run. As of November 25, 2025, the first ship in the FFG-62 program was reportedly about 12% complete.

An issue for Congress is whether to approve, reject, or modify the Navy's desired approach for restructuring its frigate acquisition effort. Decisions that Congress makes on this issue could substantially affect U.S. Navy capabilities and funding requirements, and the U.S. shipbuilding industrial base.

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Introduction

This report provides background information and discusses potential oversight issues for Congress regarding the Navy's effort to acquire new frigates, including Constellation (FFG-62) class frigates and a type of frigate proposed by the Navy called the FF(X).

Constellation (FFG-62) Class Program

The Navy began procuring Constellation (FFG-62) class frigates in FY2020. Prior to November 2025, Navy plans called for procuring a total of at least 20. Six were procured through FY2025, including one per year in FY2020-FY2023, two in FY2024, and none in FY2025. The Navy's proposed FY2026 budget did not request the procurement of any additional FFG-62s.

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Announced FF(X) Program

In a series of announcements from November 25 to December 19, 2025, the Navy stated that it wants to restructure its frigate acquisition effort by (1) truncating the FFG-62 program to no more than two ships and (2) initiating a new program to procure a different class Navy frigates, called FF(X)s, whose design would be based on that of the National Security Cutter (NSC), a frigate-like ship that has been built for the Coast Guard by Huntington Ingalls Industries/Ingalls Shipbuilding (HII/Ingalls) of Pascagoula, MS.

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[1] Tony Bertuca, "Hegseth Indicates Frigate Program Is on the Chopping Block," *Inside Defense*, June 12, 2025.

[2] See, for example, U.S. Navy, "Navy Announces New Small Surface Combatant," press release dated December 19, 2025; Huntington Ingalls Industries, "HII to Build Small Surface Combatants for US Navy," news release dated December 19, 2025; Justin Katz, "Navy Announces New Frigate Class, Taps HII to Build Off National Security Cutter," *Breaking Defense*, December 19, 2025; Sam LaGrone, "SECNAV: New Frigate will be Based on National Security Cutter, First FF(X) to be Built at Ingalls," *USNI News*, December 19 2025; Joseph Trevithick, "This Will Be The Navy's New FF(X) Frigate," *The War Zone*, December 19, 2025; Joseph Trevithick, "U.S. Navy Now Wants A New Frigate And Fast," *Breaking Defense*, December 12, 2025; Justin Katz, "Navy Wants New Frigate in 2028, Says Service's Acquisition Head," *Breaking Defense*, December 10, 2025; Rich Abott, "Navy "Golden Fleet" Plan To Include Another Frigate, LSM To Avoid Change Orders," *Defense Daily*, December 9, 2025; Mike Glenn, "Navy Secretary Announces New Frigate Program after Canceling Future Constellation-Class Warships," *Washington Times*, December 9, 2025; Lauren C. Williams, "And Just Like That, the Navy's Frigate Program Is Back On—Sort Of," (continued...)

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Issue for Congress

An issue for Congress is whether to approve, reject, or modify the Navy's desired approach for restructuring its frigate acquisition effort. Decisions that Congress makes on this issue could substantially affect U.S. Navy capabilities and funding requirements, and the U.S. shipbuilding industrial base.

Background

Navy's Force of Small Surface Combatants (SSCs)

SSCs in General

In discussing its force-level goals and 30-year shipbuilding plans, the Navy organizes its surface combatants into *large surface combatants* (LSCs), meaning the Navy's cruisers and destroyers, and *small surface combatants* (SSCs), meaning the Navy's frigates, Littoral Combat Ships (LCSs), mine warfare ships, and patrol craft.[7] SSCs are smaller, less capable in some respects, and individually less expensive to procure, operate, and support than LSCs. SSCs can operate in conjunction with LSCs and other Navy ships, particularly in higher-threat operating environments, or independently, particularly in lower-threat operating environments.

Defense One, December 8, 2025; Tom Kington, "US Navy Nixes Constellation Frigate Program after Two Ships Half-Built," *Defense News*, November 26, 2025; Rich Abott, "Navy Cancels Constellation-Class Frigate, Will Only Retain Two Under Construction," *Defense Daily*, November 25, 2025; Anthony Capaccio, "Navy Cuts Orders for Frigate Trump Once Touted as 'Beautiful,'" *Bloomberg*, November 25, 2025; Drew FitzGerald and Lara Seligman, "Navy Scraps Plans for Troubled Warship Design," *Wall Street Journal*, November 25, 2025; Sam LaGrone, "Navy Cancels Constellation-class Frigate Program, Considering New Small Surface Combatants," *USNI News*, November 25, 2025.

[3] For more on the DDG-51 class destroyer program, see CRS Report RL32109, *Navy DDG-51 and DDG-1000 Destroyer Programs: Background and Issues for Congress*, by Ronald O'Rourke.

[4] See, for example, Mike Glenn, "Navy Wants New Frigate in 2028, Says Service's Acquisition Head," *Washington Times*, December 10, 2025; Rich Abott, "Navy "Golden Fleet" Plan To Include Another Frigate, LSM To Avoid Change Orders," *Defense Daily*, December 9, 2025; Joseph Trevithick, "U.S. Navy Now Wants A New Frigate And Fast," *The War Zone*, December 12, 2025.

[5] Sam LaGrone, "Navy Cancels Constellation-class Frigate Program, Considering New Small Surface Combatants," *USNI News*, November 25, 2025.

[6] Sam LaGrone, "Navy Cancels Constellation-class Frigate Program, Considering New Small Surface Combatants," *USNI News*, November 25, 2025.

[7] See, for example, CRS Report RL32665, *Navy Force Structure and Shipbuilding Plans: Background and Issues for Congress*, by Ronald O'Rourke.

SSC Force-Level Goal

The Navy's FY2025 30-year (FY2025-FY2054) shipbuilding plan calls for a future Navy of 381 manned battle force ships, including 73 SSCs, of which 15 are to be LCSs capable of conducting mine warfare operations, plus 58 "FFG / FFG Flt II" ships, meaning 58 frigates and frigates built to a modified (i.e., Flight II) design.[8] Under its FY2025 budget submission, the Navy wanted to maintain a force of 25 (rather than 15) LCSs. This could imply a total of 48 (rather than 58) frigates.

The Navy reportedly has prepared a new ship force-level objective, referred to as the Golden Fleet, to succeed the 381-ship objective. The composition of this new force-level objective, including the number of frigates and other SSCs, had not been announced as of late December 2025.[9]

SSC Force at Start of FY2026

The Navy's force of SSCs at the start of FY26 consisted of 32 ships, including no frigates, 28 LCSs, and 4 mine warfare ships. The Navy has been retiring its mine warfare ships as LCSs (some of which are to serve as replacement mine countermeasures ships) have entered service. The figure of 32 ships equates to about 44% of the 73-ship force-level goal for SSCs discussed in the previous section.

U.S. Navy Frigates in General

As mentioned earlier SSCs (including frigates) can operate in conjunction with LSCs (i.e., cruisers and destroyers), particularly in higher-threat operating environments, or independently, particularly in lower-threat operating environments. U.S. Navy frigates perform many of the same peacetime and wartime missions as U.S. Navy cruisers and destroyers, but are equipped with fewer weapons, less-capable radars and other systems, and less engineering redundancy and survivability than cruisers and destroyers.[10]

The most recent class of frigates operated by the Navy was the Oliver Hazard Perry (FFG-7) class (**Figure 1**). A total of 51 FFG-7s were procured between FY1973 and FY1984. The ships were

[8] U.S. Navy, *Report to Congress on the Annual Long-Range Plan for Construction of Naval Vessels for Fiscal Year 2025*, March 2024, Table 1 on page 4, column entitled "June 2023 BFSAR [Battle Force Ship Assessment and Requirement] Report.

[9] See for example, Rich Abott, "Navy 'Golden Fleet' Plan To Include Another Frigate, LSM To Avoid Change Orders," *Defense Daily*, December 9, 2025.

[10] Compared to cruisers and destroyers, frigates can be a more cost-effective way to perform missions that do not require the use of a higher-cost cruiser or destroyer. In the past, the Navy's combined force of higher-capability, higher-cost cruisers and destroyers and lower-capability, lower-cost frigates has been referred to as an example of a so-called high-low force mix. High-low mixes have been used by the Navy and the other military services in recent decades as a means of balancing desires for individual platform capability against desires for platform numbers in a context of varied missions and finite resources.
Peacetime missions performed by frigates can include, among other things, engagement with allied and partner navies, maritime security operations (such as anti-piracy operations), and humanitarian assistance and disaster response (HA/DR) operations. Intended wartime operations of frigates include escorting (i.e., protecting) military supply and transport ships and civilian cargo ships that are moving through potentially dangerous waters. In support of intended wartime operations, frigates are designed to conduct anti-air warfare (AAW—aka air defense) operations, anti-surface warfare (ASuW) operations (meaning operations against enemy surface ships and craft), and antisubmarine warfare (ASW) operations. U.S. Navy frigates are designed to operate in larger Navy formations or as solitary ships. Operations as solitary ships can include the peacetime operations mentioned above.

built by three shipyards,[11] entered service between 1977 and 1989, and were decommissioned between 1994 and 2015. In their final configuration, FFG-7s were about 455 feet long and had full load displacements of roughly 3,900 tons to 4,100 tons. (By comparison, the Navy's Arleigh Burke [DDG-51] class destroyers are about 510 feet long and have full load displacements of roughly 9,700 tons.[12]) Following their decommissioning, a number of FFG-7s, like certain other decommissioned U.S. Navy ships, were transferred to the navies of U.S. allied and partner countries.

Figure 1. Oliver Hazard Perry (FFG-7) Class Frigate

Source: Photograph accompanying Dave Werner, "Fighting Forward: Last Oliver Perry Class Frigate Deployment," *Navy Live*, January 5, 2015, accessed September 21, 2017, at http://navylive.dodlive.mil/2015/01/05/fighting-forward-last-oliver-perry-class-frigate-deployment/.

FFG-62 Class Program

Program Name

The FFG-62 program was earlier known as the FFG(X) program.[13] On October 7, 2020, the Navy announced that the first ship in the class, FFG-62, would be named *Constellation*, in honor of the

[11] The three shipyards were Bath Iron Works (BIW) of Bath, ME (now referred to as General Dynamics/Bath Iron Works or GD/BIW), Todd Shipyards of Seattle, WA, and Todd Shipyards of San Pedro, CA. Todd Shipyards of Seattle was acquired in 2011 by Vigor Shipyards. (See, for example, "Vigor Shipyards," *Wikipedia*, edited January 22, 2024.) Todd Shipyards of San Pedro was closed in 1989 following the completion of its FFG-7 construction work. (See, for example, "Todd Pacific Shipyards, Los Angeles Division," *Wikipedia*, edited January 26, 2023.)

[12] This is the displacement for the current (Flight III) version of the DDG-51 design.

[13] In the designation FFG(X), *FF* meant frigate, *G* meant guided-missile ship (indicating a ship equipped with an area-defense anti-air warfare [AAW] system), and *(X)* indicated that the specific design of the ship had not yet been determined. FFG(X) thus meant a guided-missile frigate whose specific design had not yet been determined.
The designation FF, with two Fs, means frigate in the same way that the designation BB, with two Bs, means battleship, the designation DD, with two Ds, means destroyer, and the designation SS, with two Ss, means submarine. FF is sometimes translated less accurately as fast frigate. FFs, however, are not particularly fast by the standards of U.S. Navy surface combatants—their maximum sustained speed, for example, is generally lower than that of U.S. Navy aircraft carriers, cruisers, and destroyers. In addition, there is no such thing in the U.S. Navy as a slow frigate.

Some U.S. Navy surface combatants are equipped with a point-defense AAW system, meaning a short-range AAW system that is designed to protect the ship itself. Other U.S. Navy surface combatants are equipped with an area-
(continued...)

first U.S. Navy ships authorized by Congress in 1794—the six heavy frigates *United States*, *Constellation*, *Constitution*, *Chesapeake*, *Congress*, and *President*. FFG(X)s henceforth became known as Constellation (FFG-62) class ships.

Ship Design and Capabilities

FFG-62s (**Figure 2**) are intended to be multimission small surface combatants capable of conducting anti-air warfare (AAW), anti-surface warfare (ASuW), antisubmarine warfare (ASW), and electromagnetic warfare (EMW) operations. They are to be capable of operating in both blue water (i.e., mid-ocean) and littoral (i.e., near-shore) areas, and capable of operating either independently (when that is appropriate for their assigned missions) or as part of larger Navy formations.

Figure 2. Constellation (FFG-62) Class Frigate

Artist's rendering of F/MM design

Source: Illustration accompanying Alistair MacDonald and Gordon Lubold, "The Warship That Shows Why the U.S. Navy Is Falling Behind China," *Wall Street Journal*, March 20, 2025. The caption to the photograph credits the photograph to Fincantieri/Marinette Marine.

The FFG-62 design is based on the design of the Italian-French FREMM (Fregata Europea Multi-Missione) frigate, a ship that has been built in two variants, one for the Italian navy and one for the French navy. The FREMM design, in other words, served as what is known as the "parent" design for the FFG-62 design. The use of a parent design for the FFG-62 program is discussed further in the section below on the FFG-62 program's acquisition strategy.

At the time of the FFG-62 contract award (see below), the FFG-62 was described as having an estimated full load displacement of about 7,300 or 7,400 tons. As design work on the FFG-62 continued, the ship's estimated full load displacement grew by several hundred tons, to a figure

defense AAW system, meaning a longer-range AAW system that is designed to protect not only the ship itself, but other ships in the area as well. U.S. Navy surface combatants equipped with an area-defense AAW system are referred to as guided-missile ships and have a "G" in their designation.

much closer to 8,000 tons. (As noted earlier, by comparison, the Navy's newest DDG-51 class destroyers have full load displacements of roughly 9,700 tons.)

Procurement Quantities and Procurement Cost

Total Procurement Quantity

Until November 2025, the Navy wanted to procure at least 20 FFG-62s. Navy budget documents, including the FY2025 budget-justification book for Navy's shipbuilding account, described the FFG-62 program as a 20-ship program.

As discussed earlier, the Navy's FY2025 30-year (FY2025-FY2054) shipbuilding plan calls for a future Navy of 381 manned battle force ships, including 58 "FFG / FFG Flt II" ships, meaning 58 frigates and frigates built to a modified (i.e., Flight II) design.[14] The reference to a Flight II design might be interpreted as referring to a modified (i.e., Flight II) version of the FFG-62 design. Such an interpretation would imply a combination of 20 (or more) FFG-62s built to the original (i.e., Flight I) FFG-62 design plus 38 (or fewer) additional FFG-62s built to a modified (i.e., Flight II) FFG-62 design.

As also discussed earlier, under its FY2025 budget submission, the Navy wants to maintain a force of 25 (rather than 15) LCSs. This could imply a total of 48 (rather than 58) frigates. As also mentioned earlier, The Navy reportedly has prepared a new ship force-level objective, referred to as the Golden Fleet, to succeed the 381-ship objective. The composition of this new force-level objective, including the number of frigates and other SSCs, had not been announced as of late December 2025.

Annual Procurement Quantities

Table 1 shows programmed annual procurement quantities for the FFG-62 program under the Navy's budget submissions for FY2020 through FY2026, along with actual procurement quantities for FY2020 through FY2025.

Table 1. Programmed and Actual Annual FFG-62 Procurement Quantities

	FY20	FY21	FY22	FY23	FY24	FY25	FY26	FY27	FY28	FY29
Programmed										
FY20 budget submission	1	2	2	2	2					
FY21 budget submission		1	1	2	2	3				
Dec. 9, 2020, document			1	3	3	4	4			
FY22 budget submission			1	n/a	n/a	n/a	n/a			
FY23 budget submission				1	2	1	2	1		
FY24 budget submission					2	1	2	1	2	
FY25 budget submission						1	2	1	2	1

[14] U.S. Navy, *Report to Congress on the Annual Long-Range Plan for Construction of Naval Vessels for Fiscal Year 2025*, March 2024, Table 1 on page 4, column entitled "June 2023 BFSAR [Battle Force Ship Assessment and Requirement] Report.

	FY20	FY21	FY22	FY23	FY24	FY25	FY26	FY27	FY28	FY29	
FY26 budget submission							0	n/a	n/a	n/a	n/a
Actual	***1***	***1***	***1***	***1***	***2***	***0***					

Sources: Table prepared by CRS based on Navy's FY2020-FY2026 budget submissions; December 9, 2020, long-range Navy shipbuilding document; and enacted National Defense Authorization Acts (NDAAs) and DOD Appropriations Acts for FY2020 and subsequent years.

Notes: n/a means not available. DOD's FY2022 budget submission was a single-year budget that did not contain line-item details for subsequent fiscal years.

Procurement Cost

Under the Navy's FY2026 budget submission, FFG-62s generally had budgeted procurement costs of roughly $1.2 billion to $1.3 billion each. The lead ship in the program had a higher estimated procurement cost ($1,499.3 million, or about $1.5 billion) than the follow-on ships because it is at the top of the production learning curve for the class, and because the lead ship's procurement cost incorporates much of the detailed design/nonrecurring engineering (DD/NRE) costs for the class. (It is a traditional Navy budgeting practice to attach most or all of the DD/NRE costs for a new ship class to the procurement cost of the lead ship in the class.) As discussed in **Appendix A**, one potential oversight issue for Congress for the FFG-62 program has been the potential for cost growth (i.e., the potential for FFG-62 procurement costs to increase above figures shown in the Navy's FY2026 budget submission).

Acquisition Strategy

Number of Builders

The Navy's baseline plan for the FFG-62 program envisaged using a single builder at any one time to build FFG-62s, but Navy officials also spoke about the option of bringing a second shipyard into the program at some point, particularly if annual procurement rates for FFG-62s rose above two ships per year.[15]

[15] See, for example, U.S. Navy, *Report to Congress on the Annual Long-Range Plan for Construction of Naval Vessels for Fiscal Year 2025*, March 2024, p. 13.
On November 15, 2024, the Navy released a Sources Sought Request for Information (RFI) "to identify qualified U.S. surface combatant Shipbuilders as sources for future design and/or follow-on construction of the Constellation Class Frigate," inviting "all U.S. surface combatant shipbuilding sources who are interested in the FFG 62 Class ships, to submit written information sufficient to demonstrate their ability to fulfill the Government requirements." Responses to the RFI were due by November 22, 2024. ("FFG 62 Constellation Class Frigate Program, Sources Sought / Request for Information," published November 15, 2024, at https://sam.gov/opp/5df8c0d9f5da4805a080e066928011f2/view. See also Justin Katz, "State of Play: Industry Readying for Second Chance at US Navy's Frigate Program," *Breaking Defense*, December 20, 2024.)
In December 2024, a Navy official reportedly stated that having a mature design for the FFG-62 program—something that the Navy reportedly anticipated having by May 2025—"will form the basis of a potential follow-on contract competition [i.e., a potential competition to select a second shipyard] anticipated in" FY2027. (Mallory Shelbourne and Sam LaGrone, "Navy: Constellation Frigate Design Will be Ready in May, Second Yard Could Come in FY 2027," *USNI News*, December 13, 2024. See also Nick Wilson, "Navy Punting LSM Award Due to Pricier-than-Expected Bids," *Defense Daily*, December 11, 2024, which reports on both the Navy's Medium Landing Ship (LSM) program and the FFG-62 program.)

Parent-Design Approach

As noted earlier, FFG-62s are to be built to a modified version of an existing ship design—an approach, called the parent-design approach, that in theory can reduce design time, design cost, and cost, schedule, and technical risk in building the ship. Industry teams competing for the FFG-62 were required to show that their bid was based on a parent design. The Coast Guard and the Navy are currently using the parent-design approach for the Coast Guard's Polar Security Cutter (PSC) (i.e., heavy polar icebreaker) program[16] and the Navy's medium landing ship (LSM) program.[17] The parent-design approach has also been used in the past for other Navy and Coast Guard ships, including Navy mine warfare ships[18] and the Coast Guard's new Fast Response Cutters (FRCs).[19]

Some observers have questioned the value of using parent designs in military shipbuilding programs. A 2015 journal article, for example, states

> The U.S. Navy has experimented with many approaches to design and build its ships. Using an existing design as the "parent" design, also referred to as "modified-repeat" design, is on its face an attractive option. Many acquisition executives, program managers and some ship design engineers believe that a design based on a parent has fewer technical risks than a new "clean sheet of paper" design and therefore the time and cost to design and build it will be reduced. They assume early in the ship acquisition program that "the design is mature" and because of that fewer problems will be encountered in completing the design and savings will thus be accrued. Yet, a number of naval ships based on a parent design have in fact experienced unanticipated cost and schedule growth during construction as well as technical problems during their in-service life. The authors will examine some of these ship designs which were based on an existing design and/or prototypes and highlight the fallacies of such beliefs and assumptions.[20]

Figure 3 shows a U.S. Navy briefing slide summarizing what the U.S. Navy says are the "primary differences between the FFG 62 Class [design] and the FREMM Parent design." The Navy states that the design differences "were proposed by [the shipbuilding firm] Fincantieri and incorporated [into Fincantieri's proposed design for the FFG-62] prior to [the Navy's] contract award [for the FFG-62 program to Fincantieri]."[21] An August 4, 2021, press report states

> The Navy has chosen to elongate and widen the hull of its next-generation Constellation-class frigate relative to the [FREMM] parent design, but the officer overseeing its production says the internal layout will largely remain the same.
>
> "The Italians did a very good job in the design of the internal spaces, and the flow of a lot of those spaces," Capt. Kevin Smith, program manager for the Constellation class, told attendees at the Sea Air Space exposition on Monday [August 2]. "You could say we

[16] For more on the PSC program, including the parent-design approach, see CRS Report RL34391, *Coast Guard Polar Security Cutter (Polar Icebreaker) Program: Background and Issues for Congress*, by Ronald O'Rourke.

[17] For more on the LSM program, see CRS Report R46374, *Navy Medium Landing Ship (LSM) Program: Background and Issues for Congress*, by Ronald O'Rourke.

[18] The Navy's Osprey (MCM-51) class mine warfare ships are an enlarged version of the Italian Lerici-class mine warfare ships.

[19] The FRC design is based on a Dutch patrol boat design, the Damen Stan Patrol Boat 4708.

[20] Robert G. Keane Jr. and Barry F. Tibbitts, "The Fallacy of Using a Parent Design: 'The Design Is Mature,'" *Transactions (Society of Naval Architects and Marine Engineers [SNAME])*, 2015, No. 1 (January): 91-104, with additional discussion from the authors and other commentators on pages 105-122. The quoted passage appears at the start of the article, on page 91, where it forms part of an abstract or summary for the article.

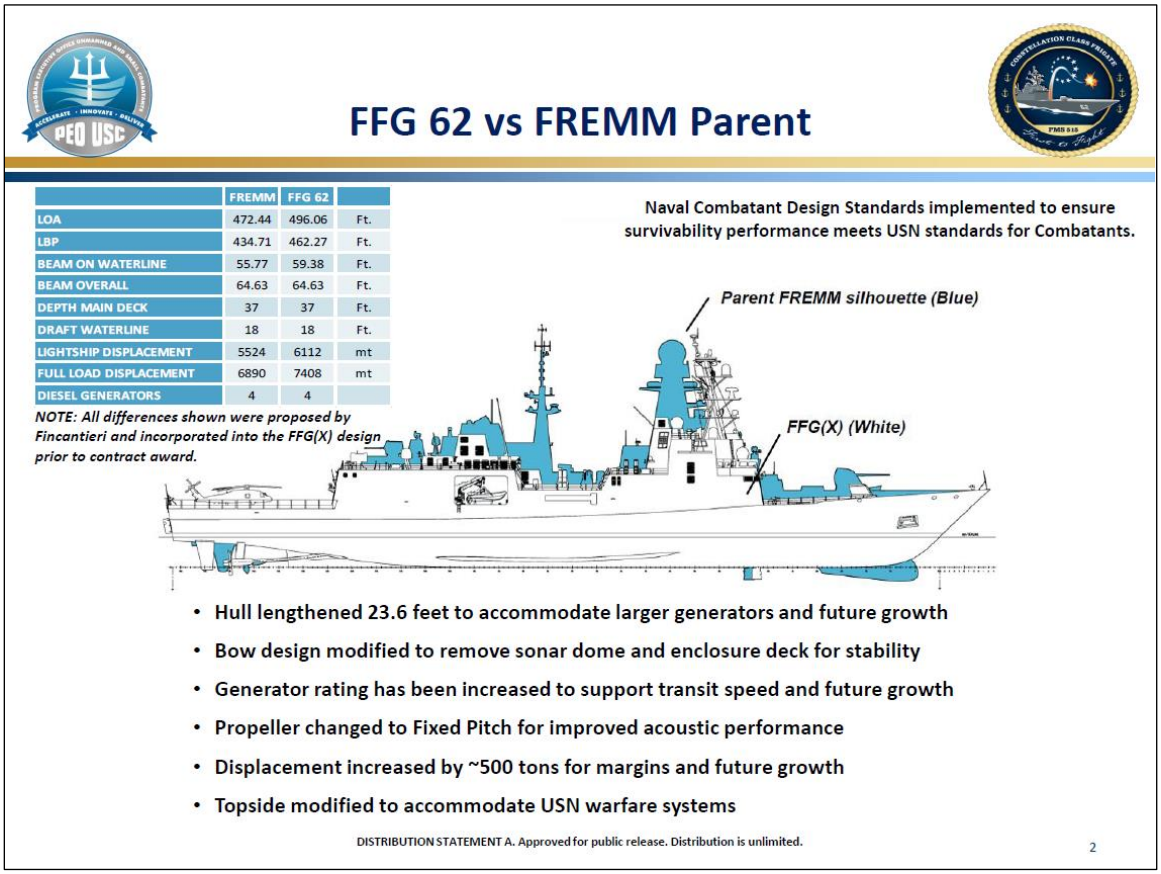
[21] Source: Navy information paper dated August 18, 2021, on differences between FFG-62 design and FREMM parent design, provided to CRS and the Congressional Budget Office (CBO) by Navy Office of Legislative Affairs on August 27, 2021.

bought a bigger house, [but] from a modeling and simulation perspective, it's exactly the same."…

While some changes are to be expected to meet the Navy's needs, enlarging the hullform itself has the potential to change where components in the ship must be placed, as well as the overall cost.

Asked about how possible changes in the ship's hull could affect the internal design, Smith said Fincantieri Marinette Marine, the Constellation's prime contractor, worked with Naval Surface Warfare Center Carderock to develop a scale model of the ship and that most elements will stay true to the parent design. He cited the bridge and propulsion plant as areas where the Navy has not made any significant changes to the layout.[22]

Figure 3. FFG-62 Design Compared to FREMM Design



Source: Navy briefing slide provided to CRS and Congressional Budget Office (CBO) by Navy Office of Legislative Affairs, August 27, 2021, with accompanying Navy information paper dated August 18, 2021.

An April 2, 2024, press report states: "At one point the Constellation design shared about 85 percent commonality with the original FREMM design, but the alterations have brought that commonality down to under 15 percent, a person familiar with the changes told USNI News."[23] If the FFG-62 design shares less than 15% commonality with the FREMM design, then some

[22] Justin Katz, "Navy Says Constellation Hull Change Won't Affect Internal Design," *Breaking Defense*, August 4, 2021.

[23] Mallory Shelbourne and Sam LaGrone, "Constellation Frigate Delivery Delayed 3 Years, Says Navy," *USNI News*, April 2 (updated April 3), 2024.

observers might characterize the FFG-62 program as having moved over time toward what might be termed a parent design in name only (PDINO) design approach.[24]

A Navy official commenting on the FFG-62 program in February 2025 reportedly stated that "[it] turns out modifying someone else's design is a lot harder than it seems," and that "sometimes, you're just better off designing a new ship."[25] Another Navy official, also commenting on the FFG-62 program in February 2025, reportedly stated that "I'll be brutally honest, I don't think people truly understood what it meant to adapt a parent design to Navy requirements."[26]

No New Technologies or Systems

As a measure for reducing cost, schedule, and technical risk in the FFG-62 program, the Navy envisaged developing no new technologies or systems for FFG-62s—the ships are to use systems and technologies that already exist or are already being developed for use in other programs.

Legislation Regarding U.S. Content Requirements for FFG-62 Components

Section 856 of the FY2020 National Defense Authorization Act (S. 1790/P.L. 116-92 of December 20, 2019) states

> SEC. 856. APPLICATION OF LIMITATION ON PROCUREMENT OF GOODS OTHER THAN UNITED STATES GOODS TO THE FFG–FRIGATE PROGRAM.
>
> Notwithstanding any other provision of law, amounts authorized to carry out the FFG–Frigate Program may be used to award a new contract that provides for the acquisition of the following components regardless of whether those components are manufactured in the United States:
>
> (1) Auxiliary equipment (including pumps) for shipboard services.
>
> (2) Propulsion equipment (including engines, reduction gears, and propellers).
>
> (3) Shipboard cranes.
>
> (4) Spreaders for shipboard cranes.

Section 8097(b) of the FY2024 DOD Appropriations Act (Division A of H.R. 2882/P.L. 118-47 of March 23, 2024) states

> SEC. 8097….
>
> (b) None of the funds provided in this Act for the FFG(X) Frigate program 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: Air circuit breakers; gyrocompasses; electronic navigation chart systems; steering controls; pumps; propulsion and machinery control systems; totally enclosed lifeboats; auxiliary equipment pumps; shipboard cranes; auxiliary chill water systems; and propulsion propellers: Provided, That the Secretary of the Navy shall incorporate United States manufactured propulsion engines

[24] The phrase *parent design in name only* (with the resulting acronym PDINO) is only one possible shorthand way of referring to the situation. One possible way to pronounce the acronym PDINO would be pa-DEE-no.

[25] Former Assistant Secretary of the Navy (Research, Development, and Acquisition), as quoted in John Grady, "Navy's Plan for Frigate Parent Design Caused Delays, Former Acquisition Chief Says," *USNI News*, February 19, 2025.

[26] Captain Andy Gold, program manager for the FFG-62 program within Program Executive Office (PEO) Unmanned and Small Combatants, as quoted in Rich Abott, "Frigate Manager Says Design To Finish This Year, Delays Because Parent Design Mods Not Understood," *Defense Daily*, January 15, 2025.

> and propulsion reduction gears into the FFG(X) Frigate program beginning not later than with the eleventh ship of the program.

Provisions similar to Section 8097(b) have been included in annual DOD appropriations acts since the FY2020 DOD appropriations act.

Competition and Contract Award

Four industry teams competed for the FFG-62 program. On April 30, 2020, the Navy announced that it had awarded the FFG-62 contract to the team led by Fincantieri/Marinette Marine (F/MM) of Marinette, WI. F/MM was awarded a fixed-price incentive (firm target) contract for Detail Design and Construction (DD&C) for up to 10 FFG-62s—the lead ship plus nine option ships. The other three industry teams reportedly competing for the program were led by Austal USA of Mobile, AL; General Dynamics/Bath Iron Works (GD/BIW) of Bath, ME; and Huntington Ingalls Industries/Ingalls Shipbuilding (HII/Ingalls) of Pascagoula, MS.

As noted earlier, industry teams competing for the FFG-62 were required to show that their bid was based on a parent design. The team led by F/MM based its bid on the Italian-French FREMM frigate. The team led by Austal based its bid on Independence (LCS-2) class Littoral Combat (LCS) design (a design that Austal was building for the U.S. Navy).[27] The team led by GD/BIW based its bid on the Spanish Navantia F100 frigate design. At the time of the competition, the team led by HII/Ingalls did not publicly disclose its parent design.[28] December 2025 press reports stated that HII now acknowledges that its parent design was the NSC design.[29]

Home Port for Initial Ships in Class

A June 2, 2021, Navy press release stated that "Naval Station Everett[30] was designated as the Navy's future homeport for the initial ships" in the FFG-62 program, serving as "the homeport for 12 Constellation-class Frigates, with a future Navy homeport decision planned for the following ships."[31]

Delay in Delivery of First Ship

Subsequent to the April 2020 contract award, the FFG-62 program fell years behind schedule due in large part to delays in completing the ship's design. The Navy's submission for the FY2020 budget—the budget that requested the procurement of the first ship in the program—estimated that the first ship would be delivered in July 2026. On April 2, 2024, as part of an announcement of significant delays to several Navy shipbuilding programs caused by shipbuilder workforce challenges, supply chain issues, and other causes, the Navy announced that the estimated delay in the delivery of the first FFG-62 had grown to 36 months. The Navy's FY2026 budget estimated that the ship would be delivered in April 2029, a delay of 33 months from the July 2026 date shown in the FY2020 budget submission. As mentioned earlier, as of November 2025, the first ship in the program reportedly was about 12% complete.

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[27] For more on the LCS program, see CRS Report RL33741, *Navy Littoral Combat Ship (LCS) Program: Background and Issues for Congress*, by Ronald O'Rourke.

[28] See page 2 and Table 2 (on page 9) of the April 17, 2020, update of this CRS report.

[29] Joseph Trevithick, "U.S. Navy Now Wants A New Frigate And Fast," *The War Zone*, December 12, 20205.

[30] Naval Station Everett is located in Everett, WA, which is on Puget Sound north of Seattle.

[31] U.S. Navy, "Naval Station Everett Future Homeport for New Constellation Class Frigates," press release dated June 2, 2021.

A June 2025 Government Accountability Office (GAO) report—the 2025 edition of an annual GAO report on selected DOD acquisition programs—stated the following regarding schedule delay and other aspects of the FFG-62 program:

> **Program Performance**
>
> Since our last assessment, the program continued to face challenges completing its functional design, which is needed to demonstrate design stability. More than 2 years after beginning lead ship construction, this persistent lack of design stability stalled construction of the lead ship and poses the same risk to initial follow-on ships. The Navy currently plans to deliver the lead frigate in April 2029—3 years later than the original contracted delivery date. The Navy and shipbuilder continue to revise basic design documents, including the ship's general arrangement drawings—the design drawings that all other design aspects are based on—and structural components of the ship. This approach is inconsistent with shipbuilding leading practices, which call for completion of basic and functional design activities prior to construction start.
>
> Further, in response to a recommendation we made in our May 2024 report, the program restructured its functional design metrics to more closely align with actual design progress. As a result, the program concluded that its functional design progress is significantly less than the 92 percent complete it reported in August 2023. As of December 2024, the program reported that the functional design was 70 percent complete, as measured with the restructured design metrics. Although program officials expect to achieve a stable basic and functional design by late spring 2025, the program has yet to achieve its planned rate of design progress to meet this goal.
>
> The frigate design is further complicated by unanticipated weight growth. In October 2024, the Navy reported 759 metric tons of weight growth from initial estimates—nearly a 13 percent increase—due in part to the underestimation of applying Navy technical requirements to a foreign ship design. Navy personnel are working with the shipbuilder to reduce the ship's weight, but weight growth has only become more pronounced over the last year as the program further developed the frigate design. We previously reported that unplanned weight growth during ship construction can compromise ship capabilities, as the fleet seeks to alter and improve initial capabilities over the planned decades-long service life of the ship. Such alterations may leave frigates less combat capable, limit the ability to add capabilities to address evolving threats, and reduce planned service lives.
>
> **Leading Product Development Practices**
>
> In May 2024, we reported that the frigate program employed a traditional, linear development approach to acquisition, in contrast to leading companies' use of iterative design approaches centered on identifying a minimum viable product to quickly meet users' needs. We recommended that the Navy evaluate ways to incorporate these leading practices into the frigate acquisition strategy prior to the acquisition of an 11th ship. The Navy stated that it is taking steps to implement this recommendation.
>
> Program officials stated that plans for a digital twin and digital thread will not be incorporated into program documentation until 2025. Officials stated that they have encountered challenges with the availability of data, cost of data environments, and finding skilled personnel. Additionally, as we reported in January 2025, the program's documents contain general language about MOSA [modular open system approach] principles but do not address planning elements for modularity.
>
> **Other Program Issues**
>
> As of November 2024, frigate program officials reported that the shipbuilder had submitted a total of five requests for equitable adjustment, raising the potential of unbudgeted program cost growth, depending on the outcome. Requests for equitable adjustment provide a remedy payable only when unforeseen or unintended circumstances, such as

government modification of the contract, cause an increase in contract performance costs. The Navy deemed the total costs of the five requests as not suitable for public release. According to program officials these requests relate to government change orders and significant design changes from the frigate's parent ship design.

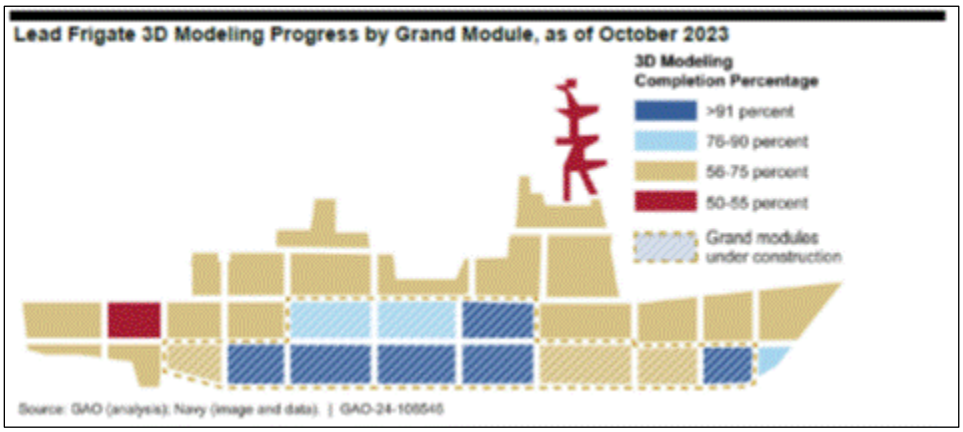
Despite the unresolved issues identified above, the Navy has proceeded full steam ahead with the frigate program, exercising options for the fifth and six ships in May 2024. Further, in November 2024, the Navy requested information seeking shipbuilders to serve as a second shipyard for constructing future frigates. In January 2025, the Navy began assessing industry responses to inform future acquisition strategies.

Program Office Comments

We provided a draft of this assessment to the program office for review and comment. The program office provided technical comments, which we incorporated where appropriate. The program office stated that in early spring 2025, it anticipates completing design products needed to support production. According to the program office, the Navy increased its leadership and technical presence at the shipyard, including contracted engineering support personnel. The program office further noted that it continues to work with the shipbuilder on frigate weight reduction and identified potential weight savings to regain service life allowance through a phased implementation across the first three ships. According to the program office, the requests for equitable adjustment are currently under Navy review. In April 2025, the office of DOD's Director, Operational Testing and Evaluation provided comments stating that the start date for the program's operational test should be reflected as the first quarter of fiscal year 2032.

A May 2024 Government Accountability Office (GAO) report on the FFG-62 program stated,

To reduce technical risk [in the FFG-62 program], the Navy and its shipbuilder [in designing the FFG-62] modified an existing [Italian-French frigate] design to incorporate [U.S.] Navy specifications and weapon systems. However, the Navy's decision to begin construction [of the first FFG-62] before the design was complete is inconsistent with leading ship design practices and jeopardized this approach. Further, design instability has caused weight growth. The figure shows the frigate's 3D design—a component of design stability—as incomplete over 1 year after construction began.



Delays in completing the ship design have created mounting construction delays. The Navy acknowledges that the April 2026 delivery date, set in the contract at award, is unachievable. The lead frigate is forecasted to be delivered 36 months later than initially planned. The program office tracks and reports design progress, but its design stability metric hinges largely on the quantity—rather than quality—of completed design documents. This limits insight into whether the program's schedule is achievable. If the Navy begins construction on the second frigate without improving this metric, it risks

repeating the same errors that resulted in construction disruptions and delays with the lead frigate.

The frigate is using many mission systems already proven on Navy ships. However, the Navy has yet to demonstrate two systems—the propulsion and machinery control systems. A planned update to the frigate test plan—combined with the opportunity afforded by schedule delays—could offer the Navy the chance to conduct land-based testing of these two unproven systems. This testing would reduce the risk of discovering issues after the ship is at sea.

The frigate is using a traditional, linear development approach for design and construction. The Navy has historically experienced schedule delays, cost growth, or both in prior shipbuilding programs using this approach. The Navy has incorporated elements of leading practices into its acquisition strategy. However, further incorporating these practices in an updated acquisition strategy could position the program, when contracting for future frigates, to better respond to evolving mission needs.[32]

Issues for Congress Prior to Navy's November 2025 Announcement

Potential oversight issues for Congress regarding the FFG-62 program as they existed prior to the Navy's November 2025 announcement about its desire to truncate the FFG-62 program and initiate a program to start procuring FF(X)s are discussed in **Appendix A**. These issues include the delay in the delivery of the first ship, the potential for cost growth in the FFG-62 program, whether and when to introduce a second shipyard into the FFG-62 program, the number of vertical launch system (VLS) tubes in the FFG-62 design, and technical risk in the FFG-62 program.

Navy's Desired Approach for Restructuring Frigate Acquisition

Overview

As discussed earlier, in June 2025, Secretary of Defense Pete Hegseth indicated that the FFG-62 program was being reviewed as one of several "difficult decisions" to be made by the Department of Defense (DOD) during a review of its acquisition programs. As also discussed earlier, in a series of announcements from November 25 to December 19, 2025, the Navy stated that it wants to restructure its frigate acquisition effort by (1) truncating the FFG-62 program to no more than two ships and (2) initiating a new program to procure a different class Navy frigates, called FF(X)s, whose design would be based on that of the National Security Cutter (NSC), a frigate-like ship that has been built for the Coast Guard by Huntington Ingalls Industries/Ingalls Shipbuilding (HII/Ingalls) of Pascagoula, MS.

Under the Navy's desired new approach, the third through sixth FFG-62s (which have not begun construction) would be cancelled; the first two FFG-62s (construction of which is underway) would remain under review; the first FF(X) would be awarded to HII/Ingalls on a sole-source basis and be launched (i.e., put into the water for the final stages of its construction) by 2028; and one or more additional U.S. shipyards would later be brought into the FF(X) program to expand the FF(X) production rate, competing with HII/Ingalls for future ships in the program.

[32] Government Accountability Office, *Navy Frigate[:] Unstable Design Has Stalled Construction and Compromised Delivery Schedules*, GAO-24-106546, May 2024, highlights page. See also Richard Thomas, "Could US Navy's Constellation-Class Frigates Share Littoral Combat Ship Fate?," *Naval Technology*, June 11, 2024; Joseph Trevithick, "Navy's New Constellation Class Frigate Is A Mess," *The War Zone*, May 30, 2024.

In announcing its desired new approach for acquiring frigates, Secretary of the Navy John Phelan stated that "the Constellation-class frigate was canceled because, candidly, it didn't make sense anymore to build it. It was 80% of the cost of a [larger DDG-51 class] destroyer and 60% of the capability. You might as well build destroyers." The continuation, for now at least, of construction work on the first two FFG-62s reportedly is intended to support F/MM in the near term, while policymakers assess how F/MM's shipbuilding capability could be used over the longer run. As of November 25, 2025, the first ship in the FFG-62 program was reportedly about 12% complete.

Navy News Release of December 19, 2025

A December 19, 2025, Navy news release about its desire to initiate procurement of FF(X)s states:

> The Navy announced today its plan to introduce a new class of smaller combatant ships, the FF(X), as a critical component of the Navy's fleet of the future. The FF(X) will be a smaller, more agile surface combatant designed to complement the fleet's larger, multi-mission warships and enhance operational flexibility around the globe.
>
> "To deliver at speed and scale, I've directed the acquisition of a new frigate class based on HII's Legend-Class National Security Cutter design: a proven, American-built ship that has been protecting U.S. interests at home and abroad," said John C. Phelan, Secretary of the Navy. "President Trump and the Secretary of War have signed off on this as part of the Golden Fleet. Our goal is clear: launch the first hull in the water in 2028. To expand capacity and production across our maritime industrial base, we will acquire these ships using a lead yard, and competitive follow-on strategy for multi-yard construction. Shipyards will be measured against one outcome: delivering combat power to the Fleet as fast as possible."
>
> The FF(X) is a highly adaptable vessel. While its primary mission will be surface warfare, its ability to carry modular payloads and command unmanned systems enables it to execute a broad spectrum of operations, making it ready for the challenges of the modern maritime environment.…
>
> "Like the Medium Landing Ship [LSM], leveraging a complete design and production baseline approach will allow the Navy and shipbuilders to reduce costs, schedule and technical risk," said Adm. Daryl Caudle, 34th Chief of Naval Operations. "We know this Frigate design works, we know it operates with the Fleet, and most importantly, we know how to build it now."[33]

A December 19, 2025, press report quoted a "senior official" as stating: "We will initially sole-source the lead ship to Ingalls, but we will move to competition as soon as possible."[34]

National Security Cutter (NSC) Design

The NSC program is discussed in detail in a separate CRS report on Coast Guard cutter acquisition programs.[35] HII/Ingalls has built 10 NSCs for the Coast Guard; the first was commissioned into service with the Coast Guard in August 2008, and the 10th was commissioned into service with the Coast Guard in April 2024. Congress funded an 11th NSC in FY2018, but in

[33] U.S. Navy, "Navy Announces New Small Surface Combatant," press release dated December 19, 2025.

[34] Sam LaGrone, "SECNAV: New Frigate will be Based on National Security Cutter, First FF(X) to be Built at Ingalls," *USNI News*, December 19, 2025.

[35] CRS Report R42567, *Coast Guard Cutter Procurement: Background and Issues for Congress*, by Ronald O'Rourke.

June 2025 it was reported that the Coast Guard and HII/Ingalls had agreed to cancel construction of the ship,[36] making the 10th NSC the final one to be built for the Coast Guard.

The NSC design (**Figure 4**) is substantially smaller than the FFG-62 design. As noted earlier, the full load displacement of the FFG-62 design is close to 8,000 tons. By comparison, the NSC design has a full load displacement of about 4,500 tons.[37] Consistent with both its smaller size and Coast Guard (rather than Navy) mission needs, the NSC is less heavily armed than the FFG-62 design.

Naval Variants of NSC Design Proposed in Past Years by HII/Ingalls

HII/Ingalls since at least 2012 has marketed naval variants of the NSC design, which HII/Ingalls has called patrol frigates, for potential export to other countries.[38] Some observers have argued that ships based on the NSC design should be procured for the U.S. Navy.[39]

[36] Sam LaGrone, "Ingalls, Coast Guard Scrap 11th National Security Cutter Over Contract Impasse, Says HII," *USNI News*, June 5, 2025.

[37] U.S. Coast Guard, "National Security Cutter," accessed December 18, 2025, at https://www.dcms.uscg.mil/Our-Organization/Assistant-Commandant-for-Acquisitions-CG-9/Programs/Surface-Programs/National-Security-Cutter/.

[38] See, for example, Sam LaGrone, "HII Targets Global Market with New Patrol Frigate," *Jane's Defence Weekly*, January 13, 2012; Huntington Ingalls Industries, "Ingalls Shipbuilding Highlighting Patrol Frigate Derivative of National Security Cutter at DIMDEX," news release dated March 26, 2012; Mrityunjoy Mazumdar, "Patrol Frigate Concepts from Huntington Ingalls Industries Gain Traction Internationally," *Defense Media Network*, April 24, 2012; Scott C. Truver, "Payloads over Platforms: Designing the 'Flexible Frigate,'" *Naval Engineers Journal*, September 2013, pp. 31-38; "Ingalls Shipbuilding Highlights its Patrol Frigate at Sea-Air-Space 2014," *Navy Recognition*, April 9, 2014; Huntington Ingalls Industries, "Ingalls Shipbuilding Sea Control Frigate," *YouTube*, April 14, 2014, at https://www.youtube.com/watch?v=5OJZ8eB_mPA&t=6s.

[39] See, for example, Zachary Howitt, "It's Time for a 'Sea-Control Frigate,'" *U.S. Naval Institute Proceedings*, April 2014; Dave Majumdar, "Huntington Ingalls Has a New Frigate that Could Give the U.S. Navy Some Impressive Capabilities," *National Interest*, January 11, 2017; Harold C. Hutchison, "The Coast Guard Could Have the Solution for a Bigger US Navy," *We Are the Mighty*, November 1, 2018.

Figure 4. National Security Cutter

Source: Cropped version of photograph accompanying Huntington Ingalls Industries, "Bertholf (WMSL 750) Builder's Trials," March 22, 2019. The caption to the photograph states that it was taken on December 4, 2007.

FF(X) Frigate

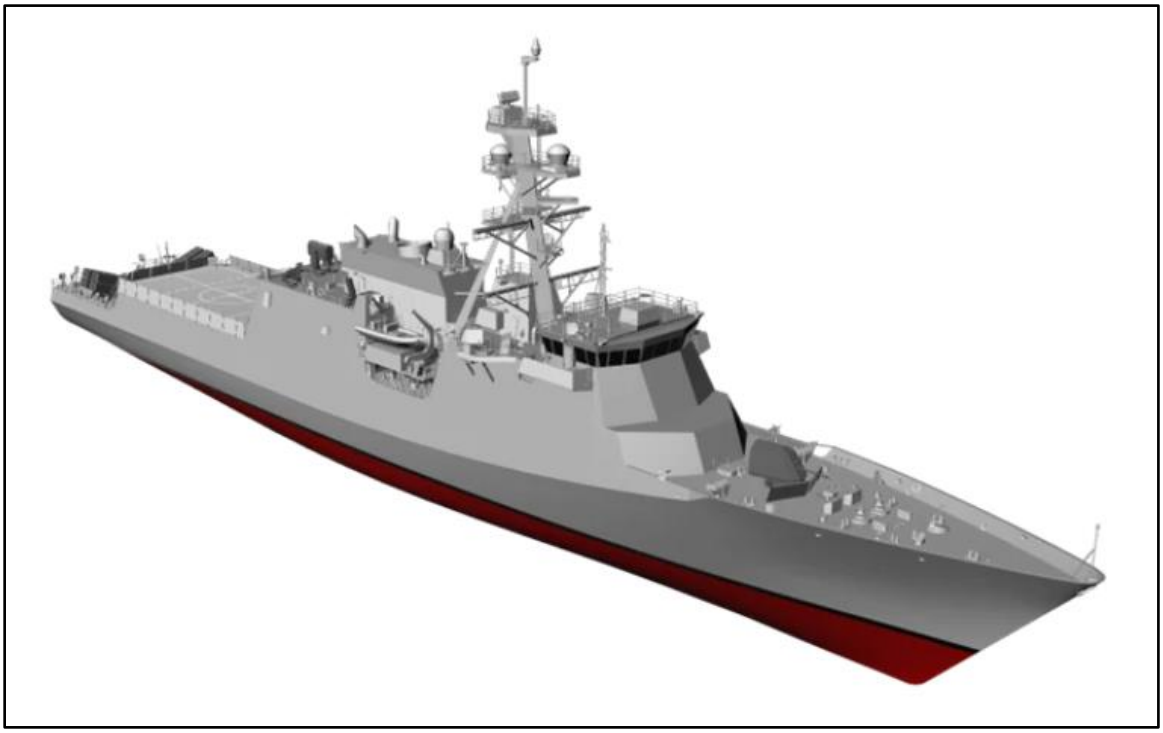
Figure 5 shows a Navy rendering of the FF(X) frigate based on the NSC design. Beyond this rendering and a small number of other renderings of the FF(X) that have been published,[40] few specifics about the FF(X)'s design features and capabilities have been released. The rendering in **Figure 5** shows some differences from the HII patrol frigate designs discussed in the previous section.[41] The Navy's decision to refer to the proposed new frigate for the U.S. Navy as the FF(X) rather than the FFG(X) suggests that the ship will be equipped with a point-defense anti-air warfare (AAW, aka air defense) system rather than an area-defense AAW system, as the "G" designation in U.S. Navy surface combatants, meaning guided missile ship, is usually reserved for ships that are equipped with an area-defense AAW system.[42]

[40] See, for example, the additional renderings shown at Joseph Trevithick, "This Will Be The Navy's New FF(X) Frigate," *The War Zone*, December 19, 2025.

[41] See, for example, the discussion of this point in Joseph Trevithick, "This Will Be The Navy's New FF(X) Frigate," *The War Zone*, December 19, 2025.

[42] A point-defense AAW system has a range sufficient to defend the ship itself, but not other ships in the area. An area-defense AAW system has a longer range that is sufficient for defending not only the ship itself, but also other ships in the area. In the U.S. Navy, ships capable of firing the Standard Missile interceptor, which is a longer-ranged AAW interceptor, are considered to have an area-defense AAW system and have a G in their designation, while ships that cannot fire the Standard Missile and employ shorter-ranged interceptors, such as the Evolved Sea Sparrow Missile (ESSM) or Rolling Airframe Missile (RAM), are considered to have a point-defense AAW system and do not have a G in their designation.

Figure 5. Rendering of FF(X) Design



Source: Cropped version of rendering accompanying Sam LaGrone, "SECNAV: New Frigate will be Based on National Security Cutter, First FF(X) to be Built at Ingalls," *USNI News*, December 19, 2025. The caption to the rendering credits it to the U.S. Navy.

A December 19, 2025, press article quotes a "senior official" as stating: "The [NSC] design [with] little adaptation will meet the CNO's [Chief of Naval Operations'] requirements for a small surface combatant."[43] The article also states:

> The scaled-back requirements for the new ship class were born from a Navy-led review of what the sea service needs in the short term to support lower-priority missions that tie up more capable warships….
>
> "They looked at what's been going on in U.S. 5th Fleet and 4th Fleet as exemplar areas where this platform would help take the load off of our destroyers so they could focus on some of the higher-end missions," a second senior official told USNI News.
>
> One of the few changes the Navy intends to make to the NSC design is to construct a platform above the open boat deck for containerized mission packages, the officials said. For example, the Army and Lockheed Martin developed the MK-70 Typhon vertical launch system within the dimensions of a 40-foot shipping container. The Navy is developing more containerized packages that can be swapped from ship to ship.
>
> "That'll be something immediately on the first flight of ships that will be available," the first senior official told USNI News. "Those containers could do a host of missions. That's a core element of the future force design. Beyond that … things that are more intrusive to

[43] Sam LaGrone, "SECNAV: New Frigate will be Based on National Security Cutter, First FF(X) to be Built at Ingalls," *USNI News*, December 19, 2025.

> install, like anti-submarine warfare equipment, would be something we would look to do in the future."[44]

Another December 19, 2025, press article states that the Navy has

> made clear that it expects the new frigate design to allow for the integration of new and improved capabilities and functionality down the line.
>
> "The [FF(X)] frigate will follow the same proven approach we've used with the Arleigh Burke destroyers, building it smart from the start, then upgrading it in steps over time, as the threat and technology evolve," Chief of Naval Operations Adm. Daryl Caudle also said in today's video announcement.[45]

Issues for Congress Regarding Navy's Desired Approach for Frigate Acquisition

In considering whether to approve, reject, or modify the Navy's desired approach for restructuring its frigate acquisition effort, Congress may consider several potential oversight issues, including but not necessarily limited to those discussed below.

Adequacy of Information Provided to Congress

One potential oversight issue for Congress is whether is whether Congress has adequate information to assess the merits of the Navy's desired new approach to frigate acquisition. Information that could support congressional assessments includes information on

- the formal analysis—such as an Analysis of Alternatives (AOA)—by which the Navy determined that the most cost-effective approach to frigate acquisition would be to truncate the FFG-62 program to no more than two ships and initiate a new frigate procurement program based on the NSC design;
- what steps, if any, in the DOD acquisition process were set aside to facilitate the initiation of the FF(X) program in December 2025; and
- the design features, capabilities, and estimated procurement and life-cycle operation and support (O&S) costs of the FF(X) design, how the FF(X) design (and thus FF(X) capabilities and costs) might evolve after procurement of the first FF(X) or the first few FF(X)s, the numbers of FF(X)s that are to be procured each year, and the schedule for introducing one or more additional shipyards into the program.

General Approach Regarding Frigate Acquisition

Another potential oversight issue for Congress is what general approach to pursue regarding frigate acquisition.

[44] Sam LaGrone, "SECNAV: New Frigate will be Based on National Security Cutter, First FF(X) to be Built at Ingalls," *USNI News*, December 19, 2025.

[45] Joseph Trevithick, "This Will Be The Navy's New FF(X) Frigate," The War Zone, December 19, 2025.

Overview of Four General Approaches

In a context of the existing FFG-62 program and a potential successor frigate program, notional general approaches regarding frigate acquisition include but are not necessarily limited to the following four possibilities:

- End procurement of FFG-62s and do not initiate a successor frigate program.
- End procurement of FFG-62s and initiate a successor frigate program (the Navy's desired approach).
- Continue procurement of FFG-62s and do not initiate a successor frigate program.
- Continue procurement of FFG-62s and initiate an additional frigate program.

Below are brief discussions of each of these possible approaches.

End Procurement of FFG-62s and Do Not Initiate a Successor Frigate Program

Under this approach, which might be thought of as the "no frigates" approach, procurement of FFG-62s would be truncated, and no successor frigate program would be initiated. Navy mission needs that were to have been met by procuring frigates would instead be met by increasing planned procurement and force levels of DDG-51 destroyers (i.e., ships larger than frigates) and/or corvette-sized unmanned surface vessels (USVs) (i.e., ships smaller than frigates).[46]

Supporters of this approach could argue that ending procurement of frigates would ease Navy shipbuilding program management workloads by reducing the number of shipbuilding programs to be managed, and do so at a time when the Navy is facing challenges in executing its shipbuilding programs. They could argue that this approach could increase production and life-cycle O&S economies of scale for DDG-51 destroyers and USVs.

Skeptics of this approach could question whether a combination of DDG-51s and USVs could meet certain mission needs that were to have been met by procuring frigates, because the capabilities of the Navy's future USVs have not been fully defined and proven, and because USVs, as unmanned ships, could be challenged in performing certain day-to-day, noncombat missions that manned frigates would perform.[47] They could argue that using destroyers to perform missions that could be adequately performed by frigates would not be cost effective, given the higher procurement and O&S costs of destroyers compared to frigates.

End Procurement of FFG-62s and Initiate a Successor Frigate Program

This is the Navy's desired approach. Supporters of this approach could argue, as Secretary of the Navy Phelan has, that the FFG-62 design is no longer cost-effective to pursue as a smaller and individually less expensive complement to the DDG-51 design, because the FFG-62 design has grown during the design process to more than 80% of the size of the DDG-51 design but would provide less than 80% of a DDG-51's capability, and that a successor frigate design could fare better than the FFG-62 design in terms of cost and capability in relation to the cost and capability

[46] For more on the Navy's program for procuring large USVs, see CRS Report R45757, *Navy Large Unmanned Surface and Undersea Vehicles: Background and Issues for Congress*, by Ronald O'Rourke.

[47] Potential examples of such missions include engagement with allied and partner navies, humanitarian assistance/disaster response (HA/DR) operations, noncombatant evacuation operations (NEOs), maritime security operations (such as anti-piracy operations), and operations with embarked Coast Guard law-enforcement detachments for fisheries enforcement or interdiction of illegal migrants and illegal drug shipments.

of the DDG-51 design. They could argue that although limiting FFG-62 procurement to two ships could increase per-ship FFG-62 O&S costs by reducing economies of scale for such costs, the increase will not be onerous. They could argue that the Navy operates other numerically small ship classes (including the three-ship Seawolf [SSN-21] class of attack submarines and the three-ship Zumwalt [DDG-1000] class of destroyers), and that the issue of per-ship FFG-62 O&S costs could be addressed by eventually selling the two FFG-62s to one or two allied or partner navies that might need only one or two such ships to meet their own mission needs.

Skeptics of this approach could argue that the FFG-62 design is the design that the Navy originally selected, following a rigorous source-selection process, as the one that could best meet the Navy's operational requirements for a frigate, and that a successor frigate design might fare no better than the FFG-62 design in terms of cost and capability in relation to the cost and capability of the DDG-51 design. They could argue that while there is less than a 20% difference in the size of a 9,700-ton DDG-51 and an 8,000-ton FFG-62, Navy plans have called for shifting destroyer procurement in the early 2030s from the DDG-51 design to a 14,500-ton next-generation destroyer design called the DDG(X),[48] which would establish a larger difference in size between the FFG-62 design and the design of the destroyer that the Navy would be procuring. They could argue that design work on the FFG-62 is progressing toward completion; that truncating FFG-62 procurement to two ships would provide a limited return on the investment of time and funding that the Navy has expended to complete the FFG-62 design (which needs to be completed to support the construction of the first two ships); that it would not be optimal for the Navy to create another case, alongside cases such as the Seawolf and Zumwalt classes, of paying elevated per-ship O&S costs for a numerically limited class of combatant ships; and that there is no guarantee that the Navy would be able to find one or two allied or partner navies willing to buy two FFG-62s unless their purchase price is set substantially below their original procurement costs.

Continue Procurement of FFG-62s and Do Not Initiate a Successor Frigate Program

Under this approach, which might be thought of as the "stay the course with the FFG-62 program" approach, the cancellation of the third through sixth FFG-62 would be treated as a pause in FFG-62 procurement that would be intended to permit FFG-62 construction work to catch up with the number of FFG-62s that have been procured, at which point procurement of additional FFG-62s would resume, and a successor frigate program would not be initiated. A pause in FFG-62 procurement could be viewed as similar in some respects to what occurred in the earlier years of the Littoral Combat Ship (LCS) procurement program.[49]

Since this approach is essentially the obverse of the previous approach, notional arguments for supporters and skeptics of this approach would essentially be the obverse of those outlined above for the previous approach: Supporters of this approach could make arguments similar to those

[48] For more information on the DDG(X) program, see CRS In Focus IF11679, *Navy DDG(X) Next-Generation Destroyer Program: Background and Issues for Congress*, by Ronald O'Rourke.

[49] The earlier years of the LCS procurement program included the cancellation of two LCSs funded in FY2006, another two LCSs funded in FY2007, and an LCS funded in FY2008, followed by procurement of additional LCSs through FY2019. For notations of the cancelled LCSs, see note 1 to the second table in the Appendix entitled "Size of the Navy and Navy Shipbuilding Rate" in CRS Report RL32665, *Navy Force Structure and Shipbuilding Plans: Background and Issues for Congress*, by Ronald O'Rourke; and the note to Table 1 (on page 3) of the December 17, 2019, update (the final update) to CRS Report RL33741, *Navy Littoral Combat Ship (LCS) Program: Background and Issues for Congress*, by Ronald O'Rourke.

outlined above for *skeptics* of the previous approach, while skeptics of this approach could make arguments similar to those outlined above for *supporters* of the previous approach.

Continue Procurement of FFG-62s and Initiate an Additional Frigate Program

Under this approach, which might be thought of as the "procure two frigate classes" approach, the cancellation of the third through sixth FFG-62 would be treated as a pause in FFG-62 procurement, followed by a resumption in FFG-62 procurement at a later point, and an additional frigate program would be initiated, with ships in this additional program being procured in parallel with procurement of FFG-62s. Under this approach, the builder or builders of FFG-62s and the builder or builders of the second type of frigate could compete for contracts to build frigates for the Navy. This approach would be broadly similar to the one the Navy employed for the LCS program, under which two different LCS designs were built at two shipyards, with each shipyard building one of the designs, and the Navy had the option of using competition between the two shipyards in determining who would build the later ships in the program.

Supporters of this approach could argue that that the FFG-62 design is the design that the Navy originally selected, following a rigorous source-selection process, as the one that could best meet the Navy's operational requirements for a frigate,[50] but that a second frigate design might be smaller and individually less expensive to procure and operate than the FFG-62 design, permitting it to serve, within the Navy's frigate force, as a less-expensive complement to the Navy's FFG-62s.

Skeptics of this approach could argue that it would increase Navy shipbuilding program management workloads by increasing the number of shipbuilding programs to be managed, and do so at a time when the Navy is facing challenges in executing its shipbuilding programs. They could also argue that building two types of frigates would reduce frigate production and life-cycle O&S economies of scale by dividing frigate acquisition into two programs, and that the reduced economies of scale could, other things held equal, increase per-ship production and life-cycle O&S costs for Navy frigates.

Potential Oversight Questions for Congress

Potential oversight questions for Congress regarding what general approach to pursue regarding frigate acquisition include the following:

- What is the analytical basis for the Navy's desire to pursue the second general approach outlined above? What formal analysis—such as an Analysis of Alternatives (AOA)—did the Navy perform to evaluate the four general approaches outlined above (and perhaps other potential approaches)? What were the findings of this analysis? Has the Navy transmitted this analysis to Congress?
- How fully and cost effectively could a combination of DDG-51s and USVs perform the missions that the Navy intends to perform with frigates?

[50] They could also argue, as skeptics of the second approach (i.e., the Navy's desired approach) could argue, that design work on the FFG-62 is progressing toward completion; that truncating FFG-62 procurement to two ships would provide a limited return on the investment of time and funding that the Navy has expended to complete the FFG-62 design (which needs to be completed to support the construction of the first two ships); that it would not be optimal for the Navy to create another case, alongside cases such as the Seawolf and Zumwalt classes, of paying elevated per-ship O&S costs for a numerically limited class; and that there is no guarantee that the Navy would be able to find one or two allied or partner navies willing to buy two FFG-62s unless their purchase price is set substantially below their original procurement costs.

- What are the potential impacts on per-ship FFG-62 life-cycle O&S costs of truncating FFG-62 procurement to no more than two ships?
- What are the potential impacts on per-ship frigate procurement and life-cycle O&S costs of building two types of frigates (FFG-62s and a second type)?

New Frigate Design

If the second or fourth general approach outlined in the previous section is pursued, and a new frigate design is consequently to be procured, a follow-on potential oversight issue for Congress would be whether the Navy's desired design—an FF(X) based on the NSC design—is the most cost-effective new design to procure.

Potential Design Options

Potential options for a new frigate design include but are not necessarily limited to the following:

- the Multi-Mission Surface Combatant (MMSC), a variant of the LCS-1 class design with a displacement of more than 3,900 tons,[51] four of which F/MM is building for the Royal Saudi Navy (**Figure 6**);[52]
- a frigate variant of the NSC design (the Navy's desired choice);
- a reduced-cost, more lightly armed variant of the DDG-51 design whose installed systems would be less like those of a destroyer and more like those of a frigate—an option broadly similar to options for lower-cost DDG-51 variants that the

[51] Source for displacement figure of more than 3,900 tons: Program Executive Office Unmanned and Small Combatants (PEO USC) Public Affairs, "Navy Cuts Steel on First Multi-Mission Surface Combatant Ship for Saudi Arabia," Naval Sea Systems Command, November 18, 2019, which cites a figure of more than 4,000 metric tons, which equates to more than 3,936 long tons.

[52] For more on the MMSC, see, for example, "The First MMSC-1 Frigate Built by Fincantieri in the United States for the Royal Saudi Navy Was Launched," *Zona Militar*, December 29, 2025; Richard Scott, "First Saudi MMSC launched by Fincantieri in Wisconsin," *Naval News*, December 24, 2025; Chris Cavas, "First Look: Fincantieri Marine Group Production Includes US Navy's Frigate, LCS and Saudi Combatants," *Naval News*, February 2, 2024; "Multi-Mission Surface Combatant (MMSC)," *Naval Technology*, July 31, 2020; Sam LaGrone, "Lockheed Awarded $1.96B Construction Contract for Four Saudi Frigates," *USNI News*, December 20, 2019; Paul McLeary, "Saudis Save Wisconsin Shipbuilder: Fills Gap Between LCS & Frigates At Marinette," *Breaking Defense*, January 17, 2019; Defense Security Cooperation Agency (DSCA), "Kingdom of Saudi Arabia - Multi-Mission Surface Combatant (MMSC) Ships," news release, October 20, 2015.

Navy studied in 1991[53] and to the Navy's 31 Spruance (DD-963) class destroyers in their original configuration;[54]

- Japan's 5,400-ton[55] Mogami-class frigate design (**Figure 7**), or the more heavily armed 6,100-ton[56] variant of that design that Australia is procuring for its navy,

[53] The Navy's 1991 study was called the destroyer variant (DDV) study (or studies). A 1994 journal article about the DDV study states:

> The Destroyer Variant (DDV) studies were initiated in mid-1991 by OPNAV [the office of the Chief of Naval Operations] to evaluate a variety of potential follow-on destroyer designs covering the spectrum from a non-AEGIS low-end reference [design] ([designated] DDV 1) to a [DDG-51] Flight III lookalike [design] with a 40-foot [hull] plug [i.e., a 40-foot increase in hull length] as a high-end reference [design] ([designated] DDV H).… The acquisition cost of DDV 1 was estimated to be 53 percent of DDV H, while the other non-AEGIS variant costs were between 70 and 87 percent of DDV H.
>
> (Robert J. Scott and Kevin E. Moak, "Studies of Helicopter Capable DDG 51 Variants," *Naval Engineers Journal*, September 1994, p. 34.)

For additional mentions of the DDV study, see Donald L. Ewing, et al., "A Surface Combatant for the 21st Century: DDG 51 Flight IIA," *Naval Engineers Journal*, May 1995, p. 218; George A. Huchting, "Lean and Mean Warship Design," *U.S. Naval Institute Proceedings*, October 1994; Department of the Navy, Department of the Navy 1992 Posture Statement, A Report by The Honorable H. Lawrence Garrett, III, Secretary of the Navy, Admiral Frank B. Kelso, II, United States Navy, Chief of Naval Operations, and General Carl E. Mundy, Jr., United States Marine Corps, Commandant of the Marine Corps on the Posture and the Fiscal Year 1993 Budget of the United States Navy and The United States Marine Corps, February-March 1992, p. 25; John F. Morton, "The U.S. Navy in 1991," *U.S. Naval Institute Proceedings*, May 1992; R. K. U. Kihune, "Message for the Fleet Sailor," *Surface Warfare*, September/ October 1991, p. 1.

For blog entries in more recent years that discuss different potential options for a reduced-cost DDG-51 variant, see Craig Hooper, "Time To Consider A Low-End "Littoral Operations Variant" DDG-51?," *Next Navy*, April 22, 2014; Mike Burleson, "Flight III: Building a Better Burke," *New Wars*, March 1, 2010.

[54] Thirty-one Spruance-class ships were procured for the Navy from FY1970 through FY1978; the ships entered service in 1975-1983 and were decommissioned in 1998-2005. CRS testimony to the Seapower and Projections Forces subcommittee of the House Armed Services Committee in October 2013 discussed the Spruance-class design, stating that it

> was criticized as being underarmed for its size—for having something like a frigate's worth of combat systems on a destroyer hull. The criticism arose in part from a Navy decision to make the ship more affordable to procure: The ship was originally designed with both a full-capability ASW [antisubmarine warfare] system and a full-capability AAW [anti-air warfare, aka air defense] system (which, in those pre-Aegis days, was the digital Tartar/SM-2 system). To reduce the ship's procurement cost, the Navy decided that the most important mission need to be met by the ship was ASW. Accordingly, the ship's full-capability ASW system was retained while its AAW system was de-scoped to a less-capable and less-expensive point-defense system. While this contributed to criticism that the ship was underarmed for its size, a decision to retain the full-capability AAW system might well have led to a different criticism—that the ship was insufficiently affordable for the shipbuilding budgets of the day. The de-scoping of the ship's AAW system, as it turned out, left the ship with ample growth margin, which the Navy years later used to install a 61-cell vertical launch system (VLS) on 24 of the 31 DD-963s, giving those ships an additional mission of acting as Tomahawk strike platforms—a mission not originally contemplated for the ships, and one that contributed to the ship's cost effectiveness in their later years of service.
>
> (Statement of Ronald O'Rourke, Specialist in Naval Affairs, Congressional Research Service, before the House Armed Services Committee, Subcommittee on Seapower and Projection Forces, on The Navy's FY2014 30-Year Shipbuilding Plan, October 23, 2013, p. 10.)

[55] Source for figure of 5,400 tons: Joseph Trevithick, "Japan's Futuristic Mogami Frigate Will Be Australia's Next Warship," *The War Zone*, August 4, 2025, which cites a figure of 5,500 metric tons, which equates to 5,413 long tons.

[56] Source for figure of 6,100 tons: Joseph Trevithick, "Japan's Futuristic Mogami Frigate Will Be Australia's Next Warship," *The War Zone*, August 4, 2025, which cites a figure of 6,200 metric tons, which equates to 6,102 long tons.

with the first three to be built in Japan and the final eight to be built in Australia;[57]

- South Korea's 3,600-ton Daegu-class frigate design (**Figure 8**),[58] or a variant of that design; and
- European frigate designs or variants of such designs, including but not limited to the 6,400-ton Spanish F100 frigate design (which was a proposed parent design in the original FFG-62 competition) (**Figure 9**),[59] the newer the Spanish F110 frigate design,[60] the Spanish Alfa 3000, 4000, and 5000 frigate designs,[61] the UK Type 26 and Type 31 frigate designs,[62] and the German MEKO 200 and MEKO 400 frigate designs.[63]

[57] For additional discussion of the Mogami-class design and Australia's decision to acquire 11 Mogami-variant ships, see, for example, "Mogami-Class Frigate," *Wikipedia*, edited December 25, 2025, accessed January 1, 2025; Moyuru Tanaka, "The Mogami: Advancing Australia-Japan Defense Cooperation," Center for Strategic and International Studies (CSIS), November 21, 2025; Iku Tsujihiro and Masashi Murano, "Japan and Australia's Mogami Gamble: A New Role in a Taiwan Strait Contingency," Hudson Institute, September 23, 2025; Joseph Trevithick, "Japan's Futuristic Mogami Frigate Will Be Australia's Next Warship," *The War Zone*, August 4, 2025; Oliver Parken, "Japan's Futuristic Mogami Frigates: Everything You Need To Know," *The War Zone*, November 17, 2023; Eric Wertheim, "Japan's Multimission Mogami-class Frigates," *U.S. Naval Institute Proceedings*, September 2023.

[58] For more on the Daegu-class design, see "Daegu-Class Frigate," *Wikipedia*, edited December 27, 2025, accessed January 1, 2026; Eric Wertheim, "South Korea's Future Experimental Frigates," *U.S. Naval Institute Proceedings*, October 2025; Jamie Chang, "South Korea Commissions Final Daegu-class FFX Batch II Frigate," *Naval News*, October 24, 2023; "FFX-II (Daegu Class) Multi-Role Frigates," *Naval Technology*, September 5, 2016.

[59] For more on the F100 design, see Navantia, "F-100," undated, accessed January 1, 2026; "Álvaro de Bazán-Class Frigate," *Wikipedia*, edited December 12, 2025, accessed January 1, 2026; Brandon J. Weichert, "Here's How Spain Is Keeping Its F100 Frigates Relevant Through 2045," *National Interest*, December 15 2025; Ben Werner, "Spanish Shipbuilder Navantia Showcases F-100 Frigate Design," *USNI News*, January 22, 2019.

[60] For more on the F110 design, see "F110-Class Frigate," *Wikipedia*, edited December 16, 2025, accessed January 1, 2026; Navantia, "F-110," undated, accessed January 1, 2026; Xavier Vavasseur, "Spain's Navantia Proposing Two New Frigate Designs to the Hellenic Navy," *Naval News*, December 4, 2021.

[61] For more on the Alfa 3000, 4000, and 5000 frigate designs, see Navantia, Alfa 4000," undated, accessed January 1, 2026; Alex Luck, "Navantia Presents Revised Alfa 4000 Light Frigate And Smart LPD Concept At Indo Pacific 2025," *Naval News*, November 11, 2025; Alex Luck, "Navantia Unveils Three New Warships Including Tier-2 Corvette," *Naval News*, August 11, 2023; Xavier Vavasseur, "Spain's Navantia Proposing Two New Frigate Designs to the Hellenic Navy," *Naval News*, December 4, 2021.

[62] For more on the Type 26 and Type 31 frigate designs, see "Type 26 Frigate," *Wikipedia*, edited December 14, 2025, accessed January 1, 2026; "Type 31 Frigate," edited December 31 2025, accessed January 1, 2026.

[63] For more on the MEKO 200 and MEKO 400 frigate designs, see TKMS, "MEKO A-200," undated, accessed January 1, 2026; "MEKO 200," *Wikipedia*, edited December 31, 2025, accessed January 1, 2026; TKMS, "MEKO A-400 AMD," undated, accessed January 1, 2026.
For press reports discussing some of potential options listed here, see Joseph Trevithick, "U.S. Navy Now Wants A New Frigate And Fast," *The War Zone*, December 12, 2025; Joseph Trevithick, "Japan's Futuristic Mogami Frigate Will Be Australia's Next Warship," *The War Zone*, August 4, 2025.

Figure 6. Multi-Mission Surface Combatant (MMSC)

Source: Cropped version of photograph accompanying "The First MMSC-1 Frigate Built by Fincantieri in the United States for the Royal Saudi Navy Was Launched," *Zona Militar*, December 29, 2025. A watermark on the photograph with both Arabic and English writing states, in its English portion, "Ministry of Defense."

Figure 7. Mogami-Class Frigate

Source: Cropped version of photograph accompanying Eric Wertheim, "Japan's Multimission Mogami-class Frigates," U.S. Naval Institute Proceedings, September 2023. The caption to the photograph credits the photograph to Arjun Sarup.

General observations that might be made about the above-listed options for a new frigate design include but are not necessarily limited to the following:

- These potential design options are varied in ship sizes, capabilities, estimated or known procurement and life-cycle O&S costs, program-execution risks (i.e., risks of cost growth, schedule slippage, or technical challenges), and potential implications for the U.S. shipbuilding industrial base.
- The foreign designs might not meet certain U.S. Navy design standards, such as those relating to ship survivability.
- The three listed U.S. designs—the MMSC, the frigate variant of the NSC design, and the reduced-cost, more lightly armed variant of the DDG-51 design—could benefit from production and life-cycle O&S economies of scale with the existing Navy and Coast Guard ships from which they would be derived (the Navy's LCS-1 class, the Coast Guard's NSCs, and the Navy's DDG-51s, respectively).

- Compared with building a U.S. design in one or more U.S. shipyards, some of the foreign designs, if built in foreign shipyards, might have lower unit procurement costs due in part to lower labor costs in foreign shipyards compared with labor costs in U.S. shipyards,
- Compared with the U.S. designs, the foreign designs might offer less potential for creating life-cycle O&S economies of scale in conjunction with existing U.S. Navy and Coast Guard ships due to differences from existing U.S. Navy and Coast Guard ships regarding installed systems and components.
- The supply chains for supporting the foreign designs could reside at least partially, and perhaps to a large degree, in the countries where the designs were developed, which could pose risks during conflicts for supporting U.S. Navy ships built to a foreign design, unless investment is made to establish a U.S.-based supply chain for the ships.

Figure 8. Daegu-Class Frigate

Source: Photograph accompanying "Daegu class (FFG-II) Guided Missile Frigate," *Seaforces*, undated, accessed January 1, 2026. The caption to the photograph credits the photograph to "Republic of Korea Armed Forces/CC."

Potential Oversight Questions for Congress

Potential oversight questions for Congress regarding options for a new frigate design include the following:

- What is the analytical basis for the Navy's selection of a frigate variant of the NSC design as the new frigate design? What formal analysis—such as an Analysis of Alternatives (AOA)—did the Navy perform to evaluate the design options listed above (and perhaps other options)? What were the findings of this analysis? Has the Navy transmitted this analysis to Congress?

- As noted earlier, Secretary of the Navy Phelan has stated that the FFG-62 design would have a cost 80% of that of a destroyer while providing 60% of the capability of a destroyer. What are the corresponding percentage figures for a frigate variant of the NSC design and for the other above-listed design options?
- As noted earlier, the frigate variant of the NSC design, according to a senior official, reportedly will meet the CNO's requirements for a small surface combatant. As also noted earlier, the frigate variant of the NSC design will be smaller than the FFG-62 design, and might thus be less heavily armed than the FFG-62 design. Are the CNO's requirements for a small surface combatant the same as the requirements that were used earlier in originally selecting the FFG-62 design? If so, then was the FFG-62 design excessively large and expensive for meeting those requirements? If the CNO's requirements for a small surface combatant are not the same as those that were used earlier in originally selecting the FFG-62 design, how were the CNO's requirements determined, and have they been set forth in a formal requirements document?

Figure 9. Álvaro de Bazán-class F100 Frigate

Source: Photograph accompanying Defence24, "Navantia Showcasing Its Miecznik Proposal in Warsaw. Aegis offered for Poland," *Defence24.com*, December 15, 2021. The caption to the photograph credits the photograph to "NATO Maritime Group 2 via US Navy."

A December 22, 2025, blog entry states the following regarding the comparative capabilities of the FFG-62 design and the proposed NSC-based FF(X) design:

> The U.S. Navy has confirmed to TWZ [*The War Zone*] that the armament package for its first "flight" of its new FF(X) frigates will not include a built-in Vertical Launch System (VLS).…

A lack of any type of VLS on the FF(X) design is a glaring omission that can only raise questions about the operational utility and flexibility of the ships. At the same time, the new frigates will be able to carry modular payloads, including containerized missile launchers, on their sterns. The Navy also has an explicit plan to employ the FF(X)s as "motherships" for uncrewed surface vessels (USV), likely offering a distributed arsenal, as well as additional sensors, for the frigates to leverage during operations….

"The initial flight of FF(X) will have a 57mm gun, 2 x 30mm guns, a Mk 49 Rolling Airframe Missile [launcher], various countermeasures, and a flight deck from which to launch helicopters and unmanned systems. Aft of the flight deck, there will be a flexible weapons system, which can accommodate containerized payloads (Counter-UAS [counter-unmanned aerial systems], other missiles)," a Navy spokesperson told TWZ today. "Much like the successful DDG-51 [Arleigh Burke class destroyer] program, we are building this in flights. The frigate will be upgraded over successive flights to evolve and has the space reservations needed to improve capability over time."…

Overall, the Mk 41 VLS requirement was central to the FFG(X) program that led to the Constellation class design. This was viewed as a key element of righting the wrongs of the Navy's chronically underperforming Littoral Combat Ship (LCS) program. The Independence class and Freedom class LCSs both lack a VLS array. In addition, it's worth remembering here that HII's losing FFG(X) bid was notably a Patrol Frigate concept derived from the National Security Cutter that featured a VLS….

Integrating a VLS into future flights of FF(X) frigates is certainly an option, but one that could be complex and costly if the design is not configured to accommodate one to begin with….

Installing missile launchers on the FF(X)'s fantail would give the ships a boost in firepower in the absence of an integrated VLS array. Renderings so far have shown what look to be launchers for up to 16 Naval Strike Missiles (NSM) installed in that position.… There also looks to be space there for a least one containerized Mk 70 Payload Delivery Systems (PDS), another capability the Navy is already acquiring. Each Mk 70 contains a four-cell launcher derived from the Mk 41 VLS, and similarly capable of firing a variety of weapons, including SM-6 multi-purpose missiles and Tomahawk land-attack cruise missiles….

"The FF(X) will be designed to command groups of unmanned vessels, acting as a sort of 'mothership,' providing the commander tailored force packages based upon the weapons and sensors fielded on those unmanned craft," a Navy spokesperson also told TWZ today.

In this way, an FF(X) could still call upon a deeper and more flexible array of weapon options without having to have a VLS integrated directly onto the ship. The uncrewed platforms would also be able to operate across a much broader area than any single crewed frigate and present a different risk calculus for operating in higher-risk environments. All of this would expand the overall reach of the combined force and present targeting challenges for opponents. But there are also substantial development and operational risks with this kind of arrangement. As it sits, this kind of autonomous vessel and manned vessel teaming is still in development. Operationally, leaving the ship without, or with very limited, area defense capability is at odds with many future threat scenarios….

Even with all this in mind, the lack of a VLS still raises significant questions about the FF(X) plans, especially about the ability of the ships to operate more independently. This has been a key issue for the Navy's existing LCS fleets, and one that the Constellation class was supposed to help address….

… While expanded [FF(X)] variants in the future [that are equipped] with VLS arrays and more exquisite combat systems seem like a real possibility, when it comes to installed

armament, America's next frigate is set to be just as lightly armed as the LCS that came before it.[64]

Sole-Source or Competitive Contract Award for First Ship

Another potential oversight issue for Congress is whether a contract to build the first ship of a new frigate design should be awarded on a sole-source basis or competitive basis. As noted earlier, a December 19, 2025, press report quoted a "senior official" as stating: "We will initially sole-source the lead ship to Ingalls, but we will move to competition as soon as possible."[65] A potential alternative to a sole-source award for the first ship would be for the government to purchase the data rights to the selected frigate design (if the government does not already own the data rights) and hold a competition among multiple shipbuilders to build the first ship to that design.

Supporters of a sole-source award could argue that it will help reduce the construction timeline for the first ship, and that it is uncertain that holding a competition would have a meaningful impact on reducing contract price. Supporters of a competitive award could argue that a sole-source award would deprive the Navy of an opportunity to use competitive leverage to minimize the contract price, and that having that leverage would be more important than the additional time needed to hold a competition. Potential questions for Congress include the following:

- What analysis did the Navy perform to evaluate the question of whether to employ a sole-source approach or a competitive approach for awarding the contract to build the first ship of a new frigate design, and what were the findings of this analysis in terms of factors such as contract price and first-ship construction timeline?
- When would a second shipyard be brought into the effort to build a new frigate design?

Potential Participation of Foreign Shipyards

Another potential oversight issue for Congress is whether foreign shipyards should play a role in building frigates for the U.S. Navy. Such a role could involve building either entire frigates or frigate ship sections (sometimes called ship modules or ship blocks) that would be transported to a final-assembly shipyard in the United States. Building ships sections in one yard for transportation to a final assembly yard would be a form of what is referred to as distributed production or federated shipbuilding. The Navy currently uses distributed production/federated shipbuilding for its Virginia- and Columbia-class submarine construction programs.[66]

As discussed at length in another CRS report, U.S. Navy shipbuilding programs in some cases are being slowed or limited by U.S. shipbuilding industrial base capacity constraints.[67] Concerns over

[64] Joseph Trevithick, "Navy's New Frigate Will Not Have A Vertical Launch System For Missiles," *The War Zone*, December 22, 2025.

[65] Sam LaGrone, "SECNAV: New Frigate will be Based on National Security Cutter, First FF(X) to be Built at Ingalls," *USNI News*, December 19, 2025.

[66] For further discussion, see CRS Report RL32418, *Navy Virginia-Class Submarine Program and AUKUS Submarine (Pillar 1) Project: Background and Issues for Congress*, by Ronald O'Rourke.

[67] CRS Report RL32665, *Navy Force Structure and Shipbuilding Plans: Background and Issues for Congress*, by Ronald O'Rourke.

this situation are heightened by the pace of China's naval shipbuilding effort.[68] President Trump,[69] some other U.S. officials,[70] and other observers[71] have suggested or advocated using foreign shipyards—particularly shipyards in South Korea and/or Japan—to build ships for the U.S. Navy, at least as a stop-gap measure until U.S. shipbuilding capacity constraints can be alleviated. Other observers oppose proposals for using foreign shipyards to build ships for the U.S. Navy.[72]

10 U.S.C. 8679 prohibits the construction of vessels for U.S. armed forces, or the major components of the hull or the superstructures of such vessels, in foreign shipyards. The statute includes a presidential waiver for the national security interest. The phrase *major component of the hull* can be viewed as including, among other things, ship sections. The full text of the statute as of January 2, 2026, is as follows:

> §8679. Construction of vessels in foreign shipyards: prohibition
>
> (a) Prohibition.-Except as provided in subsection (b), no vessel to be constructed for any of the armed forces, and no major component of the hull or superstructure of any such vessel, may be constructed in a foreign shipyard.

[68] For more on China's naval shipbuilding effort, see CRS Report RL33153, *China Naval Modernization: Implications for U.S. Navy Capabilities—Background and Issues for Congress*, by Ronald O'Rourke.

[69] See for example, Howard Altman, "Trump Considering Buying Foreign Ships To Make Up Gap With China," *The War Zone*, April 11, 2025; Song Sang-ho, "Trump Says U.S. May Buy 'Top-Of-The-Line' Ships from 'Close' Countries," *Yonhap*, April 11, 2025; Oh Sam-Gwon, "Korean Shipbuilders Gear Up as Trump Suggests U.S. May Buy Warships," *Korea JoongAng Daily*, April 11, 2025; Tom Sharpe, "Trump Plans to Rebuild the US Navy in Korean Shipyards. We Already Know This Works Well," *Telegraph (UK)*, January 9, 2025; Morgan Phillips, "Trump Threatens to Tap Allies for Military Shipbuilding if US Can't Produce," *Fox News*, January 7, 2025; Joe Gould, "Trump Hints Pentagon Could Lean on Allies to Build Warships," *Politico Pro*, January 6, 2025.

[70] See, for example, Daryl Caudle, "Winning the Long Game: Sustaining Sea Power as Our Enduring Advantage," *Defense News*, December 18, 2025, in which the author—the Chief of Naval Operations—states (emphasis added): "Until American [ship]yards fully recover from workforce shortages, supply chain fragility and lack of automation, we are exploring responsible cooperation with allied shipbuilders in places like South Korea and Japan to bridge near-term gaps in maintenance, repair and *production*." See also "U.S. Navy Looks to Korean and Japanese Shipyards to Address Submarine and Destroyer Delays," *Army Recognition*, November 26, 2025; Kim Hyun-soo, "Arms Agency, U.S. Navy Discuss Cooperation on Naval Shipbuilding, MRO," *Yonhap*, August 8, 2025.

[71] See, for example, Jennifer Hlad, "Can Partner Nations Help Solve the Navy's Shipbuilding Woes?" *Defense One*, November 24, 2025; Maritime Executive, "South Korean Yards Want to Build U.S. Navy Ships in Korea," *Maritime Executive*, November 16, 2025; Jihoon Yu, "ROK–U.S. Shipbuilding Cooperation Matters for Maritime Power," *Real Clear World*, December 17, 2025; Juliana Liu, "South Korea Is the Answer to America's Naval Problem," *Bloomberg*, December 4, 2025; Brad Lendon, Gawon Bae, Yoonjung Seo, Mike Valerio, and Charlie Miller, "US Navy Shipbuilding Is 'a Mess.' South Korean companies Think They Can Help Fix It," *CNN*, updated October 20, 2025; William Hawkins, "Trade Is Not What Matters Most," *U.S. Naval Institute Proceedings*, July 2025; Namyeon Kwon, "Don't Miss the Boat: Considerations for U.S.-South Korea Maritime Cooperation," Center for Strategic and International Studies (CSIS), June 12, 2025; Steve Forbes, "Making Our Navy Supreme Again," *Forbes*, May 27, 2025; Arjun Akwei and Jinwan Park, "Trump Wants More Ships? Korea Stands Ready to Help Build Them," *The Hill*, May 8, 2025; Miyeon Oh and Michael Cecire, "Why the United States, South Korea, and Japan Must Cooperate on Shipbuilding," RAND, May 6, 2025; "South Korea Offers to Build Five Aegis Destroyers per Year to Help the US Counter China at Sea," *Army Recognition*, April 11, 2025; Fatima Bahtić, "Facing New Realities amid Rising Costs: Could Future US Navy Warships Be Built at Foreign Shipyards?" *NavalToday.com*, February 17, 2025; Peter Suciu, "The 21st Century U.S. Navy Might Be Built in South Korea," *National Interest*, January 9, 2025; Brian T. Di Mascio, "Foreign Shipyards Can Help the U.S. Navy Build Its Fleet," *U.S. Naval Institute Proceedings*, October 2024; Douglas Robb, "Japan, South Korea and the US Should Mirror AUKUS for Destroyers," *Defense News*, October 5, 2023; Brad Lendon, "These May Be the World's Best Warships. And They're Not American," *CNN*, June 3, 2023.

[72] See, for example, Rebecca Grant, "6 Reasons to Say 'No Thanks' to Building U.S. Navy Warships in South Korea," *Real Clear Defense*, July 30, 2025; Matthew Paxton, "Outsourcing the US Shipyard Industrial Base Will Outsource American Sovereignty," *Breaking Defense*, August 5, 2024; Shipbuilders Council of America, "'We Stand Ready' Ad Campaign Shows American Shipbuilders Can Deliver the Fleet of the Future," undated, accessed January 4, 2026.

> (b) Presidential Waiver for National Security Interest. (1) The President may authorize exceptions to the prohibition in subsection (a) when the President determines that it is in the national security interest of the United States to do so.
>
> (2) The President shall transmit notice to Congress of any such determination, and no contract may be made pursuant to the exception authorized until the end of the 30-day period beginning on the date on which the notice of the determination is received by Congress.
>
> (c) Exception for Inflatable Boats. An inflatable boat or a rigid inflatable boat, as defined by the Secretary of the Navy, is not a vessel for the purpose of the restriction in subsection (a).

In addition to 10 U.S.C. 8679, a recurring provision in the annual DOD Appropriations Act has prohibited funds appropriated each year for the Navy's shipbuilding account—the Shipbuilding and Conversion, Navy (SCN) appropriation account—from being used to build naval vessels or the major components of naval vessels in foreign shipyards or other foreign facilities. The provision has not included a presidential waiver. The phrase *major components* can be viewed as including, among other things, ship sections. The text of the provision, which appears in the paragraph of the DOD appropriations act that makes appropriations for the SCN account, has been as follows:

> … *Provided furth*er, That none of the funds provided under this heading [i.e., the heading for the SCN account] for the construction or conversion of any naval vessel to be constructed in shipyards in the United States shall be expended in foreign facilities for the construction of major components of such vessel: *Provided further,* That none of the funds provided under this heading shall be used for the construction of any naval vessel in foreign shipyards:…

Supporters of having foreign shipyards contribute to the construction of frigates for the U.S. Navy could argue that the Navy's force of 32 small surface combatants (SSCs) at the start of FY2026 is less than half of the Navy's 73-ship force-level goal for such ships; that in light of China's naval shipbuilding effort, closing this shortfall is a matter of some urgency; and that given the time needed to alleviate constraints on U.S. shipbuilding capacity (particularly limits on numbers of available workers and the productivity of recently hired workers), there are few apparent options other than using foreign shipyards for quickly expanding the shipbuilding capacity engaged in building ships for the U.S. Navy. They could argue that involving foreign shipyards in the frigate-building effort could be a stop-gap measure to be employed until U.S. shipbuilding capacity is increased, and that for similar reasons, Finnish shipyards are being brought into the effort to build new icebreakers for the U.S. Coast Guard.[73] They could argue that foreign shipyards in some cases have lower shipbuilding costs than U.S. shipyards, due in part to lower labor costs, and that involving foreign shipyards in the U.S. Navy's frigate-building effort could therefore reduce frigate procurement costs for the U.S. Navy.

Skeptics of having foreign shipyards contribute to the construction of frigates for the U.S. Navy could argue that the Navy can use destroyers and other forces to compensate for its current shortfall in SSCs; that the Navy and industry are taking numerous steps to alleviate constraints on U.S. shipbuilding capacity;[74] that diverting some of the work involved in building frigates to foreign shipyards could weaken the U.S. shipbuilding industrial base by depriving the U.S.

[73] For more on programs to build new icebreakers for the U.S. Coast Guard, see CRS Report RL34391, *Coast Guard Polar Security Cutter (PSC) and Arctic Security Cutter (ASC) Icebreaker Programs: Background and Issues for Congress*, by Ronald O'Rourke.

[74] For more on these steps, see CRS Report RL32665, *Navy Force Structure and Shipbuilding Plans: Background and Issues for Congress*, by Ronald O'Rourke.

shipbuilding industry of work that would support efforts to alleviate those constraints; that involving foreign shipyards in the frigate-building effort, even if described as a stop-gap measure, could set a precedent for involving foreign shipyards in other U.S. Navy shipbuilding programs, which could further weaken the U.S. shipbuilding industrial base; and that involving foreign shipyards in the frigate-building effort could add to Navy shipbuilding program management workloads, and do so at a time when the Navy is facing challenges in executing its shipbuilding programs.

Unexpended FFG-62 Procurement Funds

Another potential oversight issue for Congress is whether unexpended funds for the FFG-62 program—particularly funds appropriated for procuring the third though sixth FFG-62s—should be rescinded or reprogrammed to other uses, and if the latter, then what those other uses should be. The Navy's FY2026 budget submission shows that a total of about $7.7 billion was appropriated for procurement of FFG-62s through FY2025, including about $5.0 billion for the third through sixth ships in the program. Potential oversight issues for Congress include the following:

- How much FFG-62 procurement funding appropriated in FY2025 and prior years has not been expended and would become available for other uses if the third through sixth ships in the program were canceled? How much additional unexpended procurement funding would become available for other uses if the first and/or second ships in the program were also canceled?
- What would be the most cost-effective uses of unexpected FFG-52 procurement funding? What are the Navy's proposed uses?

Near-Term Support for F/MM

Another potential oversight issue for Congress concerns how to support F/MM in the near term, while policymakers assess how F/MM's shipbuilding capability could be used over the longer run. Under the Navy's desired approach for frigate acquisition, construction of the first two FFG-62s, which was underway as of November 2025, would continue but remain under review. As discussed earlier, the continuation, for now at least, of construction work on the first two FFG-62s reportedly is intended to support F/MM in the near term, while policymakers assess how F/MM's shipbuilding capability could be used over the longer run. Other options for supporting F/MM in the near term—which could be pursued either in lieu of or in conjunction with continued construction work on the first two FFG-62s—include but are not necessarily limited to the following:

- building for the U.S. Navy Multi-Mission Surface Combatants (MMSCs) that would be in addition to the four MMSCs that F/MM is building for the Royal Saudi Navy;
- building ship sections of other kinds of Navy ships, including but not limited to
  - DDG-51 ship sections, so as to increase the annual production rate of DDG-51s, which is below the annual procurement rate for DDG-51s, leading to a growing backlog of numbers of DDG-51s that have been procured but not yet completed;[75] and

[75] For more on the DDG-51 program, see CRS Report RL32109, *Navy DDG-51 and DDG-1000 Destroyer Programs: Background and Issues for Congress*, by Ronald O'Rourke.

  - Virginia-class attack submarine sections, so as to help increase the annual production rate of Virginia-class submarines, which is below the annual procurement rate for Virginia-class submarines, leading to a growing backlog of numbers of Virginia-class submarines that have been procured but not yet completed; and
- participating in other Navy shipbuilding programs, including but not necessarily limited to those for building amphibious ships,[76] medium landing ships (LSMs),[77] or USVs.[78]

Continuing construction work on the first two FFG-62s would permit F/MM to fully use materials and components that have been procured for those two ships, and produce two frigates for the Navy, reducing the Navy's shortfall of small surface combatants (SSCs) relative to its stated force-level goal for SSCs. As discussed earlier in this report, a two-ship FFG-62 class could have elevated per-ship life cycle O&S costs due to the limited O&S economies of scale for a two-ship class. As also discussed earlier, the issue of elevated FFG-62 per-ship O&S costs could be addressed by eventually selling the two FFG-62s to one or two allied or partner navies that might need only one or two such ships to meet their own mission needs. Potential oversight questions for Congress include the following:

- Would continued construction of the first two FFG-62s in conjunction with F/MM's construction of MMSCs for the Royal Saudi Navy adequately support F/MM in the near term, while policymakers assess how F/MM's shipbuilding capability could be used over the longer run?
- What is the most cost-effective approach for supporting F/MM in the near term, while policymakers assess how F/MM's shipbuilding capability could be used over the longer run? What are the relative costs and benefits of supporting F/MM through continued construction of the first two FFG-62s and/or having F/MM perform other shipbuilding work for the Navy, such as the potential examples listed above?
- How much funding has been expended to purchase materials and components for the first two FFG-62s? If construction work on the first two FFG-62s were ended, how much of these materials and components could be used in other Navy shipbuilding programs?

[76] For more on Navy amphibious shipbuilding programs, see CRS Report R43543, *Navy LPD-17 Flight II and LHA Amphibious Ship Programs: Background and Issues for Congress*, by Ronald O'Rourke.

[77] For more on the LSM program, see CRS Report R46374, *Navy Medium Landing Ship (LSM) Program: Background and Issues for Congress*, by Ronald O'Rourke.

[78] For more on the Navy's USV acquisition effort, see CRS Report R45757, *Navy Large Unmanned Surface and Undersea Vehicles: Background and Issues for Congress*, by Ronald O'Rourke.

Appendix A. Issues for Congress Prior to Navy's November 2025 Announcement

This appendix discusses potential oversight issues for Congress regarding the FFG-62 program as they existed prior to the Navy's November 2025 announcement about its desire to truncate the FFG-62 program and pursue a successor frigate program.

Delay in Delivery of First Ship

One potential oversight issue for Congress concerns the estimated delay in the delivery of the first ship in the program. Potential oversight questions for Congress include the following:

- What impact will the delay have on the delivery schedules for follow-on ships in the program?
- What actions do the shipyard and the Navy plan to take to address reported worker shortages at the shipyard? How long will it take for those actions to produce results, and how confident are the shipyard and the Navy that these actions will be sufficient to eliminate reported worker shortages? If these actions include increasing pay and benefits for workers at the shipyard, what impact will that have on the procurement cost of FFG-62s (or other Navy ships) built at the shipyard in coming years?
- To what degree do worker shortages at the shipyard reflect circumstances unique to the shipyard? To what degree to they reflect circumstances affecting shipyards across the country?
- What lessons for future Navy shipbuilding efforts, if any, can the shipbuilding industry and the Navy learn from the delay in the delivery of the first ship?

Potential for Cost Growth, Particularly After First 10 Ships

CRS and CBO Analyses in 2020 and 2023

Another potential oversight issue for Congress concerns the potential for cost growth in the FFG-62 program, particularly after the first 10 ships in the program, which are to be procured under a fixed-price incentive (firm target) contract. As discussed in greater detail in earlier versions of this CRS report,[79] CRS and CBO analyses done in 2020 suggested that if FFG-62s were to wind up costing about the same to construct per thousand tons of displacement as other recent U.S. military surface combatants, then FFG-62s could cost substantially more to build than their budgeted unit procurement costs:

- The preliminary CRS analysis, done by CRS following the Navy's April 30, 2020, contract award in the FFG-62 program, suggested that if FFG-62s were to wind up costing about the same to construct per thousand tons of displacement as other recent U.S. military surface combatants, then the third and subsequent FFG-62s could cost 17% to 56% more than the budgeted estimates for those ships in the Navy's FY2021 budget submission.

[79] See, for example, the version dated December 21, 2022, or earlier versions dating back to the version of May 4, 2020.

- A follow-on and more refined analysis of the issue that was done by CBO and released on October 13, 2020,[80] and which also compared the Navy's FFG-62 budgeted cost estimate to actual costs for building other recent U.S. military surface combatants, estimated that the first 10 FFG-62s would cost 40% more to build than the Navy estimates.
- An October 2023 CBO report on the cost of the Navy's FY2024 30-year shipbuilding plan, based on updated Navy and CBO figures, estimated that FFG-62s on average will cost 10% to 20% more than the updated Navy estimates.[81]

May 2024 GAO Report

The May 2024 GAO report on the FFG-62 program stated that in October 2023, the FFG-62 shipbuilder reported "unplanned weight growth in the frigate design—an increase of over 10 percent above the shipbuilder's June 2020 weight estimate."[82] Since ship procurement costs are generally proportional to ship displacement (i.e., weight), this weight growth suggests a potential for cost growth beyond the above-discussed figures in the 2020 and 2023 CRS and CBO analyses.

Potential Consequences of Cost Growth

Depending on the exact terms of the fixed-price incentive (firm target) contract that the Navy awarded to F/MM for the first 10 ships in the FFG-62 program, some portion (perhaps much) of any cost growth that might occur on the first 10 FFG-62s could be borne by F/MM rather than the Navy, although F/MM under such a circumstance might also have the option of seeking some form of contractual relief from the Navy, which if granted could shift at least some of the cost growth back to the government.[83] If F/MM were to bear most or all of any cost growth that might occur on the first 10 FFG-62s, then cost growth in the FFG-62 program, if it were to occur, might not affect Navy budgeting substantially until the 11th ship in the program. Under the Navy's FY2025 budget submission, the 11th ship in the program was scheduled to be the first of the two ships that are programmed for procurement in FY2028.

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[80] Congressional Budget Office, *The Cost of the Navy's New Frigate*, October 2020, 11 pp.

[81] Congressional Budget Office, *An Analysis of the Navy's Fiscal Year 2024 Shipbuilding Plan*, October 2023, Table 8 on pp. 26-27. CBO states that the new estimated difference between CBO and the Navy of 10% to 20%, as opposed to the 40% difference from CBO's October 2020 report, is due to four factors: (1) an increase by the Navy since October 2020 in its estimated costs for building FFG-62s; (2) a decrease by CBO since October 2020 in its estimated costs for building FFG-62s due to an updated treatment of inflation; (3) a shift by CBO from estimating the cost of ships 1 through 10 in CBO's October 2020 report to ships 5 through 20 in CBO's October 2023 report, which among other things eliminated from the analysis the cost of the lead ship, where there is a fairly substantial difference between the CBO and Navy estimates; and (4) the rounding off in CBO's reports of Navy and CBO estimates to the nearest tenth of a billion dollars per ship, which can shift resulting calculations of the percent difference in cost. (Source: CBO telephone call with CRS, November 14, 2023.)

[82] Government Accountability Office, *Navy Frigate[:] Unstable Design Has Stalled Construction and Compromised Delivery Schedules*, GAO-24-106546, May 2024, p. 17.

[83] For example, in 2019, Eastern Shipbuilding Group of Panama City, FL, requested and received contractual relief for Offshore Patrol Cutters (OPCs) that it is building for the Coast Guard. The relief was granted under P.L. 85-804 as amended (50 U.S.C. 1431-1435), a law that authorizes certain federal agencies to provide certain types of extraordinary relief to contractors who are encountering difficulties in the performance of federal contracts or subcontracts relating to national defense. ESG reportedly submitted a request for extraordinary relief on June 30, 2019, after ESG's shipbuilding facilities were damaged by Hurricane Michael, which passed through the Florida panhandle on October 10, 2018. For additional discussion of the OPC program, including the contractual relief provided under P.L. 85-804, see CRS Report R42567, *Coast Guard Cutter Procurement: Background and Issues for Congress*, by Ronald O'Rourke. See also Congressional Budget Office, *The Cost of the Navy's New Frigate*, October 2020, p. 11.

Potential Oversight Questions

Potential oversight questions for Congress include the following:

- What is the Navy's basis for its view that FFG-62s—ships that are to be about three-quarters as large as U.S. Navy's new Flight III Arleigh Burke (DDG-51) class destroyers[84] in terms of displacement, and with installed capabilities that are in many cases similar to those of DDG-51s—can be procured for less than one-half the cost of Flight III DDG-51s?
- Under the terms of the fixed-price incentive (firm target) contract that the Navy awarded to F/MM for the FFG-62 program, what portion of any cost growth that might occur on the first 10 FFG-62s might be borne by F/MM, and what portion might be borne by the Navy?
- If the budgeted procurement costs of FFG-62s rise substantially starting with the 11th ship in the program, what impact, if any, would that have on the Navy's ability to afford other Navy program priorities? What impact, if any, would it have on the cost effectiveness of the FFG-62 program relative to other Navy investments?

Whether and When to Introduce a Second Shipyard into Program

Another potential oversight issue for Congress is whether and when to introduce a second shipyard into the FFG-62 program. The Navy's FFG-7s, which were procured at annual rates of as high as eight ships per year, were built at three shipyards. As noted earlier, the Navy's baseline plan for the FFG-62 program envisaged using a single builder at any one time to build FFG-62s, but Navy officials have also spoken about the option of bringing a second shipyard into the program at some point, particularly if annual procurement rates for FFG-62s rise above two ships per year.

In considering whether to build FFG-62s at a single shipyard or at two shipyards, Congress may consider several factors, including but not limited to the annual FFG-62 procurement rate, shipyard production capacities and production economies of scale, the potential costs and benefits in the FFG-62 program of employing recurring competition between multiple shipyards, and how the number of FFG-62 builders might fit into a larger situation involving the production of other Navy and Coast Guard ships, including Navy DDG-51 destroyers, Navy amphibious ships, and Coast Guard Offshore Patrol Cutters (OPCs).[85]

Number of VLS Tubes

Another potential oversight issue for Congress—one discussed in this CRS report since April 2019[86]—concerns the number of vertical launch system (VLS) missile tubes in the FFG-62 design. The VLS is the FFG-62's principal (though not only) means of storing and launching

[84] For more on the DDG-51 program, see CRS Report RL32109, *Navy DDG-51 and DDG-1000 Destroyer Programs: Background and Issues for Congress*, by Ronald O'Rourke.

[85] For more on the DDG-51 program, see CRS Report RL32109, *Navy DDG-51 and DDG-1000 Destroyer Programs: Background and Issues for Congress*, by Ronald O'Rourke. For more on Navy amphibious shipbuilding programs, see CRS Report R43543, *Navy LPD-17 Flight II and LHA Amphibious Ship Programs: Background and Issues for Congress*, by Ronald O'Rourke. For more on the OPC program, see CRS Report R42567, *Coast Guard Cutter Procurement: Background and Issues for Congress*, by Ronald O'Rourke.

[86] See page 11 of the April 19, 2019, update of this CRS report.

missiles. FFG-62s are to each be equipped with 32 Mark 41 VLS tubes. (The Mark 41 is the Navy's standard VLS design.)

Supporters of requiring each FFG-62 to be equipped with a larger number of VLS tubes, such as 48, might argue that FFG-62s are to be roughly three-quarters as large as the Navy's DDG-51 class destroyers, and might therefore be more appropriately equipped with at least 48 VLS tubes, which is one-half the number on recent DDG-51s. They might also argue that in a context of renewed great power competition with potential adversaries such as China, which is steadily improving its naval capabilities,[87] it might be prudent to equip each FFG-62 with 48 rather than 32 VLS tubes each, and that doing so might only marginally increase FFG-62 unit procurement costs. They might also argue that equipping each FFG-62 with 48 rather than 32 VLS tubes will permit the Navy to more fully offset a substantial reduction in VLS tubes that the Navy's surface fleet is projected to experience when the Navy's 22 Ticonderoga (CG-47) class cruisers, which are each equipped with 122 VLS tubes, are retired,[88] and provide a hedge against the possibility that Navy plans to field VLS tubes on Large Unmanned Surface Vehicles (LUSVs)[89] will be slowed or curtailed for technical or other reasons.

Supporters of having each FFG-62 be equipped with 32 VLS tubes might argue that the analyses indicating a need for 32 VLS tubes already took improving adversary capabilities (as well as other U.S. Navy capabilities) into account. They might also argue that FFG-62s, in addition to having 32 VLS tubes, will also to have separate, deck-mounted box launchers for launching 16 anti-ship cruise missiles, as well as a separate, 21-cell Rolling Airframe Missile (RAM) AAW missile launcher; that Navy plans continue to call for eventually deploying additional VLS tubes on LUSVs, which are to act as adjunct weapon magazines for the Navy's manned surface combatants; and that increasing the number of VLS tubes on each FFG-62 from 32 to 48 would increase (even if only marginally) the procurement cost of a ship that is intended to be an affordable supplement to the Navy's cruisers and destroyers.

A May 14, 2019, Navy information paper on the cost impact of expanding the FFG-62 VLS capacity from 32 cells to 48 cells states

> To grow from a 32 Cell VLS to a 48 Cell VLS necessitates an increase in the length of the ship with a small beam increase and roughly a 200-ton increase in full load displacement. This will require a resizing of the ship, readdressing stability and seakeeping analyses, and adapting ship services to accommodate the additional 16 VLS cells.
>
> A change of this nature would unnecessarily delay detail design by causing significant disruption to ship designs. Particularly the smaller ship designs. Potential competitors have already completed their Conceptual Designs and are entering the Detail Design and Construction competition with ship designs set to accommodate 32 cells.

[87] For more on China's naval shipbuilding effort, see CRS Report RL33153, *China Naval Modernization: Implications for U.S. Navy Capabilities—Background and Issues for Congress*, by Ronald O'Rourke.

[88] See, for example, Megan Eckstein and Joe Gould, "Lawmakers Crunching the Numbers on Potential Surface Navy Additions to FY22 Spending Plan," *Defense News*, June 17, 2021; Mallory Shelbourne, "Lawmakers Probe Navy's Plan to Decommission Cruisers, Navy Says Cuts Will Save $5B Across FYDP," *USNI News*, June 17 (updated June 18), 2021; Megan Eckstein, "Lawmakers Are Worried About the US Navy's Spending Plan and a Near-Term China Threat," *Defense News*, June 15, 2021; Mallory Shelbourne, "CNO Gilday: Flat or Declining Navy Budgets 'Will Definitely Shrink' the Fleet," *USNI News*, June 15, 2021; Blake Herzinger, "The Budget (and Fleet) That Might Have Been," *War on the Rocks*, June 10, 2021; David B. Larter, "As the US Navy Scrambles to Field More Missiles in Asia, a Tough Decision Looms for Aging Cruisers," *Defense News*, April 12, 2021.

[89] For more on the LUSV program, see CRS Report R45757, *Navy Large Unmanned Surface and Undersea Vehicles: Background and Issues for Congress*, by Ronald O'Rourke.

> The cost is estimated to increase between $16M [million] and $24M [million] per ship. This includes ship impacts and additional VLS cells.[90]

Compared to an FFG-62 follow-on ship unit procurement cost of roughly $1.1 billion to $1.2 billion, the above estimated increase of $16 million to $24 million would equate to an increase in unit procurement cost of about 1.3% to about 2.2%.[91] The estimated figure of $16 million to $24 million, however, dates to 2019. Inflating it to current costs would produce a percentage increase in total ship procurement cost that would be somewhat greater than 1.3% to 2.2%.

Technical Risk

Another potential oversight issue for Congress concerns technical risk in the FFG-62 program.

June 2025 and May 2024 GAO Reports

Regarding GAO's perspective on technical risk in the FFG-62 program, see the quoted passages from the June 2025 and May 2024 GAO reports on the FFG-62 program presented earlier in this CRS report.

January 2024 DOT&E Report

A January 2024 report from DOD's Director, Operational Test and Evaluation (DOT&E)—DOT&E's annual report for FY2023[92]—stated the following regarding the FFG-62 program:

> **TEST ADEQUACY**
>
> In March 2023, DOT&E published a classified FFG 62 EOA [early operational assessment] report based on evaluations conducted between February 2022 and July 2022 and detailed in the FY22 Annual Report. Evaluations were adequate to determine potential FFG 62 design risks that could affect operational effectiveness and suitability of the delivered ship. The EOA provides the FFG 62 Program with an opportunity to consider modifications to the ship design. The FFG 62 Program will also use the EOA to inform development of the next TEMP [test and evaluation master plan] revision expected to be completed in FY25. The Navy conducted the EOA in accordance with a DOT&E-approved test plan, and it was observed by DOT&E.
>
> In FY23, the Navy conducted testing against a large scale-model of a generic ship incorporating characteristics typical of Navy standard ship structure and a responding mid-deck plate to generate response data for under-bottom explosions. This test was similar to the test detailed in the FY22 Annual Report but focused on different structure response. Data from these tests provide validation data for survivability models used to predict the magnitude and extent of damage from underwater threat weapons. The Navy conducted this test in accordance with the DOT&E-approved test plan, and it was observed by DOT&E.
>
> In FY23, the FFG 62 Program approved the FFG 62 Verification, Validation, and Accreditation (VV&A) Plans for the Advanced Survivability Assessment Program (ASAP) and Navy Enhanced Sierra Mechanics (NESM) M&S [modeling and simulation] tools. These plans are adequate to determine the sufficiency of these M&S within the LFT&E [live fire test and evaluation] test strategy. Further, the Navy continued M&S modification

[90] Navy information paper entitled "FFG(X) Cost to Grow to 48 cell VLS," dated May 14, 2019, received from Navy Office of Legislative Affairs on June 14, 2019.

[91] For additional discussion, see Joseph Trevithick and Tyler Rogoway, "Does The Navy's New Constellation Class Frigate Have Enough Vertical Launch Cells?" *The Warzone*, January 31, 2024.

[92] DOT&E's January 2025 report for FY2024 does not include a section on the FFG-62 program.

that incorporates new capabilities, including improvements in the blast and whipping codes. The Navy is working closely with DOT&E on the development of M&S plans to support the Detail Design Survivability Assessment Report that the FFG 62 Program expects to publish in FY26.

PERFORMANCE

EFFECTIVENESS

No data are available to determine FFG 62 operational effectiveness due to FFG 62 being in development. However, the FFG 62 design presents risks to operational effectiveness in each of its primary mission areas: air warfare, anti-submarine warfare, and surface warfare. Classified risks to operational effectiveness are in the FFG 62 EOA report. Unclassified risks to operational effectiveness include that the FFG 62 design does not have a tracker illuminator system, which is typically installed on other Aegis platforms, and that the design crew size will be highly reliant on currently unproven system automation and human system interfaces. The Navy acknowledges the risk of the current crewing strategy for FFG 62 and is working with the appropriate stakeholders to mitigate and eliminate the associated risk to mission performance. Further, the FFG 62 Program reports that they currently have sufficient access to technical information on the Thales CAPTAS-4 [variable-depth sonar] needed to effectively integrate it with the AN/SQQ-89(V)16 [undersea warfare] system.

SUITABILITY

No data are available to determine FFG 62 operational suitability due to FFG 62 being in development. Further, reliability, maintainability, and availability data for hull, mechanical, and electrical systems are not yet available to identify associated risk in the FFG 62 design.

SURVIVABILITY

No data are available to determine the cyber survivability of FFG 62 due to its early stage of development. Cyber survivability was not assessed during the EOA.

Insufficient data are available to determine FFG 62 survivability due to ongoing LFT&E. The Navy continued to close outstanding vulnerability knowledge gaps and support validation of survivability M&S through additional large-scale underwater explosion testing in FY23.

RECOMMENDATIONS

The Navy should:

1. Provide an update to the FFG 62 TEMP that includes the strategy to test anti-air warfare mission capability.

2. Continue to monitor the development of the mission system autonomy/automation components in the ship design to minimize risk to mission performance and system maintenance capability, and if necessary, complete a reassessment of the adequacy of crew sizing to allow opportunity to incorporate modifications of the ship design, should additional crewing be required to support all intended missions.[93]

[93] Director, Operational Test & Evaluation, *FY 2023 Annual Report*, January 2024, pp. 200-201.

Appendix B. Guaranty vs. Warranty in Construction Contract

This appendix presents background information regarding the Navy's use of a guaranty rather than a warranty in the Detail Design and Construction (DD&C) contract for the first 10 ships in the FFG-62 program. An August 2019 GAO report on the FFG-62 program states

> The Navy plans to use a fixed-price incentive contract for FFG(X) detail design and construction. This is a notable departure from prior Navy surface combatant programs that used higher-risk cost-reimbursement contracts for lead ship construction. The Navy also plans to require that each ship has a minimum guaranty of $5 million to correct shipbuilder-responsible defects identified in the 18 months following ship delivery. However, Navy officials discounted the potential use of a warranty—another mechanism to address the correction of shipbuilder defects—stating that their use could negatively affect shipbuilding cost and reduce competition for the contract award. The Navy provided no analysis to support these claims and has not demonstrated why the use of warranties is not a viable option. The Navy's planned use of guarantees helps ensure the FFG(X) shipbuilder is responsible for correcting defects up to a point, but guarantees generally do not provide the same level of coverage as warranties. GAO found in March 2016 that the use of a guaranty did not help improve cost or quality outcomes for the ships reviewed. GAO also found the use of a warranty in commercial shipbuilding and certain Coast Guard ships improves cost and quality outcomes by requiring the shipbuilders to pay to repair defects. The FFG(X) request for proposal offers the Navy an opportunity to solicit pricing for a warranty to assess the cost-effectiveness of the different mechanisms to address ship defects.[94]

As discussed in another CRS report,[95] in discussions of Navy (and also Coast Guard) shipbuilding, a question that sometimes arises is whether including a warranty in a shipbuilding contract is preferable to not including one. The question can arise, for example, in connection with a GAO finding that "the Navy structures shipbuilding contracts so that it pays shipbuilders to build ships as part of the construction process and then pays the same shipbuilders a second time to repair the ship when construction defects are discovered."[96]

Including a warranty in a shipbuilding contract (or a contract for building some other kind of defense end item), while potentially valuable, might not always be preferable to not including one—it depends on the circumstances of the acquisition, and it is not necessarily a valid criticism of an acquisition program to state that it is using a contract that does not include a warranty (or a weaker form of a warranty rather than a stronger one).

Including a warranty generally shifts to the contractor the risk of having to pay for fixing problems with earlier work. Although that in itself could be deemed desirable from the government's standpoint, a contractor negotiating a contract that will have a warranty will incorporate that risk into its price, and depending on how much the contractor might charge for doing that, it is possible that the government could wind up paying more in total for acquiring the

[94] Government Accountability Office, *Guide Missile Frigate[:] Navy Has Taken Steps to Reduce Acquisition Risk, but Opportunities Exist to Improve Knowledge for Decision Makers*, GAO-19-512, August 2019, summary page.

[95] See CRS Report RL32665, *Navy Force Structure and Shipbuilding Plans: Background and Issues for Congress*, by Ronald O'Rourke.

[96] See Government Accountability Office, *Navy Shipbuilding[:] Past Performance Provides Valuable Lessons for Future Investments*, GAO-18-238SP, June 2018, p. 21. A graphic on page 21 shows a GAO finding that the government was financially responsible for shipbuilder deficiencies in 96% of the cases examined by GAO, and that the shipbuilder was financially responsible for shipbuilder deficiencies in 4% of the cases.

item (including fixing problems with earlier work on that item) than it would have under a contract without a warranty.

When a warranty is not included in the contract and the government pays later on to fix problems with earlier work, those payments can be very visible, which can invite critical comments from observers. But that does not mean that including a warranty in the contract somehow frees the government from paying to fix problems with earlier work. In a contract that includes a warranty, the government will indeed pay something to fix problems with earlier work—but it will make the payment in the less-visible (but still very real) form of the up-front charge for including the warranty, and that charge might be more than what it would have cost the government, under a contract without a warranty, to pay later on for fixing those problems.

From a cost standpoint, including a warranty in the contract might or might not be preferable, depending on the risk that there will be problems with earlier work that need fixing, the potential cost of fixing such problems, and the cost of including the warranty in the contract. The point is that the goal of avoiding highly visible payments for fixing problems with earlier work and the goal of minimizing the cost to the government of fixing problems with earlier work are separate and different goals, and that pursuing the first goal can sometimes work against achieving the second goal.[97]

DOD's guide on the use of warranties states the following:

> Federal Acquisition Regulation (FAR) 46.7 states that "the use of warranties is not mandatory." However, if the benefits to be derived from the warranty are commensurate with the cost of the warranty, the CO [contracting officer] should consider placing it in the contract. In determining whether a warranty is appropriate for a specific acquisition, FAR Subpart 46.703 requires the CO to consider the nature and use of the supplies and services, the cost, the administration and enforcement, trade practices, and reduced requirements. The rationale for using a warranty should be documented in the contract file....
>
> In determining the value of a warranty, a CBA [cost-benefit analysis] is used to measure the life cycle costs of the system with and without the warranty. A CBA is required to determine if the warranty will be cost beneficial. CBA is an economic analysis, which basically compares the Life Cycle Costs (LCC) of the system with and without the warranty to determine if warranty coverage will improve the LCCs. In general, five key factors will drive the results of the CBA: cost of the warranty + cost of warranty administration + compatibility with total program efforts + cost of overlap with Contractor support + intangible savings. Effective warranties integrate reliability, maintainability, supportability, availability, and life-cycle costs. Decision factors that must be evaluated include the state of the weapon system technology, the size of the warranted population, the likelihood that field performance requirements can be achieved, and the warranty period of performance.[98]

[97] It can also be noted that the country's two largest builders of Navy ships—General Dynamics (GD) and Huntington Ingalls Industries (HII)—derive about 60% and 96%, respectively, of their revenues from U.S. government work. (See General Dynamics, *2016 Annual Report*, page 9 of Form 10-K [PDF page 15 of 88] and Huntington Ingalls Industries, *2016 Annual Report*, page 5 of Form 10-K [PDF page 19 of 134].) These two shipbuilders operate the only U.S. shipyards currently capable of building several major types of Navy ships, including submarines, aircraft carriers, large surface combatants, and amphibious ships. Thus, even if a warranty in a shipbuilding contract with one of these firms were to somehow mean that the government did not have pay under the terms of that contract—either up front or later on—for fixing problems with earlier work done under that contract, there would still be a question as to whether the government would nevertheless wind up eventually paying much of that cost as part of the price of one or more future contracts the government may have that firm.

[98] Department of Defense, *Department of Defense Warranty Guide*, Version 1.0, September 2009, accessed July 13, 2017, at https://www.acq.osd.mil/dpap/pdi/uid/docs/departmentofdefensewarrantyguide[1].doc.

In response to a draft version of GAO's August 2019 report, the Navy stated

> As a part of the planning for the procurement of detail design and construction for FFG(X), the Navy determined that a guaranty, rather than a commercial-type warranty, will be implemented for the program. As a part of the FFG(X) detail design and construction request for proposals [RFP] released on June 20, 2019, the Navy asked contractors to include a limit of liability of at least $5 million per ship and a guaranty period of 18 months beyond preliminary acceptance of each ship. Further, the solicitation allows offerors to propose as additional limit of liability amount beyond the required $5 million amount, up to and including an unlimited liability. This arrangement represents an appropriate balance between price considerations and risks, ensuring that the shipbuilder is accountable for the correction of defects that follow preliminary acceptance, while allowing each shipbuilder to use its own business judgement in proposing the value of the limit of liability. The Navy released the solicitation prior to this GAO recommendation and is unable to modify the current solicitation because it would cause an unacceptable delay to the FFG(X) program.
>
> To support the GAO recommendation to request pricing for an unlimited warranty, the Navy will request pricing for unlimited warranty before exercising the first ship option and evaluate the business case.[99]

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Disclaimer

[99] Government Accountability Office, *Guide Missile Frigate[:] Navy Has Taken Steps to Reduce Acquisition Risk, but Opportunities Exist to Improve Knowledge for Decision Makers*, GAO-19-512, August 2019 (revised September 5, 2019 to include an omitted page in the report section, [and] comments from the Department of Defense), pp. 44-45.