



February 2025

SHIPBUILDING AND REPAIR

Navy Needs a Strategic Approach for Private Sector Industrial Base Investments

GAO Highlights

Highlights of [GAO-25-106286](#), a report to congressional committees

Why GAO Did This Study

The Navy plans for a larger, more capable fleet of ships to counter evolving threats. But the Navy has struggled to increase the size of the fleet for the past 2 decades. Its performance in shipbuilding and ship repair is critical to achieving the desired future fleet.

Senate Report 116-236 includes a provision for GAO to examine the ship industrial base. GAO's report examines the extent to which (1) the industrial base can support Navy shipbuilding and repair; (2) DOD supports the ship industrial base and assesses its support; and (3) the Navy has a strategic approach to the industrial base.

GAO analyzed DOD and Navy data and documentation; interviewed agency officials and all companies conducting complex repairs for surface ships and major shipbuilding; and conducted site visits.

What GAO Recommends

GAO is making six recommendations to DOD, including that it improves visibility across investments; and that the Navy establish metrics for its investments; assess its repair needs; and create a ship industrial base strategy. DOD did not provide formal comments on this report, but the Navy noted in draft comments that it generally concurred with the substance of the recommendations. The Navy stated that one of the six recommendations should include additional parties within the Navy. GAO agreed and adjusted the recommendation accordingly.

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Navy Needs a Strategic Approach for Private Sector Industrial Base Investments

What GAO Found

The private companies that the Navy contracts with to build vessels and repair surface ships are key components of the Navy's ship industrial base. These private companies augment the repair work conducted at the Navy's public shipyards.

Ship Industrial Base Struggles to Meet the Navy's Goals

- **Shipbuilding.** The shipbuilding industrial base has not met the Navy's goals in recent history. The Navy's shipbuilding plans have consistently reflected a larger increase in the fleet than the industrial base has achieved. Yet, the Navy continues to base its goals on an assumption that the industrial base will perform better on cost and schedule than it has historically. The shipbuilders have infrastructure and workforce challenges that have made the Navy's goals difficult to accomplish.
- **Ship repair.** The Navy has not historically met ship repair goals, but it has improved since 2019. The industrial base has grown since then, and representatives from some companies that GAO spoke with stated they often had more capacity than the Navy used. But companies may not be able to take on unplanned work due to infrastructure or workforce limitations. For example, a dry dock of the right size may not be empty when needed.

Key Infrastructure and Workforce Challenges Facing the Ship Industrial Base

Shipbuilding	Ship repair
 Infrastructure <ul style="list-style-type: none">• Aging infrastructure• Lack of physical space in shipyard  Workforce <ul style="list-style-type: none">• Insufficient number of workers to meet demand• Recruitment and retention problems• Inexperienced staff	 Infrastructure <ul style="list-style-type: none">• Not enough capacity for unplanned work, like emergent repairs  Workforce <ul style="list-style-type: none">• Repair workload could exceed workforce capacity in certain fleet concentration areas, resulting in work that may be shifted to other locations

Source: GAO analysis of Navy and private-sector company information (data); U.S. Navy photo/Ricky Thompson, U.S. Navy photo/Aya Stewart (photos left to right); and GAO (icons). | GAO-25-106286

DOD Invests Billions to Support the Shipbuilding Industrial Base

The Department of Defense (DOD)—specifically the Navy and Office of the Secretary of Defense (OSD)—spent billions to support the shipbuilding industrial base. This included funding for infrastructure and workforce improvements for shipbuilders and their suppliers. But it has yet to fully determine the effectiveness of that support (i.e., its return on investment), though it has taken steps to do so. More specifically, DOD spent over \$5.8 billion on the shipbuilding industrial base from fiscal years 2014 through 2023. It plans to spend an additional \$12.6 billion through fiscal year 2028. DOD spent this funding on contract incentives and direct investments.

DOD Investments and Budget Requests for the Shipbuilding Industrial Base, Fiscal Years 2014–2028

Spending: Over \$5.8 billion

Fiscal years (FY) 2014 through 2023

Navy contract incentives

Used to spur private industry investment in areas such as infrastructure.



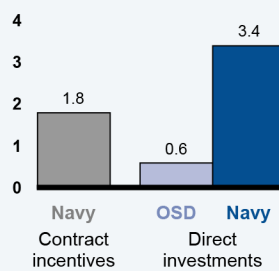
Navy and the Office of the Secretary of Defense (OSD) direct investments

Funds provided directly to private industry for:

- infrastructure
- workforce initiatives
- supplier development.



Dollars (in billions)



Requests: Over \$12.5 billion

FY 2024 through 2028

Navy contract incentives

Over \$1.5 billion remaining that can be earned by contractors. The Navy may add more incentives in the future, including for workforce.



Planned Navy direct investments

Over \$10.3 billion

Planned OSD direct investments
Over \$0.7 billion. OSD also plans to provide more funding to the overall defense industrial base which could include shipbuilding.



Source: GAO analysis of Department of Defense (DOD) budget documents and interviews with DOD officials; GAO (icons). | GAO-25-106286

However, the Navy and OSD are not fully coordinating their shipbuilding investments to prevent duplication or overlap in spending. For example, the Navy and OSD do not coordinate across all investment efforts—such as between submarines and surface ships—though they both make related investments in workforce and infrastructure for these ship categories. Further, the Navy has yet to fully establish performance metrics, such as measurable targets that link to the agency’s goals that would enable it to consistently evaluate the effectiveness of its investments in building a larger fleet or achieving other intended outcomes. Without better visibility across investments and established performance metrics, the Navy and OSD cannot ensure their investments in the shipbuilding industrial base are an effective use of federal funds to help build a larger fleet.

The Navy plans to make direct investments in the ship repair industrial base as it has for shipbuilding. However, the Navy has yet to fully assess how much infrastructure, such as dry docks, it needs to meet its ship repair goals when considering other than peacetime needs. Without understanding its needs, the Navy risks funding more infrastructure than necessary, which could interrupt the competitive environment.

The Navy Has Not Developed a Strategy for Managing the Ship Industrial Base

The lack of an overall strategy to guide management of the ship industrial base hinders Navy efforts to address several challenges, such as:

- **Changing plans for future work.** The Navy has struggled to provide industry with a stable workload projection. The Navy’s plans for building and repairing ships vary from year to year, hindering efforts to encourage the industry to invest in needed infrastructure.
- **Competing priorities.** The Navy seeks to increase opportunities for competition in shipbuilding and repair, while simultaneously seeking to protect existing companies. These priorities can be at odds. A more competitive environment could help expand the industrial base, but some companies could struggle to remain viable if they do not win contracts.

Developing a ship industrial base strategy would help the Navy better address these challenges to improve the likelihood of achieving its shipbuilding and ship repair goals. GAO’s prior work has shown that a consolidated and comprehensive strategy enables decision-makers to better guide program efforts and assess results. GAO also previously identified desirable characteristics that a national strategy should include. DOD issued its national industrial strategy in November 2023. However, Navy officials told GAO that it established a new program office in September 2024 that will be positioned to develop a strategy for the ship industrial base. Officials said they plan to have additional details available in early 2025. Until the Navy implements a ship industrial base strategy, it will not be able to effectively align or assess its actions to manage the industrial base for shipbuilding and repair.

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Abbreviations

ASN (RD&A)	Assistant Secretary of the Navy for Research, Development and Acquisition
AUKUS	Australia, United Kingdom, and United States Trilateral Security Partnership
DASN	Deputy Assistant Secretary of the Navy
DDG 51	<i>Arleigh Burke</i> class destroyers
DOD	Department of Defense
DPA	Defense Production Act
FY	Fiscal Year
IBAS	Industrial Base Analysis and Sustainment
NAVSEA	Naval Sea Systems Command
OSD	Office of the Secretary of Defense
OUSD(A&S)	Office of the Under Secretary of Defense for Acquisition and Sustainment
PEO	Program Executive Office
SUBMEPP	Submarine Maintenance Engineering, Planning and Procurement
SUPSHIP	Supervisor of Shipbuilding, Conversion, and Repair
SURFMEPP	Surface Maintenance Engineering Planning Program
VCS	<i>Virginia</i> class submarine

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Congressional Committees

February 27, 2025

The U.S. Navy is engaged in an era of strategic competition with near peer adversary nations that are rapidly modernizing and expanding the size of their naval forces, according to the Department of Defense (DOD). The Navy is concerned that these nations' maritime ambitions threaten its dominance at sea, and thereby U.S. national security interests. In the face of this threat, the *Chief of Naval Operations Navigation Plan for America's Warfighting Navy 2024* from September 2024 calls for action to develop a larger, more lethal, and ready fleet.¹ The Navy's performance in both shipbuilding and ship repair is critical to achieving the desired future fleet, but our recent work has shown that the Navy continues to fall short of its goals in these areas.²

By fiscal year 2026, the Navy expects to have no more ships than it did when it released its first 30-year shipbuilding plan in 2003 due to a combination of slower than expected new ship construction and the decommissioning of older ships. Since 2004, the Navy has nearly doubled its shipbuilding budget, after adjusting for inflation. At the same time, the Navy has accrued a backlog of surface ship maintenance—which reached \$2.3 billion in deferred work by August 2022—that influenced it to propose retiring some ships early.³ To achieve its goals for a larger future fleet, the Navy will need to reverse these trends and

¹U.S. Navy, Office of the Chief of Naval Operations, *Chief of Naval Operations Navigation Plan for America's Warfighting Navy 2024* (September 2024).

²For examples of our recent work in shipbuilding and ship repair, see GAO, *Columbia Class Submarine: Overcoming Persistent Challenges Requires Yet Undemonstrated Performance and Better-Informed Supplier Investments*, [GAO-24-107732](#) (Washington, D.C.: Sept. 30, 2024); *Navy Frigate: Unstable Design Has Stalled Construction and Compromised Delivery Schedules*, [GAO-24-106546](#) (Washington, D.C.: May 29, 2024); *Weapon System Sustainment: Navy Ship Usage Has Decreased as Challenges and Costs Have Increased*, [GAO-23-106440](#) (Washington, D.C.: Jan. 31, 2023); and *Navy Ships: Applying Leading Practices and Transparent Reporting Could Help Reduce Risks Posed by Nearly \$1.8 Billion Maintenance Backlog*, [GAO-22-105032](#) (Washington, D.C.: May 9, 2022). A list of our related products is provided at the end of this report for additional information on these topics.

³This amount is based on the most up to date data available from the Navy at the time of our review.

construct and deliver more capable ships on time while maintaining the readiness of a larger number of ships.

The Navy relies on private companies as a key element of the industrial base to build—and in many cases—repair its ships. However, the Navy has identified a “boom and bust” pattern of shipbuilding in recent history as responsible for diminished capacity in the shipbuilding industrial base. The Navy reported that 17 private shipyards that construct ships for the defense industry closed or left the defense industry over the last 50 years. In 2021, there remained roughly 25 shipyards in the United States constructing medium- to large-sized vessels. Seven of these shipyards construct Navy battle force ships.⁴

Further, with an aging fleet and significant operational requirements, a robust private sector ship repair industrial base capacity will be imperative. Private companies that use both Navy facilities and their own shipyards perform most ship repair periods, including maintenance on the Navy’s surface ships, such as cruisers, destroyers, and amphibious ships.⁵ Although the Navy spends billions annually to sustain its ships, our work has found persistent sustainment challenges across the surface fleet, including maintenance delays and degraded material condition.⁶

Senate Report 116-236 accompanying the William M. (Mac) Thornberry National Defense Authorization Act for Fiscal Year 2021 includes a provision for us to examine the industrial base for Navy shipbuilding and ship repair.⁷ This report focuses on the capability and capacity that private industry provides to support Navy shipbuilding and repair efforts, which for the purposes of this report, we refer to as the ship industrial

⁴The remaining shipyards build other types of ships, such as ships for the U.S. Coast Guard and Military Sealift Command or commercial ships.

⁵The Navy’s fleet of nuclear aircraft carriers and submarines mostly undergoes repair periods at the Navy’s four public shipyards—located at Norfolk Naval Shipyard in Virginia, Pearl Harbor Naval Shipyard and Intermediate Maintenance Facility in Hawaii, Portsmouth Naval Shipyard in Maine, and Puget Sound Naval Shipyard and Intermediate Maintenance Facility in Washington. Private industry also conducts a limited amount of this repair work.

⁶[GAO-23-106440](#).

⁷S. Rep. No. 116-236, at 47; Pub. L. No. 116-283 (2021).

base.⁸ This report examines (1) the extent to which the industrial base can support the Navy's shipbuilding and repair goals; (2) the extent to which DOD is taking actions to support the ship industrial base and determining the effectiveness of those actions; and (3) the extent to which the Navy is taking a strategic approach to address the challenges it faces managing the ship industrial base to meet its long-term shipbuilding and repair goals.

To determine the extent to which the industrial base can support the Navy's shipbuilding and repair goals, we analyzed shipbuilding programs for the Navy's battle force; major repair periods for the Navy's nonnuclear surface fleet; our prior work; and DOD, Navy, and contractor documentation. We also analyzed the Navy's annual Long-Range Plan for the Construction of Naval Vessels for fiscal years 2015 through 2025 and the annual Long-Range Plan for Maintenance and Modernization of Naval Vessels for fiscal years 2023 through 2025 (the most recent years available).

To assess the extent to which DOD is taking actions to support the industrial base, we reviewed DOD and Navy budget and briefing documents. We compared DOD's efforts to assess the effectiveness of its investments and incentives to selected standards for internal control.⁹ Specifically, we examined DOD's efforts to track, assess, and ensure visibility among its ship industrial base investments against internal control principles. We focused on comparing these efforts against internal controls that emphasize management's responsibility to obtain relevant data in a timely manner for effective monitoring; design control activities to achieve objectives, such as activities to monitor performance measures and indicators; and to communicate quality information to help the entity achieve its objectives and address related risks. We focused on DOD

⁸While we focused this review on the private industry for surface ship repair, we have reported extensively on the Navy's ability to conduct repairs of aircraft carriers and submarines at its public shipyards. In our prior work, we reported on poor conditions at the public shipyards and the challenges the Navy faces in improving them; delays in repairs conducted by the Navy; and limitations to the Navy workforce that repairs submarines and aircraft carriers. See GAO, *Naval Shipyards: Ongoing Challenges Could Jeopardize Navy's Ability to Improve Shipyards*, [GAO-22-105993](#) (Washington, D.C.: May 10, 2022) for an overview of this work. For our most recent reporting on the Navy's public shipyards, see GAO, *Navy Readiness: Actions Needed to Address Cost and Schedule Estimates for Shipyard Improvement*, [GAO-23-106067](#) (Washington, D.C.: June 28, 2023).

⁹GAO, *Standards for Internal Control in the Federal Government*, [GAO-14-704G](#) (Washington, D.C.: Sept 10, 2014).

efforts to provide financial support to the ship industrial base from fiscal years 2014 through 2023.¹⁰

To determine the extent to which the Navy is taking a strategic approach to addressing challenges with managing the industrial base, we interviewed Navy officials and reviewed the Navy's long-range planning documents for shipbuilding and repair. We also analyzed changes in all the Navy's long-range planning documents, such as the Navy's ship procurement plans, and forecasted repair workload for October 2019 to April 2024. We also reviewed contract file documents related to non-competitive contract awards and Navy documentation and interviews for information about how the Navy is managing the industrial base and managing its competing priorities. Further, we assessed DOD's National Defense Industrial Strategy for information related to the industrial base for shipbuilding and repair.¹¹ We also examined the Navy's organizational structure against the statutory authorities of Navy leadership for overseeing ship acquisition and sustainment, including repair, and the associated industrial base.¹²

In support of all our objectives, we also conducted over 50 interviews with government officials and private industry representatives. These interviews included DOD and Navy officials; all seven shipbuilders the Navy uses for its battle force ships; and 12 companies eligible to conduct complex repair work on the Navy's nonnuclear surface ships. Many of the companies conducting ship repair have facilities in multiple locations. We conducted site visits to meet with representatives from ship repair companies in Mayport, Florida; Norfolk, Virginia; San Diego, California; and Seattle/Everett, Washington; and interviewed representatives from some of these companies from more than one location to gain perspectives on region-specific topics. We also interviewed representatives from key supplier consortiums—which represent multiple suppliers that produce similar materials—to gain perspectives about challenges facing the supplier base. See appendix I for more information about our objectives, scope, and methodology.

¹⁰We selected a historical time frame of 10 years, from fiscal years 2014 to 2023, as the Office of the Secretary of Defense (OSD)'s Industrial Base Analysis and Sustainment (IBAS) office was established in fiscal year 2014.

¹¹Department of Defense. *National Defense Industrial Strategy* (Nov. 16, 2023).

¹²See, e.g., 10 U.S.C § 8016 (Assistant Secretaries of the Navy).

We conducted this performance audit from October 2022 to February 2025 in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

Some of the companies we interviewed to inform our analysis identified some of the information they provided to us as being business sensitive, which must be protected from public disclosure. Therefore, this report omits sensitive information on the companies' workforce, infrastructure, and subcontracts. One company, Bath Iron Works, did not respond to several requests to validate if information obtained from the company could be cleared for public release. We therefore omitted some information obtained from Bath Iron Works in this report.

Background

Navy Long-Range Planning for Shipbuilding and Ship Repair

30-Year Shipbuilding Plan

The Navy outlines its shipbuilding plans in an annual long-range shipbuilding plan, which is often referred to as the 30-Year Shipbuilding Plan (hereafter referred to as the shipbuilding plan). Statute requires the Navy to produce the shipbuilding plan, which should include details on the construction of Navy ships over the next 30 fiscal years and information about the force structure needed to align with the most recent national security or defense strategy.¹³

¹³Section 231 of title 10 of U.S. Code outlines the elements to be contained in the annual long-range shipbuilding plan. It also requires the Navy to include information about its plans to disposition ships—such as through decommissioning—over the next 5 years, among other things. Ships are placed “out-of-service” on their official date of decommissioning, and thereafter are not counted as part of the battle force inventory.

The Navy Shipbuilding Plan and the Australia, United Kingdom, and United States (AUKUS) Trilateral Security Partnership

The Navy's shipbuilding plan states that it has yet to fully reflect the AUKUS agreement, which was announced in September 2021 and updated in 2024, though this will be updated in future plans. According to the White House announcement, one effort under the September 2021 AUKUS partnership agreement was to provide Australia with a conventionally armed, nuclear powered submarine capability as soon as possible. According to the announcement, pending Congressional approval, the U.S. intends to sell Australia three *Virginia* class submarines in 2030, with the potential to sell two additional submarines if needed. The Navy's Fiscal Year 2025 Long-Range Shipbuilding Plan states that the Navy envisions selling in-service *Virginia* class submarines to Australia in fiscal years 2032 and 2035 and delivery of a new submarine in fiscal year 2038. Navy officials told us that they planned to build new submarines to replace those sold to Australia. However, the shipbuilding plan has yet to reflect the rates of production that would enable the submarines to be replaced.

Source: GAO analysis of Navy information. | GAO-25-106286

The Navy produced its first shipbuilding plan for fiscal year 2004 in response to the statutory requirement.¹⁴ Since that time, the Navy's plans have reflected a range of desired fleet sizes—all calling for a significant growth in fleet size—based on changes to its analysis of the force structure it needs. The Navy's most recent force structure analysis from June 2023, which serves as the basis for the fiscal year 2025 shipbuilding plan, called for a fleet of 381 battle force ships. According to the Navy, battle force ships are warships capable of contributing to combat operations or that contribute directly to Navy warfighting or support missions. This requires significant growth from the Navy's fleet of 296 ships as of September 2024.¹⁵ For additional information about the Navy's shipbuilding plan and force structure analysis since 2016, see appendix II.

Long-Range Maintenance Plan

Statute requires the Navy to produce an annual Long-Range Plan for Maintenance and Modernization of Naval Vessels (hereafter referred to as the maintenance plan). The Navy has done so in response to statute since 2023. According to the statute, the maintenance plan should provide forecasted repair and modernization requirements for the current fleet and future ships included in the shipbuilding plan, and a description

¹⁴Section 1022 of the Bob Stump National Defense Authorization Act for Fiscal Year 2003 created a requirement to submit a 30-year shipbuilding plan each year, in conjunction with each year's defense budget. See Pub. L. No. 107-314, § 1022 (2022) (codified at 10 U.S.C. § 231(a)).

¹⁵The Navy has not historically included autonomous marine systems in the plans for ship procurements. However, according to its most recent shipbuilding plan, the Navy will begin to include these systems once their capabilities are integrated into the battle force.

of Navy initiatives intended to increase ship repair industrial base capacity.¹⁶

Shipbuilding and Ship Repair Industrial Base

The industrial base for Navy shipbuilding and ship repair is a subset of the defense industrial base. This industrial base is comprised of a combination of people, technology, institutions, and facilities used to design, develop, manufacture, and maintain the weapons needed to meet U.S. national security objectives.¹⁷ The private companies in the defense industrial base can be divided into tiers: top tiers that include prime contractors and major subcontractors, and lower tiers that include suppliers of parts and materials. The Navy also relies on organic industrial installations that are government owned and operated, which include four public shipyards that repair nuclear submarines and aircraft carriers.¹⁸ While we did not examine the public shipyards in this report, they are part of DOD's organic industrial base.¹⁹

At the prime contractor level, the Navy primarily uses seven private shipyards for its shipbuilding programs. Of these companies, Electric Boat and Newport News Shipbuilding construct nuclear-powered ships and submarines. Figure 1 shows the locations of the major private shipyards that the Navy contracts with for shipbuilding.

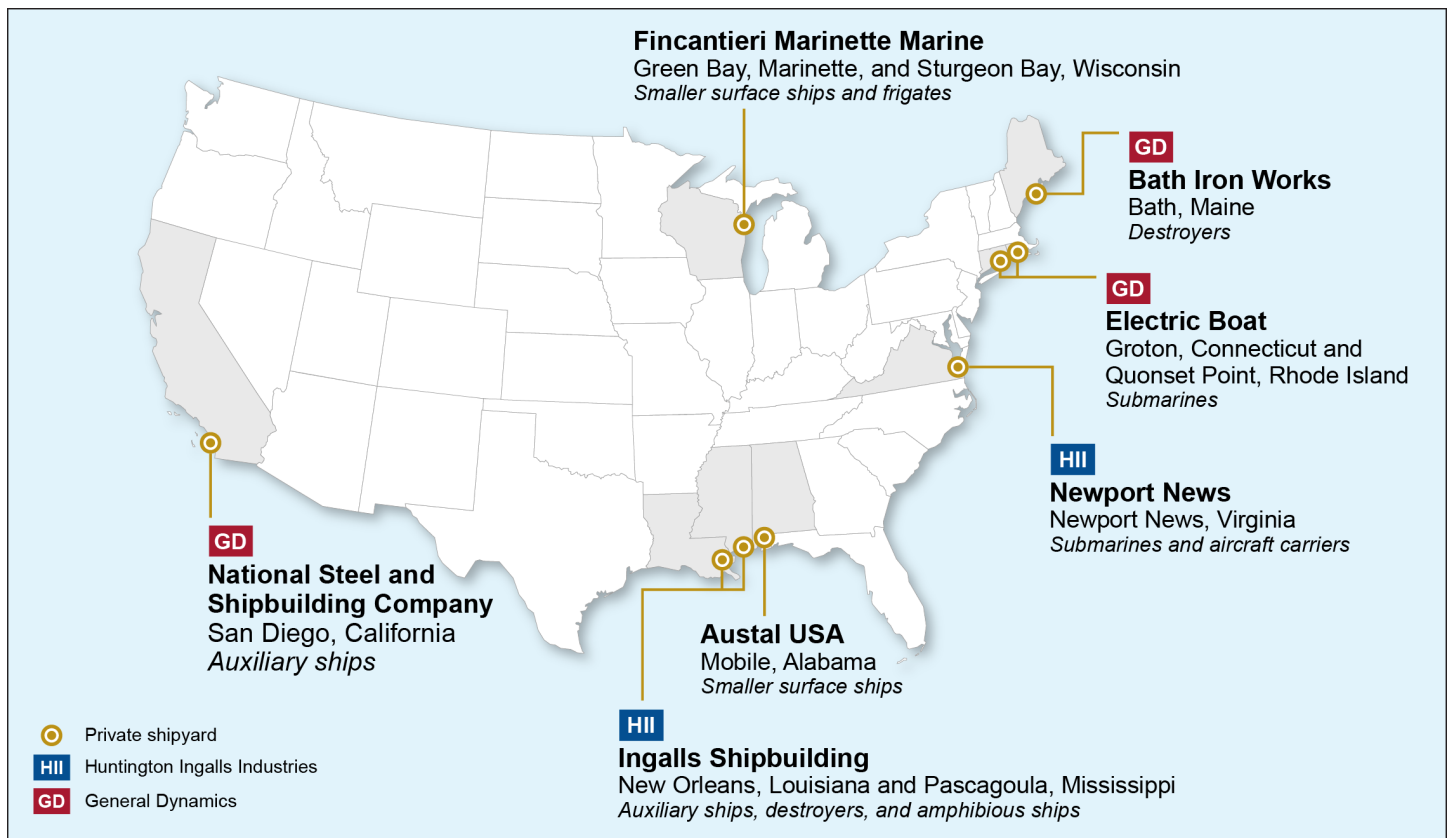
¹⁶The Navy's long-range maintenance plan is established in Section 231 of title 10, U.S. Code. The James M. Inhofe National Defense Authorization Act for Fiscal Year 2023 amended Section 352 to direct the Secretary of Defense to include a forecast of maintenance and modernization requirements for vessels in the inventory and those in the shipbuilding plan, among other things. Pub. L. No. 117-263, § 352 (2022).

¹⁷For examples of our prior work on the defense industrial base, see, GAO, *Defense Industrial Base: DOD Should Take Actions to Strengthen Its Risk Mitigation Approach*, [GAO-22-104154](#) (Washington, D.C.: July 7, 2022); and *Defense Industrial Base: Integrating Existing Supplier Data and Addressing Workforce Challenges Could Improve Risk Analysis*, [GAO-18-435](#) (Washington, D.C.: June 13, 2018).

¹⁸DOD is prohibited from spending more than 50 percent of its annual depot-level maintenance funds on contracting with non-federal entities in a given fiscal year (sometimes referred to as the *50-50 rule*). See 10 U.S.C. § 2466(a).

¹⁹The organic industrial base includes a network of government-owned industrial facilities, known as depots, that employ over 80,000 civilians, and support readiness by maintaining and repairing critical weapon systems for use in training and operations.

Figure 1: Map of Major Shipbuilders for U.S. Navy Ships, as of September 2024



Source: GAO analysis of private shipbuilder information; Map Resources (map) | GAO-25-106286

These shipyards use a network of suppliers, known as the supplier base, to provide a range of items, from raw materials to manufactured items.

Private repair companies conduct maintenance for the nonnuclear surface fleet and comprise the industrial base for ship repair at the prime contractor level. These companies perform repair work in either government-owned or contractor-owned facilities. As of May 2024, there were 12 companies—including some that operate in multiple locations—that conduct major repair periods (also called Chief of Naval Operations availabilities) for the Navy’s amphibious ships and surface combatants. Additional companies conduct repairs for the Littoral Combat Ship. Only companies with Master Ship Repair Agreements, which are used to validate a company’s ability to conduct major repair periods, or that

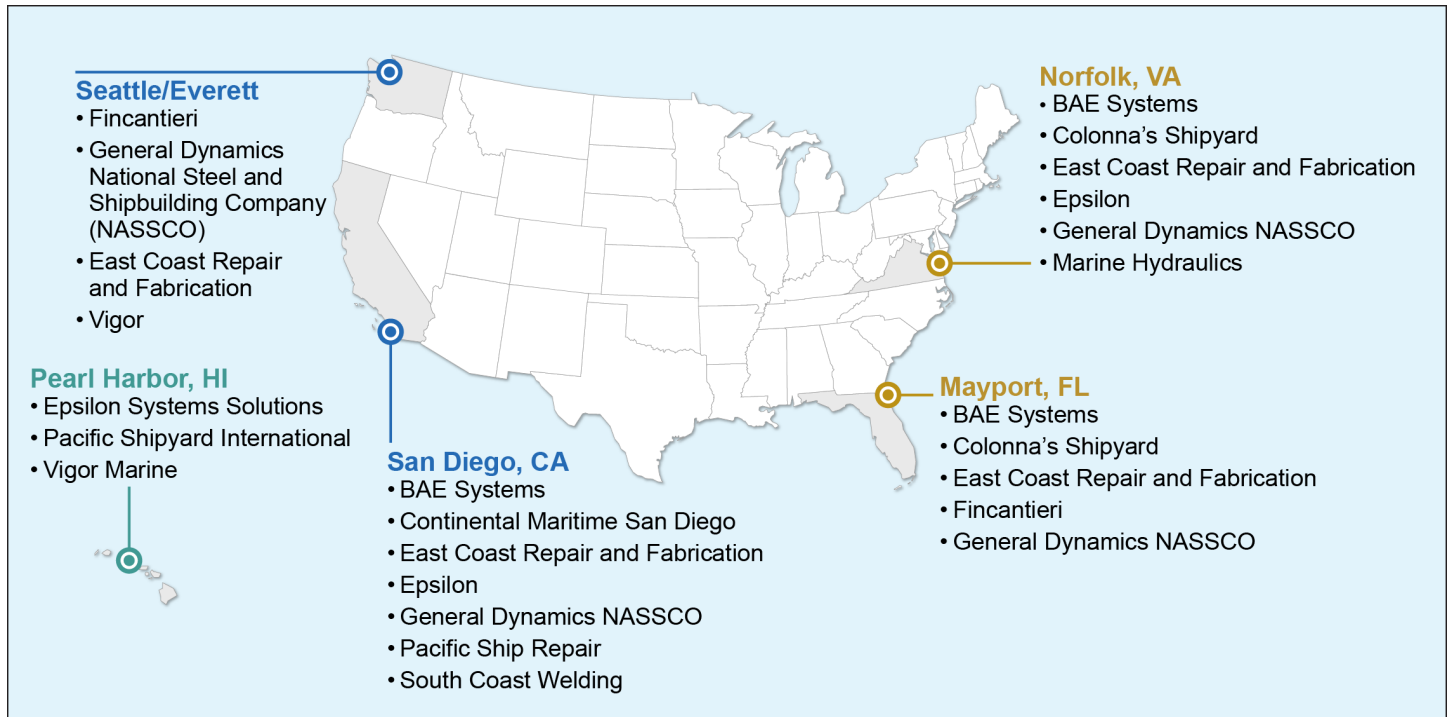
demonstrate equivalent capabilities, can conduct this work.²⁰ These repair periods accomplish significant planned repair work, such as structural, mechanical, and electrical repairs. Repair periods may include modernization work to upgrade a ship's capabilities along with repair work, and they can last for over a year. During these repair periods, companies often take ships out of the water and put them into a dry dock to perform maintenance on below-water parts of the ship. Other types of repair periods are used to accomplish non-major repair work in shorter time periods—typically only weeks to a few months in duration.²¹

Domestic facilities where contractors repair naval surface ships are located in areas where ships are homeported, commonly referred to as fleet concentration areas. Five fleet concentration areas primarily conduct work for major repair: Mayport, Florida; Norfolk, Virginia; Pearl Harbor, Hawaii; San Diego, California; and Seattle/Everett, Washington. Figure 2 shows the companies that conduct these repairs and their locations.

²⁰The Navy will grant a Master Ship Repair Agreement after certifying a ship repair firm's capability and capacity to perform all aspects of shipboard work. See U.S. Navy, *Master Agreement for Repair and Alteration of Vessels: Master Ship Repair Agreement (MSRA) and Agreement for Boat Repair (ABR)*, Commander Navy Regional Maintenance Center Instruction 4280.1A, (Feb. 17, 2021). To obtain this level of certification—the highest the Navy grants for ship repair—the firm must meet certain standards, including having the management, organization, production, and facilities to perform a complex repair. Certified firms must also be capable of subcontracting for elements beyond their capability or capacity, while ensuring that they have adequate oversight of the subcontracted effort.

²¹Non-major repair periods include continuous maintenance periods and emergent maintenance periods. Continuous maintenance periods accomplish planned, non-major repair work. For example, continuous maintenance periods may involve repainting parts of a ship or repairing the nonskid surfaces on a flight deck.

Figure 2: Map of Private Ship Repair Companies Conducting Complex Navy Ship Repair Work by Fleet Concentration, Area as of May 2024



Source: GAO analysis of private ship repair company information; Map Resources (map). | GAO-25-106286

Note: The Navy uses a separate construct for ship repair for the Littoral Combat Ship and does not designate the work as “complex” and “non-complex”. As a result, some companies that were excluded from this figure perform repair work for the Littoral Combat Ship. According to Navy documentation, the following additional companies in San Diego are eligible to perform major repair periods for the Littoral Combat Ship: Austal, Marine Group Boat Works, and Vigor. In Mayport, Navy documentation shows that the following additional companies can perform major repair periods for the Littoral Combat Ship: Austal, Epsilon, and Tecnico Corporation.

Some of the contractors for major repair periods have their own facilities—such as dry docks—while other companies rely on Navy-owned facilities to conduct repair work.

Key Navy and DOD Organizations with Responsibilities Related to Shipbuilding and Repair

Many organizations within the Navy and within DOD’s Office of the Under Secretary of Defense for Acquisition and Sustainment have responsibilities related to the shipbuilding and ship repair industrial base.

- The **Assistant Secretary of the Navy for Research, Development and Acquisition (ASN (RD&A))** has overall authority, responsibility, and accountability for all acquisition and sustainment functions and programs, including surface ship repair and maintenance.

Within the ASN (RD&A), **Program Executive Offices (PEO)** manage all aspects of life-cycle management of their respective programs, including program initiation, ship design, construction, testing, delivery, fleet introduction, and maintenance activities. PEO Ships manages the design and construction of all Navy nonnuclear surface ships, including surface combatants, amphibious ships, and support vessels. It is also responsible for providing complete life-cycle support for these ships. Similarly, PEO Strategic Submarines, PEO Attack Submarines, and PEO Carriers manage the design, construction, and life-cycle support for nuclear-powered submarines and aircraft carriers.

- There are eight **Deputy Assistant Secretaries of the Navy (DASN)** that serve in coordinating roles and advise the ASN (RD&A) on subjects related to the office's responsibilities. The DASN for Ship Programs (DASN Ships) is the principal advisor and coordinator for the ASN (RD&A) on matters pertaining to aircraft carriers, other surface ships, and submarines. DASN Ships also monitors and advises on ship programs managed by PEO Ships, PEO Carriers, PEO Strategic Submarines, and PEO Attack Submarines. Further, it is the principal advisor to the ASN (RD&A) for the shipbuilding industrial base. DASN Sustainment is the principal advisor and coordinator for the ASN (RD&A) on matters pertaining to Navy system sustainment, including policy, infrastructure, and supply chain management.
- The **Chief of Naval Operations** is the senior military officer of the Department of the Navy and is responsible to the Secretary of the Navy for the command, utilization of resources, and operating efficiency of the operating forces and shore activities. The Chief of Naval Operations serves as the primary focal point for developing department-level policy for approval by ASN (RD&A) on all matters dealing with ship sustainment and life-cycle logistics. This includes ensuring resources for maintenance and supply support align with Navy objectives.
- **Naval Sea Systems Command (NAVSEA)** and its directorate organizations provide support to both the acquisition and sustainment communities. NAVSEA is comprised of experts across multiple disciplines responsible for ensuring ship repair meets fleet requirements within cost and schedule parameters, among other duties for combat systems design and operation. Two of these directorates have responsibilities for the industrial base through contracting and life-cycle management functions:

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- **NAVSEA's Contracts Directorate** awards contracts for new ship construction and ship repair through its shipbuilding and fleet support divisions, respectively.
 - **NAVSEA's Directorate for Surface Ship Maintenance, Modernization and Sustainment** provides life-cycle management of the Navy's in-service surface ships and manages critical modernization and maintenance programs.
 - Within the **Office of the Under Secretary of Defense for Acquisition and Sustainment (OUSD(A&S))**, the **Assistant Secretary of Defense for Industrial Base Policy** manages investment programs for the defense industrial base. This office serves as DOD's principal advisor within OUSD(A&S) for issues and investment programs affecting the industrial base across the DOD enterprise.

Ship Industrial Base Struggles to Meet Navy's Goals for Shipbuilding and Ship Repair

The Navy shipbuilding and ship repair industrial base struggles to meet the Navy's goals for on time completion of ship construction and ship repair periods. Further, the Navy continues to base its shipbuilding goals on assumptions about the industrial base's ability to achieve better performance than it has historically, but which it has yet to demonstrate. In part, our analysis found that shipbuilders have insufficient or aging infrastructure and struggle to hire and retain an appropriately trained workforce, which will make such improvements to performance difficult to accomplish. Similarly, the Navy has historically not met its ship repair schedule goals, though it has achieved some improvements since 2019. While companies that repair Navy ships have enough capacity for planned work, they are not always able to accommodate surges of unplanned work.

Shipbuilding Industrial Base Has Not Historically Met the Navy's Goals

The shipbuilding industrial base has not met Navy goals for ship production in recent history. Specifically, the Navy's recent shipbuilding plans have consistently reflected a larger increase in the fleet than what the industrial base has been able to achieve. For example, as shown in table 1, shipbuilders often did not meet the Navy's planned rate of ship

deliveries for *Virginia* class submarines and *Arleigh Burke* class destroyers from 2019 to 2023.²²

Table 1: Number of Navy Planned Delivery of VCS and DDG 51 Compared with Actual Delivery Rates, Fiscal Years 2019-2023

Fiscal year	Navy planned quantity of VCS to be delivered	Number of delivered VCS	Navy planned quantity of DDG 51 to be delivered	Number of delivered DDG 51
2019 ^a	3	1	3	1
2020 ^b	3	1	4	1
2021	2	0	2	1
2022 ^c	2	2	3	1
2023 ^d	1	0	3	3
Total	11	4	15	7

VCS: *Virginia* class submarines

DDG 51: *Arleigh Burke* class destroyers

Source: GAO analysis of Navy documentation. | GAO-25-106286

^a2019 Navy planned numbers from the Navy Shipbuilding Plan fiscal year 2019.

^b2020 Navy planned numbers from the Navy Shipbuilding Plan fiscal year 2020. The 2021 Navy planned numbers also come from the Navy Shipbuilding Plan fiscal year 2020 because the Navy did not release future inventory goals in this year.

^c2022 Navy planned numbers come from the Navy Shipbuilding Plan submitted to Congress on December 9, 2020.

^d2023 Navy planned numbers from the Navy Shipbuilding Plan fiscal year 2023.

These types of delayed ship deliveries contribute to the fleet not growing at a rate commensurate with Navy plans. For example, in fiscal year 2020, the Navy planned to have a battle force of 313 ships by 2025. However, in its fiscal year 2025 shipbuilding plan, the Navy plans to have a fleet of 287 ships by 2025—26 fewer ships than previously planned.

The Navy’s shipbuilding plans include goals that are based on assumptions about the industrial base’s ability to achieve better performance than it has achieved in the past, and that has yet to be

²²Bath Iron Works and Ingalls Shipbuilding have constructed *Arleigh Burke* class destroyers since 1985 and 1987, respectively, with the most recent Flight III design of these ships in production since in 2017. As of April 2024, these shipbuilders have delivered 73 destroyers to the Navy since the start of the program. Electric Boat and Newport News Shipbuilding have been constructing *Virginia* class submarines since 1998 and 1999, respectively, with the most recent Block V design of this submarine under construction starting in 2019. As of April 2024, they have delivered 23 submarines of this class. While these ship classes have been under construction for decades and represent a high volume of Navy shipbuilding production per year, the shipbuilders for these classes are not meeting production goals.

demonstrated.²³ The Navy's fiscal year 2025 shipbuilding plan states that the Navy developed the plan based on the assumption that private industry will eliminate excess construction backlog and produce future ships on time and within budget—an assumption not grounded in historical trends. Navy officials with responsibility for the shipbuilding plan stated that they made this assumption because they expect their investments in the shipbuilding industrial base will enable improvements. However, our prior work has shown that Navy shipbuilding has regularly fallen short of schedule and cost goals, and current performance is consistent with these trends. As such, the Navy would need to deliver more ships at a quicker rate to meet its goals.²⁴

²³We previously reported on the Navy's shipbuilding performance. See GAO, *Navy Shipbuilding: Past Performance Provides Valuable Lessons for Future Investments*, [GAO-18-238SP](#) (Washington, D.C.: June 6, 2018); and *Navy Shipbuilding: Increased Use of Leading Design Practices Could Improve Timeliness of Deliveries*, [GAO-24-105503](#) (Washington, D.C.: May 2, 2024).

²⁴We reported that from 2007 to 2018, cost growth in Navy shipbuilding exceeded Navy estimates by over \$11 billion and lead ship schedule delays ranged from 6 months (USS *Independence*, LCS 2) to 72 months (USS *Zumwalt*, DDG 1000). We also reported that the Navy experienced significant schedule delays with follow-on ships during this same period. See [GAO-18-238SP](#).

Secretary of the Navy's 45-Day Shipbuilding Review

The Secretary of the Navy (pictured) directed the Navy in January 2024 to complete a 45-Day Shipbuilding Review to: (1) analyze the Navy's shipbuilding portfolio; (2) assess the national and local causes of shipbuilding challenges; and (3) provide recommended actions for achieving a healthier shipbuilding industrial base to support warfighters' needs on a timely schedule.



The Secretary of the Navy called for the study amid reported delays in the *Columbia* class submarine and the *Constellation* class frigate programs.

In early 2024, the Navy released results from its study, which included an assessment of nine shipbuilding programs, their risks, issues, and root causes. It found schedule delays ranging from 12 to 36 months for four programs and delays to contract delivery dates for four additional programs; the remaining program had yet to start construction.

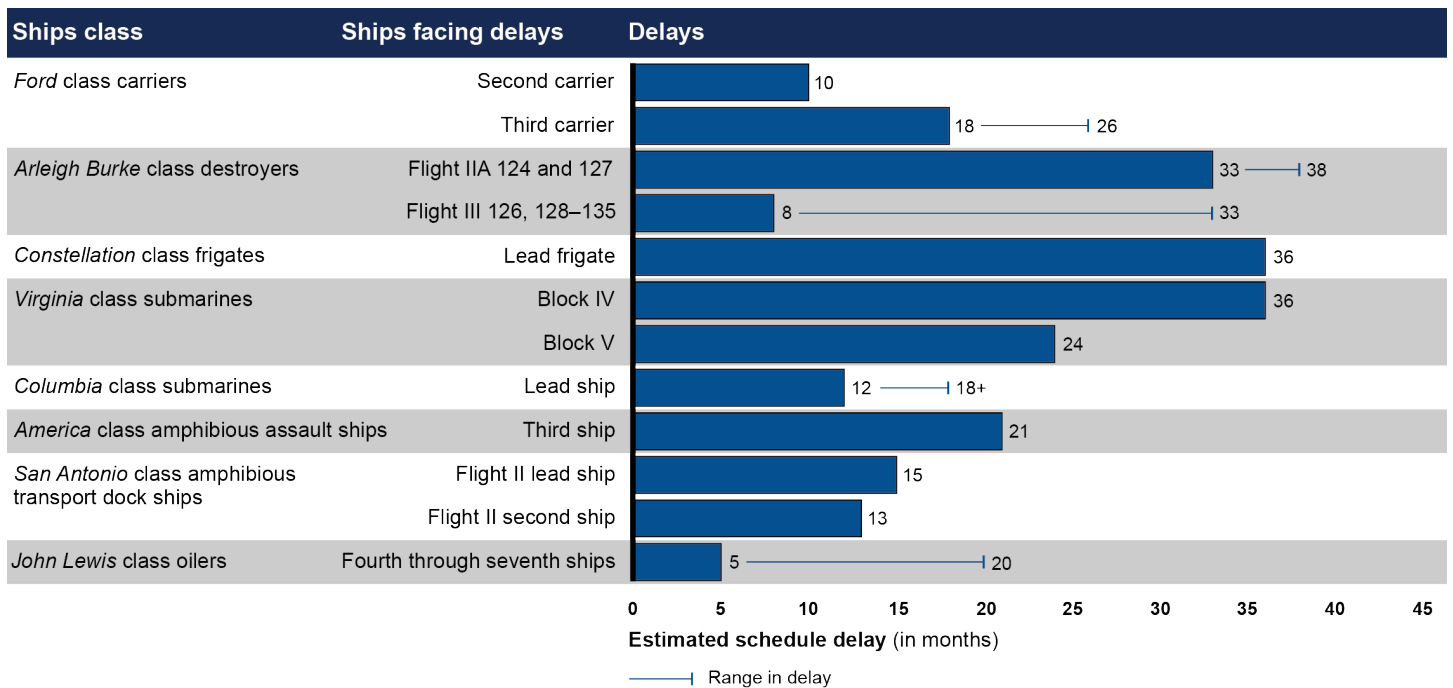
Contributing factors for program delays included: (1) issues with the lead ship, such as with design maturity problems in the *Constellation* class frigate, and (2) ship class issues that are not unique to the lead ship, such as difficulty in hiring a skilled workforce.

As a result of the review, the Navy is developing five initiatives for improvement in areas of workforce, acquisition and contract strategies, and investments.

Source: GAO analysis of Navy documents (text); U.S. Navy/Chief Petty Officer Shannon Renfroe (photo). | GAO-25-106286

Schedule. The Navy's 45-day review of its shipbuilding programs, completed in early 2024, states that its major shipbuilding programs continue to struggle with schedule delays (see sidebar). Our analysis found that schedule delays continue for most ships currently under construction, in addition to the number of ship delays reported in the 45-day review (see fig. 3).

Figure 3: Navy Ship Schedule Delays in Months for Ships Under Construction, as of September 2024



Source: GAO analysis of Navy and contractor documents. | GAO-25-106286

Note: This analysis reflects 37 out of 45 battle force ships (85 percent) currently under construction, all of which are facing delays. GAO excluded the Littoral Combat Ship because the Navy is not planning to procure additional quantities of this class under its shipbuilding plan. GAO also excluded ships that recently started construction and for which there is not sufficient data to measure performance. We also excluded command and support ships.

Cost. Cost increases erode the Navy’s buying power to execute its shipbuilding plan, particularly because the plan assumes that ships will be delivered in alignment with cost targets. Yet we found that many shipbuilding programs face cost overruns. For example:

- Our independent analysis on the cost of the lead ship of the *Columbia* class submarine reflects that the government could be responsible for hundreds of millions of dollars in additional construction costs.²⁵
- For the second *Ford* class carrier, *John F. Kennedy* (CVN 79), costs had increased by \$1.3 billion in August 2021, largely due to contract overruns. The program has also increased costs due to programmatic changes. For example, we reported in June of 2024 that the program’s baseline construction costs increased an additional \$0.2

²⁵GAO-24-107732.

billion because the program delayed planned delivery for CVN 79, and some post-delivery costs will now be included under the construction baseline.²⁶

- On the lead ship of the *Constellation* class frigate and a block of six John Lewis class oilers, costs are estimated to have increased above the contracts' ceiling prices. Costs exceeding the ceiling are generally absorbed by the contractor.²⁷

These cost increases are consistent with our prior work, which found that from 2007 to 2018, cost growth in Navy shipbuilding exceeded Navy estimates by over \$11 billion.²⁸

Ship deliveries. Even if private industry begins delivering ships on time and within budget, the industrial base would need to deliver more ships and more quickly to meet the Navy's current shipbuilding goals. For example, in fiscal year 2023, private industry delivered seven new battle force ships, but private industry would need to deliver an average of roughly 13 ships per year for 30 years to meet the optimal fleet size goal under the current shipbuilding plan.

This increase would be needed because the Navy now targets a larger fleet size than it did in prior years and because it also plans to continue to decommission many ships during the same period. Specifically, the Navy plans to grow the size of the fleet by 91 ships over the next 30 years, yet it plans to decommission 292 ships during the same period.²⁹ As a result, the Navy will need to deliver a total of 383 ships in 30 years to reach its goal. However, the industrial base has yet to demonstrate an ability to

²⁶GAO, *Weapon Systems Annual Assessment: DOD Is Not Yet Well-Positioned to Field Systems with Speed*, [Reissued with revisions on July 18, 2024], [GAO-24-106831](#) (Washington, D.C.: June 17, 2024).

²⁷Fixed-price incentive contracts generally include a profit adjustment formula referred to as a share line, as well as a target cost, target profit, and a price ceiling. Until the contract reaches the ceiling price, cost overruns would be shared between the Navy and shipbuilder as determined by the contract's share line. The price ceiling is generally the maximum the government will pay under the contract. The government may pay for adjustments under other contract clauses that are unrelated to the contract price ceiling. See Federal Acquisition Regulation § 16.403-1(a).

²⁸[GAO-18-238SP](#).

²⁹The figures here reflect the optimum fleet size goal contained in the Navy's fiscal year 2025 shipbuilding plan, which reflects the Navy's most recent force structure analysis. The plan also includes an alternative under which the Navy would procure fewer ships, and which reflects less budget growth beyond the next 5 years. This alternative approach would procure fewer battle force ships than the Navy has assessed it needs.

increase production in this manner. The Navy's fiscal year 2025 shipbuilding plan states that it would rely on planned, but not yet achieved, industrial capacity to do so.

Industrial Base Infrastructure and Workforce Limitations Make Shipbuilding Delays Difficult to Overcome

Our analysis of Navy and shipbuilder documentation—as well as discussions with the seven shipbuilders that construct the Navy's battle force ships—shows that none of the shipbuilders are currently positioned to meet the Navy's delivery goals. This is, in part, due to infrastructure and workforce limitations.

Shipbuilding Infrastructure Limitations

The Navy's current shipbuilders are limited in their ability to produce ships on time and within budget in part because of their existing infrastructure, which includes the amount of physical space and aging facilities.

Limited physical space. While representatives from three shipbuilders told us they have room to expand as needed, representatives from four of the shipbuilders stated they have constrained physical space. Specifically:

- Two of the shipbuilders we spoke with are already outsourcing work that would normally be done at their shipyards to their suppliers to overcome constrained physical space, with plans to expand the volume of material they are outsourcing.
- One shipbuilder has plans to use outsourcing but has yet to decide what portions of the construction effort to offload to the supplier base.
- One shipbuilder is considering outsourcing in the future if it is awarded a contract to construct a new class of Navy ships.

While outsourcing to suppliers can alleviate physical constraints at shipyards, many suppliers also have their own workforce and infrastructure problems that could result in challenges to their ability to produce quality materials on time. Additionally, as we previously reported, quality assurance oversight at supplier facilities is critical for avoiding further delays that could result from quality problems.³⁰

³⁰GAO, *Navy Shipbuilding: Increasing Supervisors of Shipbuilding Responsibility Could Help Improve Program Outcomes*, [GAO-22-104655](#) (Washington, DC.: Apr. 12, 2022); and *Columbia Class Submarine: Delivery Hinges on Timely and Quality Materials from an Atrophied Supplier Base*, [GAO-21-257](#) (Washington, D.C.: Jan. 14, 2021).

Aging infrastructure. Some of the shipbuilders we spoke with also face challenges related to aging facilities and equipment that affect their ability to produce ships on schedule. Additionally, Navy officials stated that one shipbuilder experienced failures in its aging infrastructure that caused schedule delays and cost increases. Moreover, Navy documentation states that this shipbuilder has additional aged infrastructure that presents similar risk for schedule delays and cost increases.

Barriers to increasing capacity. Several of the seven shipbuilders the Navy currently relies on to build its battle force ships have specialized production capabilities that constrain the types of vessels they can build. This also presents a barrier to additional companies that may want to enter the market space in the future. This is, in part, because existing shipbuilders have optimized their facilities—by purchasing specialized tools and equipment—and developed specific processes to build specific ship types. Additionally, to start building Navy ships, new companies would also need expensive facilities and tooling that could present a barrier to market entry or result in duplicative costs to the government.

The Navy has some potential options for using additional U.S. shipbuilders to construct its battle force ships. For example, representatives from a shipbuilder we visited that generally constructs Coast Guard ships and conducts other commercial work told us that they would be interested in pursuing contracts for larger Navy ships. Other U.S. shipbuilders that construct ships for the U.S. Coast Guard, Military Sealift Command, and commercial buyers could also potentially pursue Navy work. However, the number of additional domestic shipbuilders is limited. Though the Navy’s shipbuilding plans have reflected that the commercial shipbuilding industry could build some Navy ships, such as auxiliary and support ships, these plans also note that U.S. commercial shipbuilding has atrophied. Specifically, the fiscal year 2025 shipbuilding plan states that U.S. commercial shipbuilding has experienced a near-total collapse and calls for the long-term revitalization of the domestic shipbuilding industry to bolster Navy shipbuilding and enable better cost and schedule outcomes.³¹

Shipbuilding Workforce Limitations

The Navy’s ability to reach shipbuilding goals is also limited by the size and composition of the shipbuilders’ workforces. We found that all seven shipbuilders face workforce limitations—such as problems with recruitment, retention, or skill level—that affect their ability to meet the

³¹We have ongoing work examining U.S. commercial shipbuilding policies and practices.

Navy's new ship delivery goals.³² Further, when accounting for attrition, a DOD briefing from the 45-day shipbuilding review shows that over the next decade, the shipbuilding industrial base will require 174,000 new workers to keep pace with Navy shipbuilding goals. All seven of the shipbuilders we interviewed stated that they faced challenges with their skilled workforce. The following examples highlight key elements of the shipbuilders' workforce challenges that we identified through reviewing documentation and interviews:

Demographic shift. The skilled workforce in the U.S.—such as for welding and electrical work—is aging and retiring, and fewer new workers are learning these skills to replace retiring workers. This demographic shift makes positions for skilled work more difficult to fill. For example, representatives from a shipbuilder told us that a generational shift away from work in manufacturing affected their hiring. DOD's Office of Cost Assessment and Program Evaluation's review of the submarine industrial base for fiscal year 2023 states that a generational shift away from manufacturing careers has led to workforce shortages in key skilled labor positions.³³ Further, a 2021 DOD report on the defense industrial base workforce identified a national shortage in skilled labor that DOD must address to ensure enough workers for defense programs, such as in shipbuilding.

³²These challenges are not unique to shipbuilding. We previously found that DOD faces challenges with hiring and retaining organic industrial base workers with key skills to conduct depot repair periods including Navy submarine and aircraft carrier repairs. Additionally, we found that not having enough workers to perform planned work was a key cause of delays in submarine and aircraft carrier repairs. See: GAO, *DOD Depot Workforce: Services Need to Assess the Effectiveness of Their Initiative to Maintain Critical Skills* [Reissued with revisions on Dec. 26, 2018], [GAO-19-51](#) (Washington, D.C.: Dec. 14, 2018); and *Navy Shipyards: Actions Needed to Address the Main Factors Causing Maintenance Delays for Aircraft Carriers and Submarines*, [GAO-20-588](#) (Washington, D.C.: Aug. 20, 2020).

³³The Office of Cost Assessment and Program Evaluation is responsible for evaluating programs across DOD in terms of force structure, procurement, staffing, other supporting programs, and cost.

Limited Workforce and Infrastructure Capacity of the Submarine Shipbuilders

As we previously reported, demand for submarine production has exceeded infrastructure and workforce capacity of both Electric Boat and Newport News Shipbuilding, the only shipbuilders that produce nuclear powered submarines.

The Navy, however, has a goal of increasing the rate of production. It plans to begin serial production—to start producing one *Columbia* class submarine per year—in fiscal year 2026. At the same time, it plans to continue its goal of producing two *Virginia* class submarines per year (together, the rate of submarine production is commonly referred to as “1+2”).

Additionally, the size of submarines being produced has also increased. The *Columbia* class submarine is the largest submarine the U.S. has ever built. Further, Block V *Virginia* class submarines are larger than the earlier Block IV design due to additions, such as the Virginia Payload Module (a new section of the submarine that increases its capacity for cruise missiles).

The Department of Defense (DOD) estimates that, based on the size increase from both submarine classes and the volume of materials needed, the shipbuilders will need to begin producing the equivalent of five Block IV *Virginia* class submarines per year starting in fiscal year 2026.

According to a DOD assessment, the shipbuilders’ inability to keep up with planned submarine procurement rates undermines confidence in their ability to keep pace with a “1+2” rate of production.

Further, current strains on shipyard capacity do not include increased demand for *Virginia* class submarines that may result from the need to replace submarines that would be sold to Australia under the Australia, United Kingdom, and United States Trilateral Security Partnership (AUKUS).

Source: GAO analysis of Navy information. | GAO-25-106286

Recruitment and retention challenges. All seven of the shipbuilders we spoke with told us that competition with other industries for workers resulted in recruitment and retention challenges. Representatives from these companies provided examples of the services industry (such as fast-food companies and freelance work like Uber); technology companies; and the paper, oil and gas, and construction industries as being among their competitors. Five of the seven shipbuilders noted that a shrinking gap between wages for the services industry and manufacturing jobs, like shipbuilding, was a driver of this challenge. One shipbuilder explained that this is because people can make similar wages in the services industry and may perceive the work to be easier than working in a shipyard. Three shipbuilders told us that they recently raised wages to be more competitive for skilled workers.³⁴

Inexperienced staff. The majority of shipbuilders we spoke with need to hire thousands of skilled employees in the coming years, which will increase the number of inexperienced staff. For some of the shipbuilders, these hiring efforts, if successful, will result in an increase in the size of their skilled workforce by roughly 80 to 100 percent, but will result in a smaller proportion of experienced skilled employees. According to shipbuilder documentation, it takes between 3 and 5 years for an employee to gain proficiency in the skilled trades. A shipbuilder we spoke with noted that they already have a high percentage of trade workers with fewer than 5 years of experience—at 57 percent. We previously found that the majority of skilled workers at another shipbuilder were expected to have less than 5 years of experience.³⁵ We reported in 2024 that this shipbuilder continued to struggle with an inexperienced workforce.³⁶ This will likely result in reduced shipyard efficiency in the near term. New employees also require greater supervision to avoid quality problems with resulting effects on cost and schedule. This could help avoid, for example, the types of quality problems and late discovery of rework that have affected the schedule of the lead *Columbia* class submarine. Yet, many shipbuilders will be challenged to provide the supervision needed because of the increasing proportion of newer employees.

³⁴The Committee on Appropriations reported on the Senate’s bill for making appropriations for the DOD for fiscal year 2024, and included a provision for us to assess key factors affecting hiring and retention of the Navy shipbuilding trades workforce. S. Rep. No. 118-81, at 138.

³⁵GAO-21-257.

³⁶GAO-24-107732.

Further, infrastructure and workforce limitations have been particularly acute in submarine shipbuilding. As a result, submarine shipbuilders are behind schedule and currently do not have the capacity to produce a greater rate of submarines per year, despite the Navy's plans to do so in the future (see sidebar on previous page).

Appendix III provides examples of specific infrastructure challenges from shipbuilders we met with during our review and from our review of Navy documentation.

Ship Repair Industrial Base Has Not Met Schedule Goals Though It Has Seen Some Recent Improvements

The private ship repair industrial base has not met the Navy's schedule goals for completing repair periods, although there have been some recent improvements. According to the Navy's maintenance plan, in fiscal year 2022, repair companies completed only 36 percent of nonnuclear-powered surface ship repair periods on time. Further, in January 2024, we reported that private ship repair companies took nearly 10,000 days longer than planned to repair destroyers and more than 5,500 days longer than planned on cruisers between fiscal years 2015 and 2022.³⁷ Such maintenance delays reduce the number of ships available for training and operations. We also reported that the Navy has struggled to complete surface ship maintenance periods in full—meaning that the Navy did not complete all required maintenance scheduled or canceled the maintenance period entirely—resulting in a \$2.3 billion backlog of surface ship maintenance by August 2022.³⁸

Although the Navy still faces maintenance timeliness challenges, we found the average days of maintenance delay trended down from fiscal years 2019 through 2022.³⁹ Similarly, a 2023 Navy report stated that days of maintenance delay on complex repair periods had decreased by 43 percent since fiscal year 2019. The private sector industrial base for ship repair has also expanded in recent years, leading to more capacity for Navy repair work. For example, Austal invested in a dry dock for San Diego in 2021, representatives from Fincantieri told us in 2023 they

³⁷GAO, *Navy Readiness: U.S. Ability to Sustainably Produce Ready Naval Forces Lags Behind Strategic Competitor*, GAO-24-106363C (Washington, D.C.: Jan. 11, 2024).

³⁸GAO-24-106363C contains additional information about repair period delays. We also recently reported on the Navy's cruiser modernization efforts. We found that the five cruisers that reached their modernization periods have faced delays ranging from 3 to nearly 5 years. For additional information on cruiser modernizations, see: GAO, *Navy Ship Modernization: Poor Cruiser Outcomes Demonstrate Need for Better Planning and Quality Oversight in Future Efforts*, [GAO-25-106749](#) (Washington, D.C.: December 17, 2024).

³⁹GAO-24-106363C.

invested in a dry dock for Mayport, and BAE Systems documentation shows that the company has invested in adding a docking system in the Mayport area that will operate similarly to a dry dock, with plans to be certified by April 2025.

The Navy attributes some of these improvements to a change it made to its contracting strategy in 2015, which it stated has increased competition in the ship repair industrial base.⁴⁰ Unlike in shipbuilding, in ship repair, there are often enough companies with capacity that there may be multiple companies able to compete for repair periods. According to Navy documentation, increased opportunities for competition since the Navy changed its contracting strategy has provided more opportunities for businesses to enter the Navy ship repair market and resulted in an expansion of the industrial base. For example, while under the prior contracting strategy there was only one company performing major Navy repairs in Mayport and one in Pearl Harbor, there are now five companies that can compete to be awarded orders to perform this work in Mayport and three in Pearl Harbor. However, when the Navy does not anticipate multiple companies will compete for a repair period within a fleet concentration area, it can also expand competition along the East or West Coast to consider additional companies.⁴¹

Ship Repair Industrial Base Has Capacity but Cannot Always Surge to Accomplish Unplanned Work

The ship repair private sector industrial base generally has enough capacity to support the Navy's planned surface ship repair work in the near term. However, this industrial base does not always have the capacity to support maintenance plan changes, such as growth work,

⁴⁰U.S. Navy, Naval Sea Systems Command, *Report to Congress on Effects of Multiple Award Contract-Multi Order Contracting* (Washington, D.C.: November 2023). Under the Navy's Multiple Award Contract, Multi Order contracting strategy, the Navy awarded multiple award indefinite delivery, indefinite quantity contracts. Under contracts like these, each awardee must be provided a fair opportunity to compete for orders, with certain exceptions. See Federal Acquisition Regulation 16.505(b)(1). The Navy now normally awards fixed-price orders for repairs; under the previous strategy, the Navy used cost reimbursement-type contracts.

⁴¹NAVSEA created distinct contract vehicles to complete Chief of Naval Operations availabilities, separated, in part, by whether the availabilities are "short-term" availabilities with production durations less than 10 months or "long-term" availabilities with production durations greater than 10 months. See 10 U.S.C. § 8669a ("short-term work" means work that will be for a period of 10 months or less). This allows for contractors outside the home port to compete for this work. The Navy then awards contracts for these coast-wide availabilities as stand-alone contracts to a single prime contractor, potentially at a port different from the home port of the ship.

Ship Repair Infrastructure Capacity

emergency repairs, or wartime needs due to limited infrastructure and workforce capacity.

Our analyses found that the industrial base for ship repair has sufficient infrastructure capacity through at least fiscal year 2026 in each of the five fleet concentration areas—including private industry dry docks and dry docks at Navy facilities used by private industry for surface ship repairs—for the Navy's peacetime planned surface ship maintenance.⁴²

Representatives from companies in every fleet concentration area told us that they often had more infrastructure capacity than the Navy was using, except Pearl Harbor, where only Navy owned facilities are in use for ship repair.⁴³ For example,

- **Mayport, Florida.** One company we interviewed that conducts repair for the Mayport fleet concentration area has an ongoing acquisition to expand its docking capacity. Representatives from the company stated that the Navy could potentially use this additional capacity for surge capacity when needed if the Navy decided to pay for unused space. However, company representatives stated that they also have opportunities for commercial and Coast Guard repair work, so the facility could be otherwise filled with other work. We also spoke with a second company that is adding dry dock capacity in Mayport. Additionally, complex repairs are performed at Navy facilities in Mayport, which provide further infrastructure capacity for repairs.
- **Norfolk, Virginia.** We spoke with three companies that own dry docks in Norfolk, and representatives from all these companies told us there was unused dry dock capacity in the region. Representatives from one company told us that their dry docks were in use 53 percent of the time in 2022. Representatives from another company told us that their dry dock was in use roughly 85 percent of the time, but that this figure included their commercial repair work in addition to Navy work.
- **San Diego, California.** Representatives from one company with a dry dock in San Diego told us that their dry dock was in use roughly 70 percent of the time during the past 5 years. Representatives from

⁴²We were primarily focused on the capability and capacity that private industry provides to surface ship repair. However, Navy officials told us that piers and wharves at Navy facilities that are used by private industry for surface ship repair often have degraded infrastructure. They also stated that they often are not compliant with safety standards without mitigations.

⁴³In Pearl Harbor, Hawaii, ship repair companies only use facilities that are owned by the Navy—e.g., dry docks and piers—for major repair periods.

another company told us they have enough dry dock space to accommodate two Navy ships up to a certain size simultaneously. However, these representatives told us that they did not regularly have two ships docked in this space. Further, they stated that their dry dock was in use 75 percent of the time in 2022. We also spoke with a company that is in the process of adding dry dock capacity in San Diego. In addition to dry dock capacity provided by private industry, companies can perform complex repair work at Navy facilities in San Diego.

- **Seattle/Everett, Washington.** Representatives from one company that owns a dry dock in Seattle told us that they had more capacity to do Navy work. In addition to their dry dock and pier capacity in Seattle, these representatives also told us this company had dry dock capacity in Portland, Oregon where it could also conduct repair for the Navy.

While some repair companies told us they had additional capacity to provide to the Navy, the amount of usable private industry dry dock capacity available to the Navy is dependent on a variety of factors. For example:

- Companies may have repair work from other sources, such as the Coast Guard or commercial industry, that could occupy their dry docks;
- The Navy needs dry docks of specific sizes to accommodate different classes of ships, so the infrastructure available would need to match the Navy's needs to be usable;⁴⁴ and
- The amount of planned Navy repair work is variable, with some periods of time requiring more dry docks than others. As a result, there are times when none of the private industry dry docks the Navy relies on within a homeport are available.

Moreover, when the Navy needs private industry dry docks for unplanned work, it can disrupt the schedule for repair work the Navy had already planned.

We found, however, that there is not always sufficient infrastructure capacity available to manage unplanned repair work, such as growth

⁴⁴Navy officials told us that dry docks for nuclear-powered ships have particular requirements for size and other unique requirements, and that there are few private industry dry docks that meet these standards. While nuclear-powered ships most often undergo repairs at the Navy's public shipyards rather than at privately owned dry docks, officials stated that a lack of nuclear-certified dry docks presents a challenge for the Navy.

work or emergent repairs. Growth work refers to additional tasks identified during performance that is related to a work item already specified on the original contract, some of which may be identified after a repair period has begun. For example:

- **Growth work.** Given the nature of ship repair, the Navy and ship repair companies will sometimes identify growth work during a maintenance period that was not originally planned. As an example, a Navy official stated that they cannot fully inspect ballast tanks and accurately write work specifications for their repair until the repair period has begun. In the Navy's November 2023 report on its repair contracting strategy, the Navy identified growth work as a significant driver of maintenance delays. Yet, this report states that the Navy cannot rely on companies to accomplish large amounts of unplanned work added to a contract.⁴⁵ In part, this is because large amounts of unplanned work require planning, negotiation, and execution of time-consuming contract changes. Growth work can also result in the use of infrastructure, like dry docks, for longer than planned, which can disrupt the ability to start new repair periods. We have reported that growth work has detracted from both cost and schedule performance, and according to Navy documentation, this trend continues.⁴⁶ The Navy's fiscal year 2025 maintenance plan states that the Navy has ongoing efforts to reduce growth work so that it can complete more repair periods on time.
- **Emergent repairs.** This type of repair occurs during ship deployments when ships experience a malfunction or other issue

Recent Example of Emergent Repair

In June 2017, the USS *Fitzgerald* collided with a merchant vessel off the coast of Japan. Navy tugboats towed the ship to Fleet Activities Yokosuka, Japan, where it received temporary repairs. Later, the transport vessel Transshelf moved the ship to Ingalls Shipyard in Pascagoula, Mississippi, where it received the remainder of its repairs. Like battle damage repairs, these types of repairs have to be absorbed by the industrial base. In this way, emergent repairs such as those in response to the USS *Fitzgerald* collision in 2017 more closely mirror a battle damage repair process.

Source: GAO. | GAO-25-106286

⁴⁵U.S. Navy, Naval Sea Systems Command, *Report to Congress on Effects of Multiple Award Contract-Multi Order Contracting* (Washington, D.C.: Nov. 2023).

⁴⁶GAO, *Navy Ship Maintenance: Evaluating Pilot Program Outcomes Could Inform Decisions to Address Persistent Schedule Changes*, [GAO-20-370](#) (Washington, D.C.: May 11, 2020).

requiring immediate repairs (see sidebar).⁴⁷ The Commander of the Pacific Fleet issued a memorandum in August 2023 on the need for an additional dry dock in Pearl Harbor based in part on a need for these types of repairs. The memorandum states that there is no capacity for emergent repair work at this location for half of the time through at least 2028, which the Commander of the Pacific Fleet assessed as a high-risk circumstance. Our prior work has also shown that the Navy needs additional capacity for wartime repair, as the Navy has not had to conduct battle damage repair on multiple ships concurrently since World War II.⁴⁸

In some instances, the Navy can shift the timing or location of other repair work to areas with additional capacity to mitigate infrastructure capacity challenges resulting from unplanned work. The Navy also plans to increase dry dock capacity for emergent and potential wartime repairs by encouraging private industry to build additional infrastructure and by building infrastructure at Navy facilities used for surface ship repairs done by private industry (see table 2).

Table 2: Navy Projection for Adding Surface Ship Dry Dock Capacity by Fleet Concentration Area, as of 2024

Fleet concentration area	Navy plans for adding government and privately owned capacity	Navy rationale for seeking additional capacity
Mayport, Florida	None	Not applicable
Norfolk, Virginia	Navy officials told GAO that they are evaluating whether to seek investment by private industry in an additional dry dock, with a decision expected to occur later in the 2020s.	Not applicable
Pearl Harbor, Hawaii	The Navy plans to begin using a dry dock that is currently dedicated to surface ship repair for submarine repair. As a result, the Navy identified a need to purchase a floating dry dock for Pearl Harbor for surface ship repair, with a need for it to be operational no later than fiscal year 2035. It is currently in the planning stage for this acquisition.	Replace current dry dock capacity for planned ship repairs.

⁴⁷Emergent maintenance periods accomplish unplanned repair work of an urgent nature when the risk of prolonged disruption to a ship's operations makes higher payments for repair acceptable. These repair periods are only completed on an as-needed basis to keep a ship operating.

⁴⁸We recommended that the Navy designate an organization to lead and oversee the development of the Navy's battle damage repair capability. The Navy addressed our recommendation by designating NAVSEA as the organization to lead this effort. GAO, *Navy Ships: Timely Actions Needed to Improve Planning and Develop Capabilities for Battle Damage Repair*, [GAO-21-246](#) (Washington, D.C.: June 2, 2021).

Fleet concentration area	Navy plans for adding government and privately owned capacity	Navy rationale for seeking additional capacity
San Diego, California	The Navy has an ongoing acquisition of a floating dry dock.	Provide surge capacity for planned and emergent maintenance.
Seattle/Everett, Washington	<p>The Navy reported leasing a floating dry dock to a private ship repair company. This dock is currently located at the contractor’s facility in Seattle. According to Navy officials, when the lease ends in fiscal year 2025, the Navy is planning to renew it for another 5 years.</p> <p>However, the Navy put out a request for information from private industry to explore additional options for use of the dry dock. The Navy is also evaluating a permanent move of this dock to Naval Station Everett when the renewed lease expires, now planned for fiscal year 2030, as an alternative solution.</p>	Provide surge capacity for wartime and emergent maintenance; improve competition by providing a dry dock to companies to complete repair work.

Source: GAO analysis of Navy documentation. | GAO-25-106286

Ship Repair Workforce Capacity

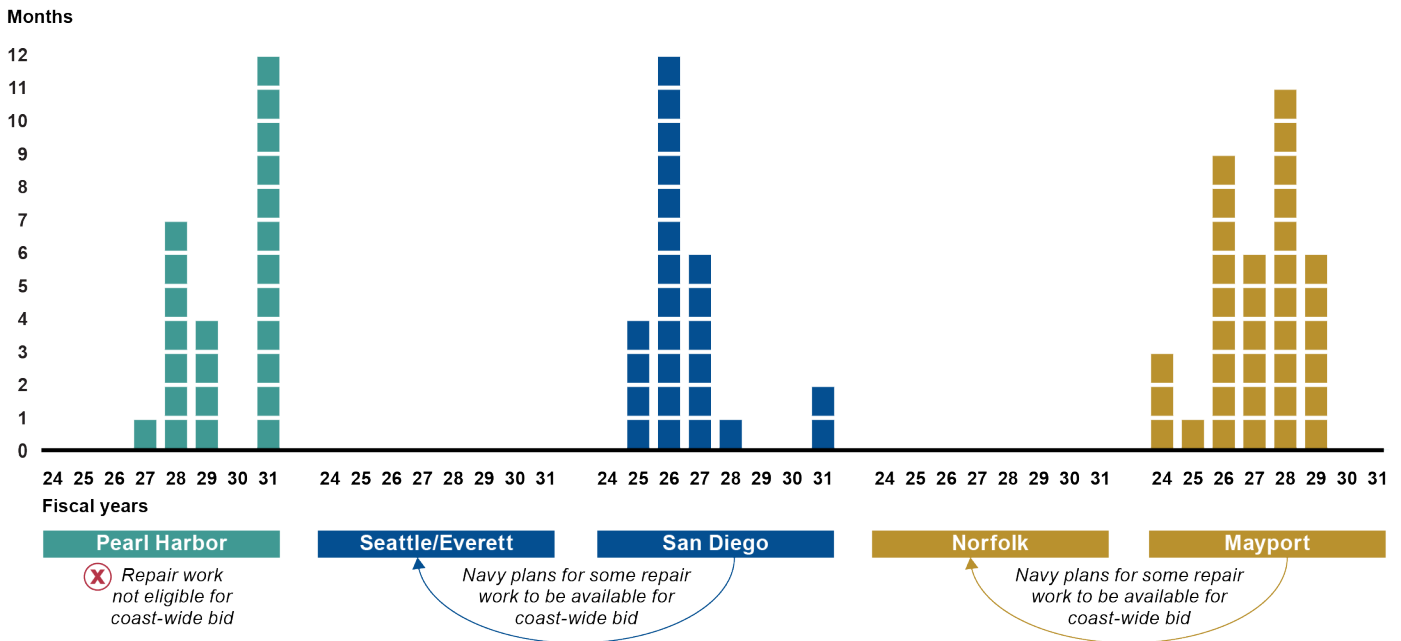
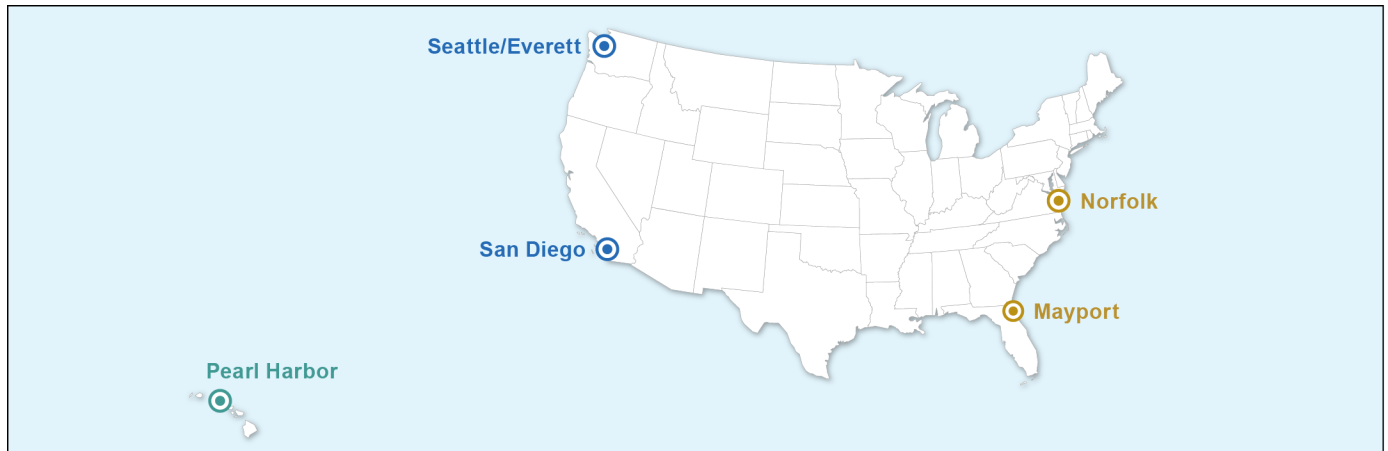
The Navy estimates that its planned repair workload could exceed ship repair companies’ workforce capacity in three fleet concentration areas— San Diego, Mayport, and Pearl Harbor— at some times through fiscal year 2031 if workforce capacity does not change from current levels.⁴⁹ However, it often has some flexibility to shift the timing of work or location to areas with additional capacity.⁵⁰

In most instances when the Navy anticipates a volume of work that exceeds workforce capacity, it plans to expand the geographic range for competition for repair periods during this timeframe so that it can utilize repair workforce that is available elsewhere (see fig. 4).

⁴⁹The Navy estimates future workforce capacity using a calculation based on data from the last 3 years. Private industry provides the workforce for major surface ship repair, even when their work is performed at Navy facilities. We previously reported on Navy workforce challenges that resulted in delays to aircraft carrier and submarine maintenance at the public shipyards. These challenges included that the Navy did not have enough workforce available, and that it faced performance problems. In contrast, the workforce that conducts surface ship repairs is employed by private industry, rather than the Navy. See [GAO-20-588](#).

⁵⁰Under 10 U.S. Code Section 8669a, the Navy should consider the costs of moving the vessel and its crew outside of the homeport area when evaluating bids for a repair contract.

Figure 4: Navy Estimation of When Workload Could Exceed Capacity Based on Private Repair Companies' Workforce Levels, as of February 2024



Fleet concentration areas

- Represents 1 month over estimated workforce capacity at Pearl Harbor, Hawaii
- Represents 1 month over estimated workforce capacity at San Diego, California
- Represents 1 month over estimated workforce capacity Mayport, Florida

Source: GAO analysis of Navy documents; Map Resources (map). | GAO-25-106286

Navy officials told us that they are concerned with repair projections that exceed current workforce capacity in San Diego because of instability in the projected repair workload. Navy officials told us they are less concerned about the projected workload in Mayport and Pearl Harbor because the surges in workload are projected to occur in later years, giving both the Navy and the industrial base more time to prepare. The Navy's plans for addressing periods when projected workload exceeds estimated capacity in San Diego, California; Mayport, Florida; and Pearl Harbor, Hawaii; are as follows:

San Diego, California. Navy documentation shows the workload in San Diego faces a dip in the second quarter of fiscal year 2025 that immediately precedes a spike. Navy officials stated that this instability could result in a reduction of the amount of available workforce as repair companies may reduce the size of their workforce when the workload is projected to dip. Navy officials told us that this issue would be a subject of discussion during future planning sessions to schedule repairs. To mitigate any workforce limitations in San Diego, the Navy is able to award repair work to ship repair companies in Seattle/Everett, Washington, as appropriate. Representatives from one of the repair companies we spoke with in Seattle told us that they did not have challenges with hiring enough workers when they have enough lead time.

Mayport, Florida. Representatives from one ship repair company told us that their ongoing effort to add infrastructure capacity to repair more ships will allow them to employ hundreds of additional full-time employees in the future. If they are successful in hiring as expected, it would help reduce any repair workforce shortages in the region. Additionally, the Navy is able to award work to ship repair companies in Norfolk, Virginia, as appropriate. Representatives from five of the six ship repair companies in Norfolk that we spoke to told us that they had either conducted layoffs or were concerned about having to reduce the size of their workforce because of a downturn in Navy repair work. However, the Navy projects that Norfolk will have either excess workforce capacity or the ability to provide surge capacity through overtime through at least fiscal year 2031.

Examples of Regional Challenges for Navy Ship Repair in Pearl Harbor, Hawaii

Navy officials told GAO that Pearl Harbor, Hawaii faces some unique challenges in ship repair due to its location, such as:

Frequency of emergent repair demands.

Navy officials told GAO that because of its strategic location, Pearl Harbor conducts a high number of emergent repair periods. For example, ships deploying from San Diego, California and Seattle/Everett, Washington or returning from Japan may need to stop at Pearl Harbor for emergent repairs. Officials stated that if ships with operational commitments come with high priority repair needs, they may delay planned maintenance to address the needs of these ships.

Availability of local workforce. Navy officials from the regional maintenance center told GAO that ship repair workforce recruitment is generally limited to people who already live on the island. They stated that people who come to Pearl Harbor to conduct Navy repairs are generally only willing to stay about 5 years.

Suppliers and technical support for repairs. Navy officials told GAO that supplies and technical support for repairs take longer to get to Pearl Harbor because of transit time. For example, when technical support for ship repair is needed from original equipment manufacturers, it can be difficult to obtain quickly because representatives need to fly into Hawaii from the contiguous United States.

Source: GAO analysis of Navy information. | GAO-25-106286

Pearl Harbor, Hawaii. Representatives from one of the repair companies we spoke with in Pearl Harbor also stated that they can take on additional work if the Navy provides them with enough lead time for them to prepare. Similarly, Navy officials from the regional maintenance center in Hawaii told us that private industry could gradually increase the number of workers available if it has stable work. However, based on the Navy's projected volume of work for fiscal year 2031, private industry would need to be prepared for roughly double the amount of work that it can presently accomplish. Increasing the workforce in Hawaii could be particularly challenging (see sidebar). According to a Navy report on ship maintenance gaps and requirements from November 2021, Navy personnel may be used to conduct repairs that exceed private industry's workforce capacity.

During some periods, the Navy projects that the amount of work in every fleet concentration area will go up above normal workforce labor hours but remain below estimated port capacity. Many ship repair companies told us that they use subcontracted labor to bolster their workforces and can create capacity as needed. Yet, Navy documentation states that managing sustained surges in this way for prolonged periods can affect the cost, schedule, and quality of maintenance periods. Unplanned work—like emergent repair needs—could result in prolonged periods in which a surge in workforce is needed. This is because, as emergent repairs are conducted with little or no notice to restore mission-essential capabilities to ships, they may occur at times that overlap with surges of planned work.

DOD Has Yet to Fully Determine Effectiveness of or Ensure Visibility into Billions Spent on the Ship Industrial Base

DOD has spent over \$5.8 billion since fiscal year 2014 on support for the shipbuilding industrial base and plans to spend \$12.6 billion more through at least fiscal year 2028. However, it has yet to fully determine the effectiveness of these funds or ensure visibility into how they are spent. The Navy has historically provided most of the funding intended to bolster the shipbuilding industrial base, but OSD also makes investments. The Navy does not consistently track its investments, and neither the Navy nor OSD has fully assessed the effectiveness of their support. Additionally, DOD has not ensured visibility into these funds because the Navy and OSD do not coordinate spending across all of their investment efforts to prevent duplication and overlap of spending. For ship repair, the Navy plans to award grants to the private ship repair industrial base for

infrastructure investments, but has yet to determine the full amount of additional infrastructure it needs to meet repair goals.

DOD Has Spent Billions to Bolster the Shipbuilding Industrial Base Over the Last Decade and Plans to Spend Billions More Through 2028

DOD spent over \$5.8 billion from fiscal year 2014 to fiscal year 2023 to support the shipbuilding industrial base, with plans to spend an additional \$12.6 billion through fiscal year 2028.⁵¹ This support includes:

- Navy contract incentives for private investment, which are typically used to encourage the shipbuilders to make corporate investments in infrastructure and facilities; and
- Navy and OSD direct investments, in which the government pays outright for the partial or whole cost of an investment, such as for infrastructure, workforce initiatives, and supplier development.

Figure 5 shows past and planned contract investment incentives and direct investments from the Navy and OSD for the shipbuilding industrial base.

⁵¹These values are not adjusted for inflation, so we are not making a direct comparison between past and future spending.

Figure 5: Contract Incentives for Private Investment and Direct Investments for the Shipbuilding Industrial Base, Fiscal Years (FY) 2014-2028

Funding source	FY2014–2023 ^a (millions of dollars)	FY2024–2028
Navy contract incentives for private investment		
	Incentive fees earned	Remaining incentive fees under contract
Investment incentives	1,831	1,505^b
Navy direct investment		
	Funding received	Budget requests
Submarine industrial base	1,911	9,946 ^c
Surface combatant industrial base	725	60
Frigate	50	–
Manufacturing technology	575	322
National shipbuilding research program	124	–
Navy direct investment total	3,385	10,328
Office of the Secretary of Defense (OSD) direct investment		
	Funding received	Budget requests
Industrial Base Analysis and Sustainment (IBAS)	306	740
Defense Production Act (DPA) Title III	301	–
Defense manufacturing community support program	21	–
OSD Total	628	740
Total	5,844	12,573

— No funding specific to the Navy ship industrial base in budget requests

Source: GAO analysis of Department of Defense (DOD) budget documents and interviews with DOD officials. | GAO-25-106286

Note: The dollar values in this figure do not account for inflation.

^aGAO reviewed investments from fiscal years 2014 to 2023 and did not include fiscal year 2024 as it was still ongoing during the time of its review. The data are current as of the end of fiscal year 2023.

^bThe fiscal year 2024 to 2028 includes \$1,505 million in Navy investment incentives, which may be subject to change as shipbuilders may not earn all available incentives. The Navy may also add additional investment incentives for shipbuilders to earn on future contracts.

^cThe fiscal year 2024 to 2028 \$9,946 million funding request for the submarine industrial base includes \$2,456 million of supplemental funding that Congress provided in April 2024. Pub. L. No. 118-50 (2024).

Appendix IV provides more information on the legal authorities associated with these investments.

Purpose of Navy Contract Incentives for Private Investment

The Navy provides investment incentives to motivate contractor performance in areas deemed important to a shipbuilding program's success. For shipyard investment incentives, the Navy primarily uses Special Capital Expenditures and Construction Readiness Incentives. As GAO previously reported, funds under these incentives are available to the shipbuilder only if it agrees to make a Navy-approved shipyard investment. Navy officials told us that they also consider the shipbuilder's level of independent investment in its own facilities prior to making an incentive award.

GAO previously reported that Navy officials cited a lack of competition and instability in Navy shipbuilding work as major reasons for why investments need to be incentivized. As such, investment incentives serve as a way for the Navy to help ensure shipbuilders make necessary facility and capital investments.

Source: [GAO-10-686](#) and GAO analysis of Navy documentation. | [GAO-25-106286](#)

Navy contract incentives for private investment. Private shipyards earned \$1.83 billion in contract incentives between fiscal years 2014 and 2023. Most of this amount was shipyard investment incentives, which support capital and facility investments.⁵² However, the amount also includes other contract incentive types, such as for shipbuilders to make shipyard investments to help them meet construction schedules.⁵³ More specifically, Navy documentation shows that:

- Electric Boat and Newport News Shipbuilding earned about \$1.15 billion in incentives under submarine construction contracts.
- Newport News Shipbuilding earned an additional \$115 million under aircraft carrier contracts.⁵⁴
- Bath Iron Works and Ingalls collectively earned \$391 million under destroyer construction contracts.
- Ingalls earned an additional \$67 million under amphibious ship construction contracts.
- General Dynamics National Steel and Shipbuilding Company earned about \$105 million under contracts for constructing combat logistics force and command and support ships.

Navy direct investment. The Navy made direct investments of \$3.39 billion between fiscal years 2014 and 2023 through various mechanisms

⁵²For shipyard investment incentives, the Navy primarily uses special contract incentive fees, such as Capital Expenditures and Construction Readiness Incentives. Capital Expenditures set aside a portion of the shipbuilding program's appropriated funding to support facility investments. According to the Navy, Construction Readiness Incentives are intended to help contractors focus on achieving shipbuilding construction schedules and ship deliveries through capital improvements. As we previously reported, on a contract that includes such a special incentive fee, a shipyard may earn a fee for making a Navy-approved investment. The special fee may pay for all or part of the investment, and in some cases, bridge the difference between the shipyard's desired rate of return and projected return on investment. One Capital Expenditure project is Newport News Shipbuilding's procurement of a Segment Assembly Machine, which is a complex manufacturing system that can assemble, fit, position, and weld the hull work portion of the bow or stern on the *Virginia* class submarine. This fixture is intended to reduce cost and schedule for submarine construction.

⁵³Navy officials stated that some shipbuilding contracts combine investment incentives with other incentive values when documenting them.

⁵⁴These contracts include construction contracts and the execution of refueling complex overhaul work, which aircraft carriers undergo during the midpoint of their lifespan to upgrade equipment, infrastructure, and electronic systems.

including supplier development funding, industrial base support for the Navy’s frigate program, and research and development (see table 3).

Table 3: Descriptions of Navy Direct Investment Categories for the Shipbuilding Industrial Base

Navy direct investment category	Description
Submarine Industrial Base	The Navy uses supplier development funding for the submarine industrial base—a subset of overall Submarine Industrial Base funding—to reduce risk from existing sources and establish new sources of supply for submarine programs. The Navy and submarine shipbuilders also use it to purchase materials to help coordinate the demand signal for shipbuilding such as through multi-program material procurement, which buys materials for both programs— <i>Virginia</i> class and <i>Columbia</i> class—in one order. ^a
Surface Combatant Industrial Base	For the surface combatant industrial base, shipbuilders use supplier development funding to increase supplier capacity, add additional sources of supply, provide workforce development, and stabilize suppliers. The Navy also uses surface combatant industrial base funding for shipyard infrastructure and advance procurement of program materials to support the supplier base.
Frigate	The frigate shipbuilder uses frigate funding for workforce development initiatives, shipyard infrastructure, and supplier projects.
Manufacturing Technology	Manufacturing Technology provides manufacturing technologies, like artificial intelligence, to naval suppliers and focuses on affordability improvements for shipbuilding programs.
National Shipbuilding Research Program	The National Shipbuilding Research Program works to reduce costs and accelerate delivery schedules through improved shipbuilding methods, like 3D printing of metal parts. It is an industry-led effort that works with the Navy to contribute funds to projects as part of its commitment.

Source: GAO interviews with shipbuilders and analysis of Department of Defense information. | GAO-25-106286

^aThe Navy uses supplier development funding to coordinate the demand signal for suppliers and mitigate long-lead times for materials through multi-program material procurement, production backup units, and continuous production of shipyard-manufactured items. These program-level funding mechanisms accelerate planned program funding rather than provide additional funding. Production backup units are long-lead time materials procured early and kept in reserve to ensure their availability, and continuous production seeks to avoid challenges caused by suppliers by gaps in demand and secure potential cost savings.

OSD direct investment. OSD invested \$628 million between fiscal years 2014 and 2023 in the shipbuilding industrial base. It made these investments primarily through the Industrial Base Analysis and Sustainment (IBAS) program and Defense Production Act (DPA) Title III funding, and provided a smaller amount of funding via the Defense Manufacturing Community Support Program (see table 4).

Table 4: Descriptions of Office of the Secretary of Defense (OSD) Direct Investment Categories for the Shipbuilding Industrial Base

OSD direct investment category	Description
Industrial Base Analysis and Sustainment (IBAS)	IBAS seeks to maintain or improve the health of essential parts of the defense industry by addressing critical capability needs, such as by supporting technical education for skills needed in the industrial base.
Defense Production Act (DPA) Title III	DPA Title III focuses on projects that establish, expand, maintain, or restore domestic production capacity for critical components and technologies, such as by supporting an infrastructure project to add steel shipbuilding capacity to a shipyard.
Defense Manufacturing Community Support Program	The Defense Manufacturing Community Support Program supports long-term community investments that seek to strengthen the defense industrial ecosystem, including the submarine and shipbuilding workforce.

Source: Department of Defense Information. | GAO-25-106286

Fiscal Year 2024 National Security Supplemental Funding for the Submarine Industrial Base

Congress provided \$2.456 billion in supplemental funding in fiscal year 2024 for the private submarine industrial base. Around \$2.449 billion is to support the private submarine industrial base and \$7 million is for Navy research, development, test, and evaluation.

As part of industrial base supplemental funding Congress provided an additional \$558 million for the Navy’s four public shipyards that repair submarines and \$282 million for military construction. Department of Defense officials told GAO that the supplemental funding accelerates its planned funding requests by a year, so the funding for fiscal years 2025 to 2029 shifted up to fiscal years 2024 to 2028. The officials said they will need to identify a new funding amount for fiscal year 2029. See Pub. L. No. 118-50 (2024).

Source: GAO interviews with Department of Defense and analysis of budget documentation. | GAO-25-106286

In addition to the IBAS and DPA Title III investments for the shipbuilding industrial base, over \$4.3 billion of IBAS and DPA Title III funding went to other investments in the defense industrial base, some of which indirectly benefited the shipbuilding industrial base. For example, OSD spent \$38.6 million on IBAS workforce programs it categorizes as having an indirect benefit on the shipbuilding industrial base. Project MFG is an example of an IBAS workforce program with an indirect benefit, as it holds competitions for the trades nationally and internationally to promote manufacturing skills across industries.

Future planned spending. DOD plans to increase investments in the shipbuilding industrial base by an additional \$12.57 billion over the next 5 years. It has requested funding in the President’s Budget for fiscal year 2025 for the submarine industrial base, surface combatant industrial base, Manufacturing Technology, and IBAS.⁵⁵ Private shipyards also have remaining investment incentives to earn on existing contracts, and the Navy can include additional incentives on future shipbuilding contracts. For example, based on recent legislation, certain future

⁵⁵In addition to these requests, OSD also requested funding for DPA Title III in the President’s Budget for fiscal year 2025. The DPA Title III funding request was for the broader defense industrial base and not specifically for the Navy’s ship industrial base. Similarly, OSD requested additional IBAS funds for the broader defense industrial base. During these next 5 years, OSD plans to invest a total of nearly \$7 billion into the defense industrial base through these two programs. Further, to support AUKUS, the President may accept contributions of money from the Government of Australia for use by DOD in support of non-nuclear-related aspects of submarine security activities. Pub. L. No. 118-31, § 1353 (2023).

shipbuilding contracts should generally include incentives for private shipyards to implement workforce development projects.⁵⁶

DOD Has Yet to Fully Assess the Effectiveness of Support for the Shipbuilding Industrial Base
















DOD is not consistently tracking, monitoring, or fully assessing the effectiveness of the contract investment incentives and direct investment it provides to support shipbuilders and suppliers. While both the Navy and OSD take steps to assess the effectiveness of some of their funding efforts, the Navy does not track all its investments and both the Navy and OSD have yet to fully measure return on investment.⁵⁷ Further, both the Navy and OSD do not have visibility across their shipbuilding investments to help ensure against potential duplication and overlap. For example, as shown in figure 6, the Navy is not consistently




- updating the information collected on its contract investment incentives;
- conducting assessments of the effectiveness of its investment incentives; or
- fully coordinating across direct investments for areas of potential duplication or overlap.

⁵⁶The James M. Inhofe National Defense Authorization Act for Fiscal Year 2023 requires the Navy to include a special incentive for workforce development in certain solicitations for shipbuilding contracts made on or after June 1, 2023, unless waived. Pub. L. No. 117-263, § 122 (2022) (adding Section 8696 to Title 10, U.S. Code).

⁵⁷When we refer to “return on investment,” we are generally referring to it as a term for performance or outcome metrics, such as efficiencies gained, or cost savings achieved. Our use of the term generally refers to metrics beyond whether funding was implemented in a timely manner.

Figure 6: Extent to Which the Navy and OSD Have Performed Selected Oversight Functions to Determine Effectiveness of Shipbuilding Industrial Base Funding

	Tracking Organizations should obtain data from reliable internal and external sources in a timely manner based on identified information requirements so that they can be used for effective monitoring.	Return on investment Organizations should design appropriate types of control activities for the entity's internal control system to achieve objectives, such as activities to monitor performance measures and indicators.	Visibility across investments Organizations should communicate quality information about funding and performance metrics externally and internally through reporting lines so that other parties can help the entity achieve its objectives and address related risks, such as duplication and overlap.
Navy Contract Incentives			
Contract Investment Incentives			
Navy Direct Investment			
Submarine Industrial Base Supplier Development Funding			
Surface Combatant Industrial Base Supplier Development Funding			
OSD Direct Investment			
Industrial Base Analysis and Sustainment			
Defense Production Act Title III			

-  The Navy or the Office of the Secretary of Defense performs the function for this investment category: tracking funding, measuring return on investment, or establishing visibility across investments.
-  The Navy or the Office of the Secretary of Defense does not perform the function for this investment category, nor does it have documented plans to do so.
-  The Navy or the Office of the Secretary of Defense is taking initial steps to perform the function. These efforts are in early stages of implementation, and we are continuing to monitor progress in these areas. For example, submarine industrial base supplier development funding follows a new operating procedure to track returns on investment, though suppliers have yet to demonstrate these metrics.

OSD Office of the Secretary of Defense

Source: GAO analysis of Department of Defense (DOD), Navy, and contractor documentation and interviews; and Summary of Standards for Internal Controls and GAO's Fragmentation, Overlap and Duplication Guide; GAO (icons). | GAO-25-106286

Tracking. The Navy and OSD track funding for supplier development funding, IBAS, and DPA Title III funding. For example, for submarine supplier development funding, the Navy maintains data on funding amounts, their purposes, and other information. However, the Navy has not consistently updated and tracked contract investment incentives. The Navy created a central repository to track shipbuilding contract investment incentives in 2020 in response to our prior recommendation, but we found it has not updated data in this repository since then.⁵⁸ Instead, data about these incentives are dispersed between NAVSEA's

⁵⁸GAO, *Navy Shipbuilding: Need to Document Rationale for the Use of Fixed-Price Incentive Contracts and Study Effectiveness of Added Incentives*, [GAO-17-211](#) (Washington, D.C.: Mar. 1, 2017).

Contracts Directorate and the Supervisors of Shipbuilding, Conversion, and Repair (SUPSHIP). The Navy does not have regular coordination or data collection mechanisms, which precluded NAVSEA's Contracts Directorate from providing an accounting of investment incentives without making separate data requests to contracting officers, contracting officers' representatives, and the SUPSHIPS.⁵⁹ In the absence of a centralized data location that the Navy updates regularly, NAVSEA's Contracts Directorate cannot conduct overarching analysis on the investment incentives without undergoing time consuming efforts to collect this information. Under OSD, the Office of the Under Secretary of Defense for Acquisition and Sustainment (OUSD(A&S)) manages the IBAS and DPA Title III programs.

Previous Navy and Office of the Secretary of Defense (OSD) Efforts for Tracking Contract Investment Incentives

- April 2018: OSD developed a template for the military departments to collect and analyze outcomes of incentive contracts.
- December 2020: The Navy created a repository for tracking shipbuilding contract special incentives.
- August 2022: OSD developed an updated template for the military services about major Department of Defense systems, which includes information on incentive contracts and contract outcomes.

Source: GAO and Department of Defense documentation. | GAO-25-106286

Standards for Internal Control in the Federal Government states that an organization should obtain data from reliable internal and external sources on a timely basis for effective monitoring, and these data should be processed into quality information that is current, complete, and accurate.⁶⁰ These standards also state that the organization should process relevant data into quality information within the entity's information system, which includes the data and technology that management uses to obtain and communicate information. The Navy established a policy on investment incentives for highly capitalized programs in 2012, which provides guidance for the Navy in developing effective shipyard investment incentives. The policy outlines that the contracting officer should obtain cost savings and efficiency metrics when practicable and validate anticipated savings after a shipbuilder completes the investment.⁶¹ However, this investment incentives policy does not require any office in the Navy to centrally collect information about shipyard investment incentives from contracting officers and the SUPSHIPS so that the Navy can regularly track and monitor the

⁵⁹As the Navy's representatives at the shipyards during construction, the SUPSHIPS are responsible for financial administration for shipbuilding contracts. NAVSEA's Contracts Directorate awards contracts for new ship construction, delegates contract administration responsibilities to the SUPSHIPS, and shares oversight of SUPSHIP contracting staff and other officials supporting the administration of ship building contracts. For more information, see [GAO-22-104655](#).

⁶⁰[GAO-14-704G](#).

⁶¹U.S. Navy, Assistant Secretary of the Navy for Research, Development and Acquisition, *Department of the Navy Policy on Investment Incentives for Highly Capitalized Programs* Memorandum (Washington, D.C.: Aug. 16, 2012). The Navy developed this policy to support shipbuilding investments and contracting methods for providing incentives for capital expenditure.

effectiveness of various incentive efforts in achieving desired program outcomes. Without updating and implementing its incentive policy to require that this information be centrally collected, tracked, and monitored on a regular basis, the Navy is not positioned to monitor the effectiveness of shipyard investment incentive funding.

Return on investment. The Navy has yet to evaluate a return on investment for its contract investment incentives or fully do so for direct investments for suppliers in the submarine and surface combatant industrial bases, though it is starting efforts to do so for its direct investments. On the other hand, in the shipbuilding-related agreements that we reviewed, OSD required recipients of DPA Title III funding to report on outcome metrics and has taken initial steps to track IBAS outcome metrics.

- **Navy contract incentives for private investment.** A senior official from NAVSEA's Contracts Directorate stated that the Navy generally does not validate a return on investment for contract investment incentives because it is difficult to determine cost and efficiency gains directly tied to the investment. The official explained that the Navy generally evaluates success based on whether the contractor decided to complete the investment targeted by the incentive. This is because the underlying goal of investment incentives is to motivate contractors to invest their own money. According to the official, it is difficult to connect incentives to specific outcomes on shipbuilding programs because many other factors in addition to investments could influence cost or schedule changes.⁶² For example, Navy documentation states that the incentives on the *Virginia* class program cannot be directly connected to outcomes due to the number of factors that could affect outcomes.

However, we found there are ways in which the Navy can measure outcomes for contract investment incentives. For example, contract documentation for two construction shipyards states that to receive investment incentives, the contractors must submit a business case

⁶²We previously reported on the Navy not evaluating the effectiveness of shipbuilding contract incentives. We recommended that the Secretary of the Navy conduct a portfolio-wide assessment of the Navy's use of additional incentives on fixed-price incentive contracts across its shipbuilding programs. This assessment should include a mechanism to share proven incentive strategies for achieving intended cost, schedule, and quality outcomes among contracting and program office officials. We closed this recommendation in 2020 when the Navy created a repository for tracking shipbuilding contract special incentives; however, as described earlier in the report, the Navy did not maintain this effort. See [GAO-17-211](#).

analysis that includes return on investment calculations. The Navy could use these calculations as a starting point to validate that the return on investment has been achieved. Further, OSD funds similar infrastructure investments through DPA Title III, and the shipbuilding-related agreements we reviewed require recipients to report on outcome metrics in categories such as manufacturing and product performance.⁶³

- **Navy direct investment.** The Navy has yet to establish performance metrics to evaluate the programmatic and aggregate outcomes of submarine supplier development funding or require submarine shipbuilders to do so as part of their responsibilities for managing these direct investments. A Navy official stated the Navy's primary contractual requirement for submarine shipbuilders receiving these funds is to prioritize work for the nuclear submarines with the equipment purchased from the funding.⁶⁴ For example, the Navy provides supplier development money on the *Columbia* class submarine contract and directs Electric Boat, which uses Newport News Shipbuilding as its primary subcontractor, to use the development funds to make direct investments in its suppliers.

Electric Boat and Newport News Shipbuilding have begun initial efforts to evaluate a return on investment for submarine industrial base funding. For example, in March 2023, Newport News Shipbuilding issued a new internal supplier development funding procedure that includes requirements for documenting cost savings and other returns on investment. Additionally, since 2023, BlueForge Alliance, a nonprofit integrator, has supported the use of submarine supplier development funding for the shipbuilders. As we reported in September 2024, for recent awards, BlueForge Alliance officials stated that they work with the suppliers and shipbuilders to define one or two types of specific metrics for each project, such as for capacity,

⁶³For example, Austal received a DPA Title III investment in 2020 to build a new steel panel line. The final reporting included product performance metrics related to steel output capacity and steel rework percentage for the panel line.

⁶⁴The Defense Production Act of 1950 authorized the president to require preferential treatment of national defense programs. Programs can be approved for one of two types of priority: programs with the highest national priority, like *Columbia* class, may be approved to use a DX rating, while a DO rating may be used by programs of a second-tier priority, like the *Virginia* class. Contractors must give DX-rated orders priority over DO-rated orders in instances when a production or delivery schedule conflict arises. For additional information, see: GAO, *Columbia Class Submarine: Program Lacks Essential Schedule Insight Amid Continuing Construction Challenges*, [GAO-23-106292](#) (Washington, D.C.: Jan. 24, 2023).

quality, and capability.⁶⁵ However, as we reported September 2024, the metrics being put in place by the shipbuilders vary and are not specifically tied to the Navy's program goals. We reported that program officials stated that they are still in the process of identifying what metrics to use to measure return on investment specific to the program's goals.⁶⁶

The Navy also provided supplier development funds to Bath Iron Works and Ingalls, which build surface combatants, to make direct investments in their suppliers. Navy officials told us that while there was no contractual requirement for the shipbuilders to evaluate a return on investment for these direct investments in suppliers, suppliers' proposals contain information about projected benefits from the investments. They also stated that the Navy and shipbuilders periodically engaged with suppliers to confirm progress as they execute projects. Further, Navy officials told us that they began collecting additional data to assess this funding during the course of our review.

- **OSD direct investment.** For the agreements we reviewed, OSD requires recipients of DPA Title III investments to report on outcome metrics, such as metrics for manufacturing and product performance. While OSD officials stated that OSD has not evaluated a return on investment for its IBAS workforce programs, OSD is in the process of fully implementing its 2023 National Defense Industrial Strategy that includes broad outcome metrics for the defense industrial base.

Standards for Internal Control in the Federal Government states that management should design appropriate types of control activities for the entity's internal control system, such as establishment and review of performance measures and indicators.⁶⁷ We found the Navy does not have performance metrics that would show the programmatic and aggregate effect of its efforts—such as specific goals for capacity

⁶⁵[GAO-24-107732](#).

⁶⁶See [GAO-24-107732](#). Additionally, the Navy primarily provides supplier development funding to Electric Boat and Newport News Shipbuilding under the *Columbia* class program contract, though the *Virginia* class program also realizes benefits from this funding due to a shared supplier base.

⁶⁷[GAO-14-704G](#).

improvements in supplier base and assessments on whether the supplier base is meeting those goals.⁶⁸

While DOD had released an interim implementation report for its 2023 industrial base strategy at the time of our review, it had yet to finalize its plans and refine outcome metrics.⁶⁹ The report's outcome metrics, such as building a resilient supply chain, are not specific to the ship industrial base or the Navy's purposes. As such, DOD's industrial base strategy does not provide information that could guide the Navy's approach to measuring the outcomes of its ship industrial base investments. Further, Navy officials stated they will develop performance metrics moving forward but told us in September 2024 that they were not able to provide details about their plans to do so. Without performance metrics it can use at the programmatic and aggregate level, the Navy cannot ensure that the many billions of dollars it is planning to invest in the shipbuilding industrial base are achieving program goals and are an effective use of federal funds.

Visibility across investments. The Navy and OSD have mechanisms in place to coordinate on industrial base investments for nuclear submarines. For example, the Navy and OSD have collaborated on their investments in the submarine workforce since fiscal year 2023. However, the Navy and OSD do not have visibility across all the investments they make in the shipbuilding industrial base though some companies receive funding from multiple sources. Under OSD, OUSD(A&S) manages IBAS and DPA Title III programs. However, the Navy does not have full internal visibility across Navy investments or maintain shared visibility with OUSD(A&S) across all investment categories.

- **Internal Navy visibility on investments.** We found that some suppliers received funding from more than one shipbuilding program, but the Navy does not have visibility between programs for these investments. Moreover, the shipbuilders responsible for distributing

⁶⁸We previously identified key attributes of successful program measures, such as having a measurable target and linkage to an agency's goals, which help organizations track the progress they are making and assess whether performance is meeting expectations. See GAO, *Tax Administration: IRS Needs to Further Refine Its Tax Filing Season Performance Measures*, [GAO-03-143](#) (Washington, D.C.: Nov. 22, 2002).

⁶⁹DOD provided illustrative outcomes or outputs to measure progress against its four long-term priorities: Resilient Supply Chains, Workforce Readiness, Flexible Acquisition, and Economic Deterrence. In its subsequent efforts, DOD is planning to develop more specific performance measures for these categories.

the funding told us they did not coordinate with the other programs.⁷⁰ One senior Navy official stated that Navy funds for the shipbuilding industrial base—for submarines, surface combatants, and frigates—have traditionally operated in a siloed manner. Officials with responsibility for the submarine industrial base told us that they only collaborate with Navy surface ship programs over investments when the programs used the same parts made to the same specifications, and that this was rare. This collaboration would not include instances where the programs used the same types of supply—like forged materials—but did not have the same specifications. As a result, more than one program could provide investments to one supplier for similar materials but remain unaware of funding overlap if the materials are made to different specifications.

After our discussions with the Navy on its visibility into its investments across its programs, the Navy released a memorandum in June 2024 to address challenges with Navy investments identified in its 45-day shipbuilding review. The Navy’s memorandum directed the establishment of a Maritime Industrial Base Program Office that will manage funding for the submarine and surface combatant industrial base efforts. The memo stated that Navy will keep existing funding efforts in place through fiscal year 2026, and that integration efforts for submarine and surface combatant funding will be proposed as part of the fiscal year 2027 budget process. The Maritime Industrial Base Program Office began operating in September 2024. In January 2025, Navy officials told us that they have already begun efforts to develop the first integrated approach for submarine and surface ship industrial base for fiscal year 2027. If implemented effectively, this integration would help ensure the Navy has the visibility to identify and prevent potential risks, such as unnecessary duplication and overlap.⁷¹

- **Navy and OUSD(A&S) shared visibility for investments.** The Navy and OUSD(A&S) do not have full shared visibility into how the various sources of ship industrial base funding are distributed, in particular for

⁷⁰We did not perform a comprehensive review of suppliers that received investments from more than one source, but we identified cases of potential overlap in our work using only a minimal review. For example, we identified that at least two companies received supplier development funding from both the submarine and surface combatant industrial base direct investment categories.

⁷¹We will continue to monitor the Navy’s efforts in this area through a provision for us to assess the submarine industrial base’s investment strategy and associated funding to achieve the submarine construction rate called for in the Navy’s 30-year shipbuilding plan. S. Rep. No. 118-204, at 133.

surface ships. Navy officials told us that the Navy and OUSD(A&S) have inconsistent visibility across the funding, and that it depends on the specific type of funding. We found several examples of companies that received funding from two or more sources of DPA Title III, IBAS, and Navy supplier development funding.⁷² Navy officials told us that receiving funding from multiple sources does not necessarily indicate that there is duplicative or overlapping funding. However, without visibility into the funding provided from various sources, the Navy is not able to ensure that it can avoid duplicative or overlapping funding. OUSD(A&S) officials told us that while they had visibility into the Navy's industrial base investments for submarines, they did not have similar visibility into investments for surface ships, like the frigate or surface combatants. OUSD(A&S) officials told us that BlueForge Alliance, a third-party contractor, is expected to help coordinate efforts for the submarine industrial base with OUSD(A&S)'s IBAS program. However, this effort is not expected to include other funding sources, such as for the frigate, surface combatant industrial base, or DPA Title III.

Standards for Internal Control in the Federal Government states that management should communicate quality information externally and internally through reporting lines so that other parties can help the entity achieve its objectives and address related risks, such as duplication and overlap.⁷³ However, OUSD(A&S) officials stated they historically do not coordinate with the Navy on industrial base support. They explained that this was because OUSD(A&S) received IBAS funding to conduct work specifically associated with the submarine industrial base but did not receive funding to work with other elements of the shipbuilding industrial base. However, some of OUSD(A&S)'s investments, such as IBAS workforce projects, affect the shipbuilding industrial base broadly. Without regular coordination of expenditures across programs that support industrial capabilities, the Navy and OUSD(A&S) risk duplicating or overlapping efforts to bolster the

⁷²For example, we identified two companies that received both Navy and OUSD(A&S) investments. Specifically, one shipbuilding company received DPA Title III and IBAS workforce funding from OSD as well as Navy investments from the submarine industrial base. Another supplier also received DPA Title III funding and Navy surface combatant industrial base investments. Navy officials told us that these investments were not duplicative. However, the overlap in recipients of funding from more than one category underscores the risk of duplicative investments in the absence of visibility across funding categories.

⁷³[GAO-14-704G](#).

private sector industrial base and are not able to evaluate the aggregate effect of their efforts.

Navy Plans to Provide Funding for Private Ship Repair Infrastructure Improvements Without Determining Needed Capacity

Navy officials with responsibility for ship repair told us that they plan to begin providing grant funding for private ship repair industrial base infrastructure improvements but have yet to determine the full amount of additional infrastructure the Navy needs for its surface ship repair.⁷⁴ The Navy's dry dock strategy states that the Navy seeks to promote growth in the private sector industrial base, and that investing is one mechanism it would use to influence such growth.⁷⁵ The Navy received authority in the National Defense Authorization Act for Fiscal Year 2024 to award grants to the ship repair industrial base for infrastructure—such as piers and dry docks—and maritime training programs.⁷⁶ The Navy plans to request funding associated with this effort, according to Navy officials.

⁷⁴The Navy has invested in the public shipyards through the Shipbuilding Infrastructure Optimization Plan since 2018 to improve repair infrastructure. See [GAO-23-106067](#). However, it has yet to make investments in private industry repair yards.

⁷⁵U.S. Navy, Naval Sea Systems Command SEA21, *Report to Congress Navy Dry Dock Strategy for Surface Ship Maintenance & Repair*, (Washington, D.C.: May 2022).

⁷⁶The National Defense Authorization Act for Fiscal Year 2024 states that a grant provided for ship repair may not be used to construct buildings or other physical facilities, except for piers, dry docks, and structures in support of piers and dry docks, or to acquire land. Pub. L. No. 118-31, § 1017 (2023)(adding Section 2219(a)(3) to Title 10, U.S. Code).

Investments in the Private Ship Industrial Base from Sources Outside of the Navy

While private ship repair companies have yet to receive direct investments from the Navy, some private ship repair companies receive funding from state and local governments, in addition to grants from the Maritime Administration. For example, the Virginia Commonwealth Development Opportunity Fund provided over \$3 million in grants to two private ship repair companies and one shipbuilding company in Virginia.

The Department of Transportation's Maritime Administration awards grants annually under the Small Shipyard Grant program. According to officials, the Maritime Administration receives around \$20 million annually for the grant program, though they stated the amount in fiscal year 2024 was \$8.75 million. Officials also stated that the companies usually request grant money for infrastructure projects, though some also apply for workforce training grants. In addition to the Small Shipyard Grant, the Maritime Administration also distributed over \$3.3 million in fiscal year 2022 to a Navy shipbuilding company through the Marine Highway Program Grant.

Source: State government and Department of Transportation information. | GAO-25-106286

The statute states that awarded grants must improve the abilities of Navy ship repair or the ship repair workforce.⁷⁷ Navy officials said that the planned grant program for ship repair would follow a process like the Maritime Administration's Small Shipyard Grants, which officials from the Maritime Administration told us had distributed \$302 million across 351 grants to small shipyards over 15 years, as of 2023. The officials noted that this program supports a wide range of small companies, both inside and outside the Navy's ship industrial base. We found that this program provided over \$23.6 million in grants to the Navy's shipbuilding and ship repair industrial base from fiscal years 2016 to 2023 (see sidebar). Navy officials added that, like the Maritime Administration's program, private companies would propose project ideas under the Navy's planned grant program.⁷⁸

However, while the Navy generally seeks to expand private dry dock capacity for emergent repair needs and to provide surge capacity for non-peacetime scenarios as previously discussed, it has yet to determine the capacity it needs. For example, the Navy has yet to estimate how much infrastructure it would need to address growth work, emergent repairs, and non-peacetime needs. Navy officials told us that the Navy has yet to decide if it should seek ship repair infrastructure sized to meet needs in a peacetime or a non-peacetime environment. Further, officials also stated that the Navy has yet to define a requirement for the exact number of extra docks needed for surge capacity, and they are not aware of any analysis work in the Navy to determine such needs.

Standards for Internal Control in the Federal Government state that management should use quality information to make informed decisions and evaluate the entity's performance in achieving key objectives and addressing risks.⁷⁹ Without identifying the required infrastructure capacity needed for surface ship repair, the Navy does not have the information it would need to make informed decisions about where it should provide

⁷⁷Pub. L. No. 118-31, § 1017 (2023) (adding Section 2219(a)(3) to Title 10, U.S. Code).

⁷⁸The Maritime Administration's Small Shipyard Grant Program solicits and reviews project proposals from shipyards. Shipyards submit applications with basic descriptors of their business and project proposal. The application should include a quantitative analysis on how the project will foster efficiency for infrastructure and productivity for workforce; a timeline for the project; other federal funds the project will use; and other considerations. The Maritime Administration will then review applications and award grants based on merit criteria concerning project benefits and other selection considerations, such as safety and the environment.

⁷⁹GAO-14-704G.

grant funding and in what amount. Should the Navy provide grants to the ship repair industrial base without basing its decisions on quality information about its needs, it risks contributing excess capacity to the repair market and interrupting the competitive environment. For example, if the Navy added excess dry dock capacity to a region, it could result in companies with empty dry docks that may struggle to recoup their business costs and remain viable competitors.

Navy's Approach to Industrial Base Management Is Not Guided by a Long-Term Strategy or Coordinated Leadership

The Navy's current approach for managing the ship industrial base has been largely ineffective at encouraging private industry to invest independently. Further, the Navy does not have an industrial base strategy and has not had coordinated leadership to guide future efforts in this area. The Navy has sought to spur the industrial base to invest in infrastructure and workforce through its efforts to communicate stable demand. However, the Navy's reported methods for doing so—long-range planning and the use of contracting strategies intended to provide stability—have not resulted in sufficient industry investments to date to meet the Navy's capacity needs.⁸⁰ Further, the Navy faces many competing priorities in managing the industrial base in shipbuilding and ship repair, and overlap between companies in these markets complicates Navy decision-making. While a ship industrial base strategy and a cohesive leadership structure for the ship industrial base could position the Navy to effectively address these challenges in the future, the Navy has yet to develop such a strategy and has only recently begun the process of establishing coordinated leadership to guide its efforts.

Navy's Plans and Strategies to Provide Stable Projection of Workload Are Ineffective at Encouraging Industry Investment

The Navy has sought to motivate industry investment through long-range planning and use of contracting strategies intended in part to provide stability and which can signal demand, but neither approach has proven effective at achieving the Navy's goal to date. The Navy's long-range plans for shipbuilding and repair state that a stable workload is key to encouraging private companies to invest in areas that would benefit the Navy in the long term, such as workforce or infrastructure. However, we found that (1) the Navy does not convey a stable demand signal with its plans and workload projections, and (2) even when the Navy has sought to convey stable demand—such as with the use of contracting strategies

⁸⁰Statutes provide special acquisition authorities that enable the purchase of multiple ships in bulk to achieve cost savings. We refer to these special acquisition authorities as "multi-ship acquisition authorities." These authorities include multiyear procurement authorities pursuant to 10 U.S.C. § 3501, as well as other provisions. Section 3501 authority, for example, may be used if such a contract will result in significant savings in anticipated costs or necessary defense industrial base stability not otherwise achievable through annual contracts.

Shipbuilding Plans and Repair Projections Routinely Change

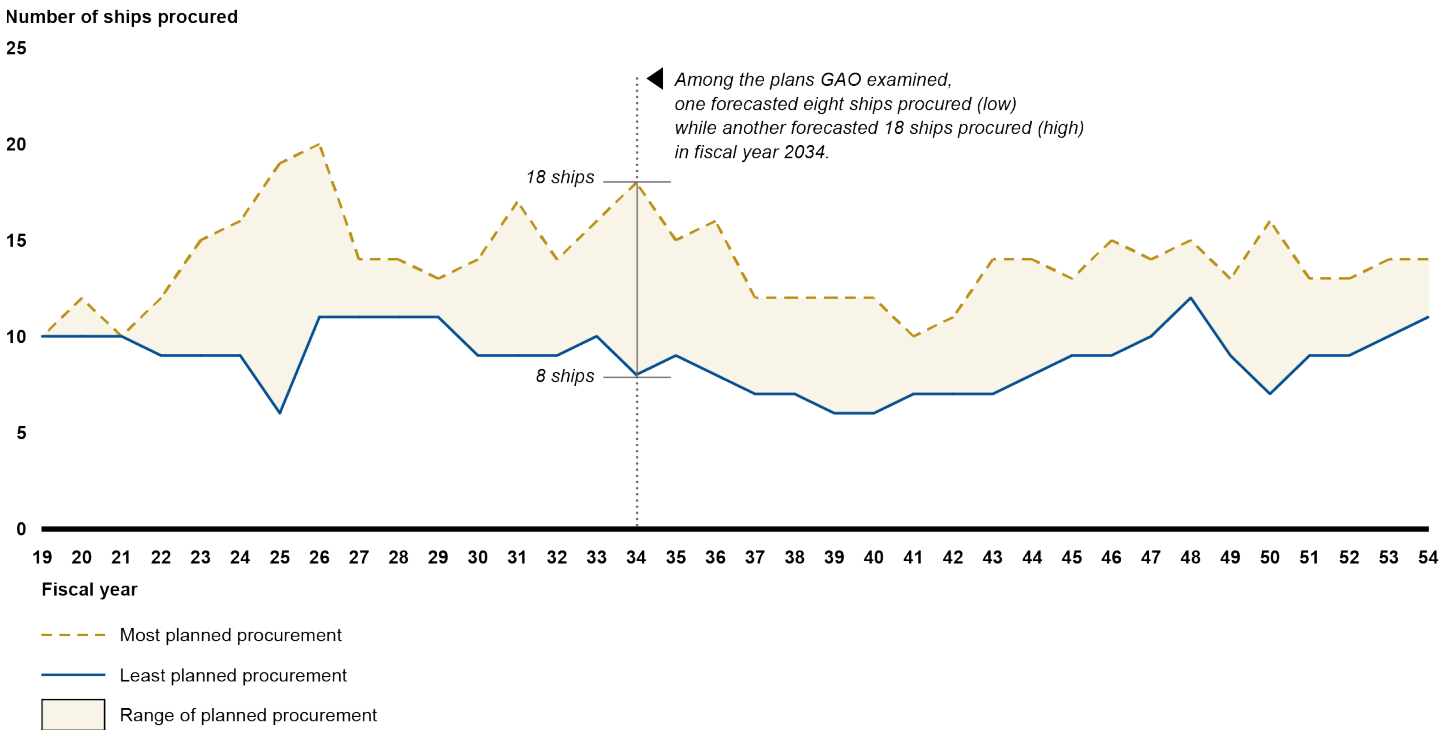
like multi-ship acquisition authorities—it has not spurred the industrial base to make independent investments in line with the Navy’s goals.

The Navy aims to communicate future demand for shipbuilding and ship repair by releasing long-range shipbuilding plans, as well as shorter-term projections of repair work. However, the Navy has routinely made significant revisions to these plans and projections. As a result, the Navy does not provide the industrial base with a stable demand signal on which to base investment decisions through these mechanisms.

Shipbuilding Plans

According to the Navy’s most recent shipbuilding plan, it uses stable demand as an approach to promote private industry investment in shipbuilding infrastructure and workforce to create a healthy shipbuilding industrial base. However, our analysis of the Navy’s shipbuilding plans for fiscal years 2019 through 2025 found that the Navy made significant changes to these plans from year to year, resulting in an unreliable signal of shipbuilding demand. For example, the Navy planned in its fiscal year 2019 plan to procure 11 ships in fiscal year 2025. Under its fiscal year 2025 plan, however, the Navy reduced its procurement plans for fiscal year 2025 to six ships—about half of its earlier estimate. Figure 7 shows the greatest and least number of ships the Navy has planned to procure for each fiscal year in recent shipbuilding plans.

Figure 7: Greatest and Least Number of Ships Planned for Procurement in Navy Annual Shipbuilding Plans, Fiscal Years 2019-2025



Source: GAO analysis of Navy shipbuilding plans. | GAO-25-106286

Note: Shipbuilding plans contain projections of future ship procurements, and as such not every plan includes projections for fiscal years 2019 through 2024. Additionally, since each shipbuilding plan projects the next 30 years, years 2049 through 2054 only reflect projections from more recent shipbuilding plans. The Navy did not release a shipbuilding plan for fiscal year 2021 and the Navy's fiscal year 2022 shipbuilding plan did not include 30-year procurement projections. The fiscal years 2023 through 2025 plans included multiple variations of potential future procurement, with each variation differing in the number of ships the Navy would buy.

Additionally, the Navy included options for the number of ships it would procure annually in its shipbuilding plans in fiscal years 2023, 2024, and 2025. For example, under its fiscal year 2024 plan, the Navy proposed three options, under which it could procure between eight and 13 ships in fiscal year 2034. The options included in the Navy's shipbuilding plans further reduce the stability of demand the Navy signals to private industry.

Ship Repair Projections

The Navy's maintenance plan states that demonstrating steady demand for ship repair, such as through projections of ship repair work, is the most consequential action the Navy can take to improve repair

outcomes—such as reducing maintenance delays. This is because the Navy expects stable demand to enable private companies to invest in infrastructure, such as dry docks and workforce. Navy officials told us that bi-monthly workload projections were the primary method of communicating upcoming demand for ship repair to the private sector.⁸¹

However, our analysis of these projections—which provide ship repair companies with an estimated workload for the current and next 3 fiscal years—shows that (1) the amount of work the Navy projected for private repair companies fluctuated significantly, and (2) the Navy consistently reduced the expected volume of workload over time.⁸² For example:

- In fiscal years 2022, 2023, and 2024, the Navy’s annual projections for the number of labor days of repair work for the private sector fluctuated by nearly 2 million labor days—based on bi-monthly projections the Navy published during a 4-year period.⁸³
- The Navy’s projections for future work that ship repair companies can expect have declined over time. As of April 2024, the Navy projects roughly a third less repair work in fiscal year 2027 than it had for fiscal year 2021.⁸⁴ Navy officials told us that most of this decline is attributable to ship decommissioning. See figure 8.

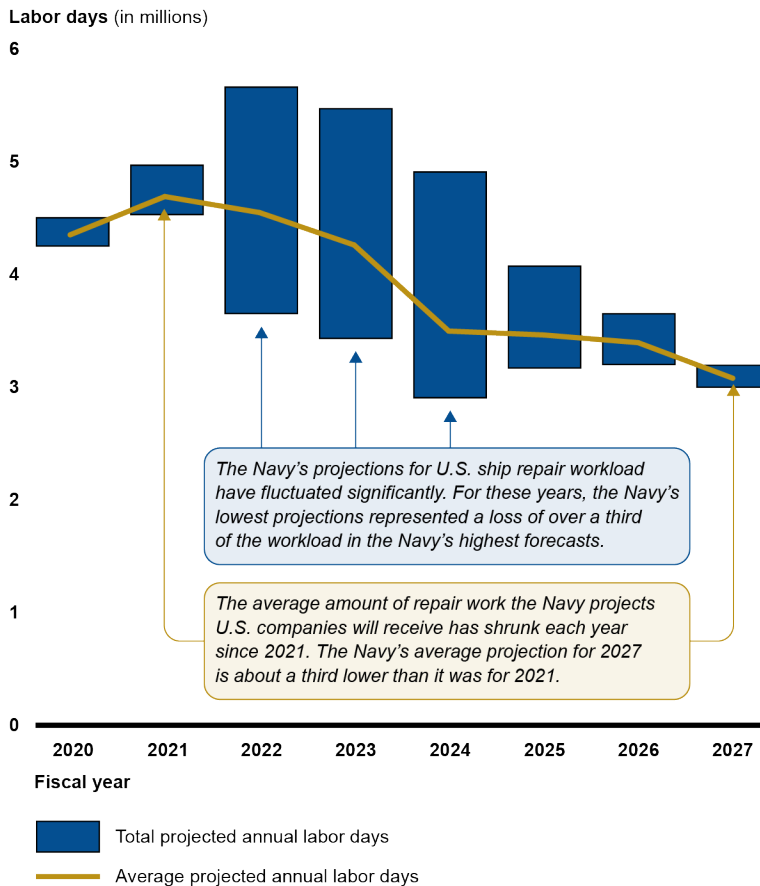
⁸¹As we previously reported, the Navy’s current contracting strategy allows for bundling multiple repair periods together under a single contract. The Navy intends this approach to increase contractors’ visibility into and confidence regarding future ship repair workloads. See [GAO-20-370](#). However, a senior official from NAVSEA’s contracts division told us that use of bundling has not been frequent. Officials from NAVSEA’s Directorate for Surface Ship Maintenance, Modernization and Sustainment told us that in some instances bundling repair periods increases the complexity of the Navy’s planning efforts.

⁸²The Navy’s workload projections include upcoming depot maintenance periods across each of the Navy’s five domestic fleet concentration areas and generally include projections for the current fiscal year as well as the next 3 fiscal years.

⁸³A labor day is the amount of work expected to be completed by a single full-time equivalent employee during a normal work day.

⁸⁴Navy officials told us that this decline in workload is partly attributable to an improvement in their process for projecting surface ship repair work, which they implemented in February 2022. They stated that 8.8 percent of the decline in projected workload we identified is attributable to this process change. We conducted our analysis without accounting for this process change because we focused on the demand signal to the industrial base, and therefore based our calculations only on publicly available projections.

Figure 8: Change in Fiscal Years 2020-2024 Navy Projections for Domestic Ship Repair Workload,



Source: GAO analysis of Department of Defense data. | GAO-25-106286

Navy officials told us that many factors can influence the demand for ship repair, such as where ships are in their life cycle, ship count, and operational requirements. For example, the officials explained that when ships enter service at similar times they will also likely enter repair periods at similar times. They noted that this can drive cyclical demand for repair.

Contracting Strategies Navy Intended to Provide Stability Did Not Spur Investments as Expected

In addition to long-range plans, the Navy has also used contracting strategies intended to convey demand, such as by using multi-ship acquisition authorities that enable DOD to purchase multiple ships to achieve cost savings or, in some cases, target industrial base stability. Contracts awarded using multi-ship authorities may be valued at hundreds of millions of dollars to billions of dollars and signal the potential for years of stable work. However, we found that even with this demand

signal, shipbuilders and ship repair companies have been reluctant to invest in their capability and capacity without additional Navy funding, such as investment incentives.⁸⁵

Shipbuilding Contracts

The Navy's 2024 shipbuilding plan notes that shipbuilders need work under contract to invest in the facilities, capital equipment, workforce, and processes to deliver affordable ships at the planned rate.⁸⁶

Representatives from five of the seven major Navy shipbuilders we spoke to noted that work under contract or a backlog of work was a useful indicator of future demand. However, certain improvements, such as major infrastructure projects, often take years to plan and complete. If contractors wait to invest in improvements until work is under contract, they may not have sufficient time to improve infrastructure or hire more workers as needed to meet the Navy's goals.

A senior official from NAVSEA's contracts division told us that they have not identified a method other than providing investment incentives due to the low number of shipbuilders available to do work. Even when using multi-ship contracting authorities or when there is a backlog of work under contract, we identified instances when shipbuilders were reluctant to make investments in infrastructure and workforce independent of contributions from the Navy. For example,

- The Navy's 45-day shipbuilding review concluded that industry has been slow to respond, and in many cases, reticent to invest, to correct known gaps such as in infrastructure and workforce.
- We found that two nuclear submarine shipbuilders did not make sufficient facilities investments to avoid schedule delays despite having a backlog of work. Officials from one of the shipbuilders told us they had reduced sustainment and maintenance spending on their facilities because they had limited capital to invest. The representatives explained that they had instead been using a large fraction of their capital to increase the size of the shipyard for Navy shipbuilding efforts. A May 2022 report by the Office of Cost

⁸⁵When using Multiyear Procurement Authority at 10 U.S.C. § 3501, in the event funds are not made available in succeeding years for the continuation of the contract, the contract must be canceled or terminated. See also Federal Acquisition Regulation 17.105-1(d).

⁸⁶U.S. Navy, Office of the Chief of Naval Operations, *Report to Congress on the Annual Long-Range Plan for Construction of Naval Vessels for Fiscal Year 2025* (Washington, D.C.: March 2024).

Assessment and Program Evaluation on the submarine industrial base found that the two nuclear shipbuilders' parent corporations place a priority on retaining a backlog of work to ensure a steady flow of work for the near future.⁸⁷ However, the report noted that, despite having an extensive backlog of work, the nuclear shipbuilders have made infrastructure investments that are "just in time" and "just enough," rather than being sized to recover from construction problems that regularly cause delays. This approach, the report concluded, has left the shipbuilders unable to recover from delays that arise from routine construction challenges, such as equipment maintenance or material delivery issues.

A senior official from NAVSEA's contracts division told us that the limited competition in the shipbuilding market does not foster an environment that encourages companies to invest without incentives.⁸⁸ As a result, the Navy has difficulty compelling the industrial base to make the investments that would enable it to produce ships in alignment with the Navy's shipbuilding plans in advance of contract awards and without incentives.

Ship Repair Contracting Strategies

Like shipbuilders, ship repair companies have demonstrated reluctance to make infrastructure investments in the past based on a demand signal from the Navy's contracting strategies.⁸⁹ For example, from 2004 to 2015, the Navy used a contracting strategy called Multi-Ship, Multi-Option. According to a November 2023 report on this repair contracting strategy, contracts were awarded for multiple availabilities for ship repair for an entire ship class or group of ship classes within their home port. The report also stated that Multi-Ship, Multi-Option contracts were awarded with options for up to 5 years based on notional work packages for each

⁸⁷Department of Defense, Office of Cost Assessment and Program Evaluation, *Submarine Industrial Base (SIB) Study Supporting Fiscal Year 2023 Program Review* (May 2022).

⁸⁸As noted above, on contracts that include a special incentive fee, a shipyard may earn a fee for making a Navy-approved investment. The special fee may pay for all or part of the investment, and in some cases, bridge the difference between the shipyard's desired rate of return and projected return on investment. Such incentives could include, for example, funding intended to encourage the contractors to invest in improving facilities or hiring additional workforce included in contracts. See, e.g., 10 U.S.C. § 8696 (Navy shipbuilding workforce development special incentive).

⁸⁹We previously reported that multiple contractor representatives stated they have always worked within an environment of peaks and valleys of workload regardless of the Navy's contracting strategy. [GAO-20-370](#).

ship.⁹⁰ Further, it also stated that the Navy had undertaken this approach, in part, to provide these companies the stability needed to make investments in their facilities and workforce. Representatives from some of the ship repair companies we spoke to told us that their workload was more stable under the Multi-Ship, Multi-Option contracting approach.⁹¹ The Navy's report found, however, that repair companies did not increase their capital investments in facilities even with 5 years of forecasted stability, and may have instead reduced their capital investment. While the Navy no longer uses this approach, its history with ship repair contracting strategies demonstrated that, even though representatives from some ship repair companies stated that their work was more stable under the Multi-Ship, Multi-Option strategy, ship repair companies did not increase capital investments.

Representatives from ship repair companies told us that under the Navy's current contracting approach, they do not have a high level of confidence or visibility into future repair work. Further, they stated that this uncertainty has affected their planning for hiring and facilities investments.⁹² However, as noted above, since the Navy has adopted its current repair contracting approach, some ship repair companies have

⁹⁰U.S. Navy, Naval Sea Systems Command, *Report to Congress on Effects of Multiple Award Contract-Multi Order -Contracting* (Washington, D.C.: November 2023). The Navy, under the Multi-Ship, Multi-Option approach, used cost reimbursement and single award indefinite delivery, indefinite quantity contracts. Cost-reimbursement contracts require the government to reimburse the contractor for its allowable incurred costs, regardless of whether the contractor completed the work. See Federal Acquisition Regulation 16.301-1. Indefinite delivery, indefinite quantity contracts allow the government to order a stated minimum quantity of supplies or services, and the government may place orders to meet its needs during the ordering period. Federal Acquisition Regulation 16.504

⁹¹The Navy's November 2023 report on its contracting strategy noted that this strategy contained more of an appearance of a guaranteed 5-year period of work than actually occurred. According to the Navy's report, each repair period beyond the initial one was a contract option that was not guaranteed to be exercised. In some instances, option repair periods were not performed by the company that had been awarded the Multi-Ship, Multi-Option contract, repair schedules changed or repair periods were canceled. These factors induced churn in the contractor workload forecasts, according to the report.

⁹²See [GAO-20-370](#) for additional information. Under the Navy's current repair contracting strategy, it awards multiple- award indefinite delivery, indefinite quantity contracts to qualified contractors at specific home ports that can then compete for future repair periods, rather than all repair periods for a particular class of ships going to one contractor. See Federal Acquisition Regulation 16.504(c). These periods include an initial execution year, or base period, with four option years executable by the government. See Federal Acquisition Regulation 16.504(a)(4)(i). Several qualified contractors are available to subsequently compete for repair periods in a specific home port under delivery orders until contract expiration.

made investments in ship repair infrastructure that will expand their capacity.

Navy Faces Challenges in Balancing Competing Industrial Base Priorities

The Navy faces competing priorities in managing the shipbuilding and ship repair industrial base, a challenge that is compounded by overlap between the companies that conduct these types of work. In managing the ship industrial base, the Navy has sought to protect existing companies by providing sufficient work to ensure they stay in business. However, the Navy also seeks to increase opportunities for competition for Navy contracts. Increasing opportunities for competition could result from bringing additional companies into the ship industrial base or from adding capacity to existing companies so they can compete to be awarded additional contracts. These priorities can be at odds because, in a competitive environment, companies that do not obtain contract awards could struggle to remain viable. This is particularly true for Navy shipbuilding and ship repair, as some contractors are fully dependent on the Navy for work.

The Navy's efforts to navigate these priorities have sometimes resulted in contradictory approaches, and the Navy has struggled to find balance. The Navy is also not structured for leadership to gain an understanding of the consequences of decisions intended to affect shipbuilding that could also affect repair, and vice-versa.

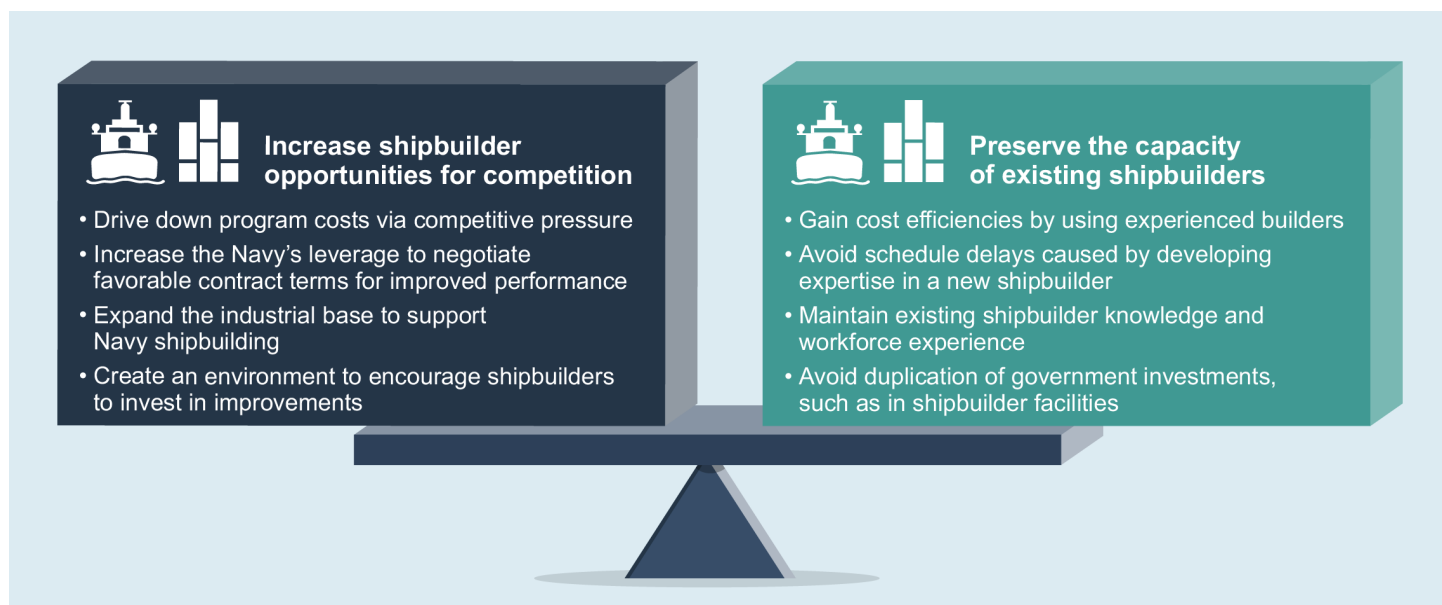
Competing Priorities in Shipbuilding

In shipbuilding, increasing the number of companies that can compete for Navy contracts could aid the Navy's goal of quickly increasing the size of the fleet. However, this priority is at odds with the Navy's desire to preserve the financial health of its existing shipbuilders. The Navy's fiscal year 2025 shipbuilding plan states that the limited availability of companies to compete for shipbuilding contracts has contributed to progressively higher costs to the government, greater fragility of the workforce, and reduced incentives for the private sector to invest in infrastructure. The plan also describes a new initiative in which the Navy plans to attract new market entrants and restore competition to the U.S. shipbuilding industry—referred to by the Navy as the Maritime Statecraft initiative. The plan describes this as a long-term initiative that would enable the Navy to deliver more ships on time and at a lower cost.

We previously found that having few shipbuilders that are specialized for Navy shipbuilding and a low volume of ship procurement has limited the Navy's ability to award contracts competitively. While the Navy has an interest in increasing opportunities for competition among shipbuilders, it also wants to preserve these companies as part of the ship industrial

base for future shipbuilding programs.⁹³ Figure 9 outlines examples of considerations between these competing priorities in the shipbuilding industrial base.

Figure 9: Examples of Competing Priorities in the Navy Shipbuilding Industrial Base



Source: GAO analysis of Navy contract file documents and other Department of Defense information; GAO (icons). | GAO-25-106286

In this complicated market environment, we found that, although the Navy seeks to increase opportunities for competition, it also regularly limited competition when procuring ships. We examined the Navy’s justification and approval documents for using other than full and open competition for

⁹³[GAO-17-211](#).

selected Navy shipbuilding contracts and identified a variety of Navy industrial base considerations for doing so.⁹⁴ These included:

- whether companies were already part of the Navy shipbuilding industrial base and were reliant on Navy contracts for their viability;
- the need to maintain enough work for shipbuilding companies to retain an adequate number of workers;
- whether shipbuilding companies had enough work to be able to maintain competitive prices; and
- the cost to the government for developing new contractors for shipbuilding programs.

As the Navy seeks to provide competitive opportunities for future classes of ships, as called for in its fiscal year 2025 shipbuilding plan, it will need to determine how to navigate these competing priorities.

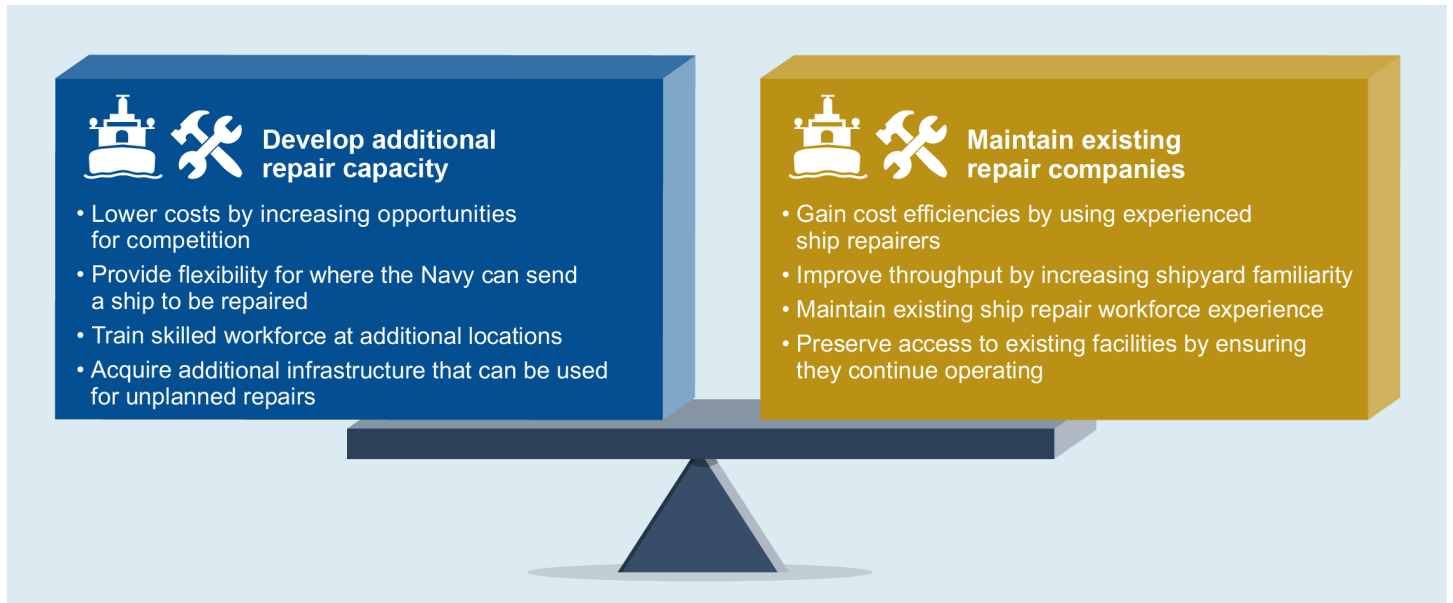
Competing Priorities in Ship Repair

The Navy has similar competing priorities related to the ship repair industrial base. In 2015, the Navy transitioned to a new contracting strategy with goals to increase competition and control costs, among other things.⁹⁵ However, it has also sought to preserve existing ship repair companies. Figure 10 outlines examples of considerations between these competing priorities in the ship repair industrial base.

⁹⁴With limited exceptions, the government is to promote and provide for full and open competition, meaning all responsible sources are permitted to compete, when soliciting offers and awarding contracts. Contracts awarded using other than full and open competition must be generally supported by written justifications that provide sufficient facts and rationale to justify the specific exception to full and open competition that is being applied to the procurement. These justifications must be approved in writing by specific officials, depending on the dollar value of the procurement. See Federal Acquisition Regulation §§ 2.101, 6.1; 6.304. For the justification and approval documents we reviewed, a variety of exceptions were used, including Industrial mobilization; engineering, developmental, or research capability (Federal Acquisition Regulation 6.302-3) and only one responsible source and no other supplies or services will satisfy agency requirements (Federal Acquisition Regulation 6.302-3).

⁹⁵For additional information, see [GAO-20-370](#).

Figure 10: Examples of Competing Priorities in the Navy Ship Repair Industrial Base



Source: GAO analysis of Navy contract file documents and other Department of Defense information; GAO (icons). | GAO-25-106286

While the Navy has a goal to increase opportunities for competition in the ship repair market, we found the Navy has in some instances used other than full and open competition on its ship repair contracts. We reviewed justification and approval documents for using other than full and open competition from selected ship repair periods to identify the Navy's considerations for limiting competition on its ship repair contracts.⁹⁶ We found these considerations included:

- preventing the loss or degradation of existing skilled workforce;
- expanding dry dock capacity and providing training for a contractor to conduct Navy ship repairs at a new affiliate location; and
- ensuring existing repair companies remain in business.

⁹⁶The justification and approvals reviewed included the below Federal Acquisition Regulation authorities to limit competition: Federal Acquisition Regulation 6.302-1 (Only one responsible source and no other supplies or services will satisfy agency requirements), Federal Acquisition Regulation 6.302-2 (Unusual and compelling urgency), Federal Acquisition Regulation 6.302-3 (Industrial mobilization; engineering, developmental, or research capability; or expert service), and 6.302-7 (Public interest).

Navy Efforts to Increase San Diego Dry Dock Capacity Underscores Competing Priorities



In its fiscal year 2024 maintenance plan, the Navy reported procuring one government-operated dry dock and upgrading another in San Diego, California to increase dry docking capacity in the region.

Once the first new dry dock, a stationary dock at Naval Base San Diego, had been upgraded, the Navy made it available for contractors to use as a place of performance when submitting offers for certain ship repair contracts. The Navy reported competitively awarding a contract to a company (hereinafter referred to as Company A) that did not operate its own dry dock to conduct two consecutive ship repair periods in San Diego at the stationary dock.

Yet, many of the other maintenance periods that the Navy projected would be conducted by the industrial base at this time in the region were delayed, moved, or canceled, resulting in ship repair companies in San Diego that had no work to fill their privately-operated dry docks. For example, these delays or cancellations resulted in one repair company (hereinafter referred to as Company B) having an unused dry dock. To stabilize Company B's workload and thereby prevent layoffs of the skilled workforce, the Navy reported moving the place of performance for a maintenance period that had been scheduled to occur at the Navy's stationary dock in San Diego to a dry dock operated by Company B. The Navy told GAO that adjusting scheduling for the stationary dry dock at Naval Base San Diego also enabled them to address emergent repair needs.

However, according to Navy documents, moving the place of performance cost \$23 million.

Source: GAO analysis of Navy data (text); Ensign Saavan Patel (photo). | GAO-25-106286

These considerations reflect a tension between a desire to grow the ship repair industrial base and maintain existing companies. This tension can be illustrated in examining dry docks, a key component of ship repair infrastructure. The Navy's dry dock strategy states that it is critical that the Navy preserve some level of dry dock surge capacity—additional dry docks beyond the minimum required to perform planned maintenance.

Ship repair company representatives told us that maintaining excess infrastructure to provide surge capacity was too costly and could place the financial health of their companies at risk. Officials from one repair company told us that they operated a dry dock that had mostly remained empty, and to reduce costs and avoid competition with other domestic companies, they were considering selling a dry dock to a foreign company. The Navy has purchased dry docks in one of its five domestic ship repair fleet concentration areas—San Diego—to provide such additional capacity, but it has struggled to use these dry docks without disruption to the industrial base (see sidebar).

Competing Priorities
Complicated by Overlap in
Ship Industrial Base

Further complicating the Navy's efforts to manage the ship industrial base is the substantial overlap between companies in the two areas of shipbuilding and ship repair. Specifically, all seven of the major shipbuilders operate repair facilities or are owned by companies that also operate affiliated repair shipyards in the United States.

The Navy's approach for managing the industrial base treats shipbuilding and ship repair separately, resulting in differing approaches. For example, the Navy's May 2022 dry dock report—its most recent report on its approach to using private industry and government-owned dry docks—cautioned that direct investment in the industrial base may disrupt industry's ability to achieve growth and the Navy's ability to treat companies equitably. Navy officials told us that avoiding disrupting the competitive environment was a key consideration for their approach to investing in the private ship repair industry. Although the Navy plans to begin a grant program for ship repair as described above, the Navy's dry dock strategy states that the Navy prefers to use the demand signal to encourage private industry to invest and characterizes investments in ship repair as a last resort. In contrast, the Navy's most recent shipbuilding plan stated that the Navy needed to directly invest in shipbuilders to support new construction and outlined \$2.6 billion in investments for fiscal year 2023, with more planned in future years.

Navy officials told us that they do not see these differing approaches as contradictory because there are different dynamics in the shipbuilding and ship repair markets. For example, they said that ship repair is more competitive, and ship repair companies do not generally have a backlog of work. As a result, they stated that investments in ship repair would have a greater impact on the competitive environment.

However, since there is overlap between companies in the shipbuilding and ship repair industrial base, the Navy's actions could have an effect across the shipbuilding and ship repair environment. For example, the parent companies of some ship repair companies have benefited from Navy investments in shipbuilders because they also operate as shipbuilders. Examples of how its differing approaches can have influence across these two sections of industry could include:

- Contracting actions taken to protect the existing shipbuilding industrial base, such as awarding contracts using other than full and open

competition, could affect companies' overhead rates and their competitive position to win contract awards in ship repair.⁹⁷

- Direct investments to bolster shipbuilders could also drive down their overhead rates and enable them to be more competitive for ship repair contracts.

Navy Does Not Have a Strategy or Coordinated Leadership for Managing Ship Industrial Base Challenges

The Navy does not have a long-term strategy to help navigate its competing priorities within the shipbuilding and ship repair industrial bases. Additionally, the Navy's organizational structure hinders effective coordination on its surface ships. Specifically, while the ASN (RD&A) has direct oversight of the offices responsible for aircraft carrier and submarine repairs, it does not have direct oversight of the office responsible for managing surface ship repairs. This organizational structure makes it more difficult for the ASN (RD&A) to fulfill its responsibilities for the repair portion of life-cycle management.⁹⁸ Further, the Navy has not had a coordinated leadership position to advise the ASN (RD&A) on the ship industrial base as a whole, despite overlap between the companies in the shipbuilding and ship repair industrial base. However, the Navy recently established a new program office intended to provide such coordinated leadership.

Navy Does Not Have a Long-Term Strategy for Managing the Ship Industrial Base

Our prior work shows that strategic planning that results in a consolidated and comprehensive strategy enables decision-makers to better guide program efforts and determine if these efforts are achieving intended results. We previously identified desirable characteristics of a national strategy, which include: identification of the problems the strategy intends to address; goals; how the strategy relates to other strategies; and resources and investments and where they should be targeted.⁹⁹ These characteristics cover actions an agency should consider from conception

⁹⁷Costs that are typically classified as overhead because they are not directly assignable to a specific contract but rather support a company's total business, include those of facilities and equipment, administrative and general office support, computer operations, managers' salaries, and security. See GAO, *Overhead Costs: Defense Industry Initiatives to Control Overhead Rates*, NSIAD-95-115 (Washington, D.C.: May 3, 1995). See Federal Acquisition Regulation 6.300 for regulations regarding contracting without providing for full and open competition. Federal Acquisition Regulation 6.302-3.

⁹⁸Life-cycle management includes the acquisition, sustainment, modernization, and final disposal of a system, such as a ship.

⁹⁹See [GAO-22-104154](#) for additional information on the desirable characteristics of a national strategy.

to implementation of a strategy to help it achieve results, evaluate progress, and ensure accountability.

DOD released a National Defense Industrial Strategy in November 2023 that included some of these elements, including the problems the strategy is intended to address (such as weaknesses in the supply chain) and goals for addressing these problems (such as improving supply chain resiliency by investing in extra capacity).¹⁰⁰ DOD's strategy, however, does not include information to specifically guide the Navy's management of the ship industrial base.

The Navy established a new program office in September 2024 that Navy officials told us will be positioned to develop a strategy for the ship industrial base. They stated that they plan to have additional details about the strategy available in early 2025. Until the Navy develops and implements a ship-specific industrial base strategy, it will not be able to effectively align or assess its actions to manage the industrial base for both shipbuilding and repair. Further, clarifying in the strategy how its approach to the ship industrial base integrates with DOD's National Defense Industrial Strategy would also reflect the characteristics of a desirable national strategy, which includes establishing relationships between strategies. Additionally, such a strategy could include performance measures to gauge results from investments in the ship industrial base and provide a framework for navigating the Navy's competing priorities.

Navy Leadership Is Not Structured for Effective Oversight of Surface Ship Repair

The ASN (RD&A) does not have authority over the organization responsible for surface ship maintenance and modernization, which hinders the ASN (RD&A)'s ability to fulfill its responsibilities for life-cycle management.¹⁰¹ The ASN (RD&A)'s role was expanded under the John S. McCain National Defense Authorization Act for Fiscal Year 2019 to include overall supervision of sustainment, including maintenance, as part of life-cycle management of Navy systems, such as ships.¹⁰²

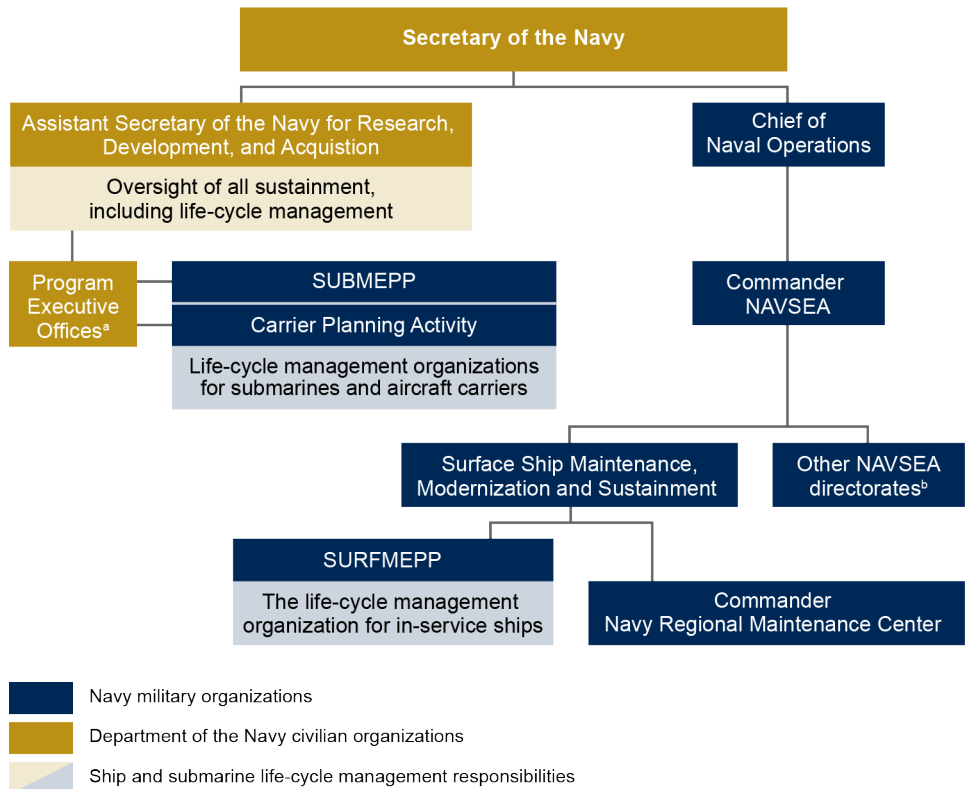
¹⁰⁰See [GAO-22-104154](#). We made six recommendations related to elements that should be included in DOD's industrial base strategy. DOD and the military departments partially concurred with one recommendation and fully concurred with the rest. We continue to monitor DOD's implementation of its effort to further develop its strategy.

¹⁰¹The ASN (RD&A) maintains contracting authority for NAVSEA and for surface ship contracting within the continental United States.

¹⁰²Pub. L. No. 115-232, § 915 (2018)(amending 10 U.S.C. § 5016(b)(4)(A), which has been renumbered 10 U.S.C. § 8016(b)(4)(A)).

Program Executive Office (PEO) Ships, the subordinate organization tasked to advise the ASN (RD&A) on surface ships, does not have the authority over surface ship repair needed to inform the ASN (RD&A)'s overall supervision of repair. The ASN (RD&A) has oversight responsibility for the Navy's PEOs, which are responsible for all aspects of life-cycle management—which includes acquisition and sustainment—for their respective programs. However, PEO Ships does not have a direct line of authority over NAVSEA's Directorate for Surface Ship Maintenance, Modernization and Sustainment, which is the Navy's dedicated life-cycle management organization for in-service surface ships. In contrast, PEO Submarines and PEO Carriers have direct lines of authority over the Submarine Maintenance Engineering, Planning and Procurement office and the Carrier Planning Activity, the organizations responsible for life-cycle management for submarines and carriers, respectively (see fig. 11).

Figure 11: Organizational Structure for the Navy with Ship Repair Oversight Responsibility



NAVSEA Naval Sea Systems Command
 SUBMEPP Submarine Maintenance Engineering, Planning and Procurement
 SURFMEPP Surface Maintenance Engineering, Planning Program

Source: GAO analysis of Navy documents. | GAO-25-106286

NAVSEA’s Directorate for Surface Ship Maintenance, Modernization and Sustainment reports to the Chief of Naval Operations through the Commander of NAVSEA. ASN (RD&A) leadership told us that after sustainment was added to the ASN (RD&A)’s responsibilities, the Navy had reorganized, assigning responsibility for the construction and repair of aircraft carriers and submarines to their respective PEOs. However, ASN (RD&A) leadership stated the Navy has yet to conduct a similar reorganization for surface ships. ASN (RD&A) leadership told us they recognized it as a challenge that there was no coordinated leadership, but they have yet to fully analyze how to adjust the organizational structure. As a result, neither the ASN (RD&A) nor the PEOs can fully coordinate actions that affect the industrial base’s ability to support shipbuilding and

repair for surface ships, such as making investments in infrastructure or workforce.

Standards for Internal Control in the Federal Government calls for agency management to establish an organizational structure, assign responsibility, and delegate authority to achieve the entity's objectives.¹⁰³ Evaluating how to align NAVSEA's Directorate for Surface Ship Maintenance, Modernization and Sustainment more directly under the ASN(RD&A)'s authority and oversight, such as by placing it under a PEO, would position the Navy to manage the ship repair industrial base more holistically and effectively.

ASN (RD&A) Is Establishing an Office to Better Coordinate the Navy's Industrial Base Approach

The ASN (RD&A) is responsible for Navy acquisition and sustainment, but it has not had an executive-level manager to serve as the assistant secretary's principal advisor on the ship industrial base. We found that neither DASN Sustainment nor DASN Ships, the relevant offices at the DASN-level, are well positioned to provide integrated oversight based on their roles and responsibilities. The ASN (RD&A) told us that DASN Sustainment only oversees some aspects of sustainment, and the official responsible for DASN Sustainment told us that DASN Ships has better insight into industrial base issues. However, DASN Ships does not have an executive position with full-time responsibility for industrial base oversight. The ASN (RD&A) explained that DASN Ships previously had someone in a temporary position to oversee the industrial base. Moreover, as noted above, PEO Ships does not have direct oversight of the ship repair industrial base.

After discussions with us about these issues in March 2024, the Navy announced efforts to create a new program office that could provide better oversight of the ship industrial base. In June 2024, the ASN (RD&A) released a memorandum establishing the Maritime Industrial Base program office. This program office is intended to manage the ship industrial base, including the industrial base that supports submarine and surface shipbuilding and ship repair. According to the memorandum, this new organization will directly report to the ASN (RD&A) on ship industrial base issues and will incorporate several existing smaller industrial base management organizations. The memorandum also states that, due to the size and scope of the Navy's ship industrial base efforts, the head of the program office will be a dedicated, full-time executive. The Navy plans to treat the ship industrial base as a major acquisition program, and as

¹⁰³[GAO-14-704G](#).

such, the head of the program office will be tasked with establishing an acquisition strategy for related efforts. The ASN (RD&A) directed the office to begin operating on August 1, 2024, but Navy officials told us it was formally established in September 2024. We will continue to monitor the efforts the Navy is initiating through this newly formed office.

Conclusions

Problems in Navy shipbuilding and repair have remained relatively unchanged over the past decades—programs are not achieving cost and schedule goals, and as a result, the battle force is not sufficiently modernized and ready to meet national security needs. These problems are in part because the ship industrial base faces workforce and infrastructure challenges that put the Navy’s goals out of reach. Yet, the Navy continues to expect different performance outcomes in the coming years than it has achieved in the past. There is no basis for expecting industrial base outcomes to improve without changes from the Navy that would motivate a different level of private industry investment and performance.

In large part, the Navy’s approach for improving the private ship industrial base is to continue to provide shipbuilding companies and their suppliers with increasing financial support, and to begin to do so for ship repair companies. Well-targeted investments that are tied to specific program outcomes could influence improved performance on the current programs of record. Achieving such outcomes demands that the Navy track and monitor its investments in the ship industrial base—specifically its contract investment incentives. Moreover, the Navy could bolster its ability to improve the industrial base if it consistently evaluated its investments based on performance metrics to determine whether its overall industrial base investments are effective and adjusting as necessary. Further, to prevent duplication and overlap of their investments, the offices in the Navy and OSD that distribute industrial base funding would benefit from coordinated visibility into the various efforts across the department. Finally, before it begins investing in the ship repair industrial base in the way it does for shipbuilding, the Navy would benefit from first establishing an understanding of its needs to avoid providing too much infrastructure and disrupting the market for repair.

Enduring changes require a strategic, rather than reactive, approach. As such, developing a strategy to motivate the ship industrial base to perform better—including goals and the resources it needs to achieve them—will help the Navy break a cycle of poor performance that has stifled the growth and modernization of the fleet for decades. Development of a

successful strategy will involve effort from the Navy to resolve the underlying tensions between its desire to increase opportunities for competition and protect the existing industrial base from the negative outcomes that would normally result from underperformance in a competitive market. Further, evaluating changes to the Navy's organizational structure could position the Navy to ensure that the ASN (RD&A) has the appropriate line of authority to carry out its responsibilities related to oversight of acquisition and sustainment, including for the industrial base that carries out these functions.

Recommendations for Executive Action

We are making the following six recommendations to DOD:

The Secretary of the Navy should ensure that the Commander of Naval Sea Systems Command (NAVSEA) updates and implements its policies to require its Contracts Directorate to centrally collect data for shipyard investment incentives from contracting officers and its Program Management Offices' contracting officer's representatives to track and monitor its incentive efforts on an ongoing basis. (Recommendation 1)

The Secretary of the Navy should develop performance metrics to assess the programmatic and aggregate effect of the Navy's ship industrial base investments. (Recommendation 2)

The Secretary of Defense should ensure that the Office of the Under Secretary of Defense for Acquisition and Sustainment and the Secretary of the Navy regularly coordinate on industrial base support investments, to include collecting and sharing relevant data. (Recommendation 3)

The Secretary of the Navy should ensure that grant funding or other support efforts the Navy provides for the ship repair industrial base are informed by analysis that identifies the required infrastructure capacity needed for surface ship repair. (Recommendation 4)

The Secretary of the Navy should develop a ship industrial base strategy that aligns with the National Defense Industrial Strategy and adheres to the desirable characteristics of a national strategy. (Recommendation 5)

The Secretary of the Navy should evaluate how to ensure ASN (RD&A) has the line of authority it needs to carry out its responsibilities for acquisition and sustainment, including repair, for example, by reorganizing NAVSEA's Director for Surface Ship Maintenance, Modernization and Sustainment to fall under PEO Ships' authority, and act on the results of this evaluation, as appropriate. (Recommendation 6)

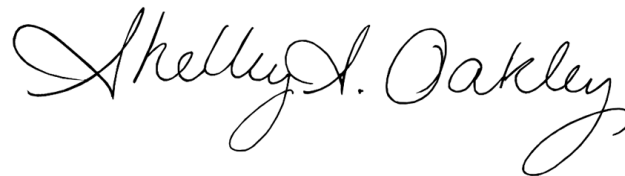
Agency Comments

We provided a draft of our report to DOD for review and comment in October 2024. As of February 2025, DOD had not provided official comments on this report. The Navy provided draft comments indicating that it generally concurred with the substance of the recommendations. The Navy stated that Recommendation 1 on collecting and monitoring investment incentive data should include additional parties within the Navy. We agreed and adjusted our recommendation accordingly. The Navy also provided technical comments, which we incorporated as appropriate.

We also provided a draft our of report to the Department of Transportation for review and comment. Officials from the Department of Transportation informed us that they did not have comments on the report.

We are sending copies of this report to the appropriate congressional committees, the Secretary of Defense, the Secretary of the Navy, Secretary of Transportation, and other interested parties. In addition, the report is available at no charge on the GAO website at <https://www.gao.gov>.

Should you or your staff have questions, please contact us at (202) 512-4841 or oakleys@gao.gov or at (202) 512-9627 or maurerd@gao.gov. Contact points for our Offices of Congressional Relations and Public Affairs may be found on the last page of this report. GAO staff who made key contributions to this report are listed in appendix V.



Shelby S. Oakley
Director, Contracting and National Security Acquisitions



Diana Maurer
Director, Defense Capabilities and Management

List of Committees

The Honorable Roger Wicker
Chairman

The Honorable Jack Reed
Ranking Member
Committee on Armed Services
United States Senate

The Honorable Mike Rogers
Chairman

The Honorable Adam Smith
Ranking Member
Committee on Armed Services
House of Representatives

Appendix I: Objectives, Scope, and Methodology

This report examines (1) the extent to which the industrial base can support the Navy's shipbuilding and repair goals; (2) the extent to which the Department of Defense (DOD) is taking actions to support the industrial base for Navy shipbuilding and ship repair and determining the effectiveness of those actions; and (3) the extent to which the Navy is taking a strategic approach to address the challenges it faces managing the industrial base to meet its long-term shipbuilding and repair goals.

In general, our work focuses on the capability and capacity that private industry provides to support Navy shipbuilding and repair efforts.¹ In shipbuilding, we included the work conducted by the private sector industrial base at contractor-owned shipyards in our review; we did not include the work performed by suppliers to produce materials for shipbuilding programs. For ship repair, we included work conducted by the private sector industrial base in our review, to include work performed at contractor-owned facilities and work performed by private contractors at government-owned facilities. We did not include repair work conducted at the Navy's four public shipyards—part of the organic industrial base—which includes most submarine and aircraft carrier maintenance, or work performed by suppliers for ship repair. Our analysis is focused on the

¹While we focused this review on the private industry for surface ship repair, we have reported extensively on the Navy's ability to conduct repairs of aircraft carriers and submarines at its public shipyards. Our work has identified poor conditions at the public shipyards and the challenges the Navy faces in improving them; delays in repairs conducted by the Navy; and limitations to the Navy workforce that repairs submarines and aircraft carriers. See GAO, *Naval Shipyards: Ongoing Challenges Could Jeopardize Navy's Ability to Improve Shipyards*, [GAO-22-105993](#) (Washington, D.C.: May 10, 2022) for an overview of this work.

industrial base as it relates to shipbuilding programs for the Navy's battle force, and major repair periods for the Navy's nonnuclear surface fleet.²

To assess the extent to which the industrial base can support the Navy's shipbuilding and repair goals, we compiled information from our prior work—from 2017 to 2024—on Navy shipbuilding and ship repair programs as it relates to the industrial base to identify trends. We also analyzed the Navy's Annual Long-Range Plan for the Construction of Naval Vessels for each year from fiscal years 2015 to 2025 and its Annual Long-Range Framework for Maintenance and Modernization of Naval Vessels from fiscal years 2023 to 2025 for information about the industrial base.³

For the shipbuilding industrial base, we compared the planned rate of delivery for two ship classes—the *Virginia* class submarine and *Arleigh Burke* class destroyer—to the actual rate of deliveries that appear in the Navy's budget documentation. We selected these classes because they have a high volume of production and have been in production for decades. Further, we examined DOD, Navy, and contractor documentation to identify information about the extent of shipbuilding program delays and the associated causes. In addition to identifying delays reported in the Navy 45-day Shipbuilding Review Briefing, for destroyers, we identified Navy reported contract delivery dates in program

²According to the Navy, battle force ships are warships capable of contributing to combat operations, or that contribute directly to Navy warfighting or support missions. The Navy conducts repair availabilities during peace time that range from a few weeks to over a year. Major repair periods, called Chief of Naval Operations availabilities, are conducted to accomplish significant planned repair work, such as structural, mechanical, and electrical repairs. These may include modernization work to upgrade a ship's capabilities along with repair work, and they can last for over a year. Other types of repair periods accomplish non-major repair work requiring relatively little time compared to Chief of Naval Operations repair periods—typically only weeks to a few months in duration. Non-major repair periods include continuous maintenance periods and emergent maintenance periods. Continuous maintenance periods accomplish planned, non-major repair work. For example, continuous maintenance periods may involve repainting parts of a ship or repairing the nonskid surfaces on a flight deck. Emergent maintenance periods accomplish unplanned repair work of an urgent nature when the risk of prolonged disruption to a ship's operations makes higher payments for repair acceptable. These repair periods are only completed on an as-needed basis to keep a ship operating.

³U.S. Navy, Office of the Chief of Naval Operations. *Long-Range Plan for Construction of Naval Vessels*, (Washington, D.C.: June 2014, March 2015, April 2016, February 2018, March 2019, December 2020, June 2021, April 2022, March 2023, March 2024); U.S. Navy, Naval Sea Systems Command, *Long-Range Framework for Maintenance and Modernization of Naval Vessels*, (Washington, D.C.: August 2022, April 2023, March 2024).

briefings. For other classes of ships, we identified contract delivery dates in detail, design, and construction contracts. We conducted analysis to compare contract delivery dates with estimated delivery dates listed in the Navy's fiscal year 2025 budget request. We excluded the Littoral Combat Ship because the Navy is not planning to procure additional quantities of this class under its shipbuilding plan, as well as ships that have recently started construction and for which we did not have sufficient data to measure performance. We also excluded command and support ships from our analysis. Documents we examined include the Navy's 45-Day Shipbuilding Review Briefing; Selected Acquisition Reports; Navy program budget briefings; and contractor-produced briefing documents.⁴ We also used these documents to identify instances of shipbuilder workforce and infrastructure problems that affected shipbuilding program performance.

For the ship repair industrial base, we analyzed Navy and contractor documentation to determine the extent to which it has the number of government-owned and privately-owned dry docks—the most constrained element of ship repair infrastructure—to meet the Navy's plans based on its assessment of its peace time needs. The documents we examined include the Report to Congress on *Navy Dry Dock Strategy for Surface Ship Maintenance & Repair* and related analysis, long-range maintenance plans, documentation on fleet priorities, and contractor briefing documents.⁵ To determine the extent to which the industrial base has sufficient workforce to meet the Navy's repair needs, we examined the February 2024 projection produced by the Director for Surface Ship Maintenance, Modernization, and Sustainment from Naval Sea Systems Command; the long-range maintenance plan; and contracting documents that include information about workforce.⁶ We also conducted site visits and interviews, described in detail later in this appendix.

To determine the extent to which DOD is taking actions to support the industrial base for Navy shipbuilding and ship repair, we reviewed Navy and Office of the Under Secretary of Defense for Acquisition and Sustainment (OUSD)(A&S)) budget and briefing documents, as well as investment information provided by offices across the department. We

⁴U.S. Navy, *45-day Shipbuilding Review* (2024).

⁵Department of the Navy, Naval Sea Systems Command, *Report to Congress Navy Dry Dock Strategy for Surface Ship Maintenance & Repair*, (Washington, D.C.: May 2022).

⁶U.S. Navy, Naval Sea Systems Command, *Long-Range Framework for Maintenance and Modernization of Naval Vessels*, (Washington, D.C.: March 2024).

selected a historical time frame of 10 years, from fiscal years 2014 to 2023, as the Office of the Secretary of Defense's (OSD) Industrial Base Analysis and Sustainment (IBAS) office was established in fiscal year 2014. This period also encapsulates investments the Navy has made in other efforts, like the submarine industrial base, and surface combatant industrial base, including for the frigate program, which started in fiscal year 2018 or later. To examine future years, we selected fiscal years 2024 to 2028 because this period covers planned spending in the Future Years Defense Program that appears in budget documents.

To identify the Navy's investments in the ship industrial base, we reviewed Navy budget materials. Specifically, we reviewed materials pertaining to the submarine industrial base, surface combatant industrial base, the frigate program, and Manufacturing Technology program. For Navy direct investments in the National Shipbuilding Research Program, Navy shipyard investment incentives on contract, and OSD direct investments for IBAS and Defense Production Act (DPA) Title III, we requested and reviewed funding data covering fiscal years 2014 to 2023 from offices across the department. We also interviewed relevant officials and reviewed related documents—such as program briefings, policy, and contract documents—about the mechanisms DOD uses to track investment data. For OSD direct investments in the Defense Manufacturing Community Support Program, we reviewed OSD's public reporting of funding awards. We confirmed with a Navy official knowledgeable about the industrial base that we had identified the major sources of investments into the ship industrial base.

To understand the extent to which DOD determined the effectiveness of actions to support the industrial base, we compared the Navy's efforts to track its contract investment incentives and direct investments to its policy and with selected standards outlined in *Standards for Internal Control in the Federal Government*.⁷ Of specific relevance were internal control principles that emphasize management's responsibility to obtain relevant data from reliable sources in a timely manner for effective monitoring. Additionally, we examined the Navy's and OSD's efforts to collect investment outcome metrics and to establish visibility across investments. We reviewed relevant documentation—like program briefings, contract documents, and project funding awards—and conducted interviews with shipbuilding company representatives and DOD officials to determine the

⁷GAO, *Standards for Internal Control in the Federal Government*, [GAO-14-704G](#) (Washington, D.C.: Sept. 10, 2014).

extent that DOD is collecting outcome metrics and coordinating on different investments. We compared these efforts to internal control principles for designing control activities to achieve objectives, such as activities to monitor performance measures and indicators, and internal control principles to communicate quality information externally through reporting lines to help the entity achieve its objectives and address related risks.

To assess the Navy's plans to begin awarding grant funding to private ship repair yards, we reviewed documents, such as the *Navy Dry Dock Strategy for Surface Ship Maintenance & Repair* and legislative provisions.⁸ We compared the Navy's efforts to determine future repair infrastructure needs to internal control principles for using quality information to make informed decisions.

To assess the extent to which the Navy is taking a strategic approach to address the challenges it faces managing the industrial base to meet its long-term shipbuilding and repair goals, we reviewed DOD's National Defense Industrial Strategy to determine whether it contained information specific to the ship industrial base.⁹ We also discussed with a knowledgeable Navy official whether the Navy had developed a similar strategy document to guide its management of the ship industrial base. We examined the Navy's approach to managing the ship industrial base as described in the Navy's long-range plans.

Based on our review of the Navy's long-range plans, we examined the demand signal as a key element of the Navy's approach to managing the industrial base. To do so, we examined the extent to which the Navy's shipbuilding plans have changed over time. Specifically, we examined the planned procurement for battle force ships outlined in six iterations of the plan, released in fiscal years 2018 through 2024 and intended to accompany the fiscal years 2019 through 2025 budgets.¹⁰ For plans that included multiple variations in planned procurement, we included each variation in our analysis. For each plan, for each fiscal year we identified

⁸Naval Sea Systems Command SEA21, *Report to Congress Navy Dry Dock Strategy for Surface Ship Maintenance & Repair*.

⁹Department of Defense, *National Defense Industrial Strategy* (2023).

¹⁰U.S. Navy, Office of the Chief of Naval Operations, *Report to Congress on the Annual Long-Range Plan for Construction of Naval Vessels* (Washington, D.C.: March 2024). We were not able to include the shipbuilding plan intended to accompany the fiscal year 2022 budget in our analysis because it did not outline planned procurement beyond fiscal year 2022.

the plan or variation under which the Navy would purchase the fewest ships and the most ships, to identify the range of potential procurements over time. We conducted additional analysis on the shipbuilding plan, which appears in appendix II.¹¹

For our analysis of the demand signal from Navy repair workload projections, we examined the publicly released bi-monthly workload projections produced by NAVSEA's Directorate for Surface Ship Maintenance, Modernization, and Sustainment. We included projections for October 2019 through April 2024, the most recent available at the time of our analysis. To estimate the range of labor days the Navy projected, we identified the highest and lowest workload volume projected for each fiscal year made during the October 2019 to April 2024 projections. We also calculated the average annual projection for each fiscal year in that period.

In our review of the Navy's approach for managing the industrial base, we identified competing priorities—such as preservation of the existing industrial base and competition. To identify the Navy's approach to navigating competing priorities in shipbuilding and ship repair, we analyzed selected Navy justification and approval documents for shipbuilding and ship repair contracts. These justification and approval documents are required under Federal Acquisition Regulation to award certain contracts without using full and open competition, and they helped us to determine examples of actions the Navy has taken using other than full and open competition for reasons related to industrial base considerations.¹² We compared the Navy's actions to goals for competition outlined in Navy documentation, such as planning and strategy documents, and in our interviews with Navy officials.

To understand how Navy leadership is structured to strategically manage the industrial base, we examined the statute outlining shipbuilding and repair responsibilities of the Assistant Secretary of the Navy for Research,

¹¹In addition, we also compared the planned force structure tables from the Navy's most recent plan, intended to accompany the fiscal year 2025 budget request, with the Navy's force structure goals from its most recent force structure assessment, based on the force structure assessment summary tables also included in the most recent shipbuilding plan.

¹²Agencies may use other than full and open competition in instances where it is deemed necessary to maintain a facility, producer, manufacturer, or other supplier available for furnishing property or services in case of a national emergency or to achieve industrial mobilization, or in instances in which the work is only available from one source, among other reasons. See Federal Acquisition Regulation Part 6 and 10 U.S.C. § 3204(a)(3)(A).

Development, and Acquisition (ASN (RD&A)). We also examined policy from the Office of the Secretary of the Navy that implements those responsibilities, and compared statute to the Navy's organizational structure for implementing those responsibilities.¹³ We further examined policy from the Office of the Chief of Naval Operations assigning specific repair responsibilities to Naval Sea Systems Command and on NAVSEA's role during maintenance periods.¹⁴ We also interviewed the ASN (RD&A) and officials from NAVSEA.

For all objectives, we conducted extensive interviews with DOD and Navy officials, and private shipbuilding and repair companies. We gathered information on the condition of companies' infrastructure, workforce and suppliers, as well as associated challenges; past and planned investments in improvements; the competitive environment for shipbuilding and ship repair; anticipated current and future workload; and other challenges. We interviewed all seven shipbuilders the Navy uses to construct battle force ships and visited the majority of their shipyards.¹⁵ For shipbuilding, we identified challenges for the defense industrial base workforce in DOD documents and our prior work and interviewed representatives on those topics. We conducted a content analysis based on our interviews about these workforce challenges to identify trends. To learn about barriers to entry into the Navy shipbuilding industrial base, we

¹³10 U.S.C. § 8016. U.S. Navy, Department of the Navy Research, Development and Acquisition, Associated Life-Cycle Management, and Sustainment Responsibilities and Accountability Secretary of the Navy Instruction 5400.15D, (Jan. 19, 2021). Pub. L. No. 115-232, § 915 (2018)(amending 10 U.S.C. § 5016(b)(4)(A), which has been renumbered 10 U.S.C. § 8016(b)(4)(A)).

¹⁴U.S. Navy, *Mission, Functions, and Tasks of Commander, Naval Sea Systems Command* Chief of Naval Operations Instruction 5450.340A CH-1 (Dec. 9, 2019), and U.S. Navy, *Maintenance Policy for Navy Ships* Chief of Naval Operations Instruction 4700.7M (May 8, 2019).

¹⁵Shipbuilders for Navy battle force ships include: Austal USA; General Dynamics Bath Iron Works; General Dynamics National Steel and Shipbuilding Company; Huntington Ingalls Newport News Shipbuilding; and Ingalls Shipbuilding. We also met with representatives from Fincantieri Marinette Marine and General Dynamics Electric Boat, but we did not visit these locations as part of this engagement because other GAO engagements were already conducting site visits to these shipbuilders.

also interviewed Bollinger and Vigor, companies that build ships, but do not currently build battle force ships for the Navy.¹⁶

For additional context about challenges facing the shipbuilding industrial base, we also interviewed representatives from key supplier consortiums—which represent multiple suppliers that produce similar materials—to gain perspectives about issues facing the supplier base.¹⁷ Further, we interviewed Navy task forces responsible for issues pertaining to the industrial base, including the Navy’s Shipbuilding Industrial Base Task Force, Submarine Industrial Base Task Force, and Aircraft Carrier Industrial Base Task Force.

For ship repair, we interviewed all 12 companies eligible to conduct complex repair work on the Navy’s nonnuclear surface ships. Many of the companies conducting ship repair have facilities in more than one location, and we engaged some of these companies in more than one location to gain perspective on region-specific topics.¹⁸ We also interviewed several companies under contract to perform repair work for the Littoral Combat Ship.¹⁹ Repair companies for Navy nonnuclear surface ships represent all five U.S.-based fleet concentration areas (Norfolk, VA; Mayport, FL; Seattle/Everett, WA; San Diego, CA; and Pearl Harbor, HI).

¹⁶We made a judgmental selection of shipbuilders that do not build battle force ship to interview. Of these shipbuilders, we selected Bollinger because it has experience in constructing smaller vessels for the Navy. We selected Vigor because of its involvement in Navy ship modernization work, and to gain perspective from a different geographic region.

¹⁷Specifically, we spoke with the Forging Industry Association and the U.S. Partnership for Assured Electronics. We selected these supplier groups because supplies from these sectors were identified as challenging in DOD’s evaluation of the supply chain in recent reports. Department of Defense, Office of the Under Secretary of Defense for Acquisition and Sustainment, *State of Competition within the Defense Industrial Base* (February 2022); Department of Defense, *Submarine Industrial Base (SIB) Study Supporting Fiscal Year 2023 Program Review* (May 2022).

¹⁸The companies we interviewed include: BAE Systems; Colonna’s Shipyard; Continental Maritime of San Diego; Epsilon Systems; East Coast Repair and Fabrication; Fincantieri Marine Repair; MHI Ship Repair & Services; General Dynamics National Steel and Shipbuilding Company; Pacific Ship Repair and Fabrication; Pacific Shipyards International; Southcoast Welding and Manufacturing; and Vigor.

¹⁹We made a judgmental selection of companies eligible to conduct major repair work for the Littoral Combat Ship based on location and their other work on Navy shipbuilding and repair contracts. The companies we interviewed that Navy documentation shows as being on contract to work on the Littoral Combat Ship but not complex work on surface combatants include Austal and Marine Group Boat Works.

For additional information about ship repair, we also interviewed Navy officials in charge of naval surface ship maintenance. These Navy ship repair officials came from NAVSEA's Directorate for Surface Ship Maintenance, Modernization and Sustainment, Commander Navy Regional Maintenance Center, and each continental-based Regional Maintenance Center—Mid-Atlantic, Northwest, Southeast, and Southwest—as well as the Hawaii Regional Maintenance Center. To learn more about the Navy's planning process for ship repair, we also interviewed QED Systems Inc, which conducts planning efforts for Navy repair.

For additional information about the OSD's investments in the industrial base, we also interviewed OSD officials managing DPA Title III investments, IBAS investments, and contractors managing an IBAS workforce project. We also interviewed the officials from the Program Executive Office for Strategic Submarines and a subcontractor for the program—BlueForge Alliance—about their role in managing submarine supplier investments. Additionally, we interviewed officials from DOD's Office of Cost Assessment and Program Evaluation about its studies on submarine industrial base investments. To gain perspectives from an external party managing investments in the ship industrial base, we interviewed the Department of Transportation's Maritime Administration. Lastly, we interviewed NAVSEA's Contracts Directorate to understand its role in managing shipyard investment incentives on contracts.

To gain the perspective of Navy leadership on the ship industrial base, we interviewed the Deputy Assistant Secretary of the Navy for Ships and officials from the office of the Deputy Assistant Secretary of the Navy for Sustainment. We also held a discussion with the Assistant Secretary of the Navy for Research, Development, and Acquisition. We also reviewed a memo issued by the ASN (RD&A) that includes information about the establishment of a new direct reporting program office for the ship industrial base.

We conducted this performance audit from October 2022 to February 2025 in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

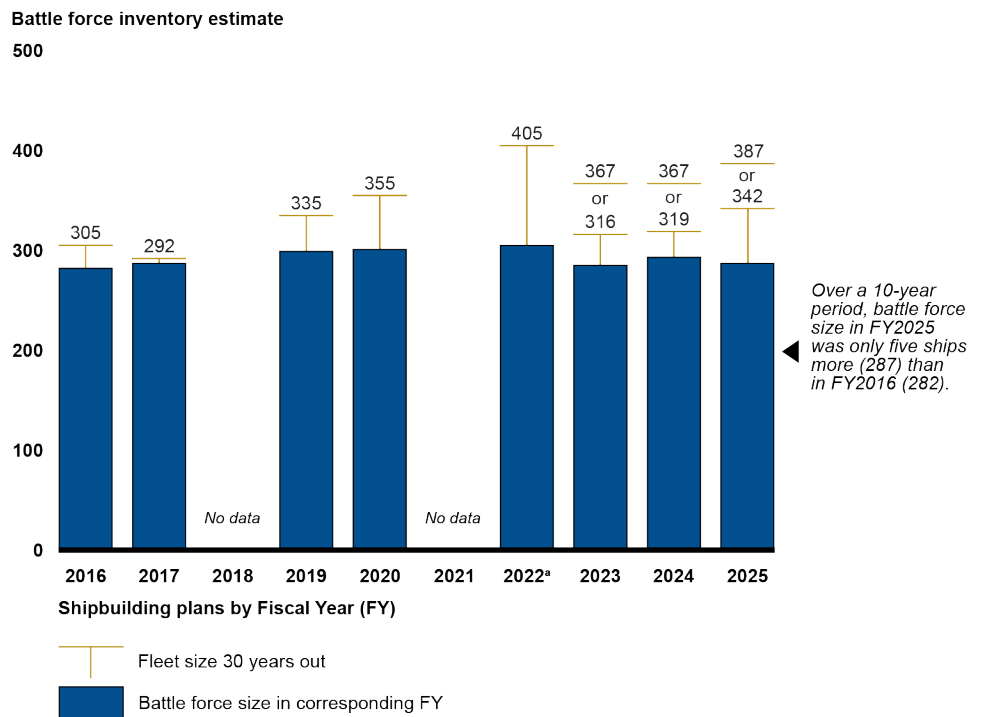
**Appendix I: Objectives, Scope, and
Methodology**

Some of the companies we interviewed to inform our analysis identified some of the information they provided to us as being business sensitive, which must be protected from public disclosure. Therefore, this report omits the sensitive information on the companies' workforce, infrastructure, and subcontracts. One company, Bath Iron Works, did not respond to several requests to validate if information obtained from the company could be cleared for public release. We therefore omitted some information obtained from Bath Iron Works in this report.

Appendix II: Misalignment Between Navy Shipbuilding Plan for Growth in the Fleet and the Navy's Battle Force Assessments

The Navy produced its first shipbuilding plan for fiscal year 2004. In recent years, it has increased its target for the size of the fleet and will have to construct more new ships to meet its goals, as seen in figure 12.

Figure 12: Navy Planned Fleet Size Growth from Shipbuilding Plans, Fiscal Years 2016-2025



Source: GAO analysis of Department of Defense data. | GAO-25-106286

*The 2022 Navy planned numbers come from the shipbuilding plan the Navy submitted to Congress on December 9, 2020. The official fiscal year 2022 shipbuilding plan released in June 2021 did not include 30-year inventory projections.

However, while the plan has consistently reflected the need for growth, it has not always outlined a pathway for the Navy to achieve its desired fleet size, as determined by Navy force structure analyses. For example, the Navy completed a force structure analysis for fiscal year 2016 that identified a 355-ship force, with a specific mix of ship types, as required to achieve national goals. Following this analysis, the National Defense Authorization Act for fiscal year 2018 specified that it is U.S. policy to have no less than 355 battle force ships available as soon as

Appendix II: Misalignment Between Navy Shipbuilding Plan for Growth in the Fleet and the Navy’s Battle Force Assessments

practicable.¹ Additionally, the law stated that the fleet should be comprised of the optimal mix of ship types, subject to the availability of appropriations or other funds. However, under the shipbuilding plan that followed, for fiscal year 2019, the Navy did not plan to reach a 355-ship battle force. Rather, it planned to have only 335 ships by fiscal year 2048.

Similarly, the most recent shipbuilding plan, for fiscal year 2025, does not outline a path by which the Navy will achieve the composition of battle force it determined it needs under an updated force structure assessment. Following a requirement to do so in the National Defense Authorization Act for Fiscal Year 2022, the Navy updated its force structure analysis. The Navy aligned its analysis with the 2022 National Defense Strategy, resulting in an increased fleet size goal over its 2016 analysis (see table 5).²

Table 5: Fleet Size by Ship Type Called for Based on Recent Navy Analysis by Fiscal Year

Ship Type	Fleet size in 2016 analysis	Fleet size in 2023 analysis
Aircraft carriers	12	12
Large surface combatants	104	87
Small surface combatants	52	73
Amphibious warfare ships	38	31
Attack submarines	66	66
Ballistic missile submarines	12	12
Cruise missile submarines	0	0
Combat logistics forces	34	46
Command, support, and other	37	54
Total battle force	355	381

Source: GAO analysis of Navy long-range planning documents. | GAO-25-106286

However, the most recent shipbuilding plan projects the Navy will have fewer of some ship types than called for in the force structure analysis. For example, it plans to have fewer than 12 aircraft carriers in the fleet—

¹Pub. L. No. 115-91 §1025 (2017).

²The National Defense Authorization Act for Fiscal Year 2022 required the Chief of Naval Operations to submit a battle force ship assessment and requirement to the congressional defense committees within 180 days of significant changes to wartime scenarios. This assessment should include the total number of battle force ships required. Pub. L. No. 117-81, § 1017 (a) (2021)(amending Title 10, U.S. Code, by adding § 8695(a)-(d)).

**Appendix II: Misalignment Between Navy
Shipbuilding Plan for Growth in the Fleet and
the Navy's Battle Force Assessments**

the number called for in its force structure analysis—for 27 of the next 30 fiscal years.³ During some years, the Navy plans to have only nine aircraft carriers.

The divide between what the Navy has determined it needs and what the Navy plans to procure is wider in the lower-cost procurement options included in its recent shipbuilding plans. Since its fiscal year 2023 plan, the Navy has provided multiple options for future force structure, rather than a single projection, that reflect different budget scenarios. For example, in its most recent shipbuilding plan, the Navy presented options to procure either 60 or 81 small surface combatants over the next 30 fiscal years. Under these options, and when also considering the Navy's decommissioning plans, there would be either 50 or 68 small surface combatants in the fleet after 30 years, up to 23 fewer ships of this type than the 73 called for in the force structure assessment. Similarly, under one option the Navy would not reach 66 attack submarines—the number called for in its force structure analysis—until the 30th year of its shipbuilding plan, and under the other option it would never reach this goal.

³In addition to the Navy's force structure goals, the Navy also has a legal requirement to maintain not less than 11 operational aircraft carriers. 10 U.S.C. § 8062(b). The fiscal year 2025 shipbuilding plan projects the Navy will have fewer than 11 aircraft carriers for most fiscal years between fiscal years 2037 and 2054.

Appendix III: Examples of Shipbuilder Infrastructure Problems

For six of the seven major shipbuilders we spoke with, we identified examples of infrastructure limitations that either currently affect their ability to construct ships on time, or that could do so in the future (see fig. 13). One company, Bath Iron Works, did not respond to several requests to validate if information obtained from the company is cleared for public release. We therefore omitted all information obtained from Bath Iron Works from figure 13.

Figure 13: Examples of Key Infrastructure Limitations for Navy Shipbuilders

 <p>Aging infrastructure</p>	<p>National Steel and Shipbuilding Company Aging infrastructure, including heavy cranes, block assembly tables, and a floating dry dock, is at risk of failure and presents a high risk of schedule delays to Navy programs.</p>
 <p>Lack of space in shipyard</p>	<p>Electric Boat The shipyard lacks space to construct both <i>Columbia</i> and <i>Virginia</i> class submarines simultaneously and has begun to outsource work that would normally be conducted at the shipyard.</p> <p>Fincantieri Marinette Marine The constrained panel line for welding steel panels is able to produce enough material for two frigates per year under an optimal schedule that does not include delays. Physical space constrains the ability to run additional shifts.</p> <p>Newport News The shipyard lacks space to construct both <i>Columbia</i> and <i>Virginia</i> class submarines simultaneously and has begun to outsource work that would normally be conducted at the shipyard.</p>
 <p>Future concerns</p>	<p>Austal An influx of new work—going up from two ship programs to 12—may strain capacity, unless ongoing and future expansion efforts are timely.</p>

Source: GAO analysis of Navy and shipbuilder documents and interviews; GAO (icons). | GAO-25-106286

Appendix IV: Purpose and Legal Authority for Department of Defense Investment Programs in Navy Shipbuilding

The Department of Defense (DOD) makes direct investments in the shipbuilding industrial base under various authorities. While DOD uses these authorities to benefit the shipbuilding industrial base, the authorities differ in purpose and where specifically they direct support to. Table 6 provides information about the legal authorities associated with each investment type we assessed.

Table 6: Selected Direct Investment Legal Authorities for the Shipbuilding Industrial Base

Navy direct investment funding	Purpose	Authority
Submarine Industrial Base	To support supplier development, shipyard infrastructure, workforce development, government oversight, and technology opportunities for the submarine industrial base.	Authorized by National Defense Authorization Acts through Navy Shipbuilding and Conversion. ^a
Surface Combatant Industrial Base	To support advanced procurement for the surface combatant industrial base and infrastructure for the shipbuilders.	Authorized by National Defense Authorization Acts through Navy Shipbuilding and Conversion. ^a
Frigate	To support the frigate industrial base.	Authorized by National Defense Authorization Acts through Navy Shipbuilding and Conversion. ^a
Investment programs	Purpose	Authority
Navy Manufacturing Technology	To anticipate and close gaps in manufacturing capabilities.	10 U.S.C. § 4841. Manufacturing Technology Program
National Shipbuilding Research Program	To reduce the total ownership cost and improve the capabilities of both U.S. government and U.S. Flag commercial ships.	Industry led effort, in partnership with the Navy, using 10 U.S.C. § 4021. Research Projects: Transactions Other Than Contracts and Grants
Industrial Base Analysis and Sustainment (IBAS)	To maintain or improve the health of essential parts of the defense industry by addressing critical capability.	10 U.S.C. §4817. Industrial Base Fund
Defense Production Act (DPA) Title III	To focus on projects that establish, expand, maintain, or restore domestic production capacity for critical components and technologies.	50 U.S.C. §4533. Other Presidential Action Authorized, and related Executive Orders
Defense Manufacturing Community Support Program	To support long-term community investments that strengthen national security innovation and expand the capabilities of the defense industrial ecosystem.	John S. McCain National Defense Authorization Act of for Fiscal Year 2019. Pub. L. No. 115-232, § 846(a)(1).

Source: GAO analysis of DOD documentation and statutes. | GAO-25-106286

^aSee, e.g., National Defense Authorization Act for Fiscal Year 2024, Pub. L. No. 118-31, 137 Stat. 136, at 710 (2023).

Appendix V: GAO Contacts and Staff Acknowledgments

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