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Navy Force Structure and Shipbuilding Plans: Background and Issues for Congress

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Summary

The current and planned size and composition of the Navy, the annual rate of Navy ship procurement, the prospective affordability of the Navy's shipbuilding plans, the capacity of the U.S. shipbuilding industry to execute the Navy's shipbuilding plans, and Navy proposals for retiring existing ships have been oversight matters for the congressional defense committees for many years.

In December 2016, the Navy released a force-structure goal that calls for achieving and maintaining a fleet of 355 ships of certain types and numbers. The 355-ship goal was made U.S. policy by Section 1025 of the FY2018 National Defense Authorization Act (H.R. 2810/P.L. 115-91 of December 12, 2017). The 355-ship goal predates the Trump and Biden Administrations' national defense strategies and does not reflect the new, more distributed fleet architecture (i.e., new mix of ships) that the Navy wants to shift toward in coming years. The Navy and the Office of the Secretary of Defense (OSD) have been working since 2019 to develop a successor for the 355-ship force-level goal that would reflect current national defense strategy and the new fleet architecture, but have not been able to come to closure on a successor goal. The Navy's FY2023 30-year (FY2023-FY2052) shipbuilding plan, released on April 20, 2022, presents the results of three studies on possibilities for the Navy's successor force-level goal. These studies call for a future Navy with 321 to 404 manned ships and 45 to 204 large surface and underwater unmanned vehicles (UVs).

The Navy's proposed FY2024 budget requests $32.8 billion in shipbuilding funding for, among other things, the procurement of nine new ships, including one Columbia (SSBN-826) class ballistic missile submarine, two Virginia (SSN-774) class attack submarines, two Arleigh Burke (DDG-51) class destroyers, two Constellation (FFG-62) class frigates, one AS(X) submarine tender, and one John Lewis (TAO-205) class oiler. The Navy's proposed FY2024 budget also proposes retiring 11 ships, including two relatively young Littoral Combat Ships (LCSs). The Navy's FY2024 five year (FY2024-FY2028) shipbuilding plan includes a total of 55 ships, or an average of 11 per year. Given a 35-year average surface life for Navy ships (a planning factor that assumes that all Navy ships would be kept in service to the end of their expected service lives), an average shipbuilding rate of 11 ships per year, if sustained for 35 years, would increase the size of the Navy to 385 ships over a 35-year period (i.e., by the 2060s).

The Navy fell below 300 battle force ships (the kind of ships that count toward the quoted size of the Navy and the Navy's 355-ship force-structure goal) in August 2003, and has generally remained between 270 and 300 battle force ships since then. As of April 17, 2023, the Navy included 296 battle force ships. The Navy projects that under its FY2024 budget submission, the Navy would include 293 battle force ships at the end of FY2024 and 291 battle force ships at the end of FY2028.

The FY2024 30-year (FY2024-FY2053) shipbuilding plan, released on April 18, 2023, similar to the FY2023 30-year (FY2023-FY2052) shipbuilding plan that was released on April 20, 2022, includes three potential 30-year shipbuilding profiles and resulting 30-year force-level projections, referred to as PB2024 (President's budget for FY2024), Alternative 2, and Alternative 3. PB2024 and Alternative 2 assume no real (i.e., above-inflation) growth in shipbuilding funding, while Alternative 3 assumes some amount of real growth in shipbuilding funding. Under PB2024, the Navy would increase to a peak of 331 manned ships in FY2039-FY2040 and then decrease to 319 manned ships in FY2053. Under Alternative 2, the Navy would increase to a peak of 331 manned ships in FY2039, and then decrease to 328 manned ships in FY2053. Under Alternative 3, the Navy would increase to 356 manned ships in FY2042 and continue increasing to 367 manned ships by FY2053.

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Introduction

Issue for Congress

This report presents background information and issues for Congress concerning the Navy's force structure and shipbuilding plans. The current and planned size and composition of the Navy, the annual rate of Navy ship procurement, the prospective affordability of the Navy's shipbuilding plans, the capacity of the U.S. shipbuilding industry to execute the Navy's shipbuilding plans, and Navy proposals for retiring existing ships have been oversight matters for the congressional defense committees for many years.

The issue for Congress is whether to approve, reject, or modify the Navy's force-level goal, its proposed FY2024 shipbuilding program, and its longer-term shipbuilding plans. Decisions that Congress makes on this issue can substantially affect Navy capabilities and funding requirements and the U.S. shipbuilding industrial base.

CRS Reports on Individual Navy Shipbuilding Programs

Detailed coverage of certain individual Navy shipbuilding programs can be found in the following CRS reports:

- CRS Report R41129, *Navy Columbia (SSBN-826) Class Ballistic Missile Submarine Program: Background and Issues for Congress*, by Ronald O'Rourke.
- CRS Report RL32418, *Navy Virginia (SSN-774) Class Attack Submarine Procurement: Background and Issues for Congress*, by Ronald O'Rourke.
- CRS In Focus IF11826, *Navy Next-Generation Attack Submarine (SSN[X]) Program: Background and Issues for Congress*, by Ronald O'Rourke.
- CRS Report RS20643, *Navy Ford (CVN-78) Class Aircraft Carrier Program: Background and Issues for Congress*, by Ronald O'Rourke.
- CRS Report RL32109, *Navy DDG-51 and DDG-1000 Destroyer Programs: Background and Issues for Congress*, by Ronald O'Rourke.
- CRS In Focus IF11679, *Navy DDG(X) Next-Generation Destroyer Program: Background and Issues for Congress*, by Ronald O'Rourke.
- CRS Report R44972, *Navy Constellation (FFG-62) Class Frigate Program: Background and Issues for Congress*, by Ronald O'Rourke.
- CRS Report R43543, *Navy LPD-17 Flight II and LHA Amphibious Ship Programs: Background and Issues for Congress*, by Ronald O'Rourke.
- CRS Report R46374, *Navy Medium Landing Ship (LSM) (Previously Light Amphibious Warship [LAW]) Program: Background and Issues for Congress*, by Ronald O'Rourke.
- CRS Report R43546, *Navy John Lewis (TAO-205) Class Oiler Shipbuilding Program: Background and Issues for Congress*, by Ronald O'Rourke.
- CRS In Focus IF11674, *Navy Next-Generation Logistics Ship (NGLS) Program: Background and Issues for Congress*, by Ronald O'Rourke.
- CRS In Focus IF11838, *Navy TAGOS-25 (Previously TAGOS[X]) Ocean Surveillance Shipbuilding Program: Background and Issues for Congress*, by Ronald O'Rourke.

- CRS Report R45757, *Navy Large Unmanned Surface and Undersea Vehicles: Background and Issues for Congress*, by Ronald O'Rourke.

Background

Navy's Force-Level Goal

Statutory Requirements for Certain Ship Types

10 U.S.C. 8062(b) requires the Navy to include not less than 11 operational aircraft carriers and not less than 31 operational amphibious warfare ships. The 31 amphibious ships are to include not less than 10 LHA/LHD-type "big deck" amphibious assault ships, with the remaining amphibious ships within the total of not less than 31 amphibious ships being LPD/LSD-type amphibious ships. The requirement regarding aircraft carriers was established by Section 126 of the FY2006 National Defense Authorization Act (NDAA) (H.R. 1815/P.L. 109-163 of January 6, 2006), which set the number at 12 carriers. The requirement was changed from 12 carriers to 11 carriers by Section 1011(a) of the FY2007 NDAA (H.R. 5122/P.L. 109-364 of October 17, 2006). The requirements regarding amphibious ships were added by Section 1023 of the FY2023 (NDAA) (H.R. 7776/P.L. 117-263 of December 23, 2022).

Navy's Existing (355-Ship) Force-Level Goal

355-Ship Goal Released in December 2016

The Navy's existing force-level goal, which the Navy released on December 15, 2016, calls for achieving and maintaining a fleet of 355 battle force ships of the types and numbers shown in **Table 1**.[1] (Battle force ships are the ships that count toward the quoted size of the Navy and the Navy's ship force-level goal.) The 355 ships shown in **Table 1** are all manned ships.

Table 1. 355-Ship Force-Level Goal

Ship Category	Number of ships
Ballistic missile submarines (SSBNs)	12
Attack submarines (SSNs)	66
Aircraft carriers (CVNs)	12
Large surface combatants (i.e., cruisers [CGs] and destroyers [DDGs])	104
Small surface combatants (i.e., frigates [FFGs], Littoral Combat Ships, and mine warfare ships)	52
Amphibious ships	38
Combat Logistics Force (CLF) ships (i.e., at-sea resupply ships)	32
Command and support ships	39
TOTAL	**355**

Source: U.S. Navy, *Report to Congress on the Annual Long-Range Plan for Construction of Naval Vessels for Fiscal Year 2020*, Table A-1, p. 10.

[1] For previous Navy force-level goals, see **Appendix A**.

355-Ship Fleet Is a Goal to Be Attained in the Future

The 355-ship fleet is a goal to be attained in the future. As shown in **Table G-1**, the actual size of the Navy in recent years has generally been between 270 and 300 ships. Increasing the numerical size of the Navy from 300 ships to 355 would equate to an increase of about 18%.

355-Ship Goal Made U.S. Policy by FY2018 NDAA

Congress made the 355-ship goal U.S. policy via Section 1025 of the FY2018 National Defense Authorization Act, or NDAA (H.R. 2810/P.L. 115-91 of December 12, 2017).[2]

355-Ship Goal Resulted from a Force Structure Assessment (FSA) Done in 2016

The 355-ship force-level goal is the result of a Force Structure Assessment (FSA) conducted by the Navy in 2016. An FSA is an analysis in which the Navy solicits inputs from U.S. regional combatant commanders (CCDRs) regarding the types and amounts of Navy capabilities that CCDRs deem necessary for implementing the Navy's portion of the national military strategy, and then translates those CCDR inputs into required numbers of ships, using current and projected Navy ship types. The analysis takes into account Navy capabilities for both warfighting and day-to-day forward-deployed presence.[3]

The Navy in the past has conducted a new FSA or an update to the existing FSA every few years, as circumstances required, to determine its force-level goal.[4] Previous Navy force-level goals that resulted from earlier FSA are shown in **Appendix A**.

Navy's Force-Level Goal Is Not Just a Single Number

Although the result of an FSA is often reduced for convenience to single number (e.g., 355 ships), FSAs take into account a number of factors, including types and capabilities of Navy ships,

---

[2] Section 1025 of P.L. 115-91 states

> SEC. 1025. Policy of the United States on minimum number of battle force ships.
>
> (a) Policy.—It shall be the policy of the United States to have available, as soon as practicable, not fewer than 355 battle force ships, comprised of the optimal mix of platforms, with funding subject to the availability of appropriations or other funds.
>
> (b) Battle force ships defined.—In this section, the term "battle force ship" has the meaning given the term in Secretary of the Navy Instruction 5030.8C.

The term *battle force ships* in the above provision refers to the ships that count toward the quoted size of the Navy in public policy discussions about the Navy. The battle force ships method for counting the number of ships in the Navy was established in 1981 by agreement between the Secretary of the Navy and the Secretary of Defense, and has been modified somewhat over time, in part by Section 1021 of the Carl Levin and Howard P. "Buck" McKeon National Defense Authorization Act for Fiscal Year 2015 (H.R. 3979/P.L. 113-291 of December 19, 2014).

[3] For further discussion, see U.S. Navy, *Executive Summary, 2016 Navy Force Structure Assessment (FSA)*, December 15, 2016, pp. 1-2.

[4] The Navy is also required by law (10 U.S.C. 8695) to submit to the congressional defense committees a battle force ship assessment and requirement not later than 180 days after the date of occurrence of any of the following events:

- strategic guidance that results in changes to theater campaign plans or warfighting scenarios;
- a strategic laydown [i.e., homeporting and basing plan] of vessels or aircraft that affects sustainable peacetime presence or warfighting response timelines;
- operating concepts, including employment cycles, crewing constructs, or operational tempo limits, that affect peacetime presence or warfighting response timelines; or
- assigned missions that affect the type or quantity of force elements.

aircraft, unmanned vehicles, and weapons, as well as ship homeporting arrangements and operational cycles. Thus, although the number of ships called for by an FSA might appear to be a one-dimensional figure, it actually incorporates multiple aspects of Navy capability and capacity.

355-Ship Figure Includes Only Manned Ships

The 355-ship force-level goal, like previous Navy force-level goals, is a figure for traditional manned ships only. The Navy has operated smaller unmanned surface vehicles (USVs) and unmanned underwater vehicles (UUVs) for many years, but because these unmanned vehicles (UVs) are launched from manned ships to act essentially as extensions of the manned ships, they have not been considered ships in their own right and consequently have not been included in the top-level expression of the Navy's force-level goal or the publicly cited figure for the number of ships in the Navy.

In the years since the 2016 FSA, the Navy has developed plans to acquire large USVs and UUVs. Because of their size and projected capabilities, these large UVs are to be deployed directly from pier, rather than from manned ships, to perform missions that might otherwise be assigned to manned ships and submarines.[5] The Navy's FY2024 30-year (FY2024-FY2053) shipbuilding plan states that it categorizes these large UVs as nonbattle force ships.[6]

Navy's Next Force-Level Goal

Release of Navy's Next Force-Level Goal Delayed Since Late 2019

The 355-ship goal predates the Trump and Biden Administrations' national defense strategies and does not reflect the new, more distributed fleet architecture (i.e., new mix of ships) that the Navy wants to shift toward in coming years. This new, more distributed fleet architecture (see below) is expected to feature a significant number of large surface and underwater unmanned vehicles (UVs). The Navy and the Office of the Secretary of Defense (OSD) have been working since 2019 to develop a successor for the 355-ship force-level goal that would reflect current national defense strategy and the new fleet architecture, but have not been able to come to closure on a successor goal. The completion of this work and the release of its results to Congress have been delayed repeatedly since late 2019. For additional background information on the effort in 2019 and 2020 to develop a new Navy force-level goal, see **Appendix H**.

Navy States That Next Force-Level Goal to Be Completed in June 2023

The Navy's FY2024 30-year (FY2024-FY2053) shipbuilding plan states that the analysis for the successor to the 355-ship force-level goal will be completed in June 2023. The document states:

> Multiple threat-informed analyses conducted by the Department of Defense (DoD) as well as external entities underscore the need for a larger, more capable Navy; however, no analysis has yet been informed by the 2022 National Defense Strategy (NDS). In order to provide definitive force structure analysis and recommendations aligned to the 2022 NDS, the Navy is conducting a Battle Force Ship Assessment and Requirement Report (BFSAR)

[5] For further discussion of these large UVs, see CRS Report R45757, *Navy Large Unmanned Surface and Undersea Vehicles: Background and Issues for Congress*, by Ronald O'Rourke.

[6] U.S. Navy, *Report to Congress on the Annual Long-Range Plan for Construction of Naval Vessels for Fiscal Year 2024*, March 2023, with cover letters dated March 30, 2023, released April 18, 2023, pp. 6, 19.

> utilizing the recently approved DoD Planning Scenario, as required by the NDAA for FY2022. This analysis will not be completed until June 2023....[7]

An April 3, 2023, press report stated:

> The U.S. Navy will submit another force structure analysis to Congress by mid-June [2023] that is likely to show a requirement for more ships compared to today's target of 373 and actual inventory of 296, according to the service's top officer.
>
> During the Navy League's annual Sea Air Space conference here, Adm. Mike Gilday told Defense News on Monday [April 3] that he believes the ongoing assessment will show the need for a larger fleet based on "what I see on a day-to-day basis with respect to demand, the wargames that I participate in, and what I believe to be the importance of the naval force in a maritime fight."...
>
> Gilday last week told senators that "with respect to not only the size but the composition of the fleet, I would expect that to change from the last report, particularly in terms of composition."
>
> He added, in response to a question from Senate Appropriations Committee defense panel ranking member Sen. Susan Collins, a Republican from Maine: "I can't see it getting any smaller than 373 manned ships."[8]

Next Navy Force-Level Goal Will Introduce More Distributed Fleet Architecture

Remarks from Navy and DOD officials since 2019 have indicated that the Navy's next force-level goal will introduce a once-in-a-generation change in fleet architecture, meaning basic the types of ships that make up the Navy and how these ships are used in combination with one another to perform Navy missions. This new fleet architecture is to be more distributed than the fleet architecture reflected in the 355-ship goal or previous Navy force-level goals. In particular, the new architecture is expected to include a significant number of large unmanned surface and underwater unmanned vehicles (UVs).

Navy and DOD leaders believe that shifting to a more distributed fleet architecture is

- **operationally necessary**, to respond effectively to the improving maritime anti-access/area-denial (A2/AD) capabilities of other countries, particularly China;[9]

[7] U.S. Navy, *Report to Congress on the Annual Long-Range Plan for Construction of Naval Vessels for Fiscal Year 2024*, March 2023, with cover letters dated March 30, 2023, released April 18, 2023, p. 3.

[8] Megan Eckstein, "Gilday Expects New US Navy Force Study to Call for More Than 373 Ships," *Defense News*, April 3, 2023.

[9] Some observers have long urged the Navy to shift to a more distributed fleet architecture, on the grounds that the Navy's current architecture—which concentrates much of the fleet's capability into a relatively limited number of individually larger and more expensive surface ships—is increasingly vulnerable to attack by the improving A2/AD capabilities (particularly anti-ship missiles and their supporting detection and targeting systems) of potential adversaries, particularly China. Shifting to a more distributed architecture, these observers have argued, would

- complicate an adversary's targeting challenge by presenting the adversary with a larger number of Navy units to detect, identify, and track;
- reduce the loss in aggregate Navy capability that would result from the destruction of an individual Navy platform;
- give U.S. leaders the option of deploying USVs and UUVs in wartime to sea locations that would be tactically advantageous but too risky for manned ships; and
- increase the modularity and reconfigurability of the fleet for adapting to changing mission needs.

For more on China's maritime A2/AD capabilities, see CRS Report RL33153, *China Naval Modernization:*

- **technically feasible** as a result of advances in technologies for UVs and for networking widely distributed maritime forces that include significant numbers of UVs; and
- **affordable**—no more expensive, and possibly less expensive, than the current fleet architecture for a given level of overall fleet capability, so as to fit within expected future Navy budgets.

Regarding the first point above, shifting to a more distributed force architecture, Navy and Marine Corps officials have indicated, will support implementation of the Navy and Marine Corps' new overarching operational concept, called Distributed Maritime Operations (DMO), and a supporting Marine Corps operational concept called Expeditionary Advanced Base Operations (EABO).[10] A key aim of DMO and EABO is to improve the ability of the Navy and Marine Corps to counter China's improving maritime military capabilities.

The Navy's FY2024 30-year (FY2024-FY2053) shipbuilding plan states:

> The concepts of DMO and Littoral Operations in a Contested Environment (LOCE) / Expeditionary Advanced Base Operations (EABO) require a balanced and different mix of traditional battle force ships as well as new unmanned, amphibious, and logistic platforms. Previous warfighting analysis validated that a progressive evolution of existing platforms combined with revolutionary introduction of new technologies results in a more survivable and more lethal force than previous force structures. The Department is committed to continually analyzing, testing, and experimenting with novel concepts and capabilities to ensure they will provide an optimal mix of capability to the warfighters of tomorrow.
>
> DMO addresses challenges to sea control and access in contested and "informationalized" environments. This concept describes required capabilities to execute DMO with massed effects. DMO provides the intellectual framework necessary to evolve our fleet to meet the challenges of the future.
>
> To realize these concepts, the Department continues to experiment and analyze a range of solutions to provide lethal capability for sea control and power projection within the framework of DMO. Study areas include, but are not limited to, aircraft carrier force structure, DDG(X) [next-generation destroyer], SSN(X) [next-generation attack submarine], T-AOL [next-generation logistics ships], LSM [medium landing ship], amphibious ship mix and force structure, and expanded missions for developing unmanned platforms. This analysis and experimentation, in support of warfighting concepts, is informed by operationally relevant metrics including, but not limited to, capacity, lethality, survivability, operational reach, and affordability.[11]

December 9, 2020, Long-Range Navy Shipbuilding Document

On December 9, 2020, the Navy released a long-range Navy shipbuilding document that presented the Trump Administration's emerging successor to the 355-ship force-level goal. The

Implications for U.S. Navy Capabilities—Background and Issues for Congress, by Ronald O'Rourke.

[10] For more on DMO, see, for example, Barry Rosenberg, "Distributed Maritime Operations: Making Ships, Subs, And Platforms Nodes On A Network," *Breaking Defense*, August 3, 2021; Edward Lundquist, "DMO is Navy's Operational Approach to Winning the High-End Fight at Sea," *Seapower*, February 2, 2021. For more on EABO, see CRS Report R46374, *Navy Medium Landing Ship (LSM) (Previously Light Amphibious Warship [LAW]) Program: Background and Issues for Congress*, by Ronald O'Rourke.

[11] U.S. Navy, *Report to Congress on the Annual Long-Range Plan for Construction of Naval Vessels for Fiscal Year 2024*, March 2023, with cover letters dated March 30, 2023, released April 18, 2023, p. 7.

document called for a Navy with a more distributed fleet architecture, including 382 to 446 manned ships and 143 to 242 large UVs.[12]

June 17, 2021, Long-Range Navy Shipbuilding Document

On June 17, 2021, the Navy released a long-range Navy shipbuilding document that presented the Biden Administration's emerging successor to the 355-ship force-level goal. The document called for a Navy with a more distributed fleet architecture, including 321 to 372 manned ships and 77 to 140 large UVs.[13]

February 18, 2022, Reported Remarks of Chief of Naval Operations

On February 18, 2022, in remarks at a conference, the Chief of Naval Operations, Admiral Michael Gilday, reportedly stated that, based on analysis, he had concluded that the Navy needs a fleet of 362 or more manned ships and about 150 large UVs to meet the Navy's commitments under the Biden Administration's forthcoming national defense strategy.[14]

July 19, 2022, Press Report about New Navy Force-Level Goal

A July 19, 2022, press report stated

> The Navy quietly slipped a new, classified assessment on the number of ships the service needs to meet its missions around the world to Congress earlier this month. The report calls for a battle force of 373 ships—75 more than in the current fleet.
>
> Dubbed the Battle Force Ship Assessment and Requirement, the Fiscal Year 2021 defense authorization bill called for the Navy to generate the report and deliver it directly to Congress.
>
> "The Navy's Battle Force Ship Assessment and Requirement (BFSAR) report determined that a battle force of 373 ships is required to meet future campaigning and warfighting demands. The report is classified and was submitted to Congress," reads a statement from the service provided to USNI News.
>
> Outside of the fleet total, the service did not provide an unclassified summary of the force structure. In prior years, the FSA has included an unclassified summary of the required quantities for each type of battleforce ship in the fleet....
>
> The requirement in the bill was designed to have the report bypass the Office of the Secretary of Defense and go directly to Congress, several legislative sources have told USNI News....
>
> The force structure will go through more tweaks before another revision is released later this year.
>
> "The Navy is expected to complete a second BFSAR later this year, which will reflect new analytic work, changes to force design, and the impacts of the 2022 National Defense

[12] U.S. Navy, *Report to Congress on the Annual Long-Range Plan for Construction of Naval Vessels*, December 2020, 23 pp.

[13] U.S. Navy, *Report to Congress on the Annual Long-Range Plan for Construction of Naval Vessels for Fiscal Year 2022*, June 2021, 16 pp.

[14] See Sam LaGrone and Mallory Shelbourne, "CNO Gilday: 'We Need a Naval Force of Over 500 Ships,'" *USNI News*, February 18, 2022; Justin Katz, "CNO Lays Out Future Fleet He Wants: 500 ships, 12 Carriers, 150 Unmanned Vessels," *Breaking Defense*, February 18, 2022; Richard R. Burgess, "CNO Is 'Sighted on a Bigger, More Capable Navy,'" *Seapower*, February 22, 2022.

> Strategy released in March on future Navy battle force structure," reads the Navy statement.[15]

July 26, 2022, Release of CNO Navigation Plan 2022

On July 26, 2022, the Navy released a document, *Chief of Naval Operations [CNO] Navigation Plan 2022*, that, similar to the above-discussed BFSAR, calls for a future fleet of 373 manned ships, as well as about 150 large unmanned surface and underwater vehicles, with the 373 manned ships to include 12 ballistic missile submarines, 66 attack submarines, 12 nuclear-powered aircraft carriers, 96 large surface combatants, 56 small surface combatants, 31 larger amphibious ships, 18 smaller Light Amphibious Warships (LAWs), and 83 combat logistics, command, and support ships.[16]

355-Ship Goal Compared to Emerging New Force-Level Goals

Table 2 compares the 355-ship force-level goal to the emerging force-level goals discussed in the above sections.

[15] Sam LaGrone, "New Navy Fleet Study Calls for 373 Ship Battle Force, Details are Classified," *USNI News*, July 19, 2020.

[16] U.S. Navy, *Chief of Naval Operations Navigation Plan 2022*, undated, released July 26, 2022, p. 10.

Table 2. 355-Ship Goal Compared to Emerging New Force-Level Goals

Ship type	355-ship goal	Trump Adminis-tration December 9, 2020, document	Biden Adminis-tration June 17, 2021, document	Reported remarks of Chief of Naval Operations, February 18, 2022	BFSAR and CNO Navigation Plan July 2022
Ballistic missile submarines (SSBNs)	12	12	12	12	12
Attack submarines (SSNs)	66	72 to 78	66 to 72[a]	70	66
Aircraft carriers	12	n/a[b]	9 to 11	12	12
Large aircraft carriers (CVNs)	*12*	*8 to 11*[b]	*n/a*	*12*	*12*
Light aircraft carriers (CVLs)	*0*	*0 to 6*[c]	*n/a*[d]	*0*	*0*
Large surface combatants (cruisers and destroyers)	104	73 to 88	63 to 65	60	96
Small surface combatants (frigates and Littoral Combat Ships [LCSs])	52	60 to 67	40 to 45	50	56
Amphibious ships	38	61 to 67	48 to 63	58 or 59 (or more)	49
Large-deck (LHA/LHD)	*12*	*9 to 10*	*8 to 9*	*9*	*31*
LPD-type	*26*	*n/a*	*16 to 19*	*19 or 20*	
Light Amphibious Warships (LAWs)	*0*	*n/a*	*24 to 35*	*30 (or more)*[e]	*18*
LPD-type and LAWs combined	*26*	*52 to 57*	*40 to 44*	*49 or 50 (or more)*	*n/a*
Combat Logistics Force (CLF) ships	32	69 to 87[f]	56 to 75[g]	~100	82
Command and support ships	39	27 to 30	27 to 29		
Subtotal manned ships	***355***	***382 to 446***	***321 to 372***	***~362 or ~363 (or more)***	***373***
Unmanned and optionally manned ships	0	143 to 242	77 to 140	~150	~150
Large and medium unmanned surface vessels (LUSVs and MUSVs)	*0*	*119 to 166*	*59 to 89*	*n/a*	*n/a*
Extra-large unmanned underwater vehicles (XLUUVs)	*0*	*24 to 76*	*18 to 51*	*n/a*	*n/a*
TOTAL manned and unmanned ships	**355**	**525 to 688**	**398 to 512**	**~512 or ~513 (or more)**	**~523**

Sources: Table prepared by CRS based on U.S. Navy data and, for the final column, Sam LaGrone and Mallory Shelbourne, "CNO Gilday: 'We Need a Naval Force of Over 500 Ships,'" *USNI News*, February 18, 2022; Justin Katz, "CNO Lays Out Future Fleet He Wants: 500 ships, 12 Carriers, 150 Unmanned Vessels," *Breaking Defense*, February 18, 2022; Richard R. Burgess, "CNO Is 'Sighted on a Bigger, More Capable Navy,'" *Seapower*, February 22, 2022; Sam LaGrone, "New Navy Fleet Study Calls for 373 Ship Battle Force, Details are Classified," *USNI News*, July 19, 2020; U.S. Navy, *Chief of Naval Operations Navigation Plan 2022*, undated, released July 26, 2022, p. 10.

Notes: n/a = not available. BFSAR is the Battle Force Ship Assessment and Requirement reportedly provided to Congress in July 2022.

a. The document states that the range of 66 to 72 includes Large Payload Submarines—the Navy's planned next-generation successor to its four current cruise missile submarines (SSGNs).
b. The document states: "Lower [end of the CVN] range may be enabled by acquisition of cost-effective CVL."
c. The document states: "Further study of cost-effective CVL capabilities and capacity required."
d. The document states: "New capability concepts like a light aircraft carrier continue to be studied and analyzed to fully illuminate their potential to execute key mission elements in a more distributed manner and to inform the best mix of a future force."
e. As reported in the *USNI News* article of February 18, 2022. The *Breaking Defense* article of February 18, 2022, reported the figure as 20 to 30.
f. The document states: "Includes Next Generation Logistic Ships (NGLS). Logistics force size/mix subject to on-going analysis."
g. The document states: "Includes the future next generation logistics ship."

April 2022 Navy Report on FY2023 30-Year Shipbuilding Plan Presents Results of Studies on Potential New Force-Level Goals

The Navy's FY2023 30-year (FY2023-FY2052) shipbuilding plan, released on April 20, 2022,[17] presents the results of three studies on possibilities for the Navy's successor force-level goal. As shown in **Figure 1**, these studies call for a future Navy with 321 to 404 manned ships and 45 to 204 large UVs.

[17] U.S. Navy, *Report to Congress on the Annual Long-Range Plan for Construction of Naval Vessels for Fiscal Year 2023*, April 2022 (released April 20, 2022), 28 pp.

Figure 1. Navy Table Summarizing Studies on Future Navy Force-Level Goal

As shown in Navy's FY2023 30-Year Shipbuilding Plan

Table 1. Previous Analytic Efforts Completed

Platforms	2016 FSA	2020 INFSA	FNFS FFA Ranges	PB22 Jun 2021 Ranges
Time Frame	Post 2030	Post 2030	2045	2045
Aircraft Carrier	12	12	8-11[1]	9-11
CVL	0	0	0-6[2]	0
LHA/LHD	12	10	6-10	8-9
Amphibious Warfare Ships (less LHA/LHD)	26	41[3]	30-43[3]	40-54[3]
Large Surface Combatant	104	96	72-80	63-65
Small Surface Combatant	52	56	47-60	40-45
Attack Submarines / Large Payload Submarine	66	66	58-70	66-72
Ballistic Missile Submarines	12	12	12	12
Combat Logistics Force	32	45[4]	51-85[4]	56-75
Support Vessels	39	52	27-51	27-29
Unmanned Surface	0	27	81-153[5]	59-89
Unmanned Subsurface	0	18	18-50[5]	18-51
Battle Force	355	390[8]	337-404[6]	321-372[7]
Battle Force + Unmanned Surface	-	417	382-454[6]	380-461
Battle Force + Unmanned Surface + Unmanned Subsurface	-	435	440-540[6]	398-512

1. Lower range may be enabled by acquisition of cost-effective CVL.
2. Cost-effective CVL capabilities and capacity study would be required.
3. Includes future Light Amphibious Warships (LAW).
4. Includes Next Generation Logistics Ships (NGLS).
5. UxV require follow-on analysis of future objectives.
6. FNFS FFA force mix ranges are not the sum of low and high platform ranges listed above. FNFS ranges were derived from previous campaign analysis, however the ranges represented no real budget growth.
7. The PB22 shipbuilding ranges were the sum of the low and high platform ranges possible in 2045, which were derived from FNFS, and updated with analytic insights.
8. The INFSA reflects the most recent full campaign analysis and force structure assessment completed by the Department of the Navy.

Source: U.S. Navy, *Report to Congress on the Annual Long-Range Plan for Construction of Naval Vessels for Fiscal Year 2023*, April 2022 (released April 20, 2022), p. 4.

Notes: INFSA = Integrated Naval Force Structure Assessment. FNFS = Future Naval Force Study. FFA = Future Fleet Architecture.

Commission on the Future of the Navy

Section 1092 of the FY2023 NDAA establishes an independent commission in the legislative branch to be known as the Commission on the Future of the Navy. Section 1092 states that the commission is to "undertake a comprehensive study of the structure of the Navy and policy assumptions related to the size and force mixture of the Navy, in order... to make recommendations on the size and force mixture of ships; and ... to make recommendations on the size and force mixture of naval aviation." The commission is to submit a report with its findings, conclusions, and recommendations not later than July 1, 2024.

Navy's FY2024 Five-Year and 30-Year Shipbuilding Plans

FY2024 Five-Year Shipbuilding Program

The Navy's FY2024 five-year (FY2024-FY2028) shipbuilding plan (**Table 3**) includes a total of 55 ships, or an average of 11 per year. Given a 35-year average surface life for Navy ships (a

planning factor that assumes that all Navy ships would be kept in service to the end of their expected service lives), an average shipbuilding rate of 11 ships per year, if sustained for 35 years, would increase the size of the Navy to 385 ships over a 35-year period (i.e., by the 2060s).

The Navy fell below 300 battle force ships (the kind of ships that count toward the quoted size of the Navy and the Navy's 355-ship force-structure goal) in August 2003, and has generally remained between 270 and 300 battle force ships since then. As of April 17, 2023, the Navy included 296 battle force ships. As shown in **Table 3**, the Navy projects that under its FY2024 budget submission, the Navy would include 293 battle force ships at the end of FY2024 and 291 battle force ships at the end of FY2028.

Table 3. FY2024 Five-Year (FY2024-FY2028) Shipbuilding Plan

	FY24	FY25	FY26	FY27	FY28	Total
Columbia (SSBN-826) class ballistic missile submarine	1		1	1	1	**4**
Virginia (SSN-774) class attack submarine	2	2	2	2	2	**10**
Gerald R. Ford (CVN-78) class aircraft carrier					1	**1**
Arleigh Burke (DDG-51) class destroyer	2	2	2	2	2	**10**
FFG-62 frigate	2	1	2	1	2	**8**
LHA amphibious assault ship				1		**1**
LPD-17 Fight II amphibious ship						**0**
Medium Landing Ship (LSM)		1	1	2	2	**6**
John Lewis (TAO-205) class oiler	1		2	1	2	**6**
Next-Generation Logistics Ship (NGLS)			1	1	1	**3**
Submarine tender (AS[X])	1		1			**2**
TAGOS(X) ocean surveillance ship		1	1	1	1	**4**
TOTAL	**9**	**7**	**13**	**12**	**14**	**55**
Projected total size of Navy	**293**	**286**	**285**	**285**	**291**	

Source: Table prepared by CRS based on FY2024 Navy budget submission.

FY2024 30-Year (FY2024-FY2053) Shipbuilding Plan (Not Yet Submitted)

As shown in **Figure 2**, the FY2024 30-year (FY2024-FY2053) shipbuilding plan, released on April 18, 2023, similar to the FY2023 30-year (FY2023-FY2052) shipbuilding plan that was released on April 20, 2022, includes three potential 30-year shipbuilding profiles and resulting 30-year force-level projections, referred to as PB2024 (President's budget for FY2024), Alternative 2, and Alternative 3. PB2024 and Alternative 2 assume no real (i.e., above-inflation) growth in shipbuilding funding, while Alternative 3 assumes some amount of real growth in shipbuilding funding. The Navy states that PB2024 and Alternative 2

> do not procure all platforms at the desired rate (e.g., DDGs, SSNs, and FFGs at two ships per year), which industry needs to demonstrate the ability to achieve, but does maximize capability within projected resources, industrial factors, and technology constraints to build the most capable force. Overall, this approach accepts risk in capacity in order to field a more capable and ready force....
>
> The primary differences between the baseline PB2024 and Alternative 2 is the focus [in Alternative 2] on procuring more SSNs and unmanned vessels within the constrained [total amount of shipbuilding funding]... Alternative 2 also continues to procure DDG 51 Flt IIIs longer than PB2024, delays the shift to DDG(X), and procures fewer of both.

Alternative 3 represents procuring to a larger Navy. This alternative shifts CVNs to 4-year centers [i.e., procuring aircraft carriers at a rate of one every four years]and not only shifts [procurement of attach submarines and destroyers to the future SSN(X) [next-generation attack submarine] and DDG(X) [and next-generation destroyer] but also procures the [two types of] platforms at a consistent rate of at least two per year.[18]

Figure 2. Alternative Shipbuilding Profiles in 30-Year Shipbuilding Plan

As shown in Navy's FY2024 30-Year Shipbuilding Plan

Table A1-2. Long-Range Procurement Profiles[1, 2, 3, 4]

PB2024

Fiscal Year	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53
Aircraft Carrier					1					1					1					1						1				1
Large Surface Combatant	2	2	2	2	2	2	2	2	2	2	1	2	2	2	2	2	2	2	2	1	2	2	1	2	1	2	2	2	2	2
Small Surface Combatant	2	1	2	1	2	1	1	1	2	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Attack Submarines	2	2	2	2	2	2	1	1	2	1	2	1	2	2	2	2	2	1	2	2	2	2	2	1	2	2	2	2	2	2
Ballistic Missile Submarines	1		1	1	1	1	1	1	1	1	1	1																		
Large Payload Submarines																			1			1			1			1		
Amphibious Warfare Ships				1				1				1						1		1		1	1		1		1	1		1
Combat Logistics Force	1		3	2	3	2	2	2	2	2	1	1	1						1		2	2	4	3	3	1	1	1	1	2
Support Vessels	1	2	3	3	3	3	3	2	2	2	2	2	2	2	1						1	1	1	2	2	2	2	2	2	4
Total New Construction Plan	9	7	13	12	14	11	10	10	10	11	8	10	9	8	8	6	6	7	7	7	9	11	11	10	13	9	10	11	9	14

Alternative 2 to PB2024

Fiscal Year	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53
Aircraft Carrier					1					1					1					1					1					1
Large Surface Combatant	2	2	2	2	2	2	2	1	2	1	1	1	2	1	2	2	2	1	2	1	2	2	1	2	1	2	1	2	2	2
Small Surface Combatant	2	1	2	1	2	2	1	1	1	1	1	2	2	3	2	3	2	3	2	2	2	2	2	2	2	2	2	2	2	2
Attack Submarines	2	2	2	2	2	2	2	2	2	1	2	2	2	2	2	2	2	3	3	2	2	2	2	2	3	2	2	3	2	2
Ballistic Missile Submarines	1		1	1	1	1	1	1	1	1	1	1																		
Large Payload Submarines													1				1			1			1				1			1
Amphibious Warfare Ships				1								1						2		1	1		2		1		1	1	1	
Combat Logistics Force	1		3	2	3	2	3	2	2	3	3	2	2					1	1		1	2	3	3	3	1	1	1	2	2
Support Vessels	1	2	3	3	3	2	1	2	2	2	1	1	1	1	1					1		1	1	2	2	2	2	2	2	2
Total New Construction Plan	9	7	13	12	14	11	10	9	10	10	9	10	10	8	9	7	7	10	8	9	8	10	12	11	13	10	9	11	12	11

Alternative 3 to PB2024

Fiscal Year	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53
Aircraft Carrier					1				1				1				1				1				1				1	
Large Surface Combatant	2	2	2	2	2	2	2	2	2	2	2	2	3	2	3	2	3	2	3	2	2	2	2	2	2	2	2	2	3	2
Small Surface Combatant	2	1	2	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Attack Submarines	2	2	2	2	2	2	1	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Ballistic Missile Submarines	1		1	1	1	1	1	1	1	1	1	1																		
Large Payload Submarines															1				1				1				1			
Amphibious Warfare Ships				1			1				1			1	1	1	1		1	1		1		1		1		1		1
Combat Logistics Force	1		3	2	3	2	3	3	2	2		2	2					1	1		2	2	3	3	3	1	1	1	2	2
Support Vessels	1	2	3	3	3	4	4	4	4	3	2	2	3	3	2	3	3	3	1		1	1	2	2	3	3	3	3	3	2
Total New Construction Plan	9	7	13	12	14	13	13	12	14	13	13	11	13	10	11	10	12	10	11	7	10	10	12	12	13	11	11	11	11	11

[1] A decision on CVN 82/83 two-ship buy is required no later than FY2025 and will be evaluated during upcoming force structure and industrial base studies. The Department is reviewing Large and Small Surface Combatant and Attack Submarine procurement quantities in FY2029-2033.
[2] The ability of the industrial base to support Alternative 3 has not been independently assessed.
[3] The profiles shown in Tables A1-2 through A1-5 do not reflect future adjustments to support the AUKUS trilateral agreement. Future Procurement Profiles, Battle Force Delivery, Retirement and Inventory Plans will be updated in future reports after further analysis refines future SSN workload. Based on the March 2023 Tri-Lateral announcement, the Navy anticipates building additional *Virginia* class SSNs in the 2030s as replacements for submarines sold to Australia.
[4] Amphibious ship inventories reflect a pause in the current LPD line. The analytic results of the medium deck amphibious ship study and the BFSAR will be reflected in future shipbuilding plans.

Source: U.S. Navy, *Report to Congress on the Annual Long-Range Plan for Construction of Naval Vessels for Fiscal Year 2024*, March 2023, with cover letters dated March 30, 2023, released April 18, 2023, pp. 15-16.

[18] U.S. Navy, *Report to Congress on the Annual Long-Range Plan for Construction of Naval Vessels for Fiscal Year 2024*, March 2023, with cover letters dated March 30, 2023, released April 18, 2023, pp. 4, 6.

Projected Force Levels Under FY2024 30-Year Shipbuilding Plan

As shown in **Figure 3**, under all three alternatives presented in the FY2024 30-year shipbuilding plan, the Navy projects that the fleet would include 293 battle force ships at the end of FY2024 and 291 battle force ships at the end of FY2028. As also shown in **Figure 3**, under PB2024, the Navy would increase to a peak of 331 manned ships in FY2039-FY2040 and then decrease to 319 manned ships in FY2053; under Alternative 2, the Navy would increase to a peak of 331 manned ships in FY2039, and then decrease to 328 manned ships in FY2053; and under Alternative 3, the Navy would increase to 356 manned ships (i.e., one more than the 355 called for in the Navy's current ship force-level goal) in FY2042 and continue increasing to 367 manned ships by FY2053. The Navy states: "In addition [to these manned ships], it is estimated that the Navy [under the three alternatives] could achieve 89-149 unmanned platforms by 2045."[19]

Figure 3. Projected Force Levels Under Alternative Shipbuilding Profiles

As shown in Navy's FY2024 30-Year Shipbuilding Plan

Table A1-5. Resultant Battle Force Inventories and Trade Space

PB2024

Fiscal Year	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53
Aircraft Carrier	11	12	11	10	11	11	11	11	11	11	11	11	11	11	11	11	10	10	10	10	10	10	9	10	9	9	9	9	10	9
Large Surface Combatant	85	84	83	85	85	86	80	77	77	76	77	81	83	84	86	87	86	84	83	82	80	78	78	78	78	76	76	76	76	78
Small Surface Combatant	33	26	26	23	24	26	27	29	31	32	34	35	36	37	39	40	42	44	44	43	44	44	44	42	41	40	41	42	43	44
Attack Submarines	50	49	48	48	47	48	46	47	50	49	50	50	54	56	53	54	53	52	53	53	54	55	56	57	58	58	58	58	60	60
SSGNs/Large Payload Submarines	4	4	2	2																						1	1	1	2	2
Ballistic Missile Submarines	14	14	14	13	13	12	11	11	11	12	12	12	12	12	12	12	13	13	12	12	12	12	12	12	12	12	12	12	12	12
Amphibious Warfare Ships	29	27	28	28	29	30	30	30	29	29	29	26	25	24	24	24	24	23	24	24	24	23	23	21	21	20	20	21	19	19
Combat Logistics Force	31	31	31	30	32	30	31	33	37	38	38	39	40	41	42	43	43	43	43	43	43	43	43	43	43	44	44	44	43	43
Support Vessels	36	39	42	46	50	52	54	55	58	58	57	58	58	59	60	60	60	61	61	59	59	58	57	57	56	54	54	55	54	52
Total Naval Force Inventory	293	286	285	285	291	295	290	293	304	305	308	312	319	324	327	331	331	330	330	326	326	323	322	320	318	314	315	318	319	319

Alternative 2 to PB2024

Fiscal Year	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53
Aircraft Carrier	11	12	11	10	11	11	11	11	11	11	11	11	11	11	11	11	10	10	10	10	10	10	9	10	9	9	9	9	10	9
Large Surface Combatant	85	84	83	85	85	86	80	77	77	76	77	81	82	83	84	86	84	82	80	79	77	74	74	73	73	71	71	71	71	73
Small Surface Combatant	33	26	26	23	24	26	27	29	31	32	35	36	37	38	39	40	42	44	45	44	46	46	47	45	44	43	44	46	46	47
Attack Submarines	50	49	48	48	47	48	46	47	50	49	50	50	54	57	55	56	55	54	56	57	58	60	61	62	64	66	66	66	69	69
Cruise Missile Submarines	4	4	2	2																	1	1	1	2	2	2	3	3	3	4
Ballistic Missile Submarines	14	14	14	13	13	12	11	11	11	12	12	12	12	12	12	12	13	13	12	12	12	12	12	12	12	12	12	12	12	12
Amphibious Warfare Ships	29	27	28	28	29	30	30	30	29	29	29	26	25	24	23	23	23	22	23	23	23	22	22	21	21	20	21	21	20	20
Combat Logistics Force	31	31	31	30	32	30	31	33	37	39	39	40	42	44	46	49	49	49	49	49	49	51	50	49	49	49	49	49	48	47
Support Vessels	36	39	42	46	50	52	54	55	57	55	54	55	55	55	55	54	53	54	54	52	52	51	51	50	49	47	47	48	48	47
Total Naval Force Inventory	293	286	285	285	291	295	290	293	303	303	307	311	318	324	325	331	329	328	329	326	328	327	327	324	323	319	322	325	327	328

Alternative 3 to PB2024

Fiscal Year	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53
Aircraft Carrier	11	12	11	10	11	11	11	11	11	11	11	11	11	11	11	11	10	11	10	10	10	11	10	10	9	10	10	10	10	10
Large Surface Combatant	85	84	83	85	85	86	80	77	77	76	77	81	83	84	85	87	87	85	84	84	82	81	81	82	82	82	82	82	83	85
Small Surface Combatant	33	26	26	23	24	26	27	29	31	32	35	37	39	41	43	45	47	49	49	48	49	49	49	47	46	45	46	48	48	49
Attack Submarines	50	49	48	48	47	48	46	47	50	49	50	50	54	56	53	54	54	53	55	55	56	57	58	59	60	61	61	61	63	63
Cruise Missile Submarines	4	4	2	2																		1	1	1	1	2	2	2	2	3
Ballistic Missile Submarines	14	14	14	13	13	12	11	11	11	12	12	12	12	12	12	13	13	12	12	12	12	12	12	12	12	12	12	12	12	12
Amphibious Warfare Ships	29	27	28	28	29	30	30	30	29	29	29	26	25	25	24	24	24	24	24	25	25	26	27	25	25	24	24	25	23	23
Combat Logistics Force	31	31	31	30	32	30	31	33	37	38	38	39	41	43	45	48	48	48	48	48	48	50	49	49	49	49	49	49	48	48
Support Vessels	36	39	42	46	50	52	54	55	59	60	61	64	64	65	67	68	69	71	74	75	78	78	77	77	76	75	75	77	76	74
Total Naval Force Inventory	293	286	285	285	291	295	290	293	305	307	313	320	329	337	340	349	352	354	356	357	360	365	364	362	360	360	361	366	365	367

Source: U.S. Navy, *Report to Congress on the Annual Long-Range Plan for Construction of Naval Vessels for Fiscal Year 2024*, March 2023, with cover letters dated March 30, 2023, released April 18, 2023, p. 18.

[19] U.S. Navy, *Report to Congress on the Annual Long-Range Plan for Construction of Naval Vessels for Fiscal Year 2024*, March 2023, with cover letters dated March 30, 2023, released April 18, 2023, p. 7.

Issues for Congress

Potential issues for Congress concerning Navy shipbuilding relating to the Navy's proposed FY2024 budget include but are not necessarily limited to those discussed below.

Force-Level Goal and Shipbuilding Profile

One issue for Congress concerns the continued absence of a new ship force-level goal to replace the 355-ship goal of 2016 and the Navy's presentation, for the second year in a row, of three 30-year shipbuilding profiles rather than a single profile. Potential oversight questions for Congress include the following:

- As mentioned earlier, the Navy's FY2024 30-year (FY2024-FY2053) shipbuilding plan states that the analysis for the successor to the 355-ship force-level goal will be completed in June 2023. Completing the analysis for the successor force-level goal is not the same as deciding on the successor goal, obtaining approval within DOD for that goal, and releasing the goal to Congress. When does the Navy or the Office of the Secretary of Defense (OSD) intend to release a clearly defined new force-level goal to definitively replace the 355-ship goal?
- Why have the Navy and OSD apparently been unable or unwilling since 2019 to decide on, approve, and release a clearly defined new force-level goal to definitively replace the 355-ship goal? Within DOD, who is responsible for resolving in a timely manner a disagreement between OSD and the Navy regarding the Navy's next force level goal? Does DOD have a clearly defined process for resolving such a dispute in a timely manner?
- In the absence of a clearly defined and definitive new force-level goal, as well as the presentation of multiple 30-year shipbuilding profiles rather than a single profile, how well can Congress
  - understand the Biden Administration's goals concerning the future size and composition of the Navy, and
  - assess the Navy's proposed FY2024 shipbuilding budget, five-year (FY2024-FY2028) shipbuilding plan, and 30-year (FY2024-FY2053) shipbuilding plan?
- Is the continued absence of a clearly defined and definitive new force-level goal and the presentation for the second year in a row of three 30-year shipbuilding profiles rather than a single profile permitting the Administration to avoid stating its specific plans for future Navy force levels and budgets?
- If the Navy and OSD do not identify and release a clearly defined and definitive new force-level goal to replace the 355-ship goal, should Congress consider the option of legislating a replacement force-level goal of its own devising (including both a total number of ships and, within that total number, required numbers for each ship category), and require DOD to budget the funding needed to achieve such a fleet in a timely manner and maintain it thereafter? What role might the recommendations of the Commission on the Future of the Navy play in such an effort?

- How many Navy ships of what types and numbers will be needed to adequately perform the Navy's projected missions in coming years, particularly in light of great power competition with China and Russia?

An April 18, 2023, press report stated:

> Like its predecessor, the U.S. Navy's 2024 long-range shipbuilding plan is a tardy, multiple-choice document that appears to fall short of the legal requirement for amphibious warships. And some lawmakers are not happy....
>
> [Senator Tim Kaine], who leads the [Senate Armed Services Committee's] Seapower panel and whose own district has another large shipbuilder, declared himself "underwhelmed by the timing of this report," which the Navy sent hours before the committee's posture hearing and after the Seapower subcommittee's own hearing....
>
> [The 30-year shipbuilding plan] also says that the Battle Force Ship Assessment and Requirement Report—another ship review—will be done by June [2023] and will shape next year's long-range shipbuilding plan.
>
> "Secondly, telling us that this plan is going to be heavily supplemented and impacted by the Battle Force Ship Assessment and Requirement Report, which won't be out before June [2023]—likely after the [FY2024] NDAA's committee processes is done—is not that helpful," Kaine said in his statement....
>
> [Alternative 3] is the only one [of the three 30-year profiles] that gets the Navy to 355 ships or more, starting in 2042. The first option [PB2024] rises to 331 ships in 2039 and 2040 before shrinking, while the second [Alternative 2] gets to 331 ships in 2039, then declines.
>
> "To restore our fleet and deter the Chinese Communist Party, any shipbuilding plan must start with achieving the statutory 355-ship fleet as soon as possible," [Senator Roger Wicker, the committee's ranking member] said in his statement.[20]

An August 1, 2022, press report stated

> In little more than five months, the shape of America's future Navy fleet changed. Between February and July, U.S. Navy leadership went from advocating for a modest fleet of 60 cruisers and destroyers to supporting a more robust vision of 96 large surface combatants by 2045.
>
> Nobody really knows what, exactly, pushed the Navy to favoring large combatants—a rating traditionally comprised of high-value cruisers and destroyers. Neither the U.S. Department of Defense, the Secretary of the Navy, nor America's Chief of Naval Operations, Admiral Mike Gilday, has offered taxpayers any real detail on what spurred the Navy, after years of fretting over the relevance of large surface combatants, to redirect at least $70 billion in future funding towards building bigger ships.
>
> The shift was abrupt. In February, at the annual WEST 2022 conference in San Diego, Gilday sketched out a future fleet of 60 large and 50 small combatants, breaking from the traditional 355-ship fleet goal of maintaining a 2:1 ratio of large combatants (cruisers and destroyers) to small vessels (frigates and Littoral Combat Ships). Last month, Gilday changed his tune, releasing a "2022 Navigation Plan," aiming for a fleet of 96 large combatants by 2045.
>
> Both targets are out of step with the 30-year shipbuilding plan detailed in April's "Report to Congress on the Annual Long-Range Plan for Construction of Naval Vessels for Fiscal Year 2023," which suggested to Congress that the Navy was intent upon fielding a fleet of between 70 to 80 large surface combatants by 2045....

[20] Caitlin M. Kenney, "Navy Shipbuilding Plan Draws Lawmakers' Ire Anew," *Defense One*, April 18, 2023.

> Given the public reporting to date, it is tough to tell what, exactly, is driving the Navy's sudden interest in large surface combatants. Industry press has been less than dogged in its efforts to understand the dramatic—if not unprecedented—oscillation in the U.S. Navy's demand for large surface combatants.
>
> That failure is unfortunate, as America's public and policymaker communities need clarity more than ever....
>
> While the Navy's growing appetite for large surface combatants—whatever they might turn out to be—is welcome news for the large surface combatant industrial base, the Navy's inability to fix on a consistent plan is a public relations and strategic disaster....
>
> With no viable strategic or tactical justification forthcoming from Navy leadership, the Navy's free-form approach to the future of the surface fleet does little more than bemuse rivals and irk everybody else. The Navy has little room to make sudden whipsaw changes. After repeated operational fiascoes, the U.S. Navy has little credibility right now, and an unexplained strategic change leaves pro-Navy advocates confused, and an already impatient Congress frustrated....
>
> The embrace of big ships in Gilday's new force structure turns distributed lethality on its head. Rather than working to grow the small-surface combatant fleet and using those vessels to smear sensors and shooters all over the sea, the surface Navy is, with DDG(X), re-inventing the battleship and, apparently, returning to the traditional World War II-era battle group, leaving distributed lethality for crew-less things.
>
> That's fine. But, as originally articulated, the Distributed Maritime Operations concept was set to push the fleet towards a 2:1 ratio of smaller crewed ships to bigger crewed surface combatants. If the mechanics behind Distributed Maritime Operations are shifting to feed the Navy's craving for larger vessels, that shift—particularly if it is sacrificing smaller crewed vessels for robots— is worth a bit of public discussion.[21]

A July 24, 2022, press report stated

> The Navy of the future needs 316 ships. Actually, make that 327. No, more like 367. You know what? Let's make it 373, or maybe even 500.
>
> At different points this year, the Pentagon and Navy leaders have floated all five numbers as the desired size of the Navy, the result of a high-stakes—and still raging—internal battle among top Navy, Marine Corps and Pentagon leaders.
>
> And the discord at the top has real-world consequences for America's sea service, denying lawmakers a number to shoot for as they figure out how many ships to buy in the fiscal year that starts in October, and beyond.
>
> At issue, according to six people with knowledge of internal discussions, is the desired number of amphibious warships, which carry Marines and can launch warplanes and landing craft.
>
> On one end is Deputy Defense Secretary Kathleen Hicks, who is spearheading an effort to cut the number of traditional, large-deck amphibs and invest in uncrewed ships and other lighter vessels, the people said. But Hicks' vision is at odds with plans put forth by Navy and Marine Corps leaders, who want to keep dozens of the ships they say are a key component to moving Marines and aircraft around the Indo-Pacific as the U.S. seeks to deter an aggressive China.

[21] Craig Hooper, "Battleships Are Back! Navy Abruptly Boosts DDG/CG Building Targets For 2045," *Forbes*, August 1, 2022.

The debate comes at a fraught time for the Navy as it struggles to grow the size of its fleet amid a series of shipbuilding failures that have drained congressional confidence in the service's ability to both put new ships in the water and maintain the ships they have....

Some critics see the large ships as easy prey for Chinese long-range missiles, while being too big to get close to the small island chains of the Pacific to safely put Marines ashore and resupply them. Instead, the idea is for the Navy to get smaller, faster and develop more uncrewed systems.

But Navy Secretary Carlos Del Toro, a Biden appointee and retired naval officer, has been a proponent of keeping the number of amphibs around its current strength of 31, a vision shared by Marine Corps Commandant Gen. David Berger who won support in Congress this year to block Pentagon plans to have the fleet shrink to 25 ships in the coming years.

Yet Marine and Navy leaders are at odds with each other over another issue: Berger also wants to add 35 new light amphibious warships to allow his Marines to move through island chains more quickly while presenting less of a target. That's a vision Navy leadership has never fully supported.

Differing opinions at the top of the Pentagon and Navy leadership chains is nothing new. Given the huge costs involved in designing and building new ships, the overall size and shape of the fleet has always been a politically fraught issue. And the constantly shifting global security dynamic often leads to clashes between the admirals and civilians at the Pentagon and Capitol Hill.

But what is new is the lack of a united front in public when numbers are supplied to Congress....

During the Trump administration, national security adviser Robert O'Brien and Defense Secretary Mark Esper seized on the 355 figure—as Trump did in his presidential campaign—but then oversaw successive budgets that actually cut shipbuilding funding by billions of dollars. At one point in early 2020, Esper rejected the Navy's annual shipbuilding plan, taking control over the process and holding up its release for almost a year, only to release it in December 2020—a month before Joe Biden moved into the White House, all but ensuring they would be scrapped immediately by the new team.

The plan was also likely impossible to implement, calling for a fleet of over 500 ships by 2045, a dramatic increase from the 298 ships in service today. To get there, it proposed building 82 new ships by 2026, doubling the Navy's previous plan to manufacture 44 new ships by 2025, a pace of building that would likely be unachievable for the U.S. shipbuilding industry.

While that plan didn't survive the transition between administrations, Chief of Naval Operations Adm. Mike Gilday has continued to defend it well into the new administration, saying as recently as February that it remains "the one that I've based my best advice on," even as he was proposing a new budget along with another new shipbuilding plan, which incorporated nothing from Esper's wishlist.

And through it all, Congress and the defense industry have grown tired of the Navy's shifting numbers. Putting forward a new shipbuilding plan every year makes it impossible to maintain a stable supply line and keep ships rolling out of the shipyards, and the constantly moving target confuses both lawmakers and contractors.

In April of this year, the Navy released its latest 30-year shipbuilding plan that contained three options: 316 ships, 327 ships, and 367 ships, all with different assumptions over budget and what kinds of ships were purchased. Then in June, the Navy sent Congress a classified report saying its plans called for 373 ships, USNI News reported. But a Navy official told POLITICO that the new report focused only on operational needs, and ignored budgets and shipyard capacity, giving it no real connection to the realities of budgets or the industrial base. The Navy plans to send an update of that report to the Hill this year.

Through it all, Gilday continues to insist that, given the Chinese threat, the Navy needs more than 500 ships in the fleet.

"The mismatch on where the Biden Pentagon team and the Navy-Marine Corps [stand], that's the source of that tension," said one person with knowledge of the internal discussions, who, like others, asked for anonymity to speak candidly about the debate. "[Hicks'] thesis and where she thinks the department needs to go does not necessarily involve a Navy with larger numbers."

There is friction not just between the Navy and Pentagon leadership, but within the service as well. The Marine Corps' plan for the light amphibious warship was pushed out of the Navy shipbuilding budget two years in a row. The fiscal 2023 budget request shows the new ship being funded in fiscal 2025—after Berger is slated to retire.

The move also throws cold water on Berger's plan to give units of 75 Marines the flexibility to carry a wide range of weapons with them at sea, including anti-ship missiles, drones and supplies to rearm friendly forces.

That ship, however, is the cornerstone of the Marine Corps' modernization priorities. The Marine Corps envisions using the light amphibious warship to ferry Marines from beach to beach while hiding in plain sight, as the new vessel is the size of other commercial ships.

The plan also has implications for the shipbuilding industrial base. Since the size of these vessels is smaller compared to traditional amphibs, that opens the door for more prospective builders, including companies that are not equipped to build large military vessels, to bid on the contract....

Complicating matters is the fact that the Biden administration has yet to put forth a nominee for the top Navy acquisition job, which is currently held on a temporary basis by Tommy Ross. Del Toro recently moved Ross, his former chief of staff, out of his front office because the two do not see eye-to-eye on the future of Navy shipbuilding, two former DoD officials said.

Instead, Ross was relocated to the acquisition job where he does not have authority to sign off on major deals, the two people said.

Ross is more aligned with Hicks' vision for the fleet, the people said.

"There is tension between Carlos and Tommy Ross and by extension between Del Toro and Kath Hicks," said one former Pentagon official familiar with the discussions. "Del Toro wants to go a different direction and he feels like he's being constrained by Kath Hicks."

Still, in his temporary role Ross does not have acquisition authority and is overseeing the Navy's $140 billion portfolio by name only, according to two internal memos announcing the changes.

"I reserve the right to exercise any and all of the authorities temporarily assigned to you," Del Toro wrote in a May memo announcing Ross's new title.

Instead that authority rests with Ross' deputy, Jay Stefany, a 37-year career Navy civil servant who entered the senior executive service in 2012. He is cleared to award contracts over $100 million to a single vendor and approve contracts in the $100 million to $500 million range that bypass the traditional acquisition process using what's known as other transaction authority.

The differing views inside the Pentagon on the future of Navy shipbuilding is not a bad thing, but leadership must come to a consensus, according to one of the people. What they decide will set the tone for the industrial base, the person added.

But what is concerning, once a path is chosen, is that the Navy lacks a Senate-confirmed acquisition executive to engage with industry to carry out the plan, the person said.

> In the end, Congress will have the final say over how large the Navy budget is and how many ships it can afford. While the Hill looks to pump tens of billions into President Joe Biden's latest defense budget, the Navy is hardly in their good graces given massive cost overruns and schedule slippages on new ship programs over the past 20 years.[22]

A May 12, 2022, press report stated

> Should Russia and China launch competing world conflicts, the Navy is unprepared to fight two wars in separate regions without additional ships, the service's top officer told senators on Thursday [May 12].
>
> The current fleet of about 298 ships "is not sized to handle two simultaneous conflicts," Adm. Mike Gilday, the chief of naval operations, said during a hearing of the Senate Armed Services Committee. "It's sized to fight one and keep a second adversary in check, but in terms of two all-out conflicts, we are not sized for that."...
>
> "What would the impact be on the Navy's ability to meet its operational requirements in [Europe] if we had to withhold Navy forces from Europe in order to deter Chinese aggression in [the Pacific]?" [Sen. Josh] Hawley said at the hearing.
>
> Gilday said the Navy would be "challenged" to meet both needs.
>
> "You'd have to take a look at how you squeeze the most out of the joint force that you have and use it the best possible way," he said.[23]

Total Number of Ships Projected Through FY2028

Another issue for Congress concerns the total number of Navy ships projected through FY2028, as shown in **Table 3**. Potential oversight issues for Congress include the following:

- Studies done by the Navy and OSD as part of their effort to develop a new force-level goal to replace the 355-ship goal of 2016 call for increasing the size of the Navy to something substantially more than 300 ships. Is the total number of Navy ships projected through FY2028 consistent with increasing the size of the Navy substantially above 300 ships? If the goal is to increase the Navy to something substantially more than 300 ships, why does the projection show the total number of ships decreasing rather than increasing through FY2028?
- Is the total number of Navy ships projected through FY2028 consistent with a goal of countering China's navy, which already has more ships than the U.S. Navy and is projected to grow further in coming years?[24]

[22] Lara Seligman, Lee Hudson, and Paul McLeary, "Inside the Pentagon Slugfest Over the Future of the Fleet, No One Can Agree on How Many Ships the Navy Needs, and Congress Isn't Pleased," *Politico*, July 24 2022.

[23] Caitlin Doornbos, "The Navy Is Unprepared to Fight in Two Conflicts at Once with Current Fleet Size, the Service's Top Officer Tells Senators," *Stars and Stripes*, May 12, 2022.

[24] For more on China's Navy, including projected total numbers in coming years, see CRS Report RL33153, *China Naval Modernization: Implications for U.S. Navy Capabilities—Background and Issues for Congress*, by Ronald O'Rourke.

Affordability of Shipbuilding Plan and Budgetary Path for Sustaining a Larger Navy

Overview

The prospective affordability of the Navy's 30-year shipbuilding plan has been a matter of oversight focus for several years. Observers have been especially concerned about the prospective affordability of Navy shipbuilding plans during the decade or so from the mid-2020s through the mid-2030s, when the Navy wants to procure Columbia-class ballistic missile submarines as well as replacements for large numbers of retiring attack submarines, cruisers, and destroyers.[25]

In the Navy's FY2024 30-year (FY2024-FY2053) shipbuilding plan, PB2024 and Alternative 2 assume no real (i.e., above-inflation) growth in shipbuilding funding, while Alternative 3 assumes some amount of real growth in shipbuilding funding. Under PB2024, the Navy would increase to a peak of 331 manned ships in FY2039-FY2040 and then decrease to 319 manned ships in FY2053. Under Alternative 2, the Navy would increase to a peak of 331 manned ships in FY2039, and then decrease to 328 manned ships in FY2053. Under Alternative 3, the Navy would increase to 356 manned ships in FY2042 and continue increasing to 367 manned ships by FY2053.

Increasing the size of the Navy's shipbuilding budget would form one component of an increase in the Navy's total budget that would be needed to increase the size of the Navy from about 300 ships to roughly 350 manned ships (plus additional large UVs)—additional increases to other parts of the Navy's budget would be needed to pay other costs associated with achieving and sustaining a larger fleet, including costs for additional ship crews, ship-embarked aircraft, ship-launched weapons, ship fuel and supplies, ship maintenance and repair, and shore support.

Some observers who advocate substantially increasing the size of the Navy have argued that doing so can or should be resourced by increasing the Navy's share of the DOD budget, perhaps by reducing the Army's share (on the grounds that countering China's military in the Pacific region is DOD's top defense-planning priority and the Pacific for the United States is primarily an aerospace and maritime theater rather than a land-forces-intensive theater). Whether reducing the Army's budget enough to finance a substantial increase in the size of the Navy would be feasible from a strategic standpoint—particularly following Russia's invasion of Ukraine and the focus that this development has placed on NATO's ability for deterring potential Russian aggression in Europe—is not clear. Another option for financing a substantial increase in the size of the Navy—one that some observers have raised following Russia's invasion of Ukraine—would be to maintain the Navy's share of the DOD budget about where it currently is, and instead increase the size of DOD's budget as a whole.

November 2022 CBO Report on FY2023 30-Year Shipbuilding Plan

A November 2022 CBO report on the Navy's FY2023 30-year shipbuilding plan states:

[25] The Navy's 30-year plans in recent years have spotlighted for policymakers the substantial increase in Navy shipbuilding funding that would be required to implement the 30-year plan during the decade or so from the mid-2020s through the mid-2030s. As discussed in CRS testimony in 2011, a key function of the 30-year shipbuilding plan is to alert policymakers well ahead of time to periods of potentially higher funding requirements for Navy shipbuilding. (See Statement of Ronald O'Rourke, Specialist in Naval Affairs, Congressional Research Service, before the House Armed Services Committee, Subcommittee on Oversight and Investigations, hearing on the Department of Defense's 30-Year Aviation and Shipbuilding Plans, June 1, 2011, 8 pp.)

> The three alternatives in the Navy's [FY]2023 [30-year shipbuilding] plan would require average annual shipbuilding appropriations that were 23 percent to 35 percent more than the average over the past five years. CBO estimates that total shipbuilding costs would average about $30 billion to $33 billion (in [constant FY]2022 dollars) over the next 30 years, which is 14 percent to 18 percent more than the Navy estimates. The Navy's total budget would increase from $220 billion today to roughly $290 billion (in [constant FY]2022 dollars) in 2052.[26]

The report also states:

> CBO's estimates of new-ship construction costs are higher than the Navy's because CBO and the Navy made different assumptions about the design and capabilities of some future ships, used different estimating methods, and treated growth in the costs of labor and materials for shipbuilding differently. Some of the difference in the estimates stems from uncertainty about the design and capabilities of large ships whose construction would begin in 5 or 10 years—in particular, the next-generation destroyer that would start to replace the Navy's Arleigh Burke class destroyers and the next-generation attack submarine to follow the service's Virginia class submarines. The difference between the estimates also increases over time, in part because the Navy's method of developing constant-dollar estimates (which reflect real costs—that is, costs adjusted to remove the effects of inflation) for most of its shipbuilding programs uses a fixed average real cost per ship; it does not account for the historically faster growth in the costs of labor and materials in the shipbuilding industry than in the economy as a whole. As a result, the Navy's estimates for the future purchases of ships with the capabilities of today's ships do not reflect the same increase in real costs that CBO's estimates reflect.[27]

The report also states:

> The cost of the Navy's [FY]2023 [30-year] shipbuilding plan is not only high when compared with recent funding, it is high by historical standards. In comparing the plan's costs with average recent funding, CBO is comparing funding during a period that saw the largest appropriations for ship construction since the Reagan Administration's defense buildup in the 1980s. Since 2013, lawmakers have appropriated, on average, $2.2 billion more per year for shipbuilding than the President has requested, partly because of concerns that the fleet is too small to perform all of its missions.... And the most recent two years of appropriations—2021 and 2022—saw two of the three largest increases by the Congress in the past decade. As a point of comparison, shipbuilding appropriations averaged $28.9 billion (in 2022 dollars) during the Cold War years of 1955 to 1989, a period of intense competition between the United States and the Soviet Union in which the Navy faced challenges that look increasingly similar to those it expects to face over the next two decades. The three alternatives in the Navy's plan would cost between 3 percent and 13 percent more than that.[28]

Navy Statements

An August 26, 2022, press report quoted the Chief of Naval Operations, Admiral Mike Gilday, as stating on August 25, 2022, that the Navy would need an additional $9 billion to $10 billion per year to build and maintain a fleet of 355 manned ships and 150 unmanned ships.[29]

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[26] Congressional Budget Office, *An Analysis of the Navy's Fiscal Year 2023 Shipbuilding Plan*, November 2022, page entitled "At a Glance" (PDF page 2 of 39).

[27] Congressional Budget Office, *An Analysis of the Navy's Fiscal Year 2023 Shipbuilding Plan*, November 2022, pp. 2-3.

[28] Congressional Budget Office, *An Analysis of the Navy's Fiscal Year 2023 Shipbuilding Plan*, November 2022, p. 5.

[29] "The Big News," Politico Pro Morning Defense, August 26, 2022.

A July 27, 2022, press report states

> The U.S. Navy's planned fleet of 2045 will require annual real [i.e., inflation-adjusted] budget increases of 3 to 5 percent, according to the Navy's top officer, who called that a "realistic" schedule for amassing the 500 hyperconnected manned and unmanned vessels that national security will require.
>
> "I think it's going to take a couple of decades to get us to yield that hybrid fleet that we think that we ultimately need in order to fight the way we think we want to fight, which is in a distributed manner," Adm. Mike Gilday, chief of naval operations, told reporters on Tuesday [July 26].
>
> That budget growth goal "would be unprecedented if they were to be achieved by the Navy," based on historical statistics, said Travis Sharp, fellow and director of defense budget studies at the Center for Strategic and Budgetary Assessments based in Washington, D.C....
>
> Historically speaking, the odds are against the Navy getting that kind of money.
>
> "Over the last 75 years, only one-third of the time has the Department of the Navy's budget grown by 3 percent or more in real terms," said CSBA's Sharp. "If you think about those outcomes as being…the odds, it's like one-third of the time the Navy has gotten that level of resourcing, and two-thirds of the time it has not gotten that level resourcing."
>
> Since World War II, Sharp said, the longest span of three-percent-or-more growth in the Navy Department's budget is three years, and that's only happened twice, during general military buildups: in the early 1980s, across the Carter and Reagan administrations and the early 2000s after 9/11 and amid the buildup to the Iraq war.
>
> Various defense and congressional officials have recommended 3 to 5 percent budget growth since 2018, when both the National Defense Strategy and U.S. Institute of Peace's 2018 report by the National Defense Strategy Commission called for it, Sharp said.[30]

As noted earlier, on July 26, 2022, the Navy released a document, *Chief of Naval Operations [CNO] Navigation Plan 2022*, that calls for a future fleet of 373 manned ships, as well as about 150 large unmanned surface and underwater vehicles. Regarding the funding levels needed to achieve this fleet, the document states (emphasis as in the original):

> Our central challenge is balancing our investments in the future fleet while sustaining a forward posture that keeps America safe and prosperous. Manpower, operations, and maintenance costs continue to grow above the rate of inflation. Meanwhile, we face the simultaneous task of recapitalizing our strategic nuclear deterrent, our century-old dry dock and ship repair facilities, and our strategic sealift capacity. **To simultaneously modernize and grow the capacity of our fleet, the Navy will require 3-5% sustained budget growth above actual inflation** [i.e., real growth]**. Short of that, we will prioritize modernization** [i.e., improving the capabilities of individual ships and aircraft] **over preserving force structure** [i.e., preserving numbers of ships and aircraft]**.** This will decrease the size of the fleet until we can deploy smaller, more cost-effective, and more autonomous force packages at scale.[31]

A November 4, 2021, press report stated

[30] Caitlin M. Kenney, "Navy Fleet Plan Needs 3-5% Annual Budget Increases for the Next Two Decades," *Defense One*, July 27, 2022.

[31] U.S. Navy, *Chief of Naval Operations Navigation Plan 2022*, undated, released July 26, 2022, p. 12.

> The U.S. Navy needs annual budget increases of three to five percent over inflation if it is to reach its shipbuilding goals and meet China's "significant threat," Navy Secretary Carlos Del Toro said Thursday [November 4]....
>
> If the U.S. Navy is to reach 355 ships—the goal service leaders put forth in 2016 and Congress ratified two years later—it needs budget increases of three to five percent over inflation, Del Toro said.[32]

A June 15, 2021, press report stated

> The number of ships in the fleet, now at 296 ships, will decrease if the Navy continues to have flat or declining budgets, the service's top officer told Congress today.
>
> Despite numerous evaluations showing the Navy needs more ships, Chief of Naval Operations Adm. Mike Gilday told the House Armed Service Committee that without a topline increase to the service's budget, the fleet will only get smaller.
>
> "As you all know, the results of analysis done over the past five years—whether inside the Pentagon or outside—have been consistent and clear: America needs a larger, more capable fleet," Gilday said. "Our latest Future [Naval Force Structure] assessment provided the headlights not only for the size of our future fleet, but importantly for the composition of that fleet, the capabilities that it brings to the joint force. If the Navy's [budget] top-line remains flat or goes down further, the size of our fleet will definitely shrink."…
>
> Gilday told lawmakers that the service's budget is trying to balance the need to pursue new capabilities and technology with its readiness priorities. While the Navy has for years been building toward a goal of 355 ships, Gilday said the service only has enough money for 300 vessels with its current budget.[33]

In February 2020, Navy officials testified that achieving and supporting a 355-ship fleet over the next 10 years would require increasing the Navy's budget by a cumulative total of $120 billion to $130 billion over the next 10 years, or an average of $12 billion to $13 billion per year. This figure, Navy officials stated, included not only the cost of procuring new ships, but costs associated with crewing, arming, operating, and maintaining a 355-ship fleet.[34]

In January 2020, Admiral Gilday stated that fully funding the Navy's program goals, including the attainment of a 355-ship fleet, would require allocating a larger share of DOD's budget to the Navy.[35]

In September and October 2019, Navy officials stated that if Navy budgets in coming years remain at current levels in real (i.e., inflation-adjusted) terms, the Navy would not be able to properly maintain a fleet of more than 302 to 310 ships.[36]

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[32] Caitlin M. Kenney, "Navy Secretary Seeks 3-5% Annual Budget Increases," *Defense One*, November 4, 2021.

[33] Mallory Shelbourne, "CNO Gilday: Flat or Declining Navy Budgets 'Will Definitely Shrink' the Fleet," *USNI News*, June 15, 2021.

[34] See, for example, Ben Werner, "SECNAV Modly: Navy Needs Additional $120 Billion To Build 355-Ship Fleet By 2030," *USNI News*, February 27, 2020.

[35] See, for example, Marcus Weisgerber, "The US Navy Needs More Money, Its Top Admiral Bluntly Argues," *Defense One*, January 14, 2020; Sam LaGrone, "CNO Gilday Calls for Budget Increase to Reach 355 Ship Fleet; New Battle Force Count Won't Include Unmanned Ships," *USNI News*, January 14, 2020; John M. Doyle, "CNO Wants Larger Slice of Defense Budget to Modernize, Meet China Threat," *Seapower*, January 15, 2020; Rich Abott, "CNO: Ship Count Will Not Include Unmanned; Bigger Topline Needed For Fleet Goal," *Defense Daily*, January 15, 2020.

[36] Justin Katz, "Modly Acknowledges 355 Ships Won't Happen in 'Reasonable' Amount of Time," *Inside Defense*, September 16, 2019; Otto Kreisher, "Modly Doubts Future Budgets Will Allow for 355-Ship Fleet," *Seapower*, October 27, 2019; Ben Werner, "Admiral: Navy Can Afford to Field a 310-Ship Fleet, Not 355," *USNI News*, October 28, 2019. See also Rich Abott, "Navy Says Current Funding Only Supports 310 Ships," *Defense Daily*, October 28,

The Navy in its FY2020 30-year shipbuilding plan highlighted a concern over the potential costs to sustain a larger fleet.[37]

Potential Oversight Questions for Congress

Potential oversight questions for Congress include the following:

- Has a clear budgetary path been identified for financing a substantial increase in the size of the Navy?
- Does the Biden Administration support increasing the size of the Navy's total budget to the level needed to increase the size of the Navy to figures like those shown in **Table 2** or **Figure 1**?
- In light of great power competition with China and Russia, how should funding requirements for the Navy be balanced against funding requirements for other parts of DOD?

Amphibious Ship Procurement and Force-Level

Another issue for Congress concerns the Navy's plans for procuring amphibious ships and the Navy's projected numbers of amphibious ships. As noted earlier, 10 U.S.C. 8062(b) requires the Navy to include not less than 31 operational amphibious warfare ships. The 31 amphibious ships are to include not less than 10 LHA/LHD-type "big deck" amphibious assault ships, with the remaining amphibious ships within the total of not less than 31 amphibious ships being LPD/LSD-type amphibious ships. The requirements regarding amphibious ships were added to 10 U.S.C. 8062(b) by Section 1023 of the FY2023 (NDAA) (H.R. 7776/P.L. 117-263 of December 23, 2022).

As shown in **Figure 3**, the FY2024 30-year shipbuilding plan shows the projected number of amphibious ships remaining below 31 ships throughout the 30-year period, with the figure decreasing to 26 ships in FY2035 and decreasing further, to 19 ships (PB2024), 20 ships (Alternative 2), or 23 ships (Alternative 3), in FY2053.

Under the 38-ship amphibious force-level goal that is included in the Navy's current 355-ship force-level objective (see **Table 1**), the Navy had planned to procure a total of 13 LPD-17 Flight II class ships. Under the Navy's proposed FY2024 budget, as under its proposed FY2023 budget, the LPD-17 Flight II ship proposed for procurement (and funded by Congress)—the third LPD-17 Flight II ship—would be the final one to be procured. The Navy's FY2024 budget submission, like its FY2023 budget submission, would thus truncate the LPD-17 Flight II program from a previously envisaged total of 13 ships to 3 ships. Ending LPD-17 Flight II procurement with the ship procured in FY2023 would make for a total of 16 LPD-17 Flight I and Flight II ships (13 LPD-17 Flight I ships procured in earlier years, and 3 LPD-17 Flight II ships).

The Navy's FY2024 30-year shipbuilding plan states:

> The Department [of the Navy] is conducting an LPD 17 Flt II amphibious ship cost/capability study... to inform PB2025's way ahead [the Navy's proposed FY2025 defense budget, to be submitted to Congress in early 2024] with respect to this platform....

2019; Paul McLeary, "Navy May Scrap Goal of 355 Ships; 310 Is Likely," *Breaking Defense*, October 25, 2019.

[37] U.S. Navy, *Report to Congress on the Annual Long-Range Plan for Construction of Naval Vessels for Fiscal Year 2020*, pp. 19-20.

> The Navy has started an Amphibious Ship Study to assess cost/capability tradeoffs to LPD Flt II, with study completion expected in June 2023....
>
> [Projected] Amphibious ship inventories reflect a pause in the current LPD [procurement] line. The analytic results of the medium deck amphibious ship study and the BFSAR will be reflected in future shipbuilding plans.[38]

Potential oversight questions for Congress include the following:

- Are the Navy's plans for procuring amphibious ships and the Navy's projected numbers of amphibious ships consistent with the requirement in 10 U.S.C. 8062(b) for the Navy to include not less than 31 amphibious ships? If not, why not?
- What are the potential operational consequences of the projected numbers of amphibious shown in **Figure 3?**
- How much additional funding for procuring amphibious ships and for operating and supporting amphibious ships would be needed to achieve and maintain a force of not less than 31 amphibious ships, including not less than 10 LHA/LHD-type "big deck" amphibious assault ships, as required by 10 U.S.C. 8062(b)?
- Is the Navy's proposal to truncate the LPD-17 Flight II program to three ships, and not procure any more such ships during the five-year period FY2024-FY2028 (see **Table 3**), consistent with the requirement under 10 U.S.C. 8062(b)?
- If the Navy has not yet released a definitive new force-level goal to replace the 355-ship goal, how can the Navy know that the requirement for LPD-17s will be no more than 16 ships?
- What impact would the truncation of LPD-17 Flight II procurement to a total of three ships have on the shipyard that builds LPD-17 Flight IIs (HII/Ingalls—the Ingalls shipyard of Pascagoula, MS, which is part of Huntington Ingalls Industries) in terms of workloads, employment levels, and costs for building other Navy warships (including DDG-51 destroyers and LHA-type amphibious assault ships) that are built at that yard? What impact would the truncation of LPD-17 Flight II procurement have on supplier firms associated with construction of LPD-17 Flight II ships?

An April 18, 2023, press report stated:

> Like its predecessor, the U.S. Navy's 2024 long-range shipbuilding plan is a tardy, multiple-choice document that appears to fall short of the legal requirement for amphibious warships. And some lawmakers are not happy.
>
> "Why are you violating the law? And why does your shipbuilding plan have no remote interest for the next 30 years, as far as I can tell, of hitting the statutory mandate that we told you to hit?" [Senator Dan Sullivan] asked Navy Secretary Carlos Del Toro at a Tuesday [April 18] hearing of the Senate Armed Services Committee.
>
> "It is my responsibility to follow the law. It's also my responsibility to ensure that we just don't waste taxpayer money on vessels, for example, that will never see the light of day," Del Toro replied....

[38] U.S. Navy, *Report to Congress on the Annual Long-Range Plan for Construction of Naval Vessels for Fiscal Year 2024*, March 2023, with cover letters dated March 30, 2023, released April 18, 2023, pp. 5, 14, 15 (note).

> Sullivan was complaining about the Navy's stated plan to allow its amphibious fleet to drop to 29 ships in 2024, below the 31-ship floor that Congress mandated in the 2023 National Defense Authorization Act.
>
> He was not alone. Several senators remarked on the amphibious-ship plan during the hearing or in later emailed statements....
>
> [Senator Tim Kaine, who leads the committee's Seapower subcommittee, said in his statement:] ""Lastly, on the issue of amphibious ships: the Marine Corps has made it clear that they need 31, and Congress shares that view. I'm frustrated that neither this plan nor the President's budget gets us there."...
>
> The top request in the Marine Corps' 2024 unfunded priorities list is to fully fund LPD 33 to try to get the fleet back to the minimum requirement, Marine Corps Commandant Gen. David Berger told senators at Tuesday's hearing.
>
> "In the shipbuilding plan and the budget submitted, there is no plan to get to that number. And that's why I put it as the top of the unfunded list," Berger said. "I know it to be the operational requirement and the law. And I saw no plan to get there."[39]

A March 30, 2023, press report stated:

> The U.S. Navy's plan to decommission three amphibious warships ahead of schedule has drawn ire from some legislators, who last year put into law a requirement for the service to maintain a fleet of at least 31 ships for the Marine Corps to use.
>
> The Navy in its fiscal 2024 budget request asked to decommission three Whidbey Island-class amphibious dock landing ships — the Germantown, Gunston Hall and Tortuga — which it tried to decommission last year and Congress voted to save.
>
> Vice Adm. Scott Conn, the deputy chief of naval operations for warfighting requirements and capabilities, explained during a Tuesday [March 28] hearing before the Senate Armed Services Committee's sea power panel that these ships are not viable options for overseas operations given their poor condition. The vessels have not reached the end of their planned 40-year life span.
>
> Conn said the ships' original service life was meant to be 35 years, but in the 1990s the Navy changed that to 40 based on the assumptions the ships would operate in six-month deployments and be properly maintained along the way.
>
> Throughout the wars in Iraq and Afghanistan, "we operated those ships much longer than six-month deployments," Conn said. "We know we didn't put the resources [toward] those ships to be able to sustain them. So now we're in a position where we have some hard choices to make."
>
> As the Navy watches their performance in ongoing maintenance availabilities, "we don't have the confidence, as we're seeing growth work and new work, that those ships will get out of the maintenance phase, be able to get through a work-up cycle … which is a year long, and then go on deployment."
>
> Why keep them if "we can't get them away from the pier," Conn wondered.
>
> It would cost about $3 billion to keep the Whidbey Island amphibious ships and cruisers the Navy wants to decommission, but Conn argues that money would be better spent on other ships. Additionally, decommissioning the ships rather than continuing their

[39] Caitlin M. Kenney, "Navy Shipbuilding Plan Draws Lawmakers' Ire Anew," *Defense One*, April 18, 2023. See also Doug G. Ware, "'You're Ignoring the Law': Navy Secretary Grilled in Senate over Lack of Amphibious Ships," *Stars and Stripes*, April 18, 2023.

> unsuccessful maintenance availabilities would free up sailors for other ship assignments at sea and would free up repair yards to work on ships that are more badly needed by the fleet.
>
> Sen. Dan Sullivan, R-Alaska, who serves in the Marine Corps Reserve, told Conn the Navy's plan to decommission these ships brings the fleet lower than the now-statutory requirement for 31 ships.
>
> "This is not a suggestion, it's a law," he said. "You have a law, we passed it … and the Navy comes out and says: 'Eh, we'll just blow off those silly U.S. senators.' "
>
> Conn told him that "having 31 ships, of which three of them may be tied to a pier for the next five years, is not really 31."[40]

A March 15, 2023, press report stated:

> The Navy halted its pursuit of the San Antonio-class amphibious transport dock line because of the program's growing costs and delays in the shipyard, the service's top officer said Wednesday.
>
> The pause to reassess the LPD-17 Flight II line started a year ago at the direction of the Office of the Secretary of Defense, Chief of Naval Operations Adm. Mike Gilday said at the annual McAleese Conference....
>
> The pause on buying amphibious ships is so the Navy can perform a Battle Force Ship Assessment and Requirements Study, which will help inform amphibious ship buys and likely wrap up in the third quarter of FY 2023, and evaluate both possible cost savings and capabilities, officials have said....
>
> The Navy wanted [LPD-32] to be the last LPD-17 Flight II purchase, as the service last year tried to end the line early after only buying three ships instead of the originally planned 13.
>
> After appeals from the Marine Corps for advanced procurement funding for LPD-33, lawmakers opted to continue the line and allotted $250 million in advanced procurement dollars for that ship in the FY 2023 funding and policy bills.
>
> But the service did not include the ship in its five-year budget outlook released Monday [March 13]. The Navy could buy LPD-33 in FY 2025 if it followed industry's recommendation to order the ships every two years to keep a stable work force and maintain the supply chain. Because of the two-year centers, Gilday said the Navy has time to evaluate the LPD-17 Flight II line.
>
> "Congress has given us the authorities in the latest [National Defense Authorization Act] to do a bundle buy and we all agree that that's the way that we ought to go after these ships. But to go after a single ship in '25, and put that in the budget now – based on where we are with all this churn on cost and so forth and this concern about the cost of those ships – it's like telling a car dealer, 'hey I really want to buy that minivan. I'm going to buy that minivan. Now let's roll up our sleeves and talk about price,'" Gilday said.
>
> "It's not going to drive down the price of that ship. It needs to be competitive. Actually, with that production line and that ship, it's not competitive. One company builds it," the CNO added.
>
> But the Marine Corps has a different take. At the same conference, Marine Corps Commandant Gen. David Berger made the case for the LPD-17 Flight II line and said a block buy acquisition strategy is the way to pursue the ships to save money. The commandant argued that HII's Ingalls Shipbuilding is approaching the point in the line

[40] Megan Eckstein, "Lawmakers Decry US Navy's Plan to Decommission Aging Amphibious Ships," *Defense News*, March 30, 2023.

> where they can see cost savings and that increased costs to buy new LPDs are because of inflation....
>
> Berger was part of the team in 2014 that assessed the LPD-17 line and chose to pursue an altered design – Flight II – instead of starting from scratch on a new amphibious ship program. He expressed doubt that the Navy could find more cost savings by doing another assessment and said halting the line would affect the workforce and drive the price up....
>
> Naval Sea Systems Command chief Vice Adm. Bill Galinis could not provide details when asked if NAVSEA is formally assessing the LPD design or looking at a potential Flight III....
>
> Both Berger and Gilday argued for block buys to achieve cost savings, a point Navy Secretary Carlos Del Toro echoed in advocating for potential multi-year procurement strategies.
>
> "I think it's necessary to try to get to why is the cost of the LPD going up as significantly as it has. It's now approaching pretty much the cost of a DDG Flight III destroyer," Del Toro said.
>
> "So there are some concerns to that. So we're going to actually take a look at that over the next few months actually, hopefully by either June or September we'll have the final answer to are there ways that we could perhaps bring that cost down a bit."...
>
> Berger cited his minimum requirement of 31 amphibious ships, which Congress signed into law in FY 2023, as the reason why he cannot support the pause in purchasing LPDs.
>
> "They're right at the point in the curve that's the most efficient and we're going to take a time out. From my perspective, I can't accept that when the inventory – the capacity has to be no less than 31," the commandant said.[41]

A March 13, 2023, press report stated:

> The Navy is proposing to drop its amphibious fleet below 31 ships, despite an agreement with the Marine Corps and a potential violation of last year's defense policy law.
>
> Sent to Congress on Monday [March 13], the Navy's proposed $255.8 billion 2024 budget aims to retire eight warships before the end of their intended service life, including three Whidbey Island-class dock landing ships, or LSDs, that it proposed to scrap last year but which were saved by the 2023 National Defense Authorization Act....
>
> "We've gone through, not only on LSDs but the other divestments proposed in this budget, did a ship-by-ship review, to understand the material state of each of the ships. What we found on the LSDs is that they are challenged in terms of readiness. We want to make sure that the capabilities that we field are the right capabilities, and are able to perform the mission to the standards that we expect," Navy Undersecretary Erik Raven told reporters ahead of the proposed budget's release.
>
> "And so we're proposing those divestments because we think the return on investment, on further investments on those particular ships, as judged hull by hull, that return on investment is not there," Raven said. "Additionally, say that we have sailors and Marines who are serving on these ships, we think that getting them matched up to the right platforms is the way to go."
>
> Marine Corps Commandant Gen. David Berger last week rejected any plans that would cut these aging LSDs before their replacements were delivered.

[41] Mallory Shelbourne, "Navy and Marine Corps Debate Amphibious Ship Costs as Clash Over LPD-17 Flight II Line Continues," *USNI News*, March 15 (updated March 16), 2023.

> Despite the delivery of one LPD in 2024, the early retirement of the three LSDs would mean the total number of amphibs that year would drop below the legally required 31 ships minimum laid out in the 2023 NDAA, according to the budget documents. Raven told reporters that the Navy is not seeking a waiver at this time....
>
> Berger on Monday reiterated the reasoning behind the 31-ship requirement for amphibs.
>
> "Anything less incurs risk to national defense by limiting the options for our combatant commanders," he said in a statement to Defense One. "Per strategic guidance, the Marine Corps must be able to provide the nation with crisis response capabilities and build partnerships with allies and partners in support of integrated deterrence—difficult to achieve without the requisite number of amphibious warships."...
>
> Last month, Navy Secretary Carlos Del Toro said the service is taking a "strategic pause" on buying more LPDs until additional studies are completed, Defense News reported. Afterward, the Navy would "probably" start buying them again, according to the report.
>
> On Monday, Raven told reporters at the Pentagon that the office of the Secretary of Defense had directed the pause and a capabilities-based assessment, and that there is an "integrated team" to assess the ships.
>
> "What we are making sure that we are doing as we move forward with our budget plans, is making sure that we have the right capabilities at the right price aligned to not only meeting military requirements, but working with industry," Raven said. "And for LPD, we're taking a look at the acquisition strategy moving forward, again, to make sure that we would have the right capabilities at the right price and working with industry partners to put together that plan moving forward."
>
> The Navy has "time to get this right" with the LPD, and that the Navy and Marine Corps are "fundamentally aligned" on the 31-ship requirement, Rear Adm. John Gumbleton, the deputy assistant secretary of the Navy for budget, said Monday.
>
> "Both service chiefs like 31 [ships] as a requirement. Both service chiefs like multiyear procurements. Both service chiefs want to buy in a predictable future. And so if we can do a study and actually lower the costs of this, that's all to the good of the Department of the Navy and Marine Corps," Gumbleton said.[42]

Another March 13, 2023, press report stated:

> The future amphibious warship fleet — and its productions line — are in peril of being sunk by budget politics. And the Marine Corps is ready to fight about it.
>
> "Without a programmed replacement for [dock landing ships] being decommissioned, substantial risk falls on the combatant commander as the requirement for 31 ships will not be met," Maj. Joshua Benson, a spokesman for the service's three-star general in charge of combat development and integration, told Breaking Defense today. "This is unacceptable."
>
> The Navy's new fiscal 2024 budget request follows up on previous comments from Navy Secretary Carlos Del Toro, who has said the service will take a "strategic pause" in purchasing new amphibious warships, which are designed to ferry Marines and their equipment into strategic locations where they can deploy from ship to shore. At the time, Del Toro said the pause was so the Navy can consider both how many ships it needs as well as the capabilities onboard those vessels.
>
> Speaking to reporters ahead of the budget rollout, Navy Undersecretary Erik Raven declined to answer several questions about the pause, instead thanking for Congress for its

[42] Caitlin M. Kenney, "Navy On Path To Violate 31-Amphibious-Ship Requirement in 2024," *Defense One*, March 13, 2023.

> support in the previous budget and promising to work with industry and the Hill moving forward.
>
> During an event on the Hill last week, Commandant Gen. David Berger also declined to explain the logic behind the "strategic pause," saying it was Del Toro's place to articulate the administration's position. But he was blunt about the risk in not meeting what the Marines say is a minimum of 31 amphibious ship fleet, a figure backed up by a recent joint Navy-Marine Corps assessment delivered to lawmakers.
>
> "The inventory is going to go down, the risk is going to go up," he said then. "The risk meaning our ability as a nation to respond when needed, and sometimes you can't predict that the risk goes up — that a combatant commander doesn't have the right tool for the job. That's the risk."
>
> But the new comments from the Marine Corps' three-star command in charge of developing warfighting technologies represent major, public push-back against the Pentagon's formal request.
>
> In follow up comments today to Breaking Defense, Benson emphasized that risk, citing the ongoing humanitarian crises in Turkey prompted by multiple earthquakes.
>
> "The ongoing humanitarian disaster in Turkey is the most recent example of a situation that would benefit from the capabilities organic to an [amphibious ready group/ Marine expeditionary unit]. Unfortunately, no operationally deployable amphibious warfare ships were available," said Benson.
>
> In terms of the industrial base, the Marine Corps views the "strategic pause" as putting its ship production lines at risk of completely shutting down. "Depending on the length of the pause," Benson said shipyards may be forced to cut their workforce, losing "years of experience that have been carried forward from keel to keel."
>
> "If a shipbuilder is forced to make these decisions due to forecasted gaps in production, re-starting a line becomes much more expensive," he added.[43]

Another March 13, 2023, press report stated:

> A new study directed by the Office of the Secretary of Defense led to the halt in amphibious ship procurement so the Navy can evaluate requirements and cost efficiencies, a Navy official said Monday [March 13].
>
> "We received direction from OSD, but this will be an integrated team moving forward for that assessment," Navy Under Secretary Erik Raven told USNI News when asked who directed the pause and reassessment.
>
> Rear Adm. Gumbleton, the Navy deputy assistant secretary for budget, said the Department of the Navy will work with both OSD and its Cost Assessment and Program Evaluation office on the evaluation....
>
> When questioned by USNI News, Gumbleton disputed the notion that the Navy chose to invest in the Landing Ship Medium over the LPD platform. He acknowledged the service would ideally buy the San Antonio-class ships on two-year centers, a procurement plan industry advocates for to keep the shipyard workforce and supply chain stable.
>
> "The intent here is not an either-or between an LPD or a Medium Landing Ship. It's a both," Gumbleton said.
>
> "I believe the services are fundamentally aligned on this requirement. Both service chiefs like 31 as the requirement. Both service chiefs like multi-year procurements. Both service

[43] Justin Katz, "'Unacceptable': Marines Are Ready to Fight Tonight—About the Amphib Budget," *Breaking Defense*, March 13, 2023.

chiefs want to buy in a predictable future. And so if we can do a study and actually lower the cost of this, that's all to the good of the Department of the Navy and the Marine Corps," he added, referring to the 31-amphibious ship floor that Congress signed into law in FY 2023.

Since Navy Secretary Carlos Del Toro said last month that there was a "strategic pause" on buying amphibious ships, the Navy opted not to include LPD-33 in today's budget proposal. In FY 2023 legislation, Congress appropriated and authorized $250 million in advanced procurement money for that ship, but a Navy official told USNI News the service plans to hold that contract for the duration of the pause.

The halt is so the Navy can perform a Battle Force Ship Assessment and Requirements Study, a new evaluation that will inform its amphibious ship procurement, according to Del Toro. Speaking at the Pentagon's budget rollout, Vice Chairman of the Joint Chiefs of Staff Adm. Christopher Grady said that study will wrap in the third quarter of FY 2023....

The current amphibious force can meet the military's missions for the immediate future, Vice Adm. Sara Joyner, the director of Force Structure, Resources and Assessment on the Joint Staff (J8), told reporters Monday.

"As far as amphib studies, with the new [National Defense Strategy] that came out in '22, the thought is that what we have right now is sufficient for what we need in order for near-term requirements for amphibs," Joyner said. "But the chance to redirect and take another look was something that was valued and that so the Department of the Navy is moving forward with that study. And it will be their study that they will bring forward is to my knowledge how that will occur."

Since Del Toro announced the pause, the Marine Corps has voiced concern over the amphibious force structure and investment plans, particularly as the Navy seeks to retire the older Whidbey Island-class dock landing ships. The Navy's FY 2024 proposal asks to retire three LSDs: USS Germantown (LSD-42), USS Gunston Hall (LSD-44) and USS Tortuga (LSD-46).

"We have to have the inventory not less than 31 [ships]. To me, that's a combination of old and new. We cannot decommission a critical element without having a replacement in our hand," Marine Corps Commandant Gen. David Berger said at an event last week.

"We can't do that, or else, back to risk … we're not going to have the tools or it's not going to be available. So the decommissioning of the LSDs to me is directly tied to the inventory as fast as we can procure and field."

Both Defense Department and Navy officials during the budget rollout emphasized that the ongoing evaluations are meant to assess both cost and capabilities to ensure the service is making the right investments.

"We remain committed to Landing Ship Medium, and for LPD we're taking a look at the acquisition strategy moving forward again to make sure that we will have the right capabilities at the right price and working with industry partners to put together that plan moving forward," Raven said.

Deputy Defense Secretary Kathleen Hicks emphasized that amphibious ships are crucial to the Indo-Pacific, the Pentagon's priority theater.

"We believe that's vital to the Indo-Pacific region in particular, and as we look at all the investments we're making, for example, in the Marine Corps' Force Design 2030, of course it includes the ability to move around our Marine forces," Hicks said.

> "The question really is what is the right mix of capabilities for today and for tomorrow, and that's where we're taking time to look at what that right mix of capabilities looks like, including, of course … in the case you're pointing out on the amphibious forces."[44]

Industrial Base Capacity

Another issue for Congress concerns industrial base capacity at ship construction shipyards, ship overhaul and repair shipyards, and supplier firms for building ships at annual rates needed to substantially increase the size of the Navy, and for performing overhaul, repair, and modernization work on a larger fleet. Potential capacity limits or bottlenecks that have been identified include but are not necessarily limited to shipyard and supplier capacity for building submarines at desired annual rates, and capacity at government-operated Naval Shipyards (NSYs) for performing overhaul, repair, and modernization work on the Navy's nuclear-powered ships (i.e., its submarines and aircraft carriers).[45]

An August 25, 2022, press report stated

> The biggest barrier to adding more ships to the Navy is industrial base capacity, Chief of Naval Operations Adm. Mike Gilday said Thursday [August 25].
>
> The service's top officer said shipbuilders need indicators from the service before they're able to make the investments required to build, for example, three destroyers per year.
>
> "We have an industrial capacity that's limited. In other words, we can only get so many ships off the production line a year. My goal would be to optimize those production lines for destroyers, for frigates, for amphibious ships, for the light amphibious ships, for supply ships," Gilday said at a Heritage Foundation event.
>
> "We need to give a signal to industry that we need to get to three destroyers a year, instead of 1.5, that we need to maintain two submarines a year. And so part of this is on us to give them a clear set of – a clear aim point so they can plan a work force and infrastructure that's going to be able to meet the demand. But again, no industry is going to make those kinds of investments unless we give them a higher degree of confidence."

[44] Mallory Shelbourne, "Navy: OSD Directed Amphib Procurement Pause, Joint Staff Says Current Amphib Force 'Sufficient,'" *USNI News*, March 13 (updated March 20), 2023. See also Mallory Shelbourne, "FY2024 Budget: Navy Won't Buy Any More San Antonio Amphibs in the Next Five Years," *USNI News*, March 9 (updated March 15), 2023; Caitlin M. Kenney, "Marines Issue Warning on Amphib Fleet, The Assistant Commandant Says 31 Large Amphibious Warfare Ships Are Needed to Avoid Risk," *Defense One*, February 14, 2023.

[45] Regarding the delays and other difficulties the Navy has experienced in recent years in executing overhaul and repair work on existing Navy ships, see, for example, Congressional Budget Office, *The Capacity of the Navy's Shipyards to Maintain Its Submar*ines, March 2021, 21 pp.; Government Accountability Office, *Navy Maintenance[:] Navy Report Did Not Fully Address Causes of Delays or Results-Oriented Elements*, GAO-21-66, October 2020, 29 pp; Government Accountability Office, *Navy Shipyards[:] Actions Needed to Address the Main Factors Causing Maintenance Delays for Aircraft Carriers and Submarines*, GAO-20-588, August 2020, 47 pp.; Government Accountability Office, *Navy Ship Maintenance[:] Evaluating Pilot Program Outcomes Could Inform Decisions to Address Persistent Schedule Challenges*, GAO-20-370, May 2020, 55 pp.; Government Accountability Office, *Navy Ship Maintenance[:] Actions Needed to Address Maintenance Delays for Surface Ships Based Overseas*, GAO-20-86, February 2020, 63 pp.; Government Accountability Office, *Navy Maintenance[:] Persistent and Substantial Ship and Submarine Maintenance Delays Hinder Efforts to Rebuild Readiness*, GAO-20-257T, December 4, 2019 (Testimony Before the Subcommittees on Seapower and Readiness and Management Support, Committee on Armed Services, U.S. Senate, Statement of Diana C. Maurer Director Defense Capabilities and Management), 31 pp. GAO has reported and testified on this issue numerous times in recent years.

> Asked by USNI News after the event if the reason the Navy isn't ready to send that signal to industry is because of funding, Gilday said, "it depends on the class of ships. Sometimes it's affordability. Sometimes it's industrial capacity."[46]

A March 21, 2023, press report stated:

> The Navy is keeping a two-ship-per-year cadence for its destroyer line because that's a realistic goal for industry to work toward, according to the Pentagon's top budget officer.
>
> Despite Congress' push for the Navy to start buying three Arleigh Burke-class Flight III destroyers per year, the Fiscal Year 2024 budget request unveiled last week showed the service buying two destroyers. That's because U.S. shipyards are not yet able to build two destroyers per year, let alone three, Mike McCord said last week.
>
> "I'm not hating on DDGs – my only point was that last year Congress added a third and the reason we didn't budget for three is, again, we don't see the yards being able to produce three a year. We don't see them being able to produce two a year. And that's just data. It's not what we wish to be true. But everybody's struggling with skilled labor. Everybody's struggling with supply chain. So it's not getting better very fast from the data that I've seen – whether with submarines or DDGs. So two a year seems to be a reasonable place," McCord told USNI News at the McAleese Conference.
>
> During the budget rollout last week, McCord said industry is currently building 1.5 destroyers per year, a number Chief of Naval Operations Adm. Mike Gilday has also cited when arguing that the shipyards have limited capacity.
>
> McCord also argued that asking for more destroyers than industry can build takes away leverage from the Navy to negotiate with shipbuilders on price.
>
> "If you keep sort of placing orders for things faster than they can be delivered, it's good for the books, the balance sheets of the companies. But are you really, as the buyer, are you in the best place you'd like to be with any leverage or are you actually short of leverage when, you produce on time or you don't produce on time. It doesn't matter to me – I'm going to keep writing you checks," McCord told USNI News.
>
> The comptroller said both he and Susanna Blume, the director of the Cost Assessment and Program Evaluation (CAPE) Office of the Secretary of Defense, don't think putting more funding toward an extra destroyer is a wise use of resources that will help shipbuilders deliver it to the Navy quicker.
>
> "It's just sort of piling up in the orders book and we're still going to have the same problems of the yards producing faster until we get through the supply chain and the workforce issues," McCord said. "It is not to say that we would not be interest[ed] in a more robust production world where in having three DDGs or moving to three submarines, but it doesn't seem to be … realistic."
>
> General Dynamics Bath Iron Works, one of the yards that build the destroyers, has spent the last several years digging through a backlog of work at its Maine yard that the COVID-19 pandemic exacerbated. HII's Ingalls Shipbuilding, the other yard that builds the Arleigh Burke destroyers, has performed better. Ingalls is also winding down the Coast Guard's Legend-class National Security Cutter production line, which could open up more capacity at its yard in Pascagoula, Miss.
>
> A spokeswoman for Ingalls Shipbuilding told USNI New in a statement that the yard is ready to support building three destroyers per year should the Navy go this route....

[46] Mallory Shelbourne, "CNO Gilday: Industrial Capacity Largest Barrier to Growing the Fleet," *USNI News*, August 25, 2022.

> A spokesperson for Bath Iron Works told USNI News that it's "working to aggressively recover schedule" at the shipyard....
>
> "We would love to live in a world where the yards could make three a year, or three submarines a year, but we don't live in that world," McCord said last week at the budget rollout.[47]

Potential oversight questions for Congress include the following:

- Is there sufficient shipyard and supplier capacity to increase the size of the Navy to the figures like those shown in **Table 2** or **Figure 1**, and to sustain a fleet of that general size? Where is there currently insufficient capacity?
- For areas where there currently is insufficient capacity, what is the Navy's plan for increasing capacity to required levels?
- Will implementing the Shipyard Infrastructure Optimization Program (SIOP)—the Navy's 20-year plan for investing in the modernization of facilities at the four government-operated NSYs—provide enough capacity at the NSYs to meet the overhaul, repair, and modernization needs for the nuclear-powered ships (including, potentially, an increased number of attack submarines) in a larger Navy?

Legislative Activity for FY2024

CRS Reports Tracking Legislation on Specific Navy Shipbuilding Programs

Detailed coverage of legislative activity on certain Navy shipbuilding programs (including funding levels, legislative provisions, and report language) can be found in the following CRS reports:

- CRS Report R41129, *Navy Columbia (SSBN-826) Class Ballistic Missile Submarine Program: Background and Issues for Congress*, by Ronald O'Rourke.
- CRS Report RL32418, *Navy Virginia (SSN-774) Class Attack Submarine Procurement: Background and Issues for Congress*, by Ronald O'Rourke.
- CRS In Focus IF11826, *Navy Next-Generation Attack Submarine (SSN[X]) Program: Background and Issues for Congress*, by Ronald O'Rourke.
- CRS Report RS20643, *Navy Ford (CVN-78) Class Aircraft Carrier Program: Background and Issues for Congress*, by Ronald O'Rourke.
- CRS Report RL32109, *Navy DDG-51 and DDG-1000 Destroyer Programs: Background and Issues for Congress*, by Ronald O'Rourke.
- CRS In Focus IF11679, *Navy DDG(X) Next-Generation Destroyer Program: Background and Issues for Congress*, by Ronald O'Rourke.
- CRS Report R44972, *Navy Constellation (FFG-62) Class Frigate Program: Background and Issues for Congress*, by Ronald O'Rourke.

[47] Mallory Shelbourne, "OSD Comptroller Says U.S. Shipyards Can't Build 3 Destroyers a Year," *USNI News*, March 21 (updated March 22), 2023.

- CRS Report R43543, *Navy LPD-17 Flight II and LHA Amphibious Ship Programs: Background and Issues for Congress*, by Ronald O'Rourke.
- CRS Report R46374, *Navy Medium Landing Ship (LSM) (Previously Light Amphibious Warship [LAW]) Program: Background and Issues for Congress*, by Ronald O'Rourke.
- CRS Report R43546, *Navy John Lewis (TAO-205) Class Oiler Shipbuilding Program: Background and Issues for Congress*, by Ronald O'Rourke.
- CRS In Focus IF11674, *Navy Next-Generation Logistics Ship (NGLS) Program: Background and Issues for Congress*, by Ronald O'Rourke.
- CRS In Focus IF11838, *Navy TAGOS-25 (Previously TAGOS[X]) Ocean Surveillance Shipbuilding Program: Background and Issues for Congress*, by Ronald O'Rourke.
- CRS Report R45757, *Navy Large Unmanned Surface and Undersea Vehicles: Background and Issues for Congress*, by Ronald O'Rourke.

Legislative activity on individual Navy shipbuilding programs that are not covered in detail in the above reports is covered below.

Summary of Congressional Action on FY2024 Shipbuilding Funding Request

The Navy's proposed FY2024 budget requests $32.8 billion in shipbuilding funding for, among other things, the procurement of nine new ships, including one Columbia (SSBN-826) class ballistic missile submarine, two Virginia (SSN-774) class attack submarines, two Arleigh Burke (DDG-51) class destroyers, two Constellation (FFG-62) class frigates, one AS(X) submarine tender, and one John Lewis (TAO-205) class oiler. The Navy's proposed FY2024 budget also proposes retiring 11 ships, including two relatively young Littoral Combat Ships (LCSs).[48]

Table 4 summarizes congressional action on the Navy's FY2024 funding request for Navy shipbuilding. The table shows the amounts requested and congressional changes to those requested amounts. A blank cell in a filled-in column showing congressional changes to requested amounts indicates no change from the requested amount.

[48] For a press report about the 11 ships, including the two LCSs and six other ships that would be retired before the end of their expected service lives, see Megan Eckstein, "Why the US Navy Wants to Retire Eight Ships Early," *Defense News*, March 13, 2023.

Table 4. Summary of Congressional Action on FY2024 Funding Request

Millions of dollars, rounded to nearest tenth; totals may not add due to rounding

Line number	Program	Request	Congressional changes to requested amounts					
			Authorization			Appropriation		
			HASC	SASC	Final	HAC	SAC	Final
Shipbuilding and Conversion, Navy (SCN) appropriation account								
001	Columbia-class SSBN	2,443.6						
002	Columbia-class SSBN (AP)	3,390.7						
003	CVN 80 aircraft carrier	1,115.3						
004	CVN-81 aircraft carrier	800.5						
005	Virginia-class SSN	7,130.0						
006	Virginia-class SSN (AP)	3,215.5						
007	CVN RCOH	0						
008	CVN RCOH (AP)	817.6						
009	DDG-1000	410.4						
010	DDG-51	4,199.2						
011	DDG-51 (AP)	284.0						
012	LCS	0						
013	FFG-62	2,173.7						
014	LPD-17 Flight II	0						
015	LPD-17 Flight II (AP)	0						
016	LPD-17 Flight I completion	0						
017	Expeditionary Sea Base (ESB)	0						
018	LHA amphibious assault ship	1,830.1						
019	LHA amphibious assault ship (AP)	0						
020	Expeditionary fast transport ship (EPF)	0						
021	AS(X) submarine tender	1,733.2						
022	TAO-205 oiler	815.4						
023	TAGOS(X) ocean surveillance ship	0						
024	TATS towing/salvage/rescue ship	0						
025	LCU 1700 landing craft	62.5						
026	Outfitting	557.4						
027	Ship to shore connector (SSC)	0						
028	Service craft	63.8						
029	Auxiliary Personnel Lighter (APL)	0						
030	LCAC landing craft SLEP	15.3						
031	Auxiliary vessels (used sealift ships)	142.0						
032	Completion of prior-year ships	1,648.6						
TOTAL		**32,849.0**						

Source: Table prepared by CRS based on original Navy FY2024 budget submission, committee reports, and explanatory statements on the FY2024 National Defense Authorization Act and FY2024 DOD Appropriations Act.

Notes: Millions of dollars, rounded to nearest tenth. A blank cell indicates no change to requested amount. Totals may not add due to rounding. **AP** = advance procurement funding; **HASC** = House Armed Services Committee; **SASC** = Senate Armed Services Committee; **HAC** = House Appropriations Committee; **SAC** = Senate Appropriations Committee; **SLEP** = service life extension program.

Appendix A. Earlier Navy Force-Structure Goals Dating Back to 2001

The table below shows earlier Navy force-structure goals dating back to 2001. The 308-ship force-level goal of March 2015, shown in the first column of the table, is the goal that was replaced by the 355-ship force-level goal released in December 2016.

Table A-1. Earlier Navy Force-Structure Goals Dating Back to 2001

Ship type	308-ship goal of March 2015	306-ship goal of January 2013	~310-316 ship goal of March 2012	Revised 313-ship goal of September 2011	Changes to February 2006 313-ship goal announced through mid-2011	February 2006 Navy goal for 313-ship fleet	Early-2005 Navy goal for fleet of 260-325 ships		2002-2004 Navy goal for 375-ship Navy[a]	2001 QDR goal for 310-ship Navy
							260-ships	325-ships		
Ballistic missile submarines (SSBNs)	12[b]	12[b]	12-14[b]	12[b]	12[b]	14	14	14	14	14
Cruise missile submarines (SSGNs)	0[c]	0[c]	0-4[c]	4[c]	0[c]	4	4	4	4	2 or 4[d]
Attack submarines (SSNs)	48	48	~48	48	48	48	37	41	55	55
Aircraft carriers	11[e]	11[e]	11[e]	11[e]	11[e]	11[f]	10	11	12	12
Cruisers and destroyers	88	88	~90	94	94[g]	88	67	92	104	116
Frigates	0	0	0	0	0	0	0	0	0	
Littoral Combat Ships (LCSs)	52	52	~55	55	55	55	63	82	56	0
Amphibious ships	34	33	~32	33	33[h]	31	17	24	37	36
MPF(F) ships[i]	0[j]	0[j]	0[j]	0[j]	0[j]	12[j]	14[j]	20[j]	0[j]	0[j]
Combat logistics (resupply) ships	29	29	~29	30	30	30	24	26	42	34
Dedicated mine warfare ships	0	0	0	0	0	0	0	0	26[k]	16
Joint High Speed Vessels (JHSVs)	10[l]	10[l]	10[l]	10[l]	21[l]	3	0	0	0	0
Other[m]	24	23	~23	16	24[n]	17	10	11	25	25
Total battle force ships	**308**	**306**	**~310-316**	**313**	**328**	**313**	**260**	**325**	**375**	**310 or 312**

Source: Table prepared by CRS based on U.S. Navy data.

Notes: QDR = Quadrennial Defense Review. The "~" symbol means approximately.

a. Initial composition. Composition was subsequently modified.

b. The Navy plans to replace the 14 current Ohio-class SSBNs with a new class of 12 next-generation SSBNs. For further discussion, see CRS Report R41129, *Navy Columbia (SSBN-826) Class Ballistic Missile Submarine Program: Background and Issues for Congress*, by Ronald O'Rourke.

c. Although the Navy plans to continue operating its four SSGNs until they reach retirement age in the late 2020s, the Navy does not plan to replace these ships when they retire. This situation can be expressed in a table like this one with either a 4 or a 0.

d. The report on the 2001 QDR did not mention a specific figure for SSGNs. The Administration's proposed FY2001 DOD budget requested funding to support the conversion of two available Trident SSBNs into

SSGNs, and the retirement of two other Trident SSBNs. Congress, in marking up this request, supported a plan to convert all four available SSBNs into SSGNs.

e. With congressional approval, the goal has been temporarily be reduced to 10 carriers for the period between the retirement of the carrier *Enterprise* (CVN-65) in December 2012 and entry into service of the carrier *Gerald R. Ford* (CVN-78), currently scheduled for September 2015.

f. For a time, the Navy characterized the goal as 11 carriers in the nearer term, and eventually 12 carriers.

g. The 94-ship goal was announced by the Navy in an April 2011 report to Congress on naval force structure and missile defense.

h. The Navy acknowledged that meeting a requirement for being able to lift the assault echelons of 2.0 Marine Expeditionary Brigades (MEBs) would require a minimum of 33 amphibious ships rather than the 31 ships shown in the February 2006 plan. For further discussion, see CRS Report RL34476, *Navy LPD-17 Amphibious Ship Procurement: Background, Issues, and Options for Congress*, by Ronald O'Rourke.

i. Today's Maritime Prepositioning Force (MPF) ships are intended primarily to support Marine Corps operations ashore, rather than Navy combat operations, and thus are not counted as Navy battle force ships. The planned MPF (Future) ships, however, would have contributed to Navy combat capabilities (for example, by supporting Navy aircraft operations). For this reason, the ships in the planned MPF(F) squadron were counted by the Navy as battle force ships. The planned MPF(F) squadron was subsequently restructured into a different set of initiatives for enhancing the existing MPF squadrons; the Navy no longer plans to acquire an MPF(F) squadron.

j. The Navy no longer plans to acquire an MPF(F) squadron. The Navy, however, has procured or plans to procure some of the ships that were previously planned for the squadron—specifically, TAKE-1 class cargo ships, and Mobile Landing Platform (MLP)/Afloat Forward Staging Base (AFSB) ships. These ships are included in the total shown for "Other" ships. AFSBs are now called Expeditionary Sea Base ships (ESBs).

k. The figure of 26 dedicated mine warfare ships included 10 ships maintained in a reduced mobilization status called Mobilization Category B. Ships in this status are not readily deployable and thus do not count as battle force ships. The 375-ship proposal thus implied transferring these 10 ships to a higher readiness status.

l. Totals shown include 5 ships transferred from the Army to the Navy and operated by the Navy primarily for the performance of Army missions.

m. This category includes, among other things, command ships and support ships.

n. The increase in this category from 17 ships under the February 2006 313-ship goal to 24 ships under the apparent 328-ship goal included the addition of one TAGOS ocean surveillance ship and the transfer into this category of six ships—three modified TAKE-1 class cargo ships, and three Mobile Landing Platform (MLP) ships—that were previously intended for the planned (but now canceled) MPF(F) squadron.

Appendix B. Comparing Past Ship Force Levels to Current or Potential Future Levels

In assessing the appropriateness of the current or potential future number of ships in the Navy, observers sometimes compare that number to historical figures for total Navy fleet size. Historical figures for total fleet size, however, can be a problematic yardstick for assessing the appropriateness of the current or potential future number of ships in the Navy, particularly if the historical figures are more than a few years old, because

- the missions to be performed by the Navy, the mix of ships that make up the Navy, and the technologies that are available to Navy ships for performing missions all change over time; and
- the number of ships in the fleet in an earlier year might itself have been inappropriate (i.e., not enough or more than enough) for meeting the Navy's mission requirements in that year.

Regarding the first bullet point above, the Navy, for example, reached a late-Cold War peak of 568 battle force ships at the end of FY1987,[49] and as of April 17, 2023, included a total of 296 battle force ships. The FY1987 fleet, however, was intended to meet a set of mission requirements that focused on countering Soviet naval forces at sea during a potential multitheater NATO-Warsaw Pact conflict, while the April 2023 fleet is intended to meet a considerably different set of mission requirements centered on countering China's improving naval capabilities and, secondarily, Russia's naval capabilities. In addition, the Navy of FY1987 differed substantially from the April 2023 fleet in areas such as profusion of precision-guided weapons and the sophistication of C4ISR systems and networking capabilities.[50]

In coming years, Navy missions may shift again, and the capabilities of Navy ships will likely have changed further by that time due to developments such as more comprehensive implementation of networking technology, increased use of ship-based unmanned vehicles, and the potential fielding of new types of weapons such as lasers.[51]

The 568-ship fleet of FY1987 may or may not have been capable of performing its stated missions; the 296-ship fleet of April 2023 may or may not be capable of performing its stated missions; and a fleet years from now with a certain number of ships may or may not be capable of performing its stated missions. Given changes over time in mission requirements, ship mixes, and technologies, however, these past, present, and future relationships of Navy ship totals to stated Navy missions are to a substantial degree independent of one another.

[49] Some publications have stated that the Navy reached a peak of 594 ships at the end of FY1987. This figure, however, is the total number of active ships in the fleet, which is not the same as the total number of battle force ships. The battle force ships figure is the number used in government discussions of the size of the Navy. In recent years, the total number of active ships has been larger than the total number of battle force ships. For example, the Naval History and Heritage Command (formerly the Naval Historical Center) states that as of November 16, 2001, the Navy included a total of 337 active ships, while the Navy states that as of November 19, 2001, the Navy included a total of 317 battle force ships. Comparing the total number of active ships in one year to the total number of battle force ships in another year is thus an apples-to-oranges comparison that in this case overstates the decline since FY1987 in the number of ships in the Navy. As a general rule to avoid potential statistical distortions, comparisons of the number of ships in the Navy over time should use, whenever possible, a single counting method.

[50] C4ISR stands for command and control, communications, computers, intelligence, surveillance, and reconnaissance.

[51] For more on Navy programs for developing high-energy shipboard lasers, see CRS Report R44175, *Navy Shipboard Lasers: Background and Issues for Congress*, by Ronald O'Rourke.

For similar reasons, trends over time in the total number of ships in the Navy are not necessarily a reliable indicator of the direction of change in the fleet's ability to perform its stated missions. An increasing number of ships in the fleet might not necessarily mean that the fleet's ability to perform its stated missions is increasing, because the fleet's mission requirements might be increasing more rapidly than ship numbers and average ship capability. Similarly, a decreasing number of ships in the fleet might not necessarily mean that the fleet's ability to perform stated missions is decreasing, because the fleet's mission requirements might be declining more rapidly than numbers of ships, or because average ship capability and the percentage of time that ships are in deployed locations might be increasing quickly enough to more than offset reductions in total ship numbers.

Regarding the second of the two bullet points above, it can be noted that comparisons of the size of the fleet today with the size of the fleet in earlier years rarely appear to consider whether the fleet was appropriately sized in those earlier years (and therefore potentially suitable as a yardstick of comparison), even though it is quite possible that the fleet in those earlier years might not have been appropriately sized, and even though there might have been differences of opinion among observers at that time regarding that question. Just as it might not be prudent for observers years from now to tacitly assume that the 294-ship Navy of September 2021 was appropriately sized for meeting the mission requirements of 2021, even though there were differences of opinion among observers on that question, simply because a figure of 294 ships appears in the historical records for 2021, so, too, might it not be prudent for observers today to tacitly assume that the number of ships of the Navy in an earlier year was appropriate for meeting the Navy's mission requirements that year, even though there might have been differences of opinion among observers at that time regarding that question, simply because the size of the Navy in that year appears in a table like **Table G-1**.

Previous Navy force structure plans, such as those shown in **Table A-1**, might provide some insight into the potential adequacy of a proposed new force-structure plan, but changes over time in mission requirements, technologies available to ships for performing missions, and other force-planning factors, as well as the possibility that earlier force-structure plans might not have been appropriate for meeting the mission demands of their times, suggest that some caution should be applied in using past force structure plans for this purpose, particularly if those past force structure plans are more than a few years old. The Reagan-era goal for a 600-ship Navy, for example, was designed for a Cold War set of missions focusing on countering Soviet naval forces at sea, which is not an appropriate basis for planning the Navy today, and there was considerable debate during those years as to the appropriateness of the 600-ship goal.[52]

[52] Navy force structure plans that predate those shown in **Table A-1** include the Reagan-era 600-ship goal of the 1980s, the Base Force fleet of more than 400 ships planned during the final two years of the George H. W. Bush Administration, the 346-ship fleet from the Clinton Administration's 1993 Bottom-Up Review (or BUR, sometimes also called Base Force II), and the 310-ship fleet of the Clinton Administration's 1997 QDR. The table below summarizes some key features of these plans.

Features of Recent Navy Force Structure Plans

Plan	600-ship	Base Force	1993 BUR	1997 QDR
Total ships	~600	~450/416[a]	346	~305/310[b]
Attack submarines	100	80/~55[c]	45-55	50/55[d]
Aircraft carriers	15[e]	12	11+1[f]	11+1[f]
Surface combatants	242/228[g]	~150	~124	116
Amphibious ships	~75[h]	51[i]	41[i]	36[i]

Source: Prepared by CRS based on DOD and U.S. Navy data.
a. Commonly referred to as 450-ship goal, but called for decreasing to 416 ships by end of FY1999.
b. Original total of about 305 ships was increased to about 310 due to increase in number of attack submarines to 55 from 50.
c. Plan originally included 80 attack submarines, but this was later reduced to about 55.
d. Plan originally included 50 attack submarines but this was later increased to 55.
e. Plus one additional aircraft carrier in the service life extension program (SLEP).
f. Eleven active carriers plus one operational reserve carrier.
g. Plan originally included 242 surface combatants but this was later reduced to 228.
h. Number needed to lift assault echelons of one Marine Expeditionary Force (MEF) plus one Marine Expeditionary Brigade (MEB).
i. Number needed to lift assault echelons of 2.5 MEBs. Changing numbers needed to meet this goal reflect in part changes in the design and capabilities of amphibious ships.

Appendix C. Industrial Base and Employment Aspects of Additional Shipbuilding Work

This appendix presents background information on the ability of the industrial base to take on the additional shipbuilding work associated with achieving and maintaining the Navy's 355-ship force-level goal and on the employment impact of additional shipbuilding work.

Industrial Base Ability

The U.S. shipbuilding industrial base has some unused capacity to take on increased Navy shipbuilding work, particularly for certain kinds of surface ships, and its capacity could be increased further over time to support higher Navy shipbuilding rates. Navy shipbuilding rates could not be increased steeply across the board overnight—time (and investment) would be needed to hire and train additional workers and increase production facilities at shipyards and supplier firms, particularly for supporting higher rates of submarine production. Depending on their specialties, newly hired workers could be initially less productive per unit of time worked than more experienced workers.

Some parts of the shipbuilding industrial base, such as the submarine construction industrial base, could face more challenges than others in ramping up to the higher production rates required to build the various parts of the 355-ship fleet. Over a period of a few to several years, with investment and management attention, Navy shipbuilding could ramp up to higher rates for achieving a 355-ship fleet over a period of 20-30 years.

An April 2017 CBO report stated that

> all seven shipyards [currently involved in building the Navy's major ships] would need to increase their workforces and several would need to make improvements to their infrastructure in order to build ships at a faster rate. However, certain sectors face greater obstacles in constructing ships at faster rates than others: Building more submarines to meet the goals of the 2016 force structure assessment would pose the greatest challenge to the shipbuilding industry. Increasing the number of aircraft carriers and surface combatants would pose a small to moderate challenge to builders of those vessels. Finally, building more amphibious ships and combat logistics and support ships would be the least problematic for the shipyards. The workforces across those yards would need to increase by about 40 percent over the next 5 to 10 years. Managing the growth and training of those new workforces while maintaining the current standard of quality and efficiency would represent the most significant industrywide challenge. In addition, industry and Navy sources indicate that as much as $4 billion would need to be invested in the physical infrastructure of the shipyards to achieve the higher production rates required under the [notional] 15-year and 20-year [buildup scenarios examined by CBO]. Less investment would be needed for the [notional] 25-year or 30-year [buildup scenarios examined by CBO].[53]

A January 13, 2017, press report states the following:

> The Navy's production lines are hot and the work to prepare them for the possibility of building out a much larger fleet would be manageable, the service's head of acquisition said Thursday.
>
> From a logistics perspective, building the fleet from its current 274 ships to 355, as recommended in the Navy's newest force structure assessment in December, would be

[53] Congressional Budget Office, *Costs of Building a 355-Ship Navy*, April 2017, pp. 9-10.

> straightforward, Assistant Secretary of the Navy for Research, Development and Acquisition Sean Stackley told reporters at the Surface Navy Association's annual symposium.
>
> "By virtue of maintaining these hot production lines, frankly, over the last eight years, our facilities are in pretty good shape," Stackley said. "In fact, if you talked to industry, they would say we're underutilizing the facilities that we have."
>
> The areas where the Navy would likely have to adjust "tooling" to answer demand for a larger fleet would likely be in Virginia-class attack submarines and large surface combatants, the DDG-51 guided missile destroyers—two ship classes likely to surge if the Navy gets funding to build to 355 ships, he said.
>
> "Industry's going to have to go out and procure special tooling associated with going from current production rates to a higher rate, but I would say that's easily done," he said.
>
> Another key, Stackley said, is maintaining skilled workers—both the builders in the yards and the critical supply-chain vendors who provide major equipment needed for ship construction. And, he suggested, it would help to avoid budget cuts and other events that would force workforce layoffs.
>
> "We're already prepared to ramp up," he said. "In certain cases, that means not laying off the skilled workforce we want to retain."[54]

A January 17, 2017, press report states the following:

> Building stable designs with active production lines is central to the Navy's plan to grow to 355 ships. "if you look at the 355-ship number, and you study the ship classes (desired), the big surge is in attack submarines and large surface combatants, which today are DDG-51 (destroyers)," the Assistant Secretary of the Navy, Sean Stackley, told reporters at last week's Surface Navy Association conference. Those programs have proven themselves reliable performers both at sea and in the shipyards.
>
> From today's fleet of 274 ships, "we're on an irreversible path to 308 by 2021. Those ships are already in construction," said Stackley. "To go from there to 355, virtually all those ships are currently in production, with some exceptions: Ohio Replacement, (we) just got done the Milestone B there (to move from R&D into detailed design); and then upgrades to existing platforms. So we have hot production lines that will take us to that 355-ship Navy."[55]

A January 24, 2017, press report states the following:

> Navy officials say a recently determined plan to increase its fleet size by adding more new submarines, carriers and destroyers is "executable" and that early conceptual work toward this end is already underway....
>
> Although various benchmarks will need to be reached in order for this new plan to come to fruition, such as Congressional budget allocations, Navy officials do tell Scout Warrior that the service is already working—at least in concept—on plans to vastly enlarge the fleet. Findings from this study are expected to inform an upcoming 2018 Navy Shipbuilding Plan, service officials said.[56]

[54] Hope Hodge Seck, "Navy Acquisition Chief: Surge to 355 Ships 'Easily Done,'" *DoD Buzz*, January 13, 2017.

[55] Sydney J. Freedberg Jr., "Build More Ships, But Not New Designs: CNO Richardson To McCain," *Breaking Defense*, January 17, 2017.

[56] Kris Osborn, "Navy: Larger 355-Ship Fleet—'Executable,'" *Scout Warrior*, January 24, 2017.

A January 12, 2017, press report states the following:

> Brian Cuccias, president of Ingalls Shipbuilding [a shipyard owned by Huntington Ingalls Industries (HII) that builds Navy destroyers and amphibious ships as well as Coast Guard cutters], said Ingalls, which is currently building 10 ships for four Navy and Coast Guard programs at its 800-acre facility in Pascagoula, Miss., could build more because it is using only 70 to 75 percent of its capacity.[57]

A March 2017 press report states the following:

> As the Navy calls for a larger fleet, shipbuilders are looking toward new contracts and ramping up their yards to full capacity....
>
> The Navy is confident that U.S. shipbuilders will be able to meet an increased demand, said Ray Mabus, then-secretary of the Navy, during a speech at the Surface Navy Association's annual conference in Arlington, Virginia.
>
> They have the capacity to "get there because of the ships we are building today," Mabus said. "I don't think we could have seven years ago."
>
> Shipbuilders around the United States have "hot" production lines and are manufacturing vessels on multi-year or block buy contracts, he added. The yards have made investments in infrastructure and in the training of their workers.
>
> "We now have the basis ... [to] get to that much larger fleet," he said....
>
> Shipbuilders have said they are prepared for more work.
>
> At Ingalls Shipbuilding—a subsidiary of Huntington Ingalls Industries—10 ships are under construction at its Pascagoula, Mississippi, yard, but it is under capacity, said Brian Cuccias, the company's president.
>
> The shipbuilder is currently constructing five guided-missile destroyers, the latest San Antonio-class amphibious transport dock ship, and two national security cutters for the Coast Guard.
>
> "Ingalls is a very successful production line right now, but it has the ability to actually produce a lot more in the future," he said during a briefing with reporters in January.
>
> The company's facility is currently operating at 75 percent capacity, he noted....
>
> Austal USA—the builder of the Independence-variant of the littoral combat ship and the expeditionary fast transport vessel—is also ready to increase its capacity should the Navy require it, said Craig Perciavalle, the company's president.
>
> The latest discussions are "certainly something that a shipbuilder wants to hear," he said. "We do have the capability of increasing throughput if the need and demand were to arise, and then we also have the ability with the present workforce and facility to meet a different mix that could arise as well."
>
> Austal could build fewer expeditionary fast transport vessels and more littoral combat ships, or vice versa, he added.
>
> "The key thing for us is to keep the manufacturing lines hot and really leverage the momentum that we've gained on both of the programs," he said.

[57] Marc Selinger, "Navy Needs More Aircraft to Match Ship Increase, Secretary [of the Navy] Says," *Defense Daily*, January 12, 2017. See also Lee Hudson, "Ingalls Operating at About 75 Percent Capacity, Provided Info to Trump Team," *Inside the Navy*, January 16, 2017.

> The company—which has a 164-acre yard in Mobile, Alabama—is focused on the extension of the LCS and expeditionary fast transport ship program, but Perciavalle noted that it could look into manufacturing other types of vessels.
>
> "We do have excess capacity to even build smaller vessels … if that opportunity were to arise and we're pursuing that," he said.
>
> Bryan Clark, a naval analyst at the Center for Strategic and Budgetary Assessments, a Washington, D.C.-based think tank, said shipbuilders are on average running between 70 and 80 percent capacity. While they may be ready to meet an increased demand for ships, it would take time to ramp up their workforces.
>
> However, the bigger challenge is the supplier industrial base, he said.
>
> "Shipyards may be able to build ships but the supplier base that builds the pumps … and the radars and the radios and all those other things, they don't necessarily have that ability to ramp up," he said. "You would need to put some money into building up their capacity."
>
> That has to happen now, he added.
>
> Rear Adm. William Gallinis, program manager for program executive office ships, said what the Navy must be "mindful of is probably our vendor base that support the shipyards."
>
> Smaller companies that supply power electronics and switchboards could be challenged, he said.
>
> "Do we need to re-sequence some of the funding to provide some of the facility improvements for some of the vendors that may be challenged? My sense is that the industrial base will size to the demand signal. We just need to be mindful of how we transition to that increased demand signal," he said.
>
> The acquisition workforce may also see an increased amount of stress, Gallinis noted. "It takes a fair amount of experience and training to get a good contracting officer to the point to be [able to] manage contracts or procure contracts."
>
> "But I don't see anything that is insurmountable," he added.[58]

At a May 24, 2017, hearing before the Seapower subcommittee of the Senate Armed Services Committee on the industrial-base aspects of the Navy's 355-ship goal, John P. Casey, executive vice president–marine systems, General Dynamics Corporation (one of the country's two principal builders of Navy ships) stated the following:

> It is our belief that the Nation's shipbuilding industrial base can scale-up hot production lines for existing ships and mobilize additional resources to accomplish the significant challenge of achieving the 355-ship Navy as quickly as possible....
>
> Supporting a plan to achieve a 355-ship Navy will be the most challenging for the nuclear submarine enterprise. Much of the shipyard and industrial base capacity was eliminated following the steep drop-off in submarine production that occurred with the cancellation of the Seawolf Program in 1992. The entire submarine industrial base at all levels of the supply chain will likely need to recapitalize some portion of its facilities, workforce, and supply chain just to support the current plan to build the Columbia Class SSBN program, while concurrently building Virginia Class SSNs. Additional SSN procurement will require industry to expand its plans and associated investment beyond the level today....
>
> Shipyard labor resources include the skilled trades needed to fabricate, build and outfit major modules, perform assembly, test and launch of submarines, and associated support organizations that include planning, material procurement, inspection, quality assurance, and ship certification. Since there is no commercial equivalency for Naval nuclear

[58] Yasmin Tadjdeh, "Navy Shipbuilders Prepared for Proposed Fleet Buildup," *National Defense*, March 2017.

submarine shipbuilding, these trade resources cannot be easily acquired in large numbers from other industries. Rather, these shipyard resources must be acquired and developed over time to ensure the unique knowledge and know-how associated with nuclear submarine shipbuilding is passed on to the next generation of shipbuilders. The mechanisms of knowledge transfer require sufficient lead time to create the proficient, skilled craftsmen in each key trade including welding, electrical, machining, shipfitting, pipe welding, painting, and carpentry, which are among the largest trades that would need to grow to support increased demand. These trades will need to be hired in the numbers required to support the increased workload. Both shipyards have scalable processes in place to acquire, train, and develop the skilled workforce they need to build nuclear ships. These processes and associated training facilities need to be expanded to support the increased demand. As with the shipyards, the same limiting factors associated with facilities, workforce, and supply chain also limit the submarine unique first tier suppliers and sub-tiers in the industrial base for which there is no commercial equivalency....

The supply base is the third resource that will need to be expanded to meet the increased demand over the next 20 years. During the OHIO, 688 and SEAWOLF construction programs, there were over 17,000 suppliers supporting submarine construction programs. That resource base was "rationalized" during submarine low rate production over the last 20 years. The current submarine industrial base reflects about 5,000 suppliers, of which about 3,000 are currently active (i.e., orders placed within the last 5 years), 80% of which are single or sole source (based on $). It will take roughly 20 years to build the 12 Columbia Class submarines that starts construction in FY21. The shipyards are expanding strategic sourcing of appropriate non-core products (e.g., decks, tanks, etc.) in order to focus on core work at each shipyard facility (e.g., module outfitting and assembly). Strategic sourcing will move demand into the supply base where capacity may exist or where it can be developed more easily. This approach could offer the potential for cost savings by competition or shifting work to lower cost work centers throughout the country. Each shipyard has a process to assess their current supply base capacity and capability and to determine where it would be most advantageous to perform work in the supply base....

Achieving the increased rate of production and reducing the cost of submarines will require the Shipbuilders to rely on the supply base for more non-core products such as structural fabrication, sheet metal, machining, electrical, and standard parts. The supply base must be made ready to execute work with submarine-specific requirements at a rate and volume that they are not currently prepared to perform. Preparing the supply base to execute increased demand requires early non-recurring funding to support cross-program construction readiness and EOQ funding to procure material in a manner that does not hold up existing ship construction schedules should problems arise in supplier qualification programs. This requires longer lead times (estimates of three years to create a new qualified, critical supplier) than the current funding profile supports....

We need to rely on market principles to allow suppliers, the shipyards and GFE material providers to sort through the complicated demand equation across the multiple ship programs. Supplier development funding previously mentioned would support non-recurring efforts which are needed to place increased orders for material in multiple market spaces. Examples would include valves, build-to-print fabrication work, commodities, specialty material, engineering components, etc. We are engaging our marine industry associations to help foster innovative approaches that could reduce costs and gain efficiency for this increased volume....

Supporting the 355-ship Navy will require Industry to add capability and capacity across the entire Navy Shipbuilding value chain. Industry will need to make investment decisions for additional capital spend starting now in order to meet a step change in demand that would begin in FY19 or FY20. For the submarine enterprise, the step change was already envisioned and investment plans that embraced a growth trajectory were already being formulated. Increasing demand by adding additional submarines will require scaling

facility and workforce development plans to operate at a higher rate of production. The nuclear shipyards would also look to increase material procurement proportionally to the increased demand. In some cases, the shipyard facilities may be constrained with existing capacity and may look to source additional work in the supply base where capacity exists or where there are competitive business advantages to be realized. Creating additional capacity in the supply base will require non-recurring investment in supplier qualification, facilities, capital equipment and workforce training and development.

Industry is more likely to increase investment in new capability and capacity if there is certainty that the Navy will proceed with a stable shipbuilding plan. Positive signals of commitment from the Government must go beyond a published 30-year Navy Shipbuilding Plan and line items in the Future Years Defense Plan (FYDP) and should include

- Multi-year contracting for Block procurement which provides stability in the industrial base and encourages investment in facilities and workforce development
- Funding for supplier development to support training, qualification, and facilitization efforts—Electric Boat and Newport News have recommended to the Navy funding of $400M over a three-year period starting in 2018 to support supplier development for the Submarine Industrial Base as part of an Integrated Enterprise Plan Extended Enterprise initiative
- Acceleration of Advance Procurement and/or Economic Order Quantities (EOQ) procurement from FY19 to FY18 for Virginia Block V
- Government incentives for construction readiness and facilities / special tooling for shipyard and supplier facilities, which help cash flow capital investment ahead of construction contract awards
- Procurement of additional production back-up (PBU) material to help ensure a ready supply of material to mitigate construction schedule risk....

So far, this testimony has focused on the Submarine Industrial Base, but the General Dynamics Marine Systems portfolio also includes surface ship construction. Unlike Electric Boat, Bath Iron Works and NASSCO are able to support increased demand without a significant increase in resources.....

Bath Iron Works is well positioned to support the Administration's announced goal of increasing the size of the Navy fleet to 355 ships. For BIW that would mean increasing the total current procurement rate of two DDG 51s per year to as many as four DDGs per year, allocated equally between BIW and HII. This is the same rate that the surface combatant industrial base sustained over the first decade of full rate production of the DDG 51 Class (1989-1999)....

No significant capital investment in new facilities is required to accommodate delivering two DDGs per year. However, additional funding will be required to train future shipbuilders and maintain equipment. Current hiring and training processes support the projected need, and have proven to be successful in the recent past. BIW has invested significantly in its training programs since 2014 with the restart of the DDG 51 program and given these investments and the current market in Maine, there is little concern of meeting the increase in resources required under the projected plans.

A predictable and sustainable Navy workload is essential to justify expanding hiring/training programs. BIW would need the Navy's commitment that the Navy's plan will not change before it would proceed with additional hiring and training to support increased production.

BIW's supply chain is prepared to support a procurement rate increase of up to four DDG 51s per year for the DDG 51 Program. BIW has long-term purchasing agreements in place for all major equipment and material for the DDG 51 Program. These agreements provide for material lead time and pricing, and are not constrained by the number of ships ordered in a year. BIW confirmed with all of its critical suppliers that they can support this increased procurement rate....

> The Navy's Force Structure Assessment calls for three additional ESBs. Additionally, NASSCO has been asked by the Navy and the Congressional Budget Office (CBO) to evaluate its ability to increase the production rate of T-AOs to two ships per year. NASSCO has the capacity to build three more ESBs at a rate of one ship per year while building two T-AOs per year. The most cost effective funding profile requires funding ESB 6 in FY18 and the following ships in subsequent fiscal years to avoid increased cost resulting from a break in the production line. The most cost effective funding profile to enable a production rate of two T-AO ships per year requires funding an additional long lead time equipment set beginning in FY19 and an additional ship each year beginning in FY20.
>
> NASSCO must now reduce its employment levels due to completion of a series of commercial programs which resulted in the delivery of six ships in 2016. The proposed increase in Navy shipbuilding stabilizes NASSCO's workload and workforce to levels that were readily demonstrated over the last several years.
>
> Some moderate investment in the NASSCO shipyard will be needed to reach this level of production. The recent CBO report on the costs of building a 355-ship Navy accurately summarized NASSCO's ability to reach the above production rate stating, "building more … combat logistics and support ships would be the least problematic for the shipyards."[59]

At the same hearing, Brian Cuccias, president, Ingalls Shipbuilding, Huntington Ingalls Industries (the country's other principal builder of Navy ships) stated the following:

> Qualifying to be a supplier is a difficult process. Depending on the commodity, it may take up to 36 months. That is a big burden on some of these small businesses. This is why creating sufficient volume and exercising early contractual authorization and advance procurement funding is necessary to grow the supplier base, and not just for traditional long-lead time components; that effort needs to expand to critical components and commodities that today are controlling the build rate of submarines and carriers alike. Many of our suppliers are small businesses and can only make decisions to invest in people, plant and tooling when they are awarded a purchase order. We need to consider how we can make commitments to suppliers early enough to ensure material readiness and availability when construction schedules demand it.
>
> With questions about the industry's ability to support an increase in shipbuilding, both Newport News and Ingalls have undertaken an extensive inventory of our suppliers and assessed their ability to ramp up their capacity. We have engaged many of our key suppliers to assess their ability to respond to an increase in production.
>
> The fortunes of related industries also impact our suppliers, and an increase in demand from the oil and gas industry may stretch our supply base. Although some low to moderate risk remains, I am convinced that our suppliers will be able to meet the forecasted Navy demand....
>
> I strongly believe that the fastest results can come from leveraging successful platforms on current hot production lines. We commend the Navy's decision in 2014 to use the existing LPD 17 hull form for the LX(R), which will replace the LSD-class amphibious dock landing ships scheduled to retire in the coming years. However, we also recommend that the concept of commonality be taken even further to best optimize efficiency, affordability and capability. Specifically, rather than continuing with a new design for LX(R) within the "walls" of the LPD hull, we can leverage our hot production line and supply chain and offer the Navy a variant of the existing LPD design that satisfies the aggressive cost targets of the LX(R) program while delivering more capability and survivability to the fleet at a

[59] John P. Casey, Executive Vice President – Marine Systems, General Dynamics Corporation, Testimony before the Senate Armed Services Committee, Subcommittee on Seapower, 115th Congress, Supporting the 355-Ship Navy with Focus on Submarine Industrial Base, Washington, DC, May 24, 2017, pp. 3-18. See also Marjorie Censer, "BWX Technologies Weighs When To Ready for Additional Submarines," *Inside the Navy*, May 29, 2017.

> significantly faster pace than the current program. As much as 10-15 percent material savings can be realized across the LX(R) program by purchasing respective blocks of at least five ships each under a multi-year procurement (MYP) approach. In the aggregate, continuing production with LPD 30 in FY18, coupled with successive MYP contracts for the balance of ships, may yield savings greater than $1 billion across an 11-ship LX(R) program. Additionally, we can deliver five LX(R)s to the Navy and Marine Corps in the same timeframe that the current plan would deliver two, helping to reduce the shortfall in amphibious warships against the stated force requirement of 38 ships.
>
> Multi-ship procurements, whether a formal MYP or a block-buy, are a proven way to reduce the price of ships. The Navy took advantage of these tools on both Virginia-class submarines and Arleigh Burke-class destroyers. In addition to the LX(R) program mentioned above, expanding multi-ship procurements to other ship classes makes sense....
>
> The most efficient approach to lower the cost of the Ford class and meet the goal of an increased CVN fleet size is also to employ a multi-ship procurement strategy and construct these ships at three-year intervals. This approach would maximize the material procurement savings benefit through economic order quantities procurement and provide labor efficiencies to enable rapid acquisition of a 12-ship CVN fleet. This three-ship approach would save at least $1.5 billion, not including additional savings that could be achieved from government-furnished equipment. As part of its Integrated Enterprise Plan, we commend the Navy's efforts to explore the prospect of material economic order quantity purchasing across carrier and submarine programs.[60]

At the same hearing, Matthew O. Paxton, president, Shipbuilders Council of America (SCA)—a trade association representing shipbuilders, suppliers, and associated firms—stated the following:

> To increase the Navy's Fleet to 355 ships, a substantial and sustained investment is required in both procurement and readiness. However, let me be clear: building and sustaining the larger required Fleet is achievable and our industry stands ready to help achieve that important national security objective.
>
> To meet the demand for increased vessel construction while sustaining the vessels we currently have will require U.S. shipyards to expand their work forces and improve their infrastructure in varying degrees depending on ship type and ship mix – a requirement our Nation's shipyards are eager to meet. But first, in order to build these ships in as timely and affordable manner as possible, stable and robust funding is necessary to sustain those industrial capabilities which support Navy shipbuilding and ship maintenance and modernization....
>
> Beyond providing for the building of a 355-ship Navy, there must also be provision to fund the "tail," the maintenance of the current and new ships entering the fleet. Target fleet size cannot be reached if existing ships are not maintained to their full service lives, while building those new ships. Maintenance has been deferred in the last few years because of across-the-board budget cuts....
>
> The domestic shipyard industry certainly has the capability and know-how to build and maintain a 355-ship Navy. The Maritime Administration determined in a recent study on the Economic Benefits of the U.S. Shipyard Industry that there are nearly 110,000 skilled men and women in the Nation's private shipyards building, repairing and maintaining America's military and commercial fleets.1 The report found the U.S. shipbuilding industry supports nearly 400,000 jobs across the country and generates $25.1 billion in income and $37.3 billion worth of goods and services each year. In fact, the MARAD report found that the shipyard industry creates direct and induced employment in every

[60] Statement of Brian Cuccias, President, Ingalls Shipbuilding, Huntington Ingalls Industries, Subcommittee on Seapower, Senate Armed Services Committee, May 24, 2017, pp. 4-11.

> State and Congressional District and each job in the private shipbuilding and repairing industry supports another 2.6 jobs nationally.
>
> This data confirms the significant economic impact of this manufacturing sector, but also that the skilled workforce and industrial base exists domestically to build these ships. Long-term, there needs to be a workforce expansion and some shipyards will need to reconfigure or expand production lines. This can and will be done as required to meet the need if adequate, stable budgets and procurement plans are established and sustained for the long-term. Funding predictability and sustainability will allow industry to invest in facilities and more effectively grow its skilled workforce. The development of that critical workforce will take time and a concerted effort in a partnership between industry and the federal government.
>
> U.S. shipyards pride themselves on implementing state of the art training and apprenticeship programs to develop skilled men and women that can cut, weld, and bend steel and aluminum and who can design, build and maintain the best Navy in the world. However, the shipbuilding industry, like so many other manufacturing sectors, faces an aging workforce. Attracting and retaining the next generation shipyard worker for an industry career is critical. Working together with the Navy, and local and state resources, our association is committed to building a robust training and development pipeline for skilled shipyard workers. In addition to repealing sequestration and stabilizing funding the continued development of a skilled workforce also needs to be included in our national maritime strategy....
>
> In conclusion, the U.S. shipyard industry is certainly up to the task of building a 355-ship Navy and has the expertise, the capability, the critical capacity and the unmatched skilled workforce to build these national assets. Meeting the Navy's goal of a 355-ship fleet and securing America's naval dominance for the decades ahead will require sustained investment by Congress and Navy's partnership with a defense industrial base that can further attract and retain a highly-skilled workforce with critical skill sets. Again, I would like to thank this Subcommittee for inviting me to testify alongside such distinguished witnesses. As a representative of our nation's private shipyards, I can say, with confidence and certainty, that our domestic shipyards and skilled workers are ready, willing and able to build and maintain the Navy's 355-ship Fleet.[61]

Employment Impact

Building the additional ships that would be needed to achieve and maintain the 355-ship fleet could create many additional manufacturing and other jobs at shipyards, associated supplier firms, and elsewhere in the U.S. economy. A 2015 Maritime Administration (MARAD) report states

> Considering the indirect and induced impacts, each direct job in the shipbuilding and repairing industry is associated with another 2.6 jobs in other parts of the US economy; each dollar of direct labor income and GDP in the shipbuilding and repairing industry is associated with another $1.74 in labor income and $2.49 in GDP, respectively, in other parts of the US economy.[62]

[61] Testimony of Matthew O. Paxton, President, Shipbuilders Council of America, before the United States Senate Committee on Armed Services, Subcommittee on Seapower, [on] Industry Perspectives on Options and Considerations for Achieving a 355-Ship Navy, May 24, 2017, pp. 3-8.

[62] MARAD, *The Economic Importance of the U.S. Shipbuilding and Repairing Industry*, November 2015, pp. E-3, E-4. For another perspective on the issue of the impact of shipbuilding on the broader economy, see Edward G. Keating et al., *The Economic Consequences of Investing in Shipbuilding, Case Studies in the United States and Sweden*, RAND Corporation, 2015.

A March 2017 press report states, "Based on a 2015 economic impact study, the Shipbuilders Council of America [a trade association for U.S. shipbuilders and associated supplier firms] believes that a 355-ship Navy could add more than 50,000 jobs nationwide."[63] The 2015 economic impact study referred to in that quote might be the 2015 MARAD study discussed in the previous paragraph. An estimate of more than 50,000 additional jobs nationwide might be viewed as a higher-end estimate; other estimates might be lower. A June 14, 2017, press report states the following: "The shipbuilding industry will need to add between 18,000 and 25,000 jobs to build to a 350-ship Navy, according to Matthew Paxton, president of the Shipbuilders Council of America, a trade association representing the shipbuilding industrial base. Including indirect jobs like suppliers, the ramp-up may require a boost of 50,000 workers."[64]

[63] Yasmin Tadjdeh, "Navy Shipbuilders Prepared for Proposed Fleet Buildup," *National Defense*, March 2017. Similarly, another press report states the following: "The Navy envisioned by Trump could create more than 50,000 jobs, the Shipbuilders Council of America, a trade group representing U.S. shipbuilders, repairers and suppliers, told Reuters." (Mike Stone, "Missing from Trump's Grand Navy Plan: Skilled Workers to Build the Fleet," *Reuters*, March 17, 2017.)

[64] Jaqueline Klimas, "Growing Shipbuilding Workforce Seen as Major Challenge for Trump's Navy Buildup," *Politico*, June 14, 2017.

Appendix D. A Summary of Some Acquisition Lessons Learned for Navy Shipbuilding

This appendix presents a general summary of lessons learned in Navy shipbuilding, reflecting comments made repeatedly by various sources over the years. These lessons learned include the following:

- **At the outset, get the operational requirements for the program right.** Properly identify the program's operational requirements at the outset. Manage risk by not trying to do too much in terms of the program's operational requirements, and perhaps seek a so-called 70%-to-80% solution (i.e., a design that is intended to provide 70%-80% of desired or ideal capabilities). Achieve a realistic balance up front between operational requirements, risks, and estimated costs.
- **Use mature technologies.** Use land-based prototyping and testing to bring new technologies to a high state of maturity before incorporating them into ship designs, and limit the number of major new technologies to be incorporated into a new ship design.
- **Impose cost discipline up front.** Use realistic price estimates, and consider not only development and procurement costs, but life-cycle operation and support (O&S) costs.
- **Employ competition** where possible in the awarding of design and construction contracts.
- **Use a contract type that is appropriate for the amount of risk involved**, and structure its terms to align incentives with desired outcomes.
- **Minimize design/construction concurrency** by developing the design to a high level of completion before starting construction and by resisting changes in requirements (and consequent design changes) during construction.
- **Properly supervise construction work.** Maintain an adequate number of properly trained Supervisor of Shipbuilding (SUPSHIP) personnel.
- **Provide stability for industry**, in part by using, where possible, multiyear procurement (MYP) or block buy contracting.
- **Maintain a capable government acquisition workforce** that understands what it is buying, as well as the above points.

Identifying these lessons is arguably not the hard part—most if not all these points have been cited for years. The hard part, arguably, is living up to them without letting circumstances lead program-execution efforts away from these guidelines.

Appendix E. Some Considerations Relating to Warranties in Shipbuilding Contracts

This appendix presents some considerations relating to warranties in shipbuilding contracts and other defense acquisition.

In discussions of Navy (and also Coast Guard) shipbuilding, one 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."[65]

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 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.[66]

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[65] 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.

[66] 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,

The Department of Defense'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.[67]

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.

[67] 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.

Appendix F. Avoiding Procurement Cost Growth vs. Minimizing Procurement Costs

This appendix presents some considerations relating to avoiding procurement cost growth vs. minimizing procurement costs in shipbuilding and other defense acquisition.

The affordability challenge posed by the Navy's shipbuilding plans can reinforce the strong oversight focus on preventing or minimizing procurement cost growth in Navy shipbuilding programs, which is one expression of a strong oversight focus on preventing or minimizing cost growth in DOD acquisition programs in general. This oversight focus may reflect in part an assumption that avoiding or minimizing procurement cost growth is always synonymous with minimizing procurement cost. It is important to note, however, that as paradoxical as it may seem, avoiding or minimizing procurement cost growth is not always synonymous with minimizing procurement cost, and that a sustained, singular focus on avoiding or minimizing procurement cost growth might sometimes lead to higher procurement costs for the government.

How could this be? Consider the example of a design for the lead ship of a new class of Navy ships. The construction cost of this new design is uncertain, but is estimated to be likely somewhere between Point A (a minimum possible figure) and Point D (a maximum possible figure). (Point D, in other words, would represent a cost estimate with a 100% confidence factor, meaning there is a 100% chance that the cost would come in at or below that level.) If the Navy wanted to avoid cost growth on this ship, it could simply set the ship's procurement cost at Point D. Industry would likely be happy with this arrangement, and there likely would be no cost growth on the ship.

The alternative strategy open to the Navy is to set the ship's target procurement cost at some figure between Points A and D—call it Point B—and then use that more challenging target cost to place pressure on industry to sharpen its pencils so as to find ways to produce the ship at that lower cost. (Navy officials sometimes refer to this as "pressurizing" industry.) In this example, it might turn out that industry efforts to reduce production costs are not successful enough to build the ship at the Point B cost. As a result, the ship experiences one or more rounds of procurement cost growth, and the ship's procurement cost rises over time from Point B to some higher figure—call it Point C.

Here is the rub: Point C, in spite of incorporating one or more rounds of cost growth, might nevertheless turn out to be lower than Point D, because Point C reflected efforts by the shipbuilder to find ways to reduce production costs that the shipbuilder might have put less energy into pursuing if the Navy had simply set the ship's procurement cost initially at Point D.

Setting the ship's cost at Point D, in other words, may eliminate the risk of cost growth on the ship, but does so at the expense of creating a risk of the government paying more for the ship than was actually necessary. DOD could avoid cost growth on new procurement programs starting tomorrow by simply setting costs for those programs at each program's equivalent of Point D. But as a result of this strategy, DOD could well wind up leaving money on the table in some instances—of not, in other words, minimizing procurement costs.

DOD does not have to set a cost precisely at Point D to create a potential risk in this regard. A risk of leaving money on the table, for example, is a possible downside of requiring DOD to budget for its acquisition programs at something like an 80% confidence factor—an approach that some observers have recommended—because a cost at the 80% confidence factor is a cost that is likely fairly close to Point D.

Procurement cost growth is often embarrassing for DOD and industry, and can damage their credibility in connection with future procurement efforts. Procurement cost growth can also disrupt congressional budgeting by requiring additional appropriations to pay for something Congress thought it had fully funded in a prior year. For this reason, there is a legitimate public policy value to pursuing a goal of having less rather than more procurement cost growth.

Procurement cost growth, however, can sometimes be in part the result of DOD efforts to use lower initial cost targets as a means of pressuring industry to reduce production costs—efforts that, notwithstanding the cost growth, might be partially successful. A sustained, singular focus on avoiding or minimizing cost growth, and of punishing DOD for all instances of cost growth, could discourage DOD from using lower initial cost targets as a means of pressurizing industry, which could deprive DOD of a tool for controlling procurement costs.

The point here is not to excuse away cost growth, because cost growth can occur in a program for reasons other than DOD's attempt to pressurize industry. Nor is the point to abandon the goal of seeking lower rather than higher procurement cost growth, because, as noted above, there is a legitimate public policy value in pursuing this goal. The point, rather, is to recognize that this goal is not always synonymous with minimizing procurement cost, and that a possibility of some amount of cost growth might be expected as part of an optimal government strategy for minimizing procurement cost. Recognizing that the goals of seeking lower rather than higher cost growth and of minimizing procurement cost can sometimes be in tension with one another can lead to an approach that takes both goals into consideration. In contrast, an approach that is instead characterized by a sustained, singular focus on avoiding and minimizing cost growth may appear virtuous, but in the end may wind up costing the government more.

Appendix G. Size of the Navy and Navy Shipbuilding Rate

Size of the Navy

Table G-1 shows the size of the Navy in terms of total number of ships since FY1948; the numbers shown in the table reflect changes over time in the rules specifying which ships count toward the total. Differing counting rules result in differing totals, and for certain years, figures reflecting more than one set of counting rules are available. Figures in the table for FY1978 and subsequent years reflect the battle force ships counting method, which is the set of counting rules established in the early 1980s for public policy discussions of the size of the Navy.

As shown in the table, the total number of battle force ships in the Navy reached a late-Cold War peak of 568 at the end of FY1987 and began declining thereafter.[68] The Navy fell below 300 battle force ships in August 2003 and remained below 300 ships for the next 16 years. The Navy briefly returned to a level of 300 ships in early July 2020, for the first time in almost 17 years, subsequently fell back below 300 ships, reached 300 ships again briefly during periods in August and September 2022, and as of April 17, 2023, included 296 battle force ships.

As discussed in **Appendix B**, historical figures for total fleet size might not be a reliable yardstick for assessing the appropriateness of proposals for the future size and structure of the Navy, particularly if the historical figures are more than a few years old, because the missions to be performed by the Navy, the mix of ships that make up the Navy, and the technologies that are available to Navy ships for performing missions all change over time, and because the number of ships in the fleet in an earlier year might itself have been inappropriate (i.e., not enough or more than enough) for meeting the Navy's mission requirements in that year.

For similar reasons, trends over time in the total number of ships in the Navy are not necessarily a reliable indicator of the direction of change in the fleet's ability to perform its stated missions. An increasing number of ships in the fleet might not necessarily mean that the fleet's ability to perform its stated missions is increasing, because the fleet's mission requirements might be increasing more rapidly than ship numbers and average ship capability. Similarly, a decreasing number of ships in the fleet might not necessarily mean that the fleet's ability to perform stated missions is decreasing, because the fleet's mission requirements might be declining more rapidly than numbers of ships, or because average ship capability and the percentage of time that ships are in deployed locations might be increasing quickly enough to more than offset reductions in total ship numbers.

[68] Some publications have stated that the Navy reached a peak of 594 ships at the end of FY1987. This figure, however, is the total number of active ships in the fleet, which is not the same as the total number of battle force ships. The battle force ships figure is the number used in government discussions of the size of the Navy. In recent years, the total number of active ships has been larger than the total number of battle force ships. For example, the Naval History and Heritage Command (formerly the Naval Historical Center) states that as of November 16, 2001, the Navy included a total of 337 active ships, while the Navy states that as of November 19, 2001, the Navy included a total of 317 battle force ships. Comparing the total number of active ships in one year to the total number of battle force ships in another year is thus an apples-to-oranges comparison that in this case overstates the decline since FY1987 in the number of ships in the Navy. As a general rule to avoid potential statistical distortions, comparisons of the number of ships in the Navy over time should use, whenever possible, a single counting method.

Table G-1. Total Number of Ships in Navy Since FY1948

FY[a]	Number	FY[a]	Number	FY[a]	Number	FY[a]	Number
1948	737	1970	769	1992	466	2014	289
1949	690	1971	702	1993	435	2015	271
1950	634	1972	654	1994	391	2016	275
1951	980	1973	584	1995	372	2017	279
1952	1,097	1974	512	1996	356	2018	286
1953	1,122	1975	496	1997	354	2019	290
1954	1,113	1976	476	1998	333	2020	296
1955	1,030	1977	464	1999	317	2021	294
1956	973	1978	468	2000	318		
1957	967	1979	471	2001	316		
1958	890	1980	477	2002	313		
1959	860	1981	490	2003	297		
1960	812	1982	513	2004	292		
1961	897	1983	514	2005	281		
1962	959	1984	524	2006	281		
1963	916	1985	541	2007	279		
1964	917	1986	556	2008	282		
1965	936	1987	568	2009	285		
1966	947	1988	565	2010	288		
1967	973	1989	566	2011	284		
1968	976	1990	546	2012	287		
1969	926	1991	526	2013	285		

Source: Compiled by CRS using U.S. Navy data. Numbers shown reflect changes over time in the rules specifying which ships count toward the total. Figures for FY1978 and subsequent years reflect the battle force ships counting method, which is the set of counting rules established in the early 1980s for public policy discussions of the size of the Navy.

a. Data for earlier years in the table may be for the end of the calendar year (or for some other point during the year), rather than for the end of the fiscal year.

Shipbuilding Rate

Table G-2 shows past (FY1982-FY2023) and programmed (FY2024-FY2028) rates of Navy ship procurement.

Table G-2. Battle Force Ships Procured or Requested, FY1982-FY2028

Procured in FY1982-FY2023 and *programmed for FY2024-FY2028*

82	**83**	**84**	**85**	**86**	**87**	**88**	**89**	**90**	**91**	**92**	**93**	**94**	**95**	**96**	**97**	**98**	**99**	**00**
17	14	16	19	20	17	15	19	15	11	11	7	4	4	5	4	5	5	6
01	**02**	**03**	**04**	**05**	**06**	**07**	**08**	**09**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**
6	6	5	7	8	4	5	3	8	7	10	11	11	8	8	9	9	9	13
20	**21**	**22**	**23**	***24***	***25***	***26***	***27***	***28***										
13	11	13	11	*9*	*7*	*13*	*12*	14										

Source: CRS compilation based on Navy budget data and examination of defense authorization and appropriation committee and conference reports for each fiscal year. The table excludes nonbattle force ships that do not count toward the 355-ship goal, such as certain sealift and prepositioning ships operated by the Military Sealift Command and oceanographic ships operated by agencies such as the National Oceanic and Atmospheric Administration (NOAA).

Notes: (1) **The totals shown for FY2006, FY2007, and FY2008**, reflect the cancellation two LCSs funded in FY2006, another two LCSs funded in FY2007, and an LCS funded in FY2008.

(2) **The total shown for FY2012** includes two JHSVs—one that was included in the Navy's FY2012 budget submission, and one that was included in the Army's FY2012 budget submission. Until FY2012, JHSVs were being procured by both the Navy and the Army. The Army was to procure its fifth and final JHSV in FY2012, and this ship was included in the Army's FY2012 budget submission. In May 2011, the Navy and Army signed a Memorandum of Agreement (MOA) transferring the Army's JHSVs to the Navy. In the FY2012 DOD Appropriations Act (Division A of H.R. 2055/P.L. 112-74 of December 23, 2011), the JHSV that was in the Army's FY2012 budget submission was funded through the Shipbuilding and Conversion, Navy (SCN) appropriation account, along with the JHSV that the Navy had included in its FY0212 budget submission. The four JHSVs that were procured through the Army's budget prior to FY2012, however, are not included in the annual totals shown in this table.

(3) **The figures shown for FY2019 and FY2020** reflect a Navy decision to show the aircraft carrier CVN-81 as a ship to be procured in FY2020 rather than a ship that was procured in FY2019. Congress, as part of its action on the Navy's proposed FY2019 budget, authorized the procurement of CVN-81 in FY2019.

(4) **The figures shown for FY2021 and FY2023** include LHA-9 as a ship procured in FY2021, consistent with congressional authorization and appropriation action for FY2021 and prior fiscal years.

Appendix H. Effort in 2019 and 2020 to Develop New Navy Force-Level Goal

This appendix presents additional background information on the effort in 2019 and 2020 to develop a new Navy force level goal.[69]

Navy's Initial Effort Was Called the Integrated Naval FSA (INFSA)

The effort to develop a new Navy force-level goal began in the Navy with a new FSA that Navy and Marine Corps officials called the Integrated Naval FSA (INFSA), with the words *integrated naval* intended to signal that this FSA would integrate Marine Corps requirements into the analytical process more fully than previous FSAs did. Department of the Navy (DON) officials stated that the INFSA would take into account the Trump Administration's December 2017 National Security Strategy document and its January 2018 National Defense Strategy document, both of which put an emphasis on renewed great power competition with China and Russia,[70] as well as updated information on Chinese and Russian naval and other military capabilities and recent developments in new technologies, including those related to UVs.[71]

INFSA May Have Called for a 390/435-Ship Force-level Goal

Press reports and statements from Navy officials suggested that the INFSA was completed in late 2019 or early 2020, and that it may have resulted in a new Navy force-level goal for a fleet of about 390 manned ships plus about 45 unmanned or optionally manned ships, for a total of about 435 manned and unmanned/optionally manned ships. Navy officials provided few additional details about the composition of this 390/435-ship force-level goal.[72]

[69] See also Megan Eckstein, "After 9 Months of Study, Pentagon's Fleet Architecture Similar to Original Navy Plan," *USNI News*, November 4, 2020; Mallory Shelbourne and Sam LaGrone, "SECDEF Esper's 'Battle Force 2045' Plan Still Awaiting White House Approval," *USNI News*, October 231, 2020; John R. Kroger, "Esper's Fantasy Fleet, The SecDef's 500-Ship Plan Is an Exercise in Wishful Thinking That Avoids Hard Choices," *Defense One*, October 13, 2020; Gina Harkins, "The Navy Really Does Need 500 Ships, Experts Say. But Paying for Them Won't Be Easy," *Military.com*, October 8, 2020. For a series of additional reaction and commentary articles on the Battle Force 2045 plan, see Dmitry Filipoff, "Fleet Force Structure Series," Center for International Maritime Security (CIMSEC), undated, with the linked reaction and commentary pieces dated October 26 to November 2, 2020.

[70] For additional discussion of the defense implications of great power competition, see CRS Report R43838, *Renewed Great Power Competition: Implications for Defense—Issues for Congress*, by Ronald O'Rourke.

[71] See, for example, Marcus Weisgerber, "US Navy Re-Evaluating 355-Ship Goal," *Defense One*, February 1, 2019; Paul McLeary, "Navy Rethinks 355-Ship Fleet: CNO Richardson," *Breaking Defense*, February 1, 2019; Mallory Shelbourne, "CNO: Navy Expects New Force-Structure Assessment 'Later This Year,'" *Inside the Navy*, February 4, 2019.

[72] See, for example, Ben Werner, "SECNAV Modly Says Nation Needs Larger, Distributed Fleet of 390 Hulls," *USNI News*, February 28, 2020; Mallory Shelbourne, "Modly Sketches Out Potential Navy Force Structure Changes, Anticipates 390-Ship Fleet," *Inside Defense*, February 28, 2020; Rich Abott, "Modly Reveals Next Force Structure Assessment Details, Working Toward 390-Ship Fleet," *Defense Daily*, February 28, 2020; Patrick Tucker, "Acting Navy Secretary: We Need More than 355 Ships, and That's Not Even Counting Robot Vessels," *Defense One*, February 28, 2020; Connor O'Brien, "Acting Navy Secretary Hints At Larger Fleet Goal," *Politico Pro*, February 28, 2020.

INFSA Results and Associated FY2021 30-Year Shipbuilding Plan Withheld from Congress

The release to Congress of the new Navy force-level goal resulting from the INFSA was postponed repeatedly in late 2019 and early 2020.[73] Remarks from DOD officials and press reports indicated that then-Secretary of Defense Mark Esper and officials OSD disagreed with some of the INFSA's assumptions and resulting conclusions. Coincident with this, OSD reportedly also withheld the release to Congress of the Navy's associated FY2021 30-year shipbuilding plan, because Esper and OSD officials reportedly believed that it did not present a "credible pathway" for achieving a fleet of at least 355 ships in a timely manner.[74]

INFSA Superseded by DOD's Future Naval Force Study (FNFS)

The INFSA reportedly was superseded in early 2020 by an OSD-led effort called the Future Naval Force Study (FNFS) that reportedly involves OSD and the Joint Staff and is being overseen by Deputy Defense Secretary David Norquist.[75] As part of the FNFS, OSD reportedly has used war games to assess the merits of three candidate fleet plans prepared by the Navy, the Joint Staff, and the Cost Assessment and Program Evaluation (CAPE) office within OSD. The Hudson Institute, a private defense and foreign policy think tank, provided an additional study to help inform DOD's work.[76] With the INFSA having been superseded by the FNFS, the Navy

[73] Through much of 2019, Navy officials stated that the INFSA was to be completed by the end of 2019. A September 27, 2019, press report stated that an interim version was to be completed by September 2019, in time to inform programmatic decisions on the FY2022 Program Objective Memorandum (POM), meaning the in-house DOD planning document that will guide the development of DOD's FY2022 budget submission. (Mallory Shelbourne, "Navy, Marine Corps Conducting Integrated Force-Structure Assessment," *Inside Defense*, September 27, 2019. See also Otto Kreisher, "New Force Structure Assessment Will Address Needs of 'Great Power Competition,' Two Top Requirements Officers Say," *Seapower*, October 22, 2019, and the section under the subheader "Naval Integrated Force Structure Assessment" in Megan Eckstein, "Navy Marines Wargaming New Gear to Support Emerging Warfare Concepts," *USNI News*, October 23, 2019.)

A December 6, 2019, memorandum from then-Acting Secretary of the Navy Thomas Modly stated that he expected the final INFSA to be published no later than January 15, 2020. (Memorandum for distribution from Acting Secretary of the Navy Thomas B. Modly, subject "SecNav Vector 1," dated December 6, 2019. See also David B. Larter, "Acting US Navy Secretary: Deliver Me a 355-Ship Fleet by 2030," Defense News, December 9, 2019.)

A January 23, 2020, press report quoted Modly as saying that the January 15 date was an internal Navy deadline, and that the Navy expected the INFSA to be released to outside audiences sometime during the spring of 2020. (Mallory Shelbourne, "Modly: Navy Expects to Release FSA by Spring," *Inside Defense*, January 23, 2020.)

[74] See, for example, Sam LaGrone, "SECDEF Esper Holds Back 30-Year Shipbuilding Outlook, New 355-Ship Plan Ahead of HASC Testimony," *USNI News*, February 25, 2020; Paul McLeary, "Esper To Navy: Rethink Your Shipbuilding Plan," *Breaking Defense*, February 25, 2020; Ben Werner, "SECDEF Esper Blames Failures of Optimized Fleet Response Plan for Delay of New 355-Ship Fleet Outlook," *USNI News*, February 26, 2020; Paul McLeary, "EXCLUSIVE: SecDef Esper Seeks Détente With HASC; New Navy Plan This Summer," *Breaking Defense*, February 28, 2020; Paul McLeary, "SecNav Details Gaps Between Navy & Pentagon Shipbuilding Plans," *Breaking Defense*, March 11, 2020; Mallory Shelbourne, "CAPE Nominee: SECDEF Esper Blocked Shipbuilding Plan to Congress Because it Lacked 'Credible Pathway' to 355-Ship Fleet," *USNI News*, August 4, 2020; David B. Larter and Joe Gould, "Pentagon Nominee Slams the US Navy's Fleet Plans as 'Not a Credible Document,'" *Defense News*, August 4, 2020.

[75] See, for example, David B. Later, "Defense Department Study Calls for Cutting 2 of the US Navy's Aircraft Carriers," *Defense News*, April 20, 2020; Jack Detsch, "Trump's Navy Pick Would Have Limited Sway on Ship Goal," *Foreign Policy*, May 7, 2020; Paul McLeary, "Navy Scraps Big Carrier Study, Clears Deck For OSD Effort," *Breaking Defense*, May 12, 2020; Megan Eckstein, "Pentagon Leaders Have Taken Lead in Crafting Future Fleet from Navy," *USNI News*, June 24, 2020.

[76] Megan Eckstein, "Pentagon Leaders Have Taken Lead in Crafting Future Fleet from Navy," *USNI News*, June 24, 2020.

reportedly "has lost much of its power on deciding what its future fleet will look like…."[77] No release date for the result of the FNFS has been announced, but press reports suggest that much of the analytical work on the FNFS has now been completed, and that the results of the FNFS could be released in coming days or weeks.[78]

April and June 2020 Press Reports About FNFS Results

April and June 2020 press reports stated that FNFS as of April 2020 was moving toward recommending a fleet with, among other things, 68 or 69 nuclear-powered attack submarines (SSNs), 9 aircraft carriers, 80 to 90 large surface combatants (i.e., cruisers and destroyers), 55 to 70 small surface combatants (i.e., frigates and Littoral Combat Ships [LCSs]), 65 unmanned or lightly manned surface vehicles, and 50 extra-large unmanned underwater vehicles (XLUUVs).[79]

September 2020 Press Reports About FNFS Studies

A September 24, 2020, press report about studies done in April in support of the FNFS stated

> The Pentagon's upcoming recommendation for a future Navy is expected to call for a significant increase in the number of ships, with officials discussing a fleet as large as 530 hulls, according to documents obtained by Defense News.
>
> Supporting documents to the forthcoming Future Navy Force Study reviewed by Defense News show the Navy moving towards a lighter force with many more ships but fewer aircraft carriers and large surface combatants. Instead, the fleet would include more small surface combatants, unmanned ships and submarines and an expanded logistics force.
>
> Two groups commissioned by Secretary of Defense Mark Esper to design what a future Navy should look like suggested fleets of anywhere from 480 to 534 ships, when manned and unmanned platforms are accounted for—at least a 35 percent increase in fleet size from the current target of 355 manned ships by 2030.
>
> The numbers all come from an April draft of inputs to the Future Navy Force Study conducted by the Office of the Secretary of Defense. While the number will likely have changed somewhat in final recommendations recently sent to Esper, the plans being discussed in April are notable as they reflect what will likely be major shift in the Navy's future—and the expectation is that a larger-than-planned Navy based on the concepts laid out in the documents will remain intact in the final analysis….
>
> The Future Naval Force Study, overseen by Deputy Secretary of Defense David Norquist, kicked off in January after Esper decided he wanted an outside take on the Navy's self-review of its future force structure. The OSD-led review tasked three groups to provide their version of an ideal fleet construction for the year 2045, one each by the Pentagon's Cost Assessment & Program Evaluation office, the Joint Staff, the Navy and a group from the Hudson Institute.
>
> Those fleets were war-gamed and the results were compiled into the Future Naval Force Study, which was briefed to Esper earlier this month….

[77] Megan Eckstein, "Pentagon Leaders Have Taken Lead in Crafting Future Fleet from Navy," *USNI News*, June 24, 2020.

[78] David B. Larter, "US Navy's Long-Delayed Plan for Its Future Force is Nearing the Finish Line … Sort of," *Defense News*, September 10, 2020. See also Paul McLeary, "New Navy Ships Plan Finally Ready; On Esper's Desk Next Week," *Breaking Defense*, September 10, 2020.

[79] David B. Larter, "Defense Department Study Calls for Cutting 2 of the US Navy's Aircraft Carriers," *Defense News*, April 20, 2020; David B. Larter, "To Compete with China, An Internal Pentagon Study Looks to Pour Money into Robot Submarines," *Defense News*, June 1, 2020.

The April documents viewed by Defense News included notional fleets designed by CAPE and the Hudson Institute….

The fleets designed by the CAPE and Hudson teams agreed on the need to increase the number and diversity of ships while boosting vertical launch system capacity—while also holding the operations and sustainment cost of the fleet as steady as possible and avoid adding to the number of sailors required to operate it.

As of the April drafts, both the CAPE and Hudson Institute teams were supportive of shrinking the number of supercarriers to nine from the current 11, which would effectively give the country eight active carriers, with one carrier always in midlife overhaul and refueling. The Hudson study also called for investing in four light carriers.

The CAPE fleet called for between 80 and 90 large surface combatants, about the same level as today's 89 cruisers and destroyers. Hudson looked to reduce the number slightly and instead fund more lightly manned corvettes, something Hudson has called for in the past.

The reports called for between 65 and 87 large unmanned surface vessels or optionally unmanned corvettes, which the Navy hopes will boost vertical launch system capacity to offset the loss over time of the Arleigh Burke-class destroyers and the four guided missile submarines.

Both fleets called for increased small surface combatants, with the CAPE study putting the upper limit at 70 ships. Hudson recommended a maximum of 56. The Navy's 2016 Force Structure Assessment called for 52 small surface combatants.

Both fleets also favored a slight increase in attack submarines over the current 66-ship requirement but reflected a big boost in large unmanned submarines, anywhere between 40 and 60 total. The idea would be to get the Extra Large Unmanned Underwater Vehicle to do monotonous surveillance missions or highly dangerous missions, freeing up the more complex manned platforms for other tasking.

On the amphibious side, both fleets reduced the overall number of traditional dock landing ships, such as the LPD-17, from the current 23 to between 15 and 19. As for the big-deck amphibious ships, CAPE favored holding at the current level of 10, while Hudson favored cutting to five, with the savings reinvested towards four light carriers.

The studies called for between 20 and 26 of the Marines' light amphibious warships, which they need for ferrying Marines and gear around islands in the Pacific.

Both fleets significantly expanded the logistics force, with big increases coming from smaller ships similar to offshore or oil platform support-type vessels. The fleets called for anywhere from 19 to 30 "future small logistics" ships. The CAPE and Hudon fleets increased the number of fleet oilers anywhere from 21 to 31, up from today's 17….

The Hudson fleet called for a significant boost to the command and support ship infrastructure from today's 33 ships to 52 ships. CAPE called for the fleet to remain about the same. Those ships include dry cargo ships, the expeditionary fast transports, expeditionary transfer docks and expeditionary sea bases.

All told, the fleets posited between 316 and 358 "traditional" ships, but when new classes and unmanned ships were lumped in, the fleet designs contained upwards of 500 ships or more.[80]

[80] David B. Larter and Aaron Mehta, "The Pentagon Is Eyeing a 500-Ship Navy, Documents Reveal," *Defense News*, September 24, 2020.

A September 25, 2020, press report similarly stated that the Hudson Institute study called for a Navy with 434 manned ships and 139 large UVs, including, among other things, 60 nuclear-powered attack submarines (SSNs), 9 aircraft carriers, 80 corvettes, 26 Light Amphibious Warships (LAWs), 99 medium unmanned surface vessels (MUSVs), and 40 extra-large unmanned underwater vehicles (XLUUVs).[81]

June 2020 Testimony from Hudson Institute

At a June 4, 2020, hearing on hearing on future force structure requirements for the Navy before the Seapower and Projection Forces subcommittee of the House Armed Services Committee, one of the witnesses, Bryan Clark of the Hudson Institute, presented testimony that proposed a fleet of 473 manned ships and 152 large UVs, including 12 ballistic missile submarines; 61 SSNs; 10 large-deck, nuclear-powered aircraft carriers (CVNs); 77 large surface combatants (i.e., cruisers and destroyers); 52 small surface combatants (i.e., frigates and Littoral Combat Ships); 91 corvettes; 33 larger amphibious ships, including 9 large-deck (LHD/LHA-type) ships and 24 small-deck (LPD-type) ships; 27 smaller Light Amphibious Warships (LAWs); 39 larger resupply ships (including 20 oilers); 20 smaller oilers; 51 command and support ships; 112 MUSVs; and 40 XLUUVs.[82]

October 2020 Report from Hudson Institute

An October 2020 report by the Hudson Institute on future Navy force structure presented a revised set of force-level goals, recommending a fleet of 442 manned ships and 139 large UVs, including 12 ballistic missile submarines; 60 SSNs; 9 large-deck, nuclear-powered aircraft carriers (CVNs); 64 large surface combatants (i.e., cruisers and destroyers); 52 small surface combatants (i.e., frigates and Littoral Combat Ships); 80 corvettes; 30 larger amphibious ships, including 8 large-deck (LHD/LHA-type) ships and 22 small-deck (LPD-type) ships; 26 smaller Light Amphibious Warships (LAWs); 38 larger resupply ships; 18 smaller oilers; 53 command and support ships; 99 MUSVs; and 40 XLUUVs.[83]

[81] Justin Katz, "Enlisted by DEPSECDEF, Hudson Proposes Fleet Lighter on Carriers, Roughly 140 Unmanned Vessels," *Inside Defense*, September 25, 2020.

[82] Prepared statement by Bryan Clark, Senior Fellow, Hudson Institute, to Seapower and Projection Forces subcommittee, House Armed Services Committee, hearing on future force structure requirements for the United States Navy, June 4, 2020, p. 4.

[83] Bryan Clark, Timothy A. Walton, and Seth Cropsey, *American Sea Power at a Crossroads: A Plan to Restore the US Navy's Maritime Advantage*, Hudson Institute, September 2020, Table 1 on p. 9. The report was released on September 30, 2020.

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