



NAVY SHIP MODERNIZATION

Poor Cruiser Outcomes Demonstrate Need for Better Planning and Quality Oversight in Future Efforts

Report to Congressional Committees

December 2024

GAO-25-106749

United States Government Accountability Office

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GAO Highlights

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Why GAO Did This Study

In 2012 and 2013, the Navy proposed retiring several cruisers due to budget constraints. Congress rejected the Navy's proposal and provided funding to modernize these ships. In response, the Navy planned to use a phased approach to modernization that would extend 11 cruisers' service life by 5 years and upgrade the vessels' combat capability. The Navy originally planned to complete all 11 cruisers by fiscal year 2026. The Navy has other upcoming significant surface ship modernization efforts, such as for 23 destroyers. The success of these efforts is critical to the Navy having a combat-ready fleet.

A Senate report included a provision for GAO to assess the Navy's cruiser modernization. This report assesses, among other things, the extent to which (1) the Navy met its modernization objectives; (2) the Navy's planning affected outcomes; and (3) the Navy exercised effective quality control and oversight of the effort. To do this work, GAO toured five cruisers undergoing modernization, interviewed over 100 Navy officials, compared actual versus planned cost and schedule data, and reviewed Navy documentation and prior GAO reports related to Navy shipbuilding and repair.

What GAO Recommends

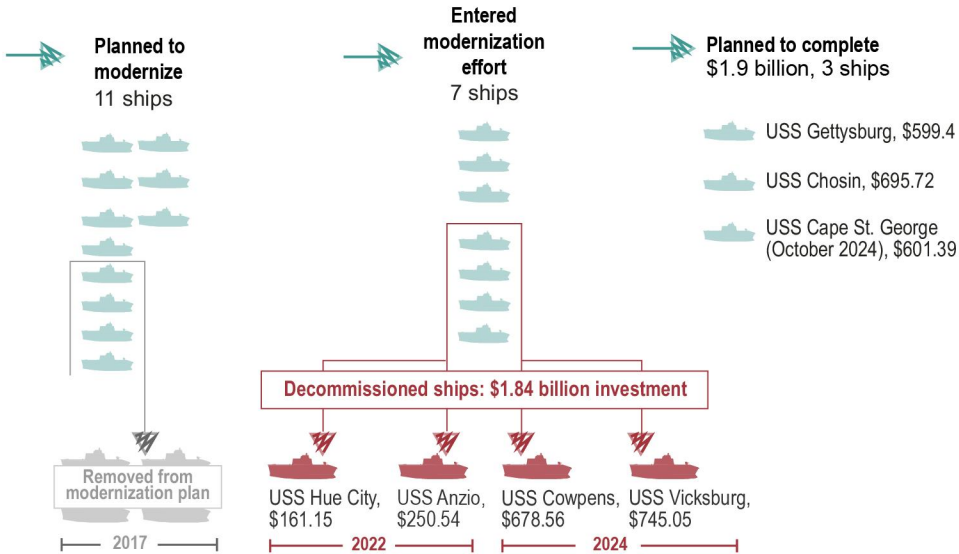
GAO is making six recommendations, including that the Navy assess root causes of unplanned work, develop mitigation strategies, and codify these strategies in policy; and re-assess its overall approach to quality assurance to prevent similar issues in future surface ship modernization efforts. The Navy concurred with all six recommendations.

What GAO Found

Since 2015, the Navy has spent about \$3.7 billion modernizing seven of the *Ticonderoga* class guided-missile cruisers—large surface combatants that provide key air defense capabilities. However, only three of the seven ships will complete modernization, and none will gain 5 years of service life, as intended. The Navy wasted \$1.84 billion modernizing four cruisers that have now been divested prior to deploying. The Navy also experienced contractor performance and quality issues across the cruiser effort. For example, the contractor performed poor quality work on USS Vicksburg's sonar dome—a critical element of the Anti-Submarine Warfare mission area—resulting in additional cost and schedule delays due to necessary rework.

Status of Navy Cruiser Modernization as of August 2024

Dollars (in millions as of September 2023)



Source: GAO analysis of Navy data. | GAO-25-106749

The Navy did not effectively plan the cruiser effort. This led to a high volume of unplanned work—9,000 contract changes—resulting in cost growth and schedule delays. The Navy has yet to identify the root causes of unplanned work or develop and codify root cause mitigation strategies to prevent poor planning from similarly affecting future surface ship modernization efforts.

Further, weakened quality assurance tools restricted the Navy's ability to hold contractors accountable for poor quality work. In 2018, leadership restricted maintenance officials from assessing monetary penalties to contractors without senior leadership approval. In 2020, leadership changed procedures to reduce inspections, which are a vital tool for overseeing ship repair contracts, by almost 50 percent. These actions were implemented to maintain strong working relationships with the contractors because of the Navy's dependence on them to modernize its fleet, according to Navy officials. Without reassessment, the Navy risks experiencing similar negative outcomes in future modernization efforts.

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Abbreviations

- CAR: Corrective Action Request
- CNO: Chief of Naval Operations
- CNRMC: Commander, Navy Regional Maintenance Center
- CPARS: Contractor Performance Assessment Reporting System
- DDG: Guided-Missile Destroyer
- DOD: Department of Defense
- FAR: Federal Acquisition Regulation

- JFMM: Joint Fleet Maintenance Manual
- MARMC: Mid-Atlantic Regional Maintenance Center
- NAVSEA: Naval Sea Systems Command
- NAVSEA 21: Naval Sea Systems Command, Surface Ship Maintenance, Modernization, and Sustainment
- NMD: Naval Maintenance Database
- NRMO: Naval Sea Systems Command, Regional Maintenance Offices
- NWRMC: Northwest Regional Maintenance Center
- OPNAV: Office of the Chief of Naval Operations
- OPNAV N96: Chief of Naval Operations, Surface Warfare
- QASP: Quality Assurance Surveillance Plan
- RCC: Request for Contract Change
- RMC: Regional Maintenance Center
- SURFMEPP: Surface Maintenance Engineering Planning Program
- SWRMC: Southwest Regional Maintenance Center

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441 G St. N.W.
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December 17, 2024

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

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

From 2015 through fiscal year 2023, the Navy spent about \$3.7 billion modernizing seven *Ticonderoga* class guided-missile cruisers. Through the cruiser modernization effort, the Navy intended to extend the service lives—or lifespans—of 11 cruisers while also providing the ships with warfighting upgrades. The Navy planned to achieve this modernization through 4-year work periods on each ship over a 10-year period for all 11 ships. The work periods involved extensive maintenance and modernization work, including maintenance work on the ships’ hulls and modernization work to upgrade the ships’ guns and combat systems. But nearly 10 years later, only one of the ships has deployed and the Navy plans to divest the remaining cruisers by fiscal year 2027.

Cruisers are large surface combatants that primarily fulfill the Air and Missile Defense Commander role, which involves coordinating the use of valuable air defense assets to protect U.S. and ally ships. Since technology needs to be refreshed often and the United States industrial base is limited in the number of ships it can build, modernizing ships successfully is critical to maintaining and increasing the fleet size to 355 ships in accordance with Navy plans.

In the coming decade, the Navy is planning additional significant surface ship modernizations. These include an effort costing more than \$10 billion to modernize 23 of the Navy’s destroyers (DDG) at some of the same ship repair yards that executed cruiser modernization. The Navy is planning additional multi-billion-dollar efforts to maintain and modernize many of its 32 amphibious ships. Modernization efforts can vary but are critical for updating ships. Our past work has found that the Navy has experienced substantial sustainment challenges across the fleet, including ship repair delays, degraded materiel condition, and a significant maintenance backlog.¹

The Senate Armed Services Committee report accompanying the James M. Inhofe National Defense Authorization Act for Fiscal Year 2023 included a provision for us to assess the Navy’s cruiser modernization.²

¹GAO, *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).

²S. Rep. 117-130, at 23-24 (2022); Pub. L. No. 117-263 (2022).

This report assesses the extent to which (1) the Navy met its objectives for cruiser modernization; (2) the Navy's planning affected cruiser modernization outcomes; (3) the Navy exercised effective quality control and oversight of cruiser modernization; and (4) the Navy extended the cruiser service lives as planned and considered the benefits, costs, and risks of decommissioning the cruisers that will complete modernization.

To answer all four objectives, we toured the five cruisers undergoing modernization as of September 2023. As discussed in this report, two additional cruisers were dropped from the modernization effort in 2022. We also interviewed over 100 officials across relevant Navy offices.

To assess the extent to which the Navy met its objectives for cruiser modernization, we compared cost and schedule data as of September 30, 2023, to the Navy's planned cost and schedule objectives at the start of cruiser modernization. To identify quality of work on the ships, a critical element of completing each ship's modernization, we reviewed Navy data on quality, such as corrective action requests and contractor performance assessment reports, and interviewed maintenance officials and ships' crew on quality issues.

To assess how planning affected cruiser modernization outcomes, we reviewed the steps that the Navy took to gather information about the condition of the cruisers and to plan cruiser modernization. For example, we reviewed documentation of pre-modernization surveys that were conducted by the Navy to identify the condition of the ships that the Navy planned to modernize. We also analyzed requests for contract change and growth work data.

To assess the extent to which the Navy exercised effective quality control and oversight, we reviewed contracts, contract performance data, and documentation of Navy oversight of cruiser modernization. We compared these to Navy policy for maintenance and modernization and relevant portions of the Federal Acquisition Regulation (FAR).

To assess the extent to which the Navy extended the cruisers' service lives as planned and considered the benefits, costs, and risks of decommissioning the cruisers, we evaluated the Navy's analyses based on existing requirements outlined in Navy policy on decommissioning Navy vessels. We also assessed the Navy's analyses against GAO's Assessment Methodology for Economic Analysis which provides guidance on conducting cost benefit analysis.³

Additional details about our scope and methodology can be found in appendix I.

We conducted this performance audit from March 2023 to December 2024 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.

³GAO, *Assessment Methodology for Economic Analysis*, [GAO-18-151SP](#) (Washington, D.C., Apr. 2018).

Background

Cruisers carry out several missions, such as defending aircraft carriers, launching missiles to strike maritime and land targets, and patrolling sea lanes. Some cruisers are also capable of providing ballistic missile defense. Further, the cruiser is the Navy’s only purpose-built air defense platform designed to perform the Air Defense Commander role. The Air Defense Commander is responsible for coordinating air defense for carrier strike groups, and the cruisers are more equipped to perform this function than any other ship class. The lead *Ticonderoga* class ship was first commissioned in 1983. The Navy has since commissioned 27 cruisers, with each ship having an estimated 35-year service life. Figure 1 shows USS Gettysburg, a cruiser that was commissioned in 1991.

Figure 1: Guided Missile Cruiser



Source: U.S. Navy photo by Brian Fromal. | GAO-25-106749

Navy Stakeholders Involved in Overseeing Cruiser Modernization

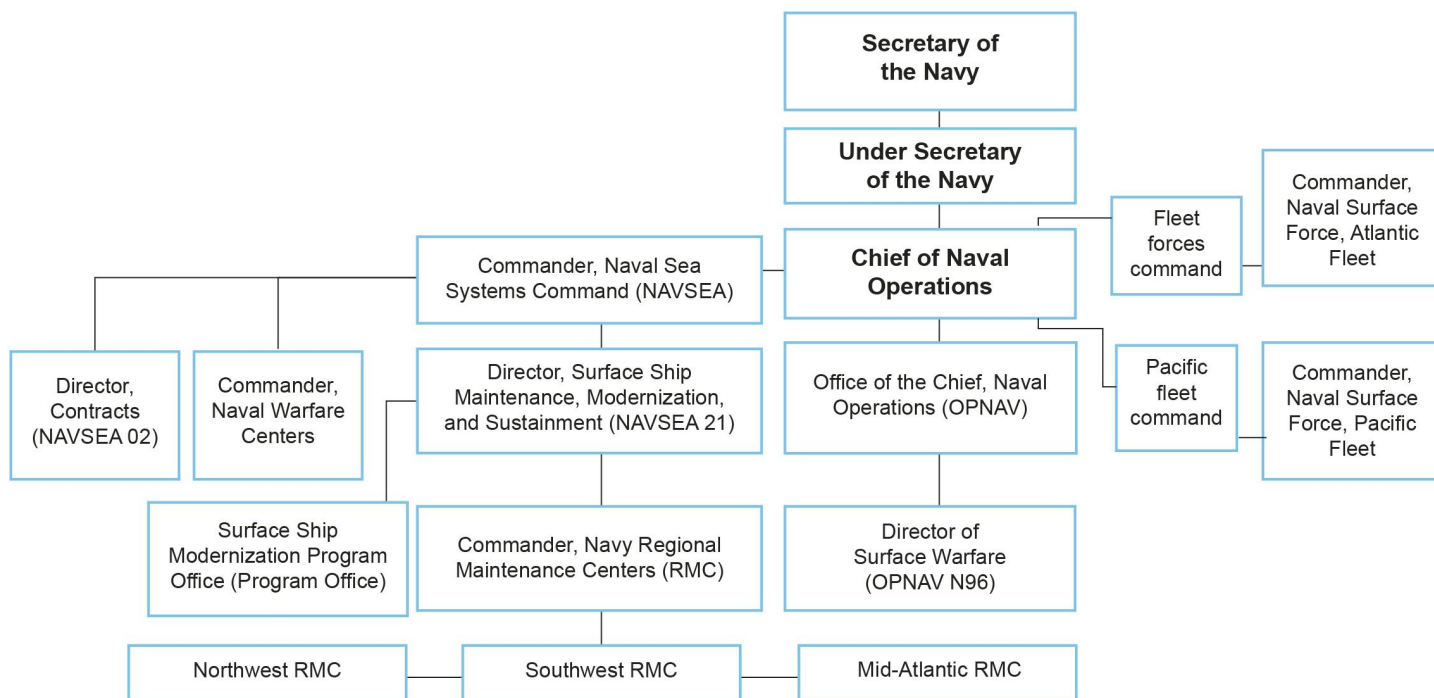
As previously mentioned, the overall cruiser modernization effort requires both maintenance and modernization. These types of work—maintenance or modernization—are funded through different categories of Navy funding.⁴ Maintenance includes, for example, structural or mechanical repairs, whereas modernization involves upgrades to a ship’s capabilities. In this report, we refer to the overall modernization effort, including maintenance and modernization, as the “cruiser modernization effort.”

The cruiser modernization effort’s oversight and management are unique compared to how the Navy typically oversees other surface ship maintenance and modernization. When each ship was inducted into or entered cruiser modernization, the control and responsibility of the ship—along with responsibility for allocating and disbursing funding—was transferred from the fleet (Surface Forces Atlantic or Surface Forces Pacific) to Naval

⁴The Navy uses Operations and Maintenance, Navy appropriations for the maintenance of ships, among other things. The Navy uses Other Procurement, Navy appropriations to finance modernization of equipment, among other things.

Sea Systems Command (NAVSEA). Control of the ships was transferred back to the fleet midway through each ship’s modernization, but NAVSEA remained responsible for completing the modernization effort, according to Navy officials. For other surface ships, the fleet maintains control and responsibility of the ship going through maintenance. This can include modernization, and overseeing funding, whereas NAVSEA is primarily responsible for providing system expertise as well as contract award and administration. Figure 2 outlines the various stakeholders that oversee and manage cruiser modernization.

Figure 2: Organizational Chart for Navy’s Cruiser Modernization Effort



Source: GAO analysis of Navy data. | GAO-25-106749

NAVSEA and its subordinate organizations help maintain ships to meet fleet requirements within cost and schedule goals, among other duties.

- **Director, Surface Ship Maintenance, Modernization, and Sustainment (NAVSEA 21)** manages life-cycle support for all nonnuclear surface ships and is responsible for the depot-level maintenance and modernization of surface ships operating in the fleet.⁵ NAVSEA 21 has ownership of the cruiser modernization ships, meaning NAVSEA 21 has the overall technical, acquisition, and execution authority of cruiser modernization.
- **Surface Ship Modernization Program Office (Program Office)** leads and integrates all surface ship modernization policy, planning, and execution. The Program Office is responsible for various cruiser

⁵Depot-level maintenance—the highest maintenance level—consists of tasks that focus on areas such as repair, fabrication, manufacture, assembly, overhaul, rebuilding, test, analysis, design, assemblies, or software that require specialized facilities, tooling, support equipment, or personnel with higher technical skill. Large modernization efforts are nearly always a part of depot-level maintenance.

modernization oversight elements, including program management and requesting, allocating, and disbursing Chief of Naval Operations funds.⁶

- **Commander, Navy Regional Maintenance Center (CNRMC)** oversees the Navy's Regional Maintenance Centers (RMC) in their administration of surface ship contracts for maintenance and modernization of ships.
 - The RMCs administer and are responsible for the day-to-day oversight of the contracts the Navy uses to maintain and modernize ships. RMCs involved in the cruiser modernization effort include Mid-Atlantic Regional Maintenance Center (MARMC) in Norfolk, Virginia, Southwest Regional Maintenance Center (SWRMC) in San Diego, California, and the Northwest Regional Maintenance Center (NWRMC) in Everett, Washington.
- **Commander, Naval Warfare Centers** provide technical expertise and support for the Navy's ships and systems. For certain modernization elements, the Warfare Centers oversee the Navy's use of modernization teams. The government supervises and a contractor manages modernization teams responsible for installing ship alterations, such as a communications system upgrade. The modernization team's work should be integrated into the ship repair yard's maintenance period schedule, according to the Navy's Joint Fleet Maintenance Manual.⁷
- **NAVSEA Contracts** awards contracts for large and complex ship repair and modernization periods, while the RMCs administer them.

Office of Chief of Naval Operations (CNO) is the senior military officer of the Department of the Navy, overseeing the Navy's fleet, among other organizations.

- **Office of the Chief of Naval Operations Surface Warfare Director, (OPNAV N96)** is the requirements and resource sponsor for the maintenance and modernization of cruisers undergoing modernization.
- **Operational Fleet Forces (fleet)** of the Navy, including the fleet commands (Surface Forces Atlantic and Surface Forces Pacific), typically assume full responsibility for operating and maintaining ships. Port Engineers work for the fleet and are responsible for the maintenance of their assigned ships. The fleet does not have a significant role with developing and installing systems associated with major modernization efforts. As mentioned above, control of the cruisers was transferred away from the fleet for cruiser modernization and then back to the fleet midway through the ships' modernization period, which we discuss later in the report.

Types of Ship Maintenance and Modernization

The Navy contracts with private shipyards—which are part of the ship repair industrial base—for the maintenance and modernization of non-nuclear surface ships. Certain types of work, such as repairing a ship's hull, might require placing a ship in the ship repair contractor's dry dock.⁸ Ship maintenance and modernization

⁶In part, cruiser modernization was funded through the Ship Modernization, Operation and Sustainment Fund. In 2013 when the Navy proposed decommissioning seven cruisers, Congress created this as a fund for modernization of the cruisers as well as three landing dock ships to prevent the Navy from decommissioning them as planned.

⁷Department of the Navy, *Joint Fleet Maintenance Manual*, COMUSFLTFORCOMINST 4790.3 (Jan. 15, 2021).

⁸Dry dock means the ship is parked in a narrow basin that allows water to be drained so maintenance/repair can be performed on areas normally under water.

work time frames can range from a few weeks to years depending on the extent and complexity of the work required. The types of maintenance periods, which also include modernization work, include the following:

CNO maintenance periods. The Navy's most intensive maintenance and modernization periods are called CNO availabilities. In this report, as a broad term we refer to CNO availabilities as CNO maintenance periods. The Navy accomplishes major repair work—known as depot-level maintenance and modernization—during these periods. This level of work requires complex processes to complete restorative work, such as structural, mechanical, and electrical repairs. These may include modernization work to upgrade a ship's capabilities and extend the ship's service life.

Continuous maintenance periods. These maintenance periods accomplish non-major repair work, which includes routine maintenance work requiring relatively little time compared to CNO maintenance periods—typically only weeks to a few months in duration.⁹

Contracting Approach

The Navy began to award the cruiser modernization contracts as it transitioned its ship repair and modernization contracts from cost-type contracts to firm-fixed-price contracts. Under cost-type contracts, the government pays allowable costs incurred by the contractor, to the extent prescribed by the contract. Firm-fixed-price contracts provide for a price that is not subject to any adjustments regardless of the contractor's cost experience. The Navy implemented this change in 2015 as part of a strategy to address widespread cost and schedule challenges related to ship maintenance. Under the new strategy, contracting opportunities for maintenance periods that the Navy expects to last more than 10 months are not restricted to vendors in the ship's home port and are often competed among interested shipbuilders located on the same coast as the ship's home port.

Cruiser Modernization Strategy

In 2012, the Navy decided to divest seven cruisers and two dock-landing ships due to budget constraints, according to Navy officials.¹⁰ However, Congress did not support the Navy's decision and provided funds to maintain, operate, and sustain the ships in the fleet. In March 2014, as part of the President's Budget for Fiscal Year 2015, the Navy proposed a Phased Modernization Plan that included placing 11 *Ticonderoga* class cruisers into a phased modernization and maintenance period to reduce near-term funding requirements and as a means to extend the life of these ships. According to Navy officials, the Navy did not consider any formal alternatives to the original Phased Modernization Plan submitted as part of the President's Budget for Fiscal Year 2015. Navy officials stated that the Navy's Phased Modernization Plan evolved after Congress rejected the Navy's earlier proposal to divest nine ships, and that there were discussions held to determine the best plan. According to Navy officials, because Congress did not approve its Phased Modernization Plan, the Navy

⁹In 2022, we issued a report reviewing intermediate maintenance periods, including surface ship continuous maintenance periods (*Navy Ship Maintenance: Actions Needed to Monitor and Address the Performance of Intermediate Maintenance Periods*, [GAO-22-104510](#), Washington, D.C., Feb. 8, 2022.).

¹⁰DOD uses the term divest to mean retiring a ship before the end of its expected service life, whereas decommission means to retire a ship at the end of its expected service life.

made further modifications to the plan and adopted the “2-4-6” strategy, which the officials believe is consistent with congressional intent.

Under this strategy, the Navy planned to modernize a total of 11 cruisers over 10 years by

- inducting no more than **2** cruisers each year into modernization cycles,
- for up to **4** years in modernization, and
- with no more than **6** cruisers undergoing modernization at the same time.

To save on crew costs, the Navy inactivated, but retained in commission, the seven ships that entered the cruiser modernization effort. The Navy continued to count these ships toward fleet size but reduced the crew on each ship from generally over 350 sailor billets allowed to a 45-sailor caretaker crew. To maintain the ship with a caretaker crew, officials told us that the Navy had to preserve the ship, which included taking actions such as draining the lube oil from the propulsion system and replacing it with a preservative. The Navy’s strategy was unusual, as a ship going through maintenance or modernization typically would not have its crew significantly reduced or be inactivated, according to Navy officials. According to Navy guidance, midway through the modernization period for each ship, the Navy was to increase the number of crew back to the full billets, generally around 350, to help reactivate the ship.

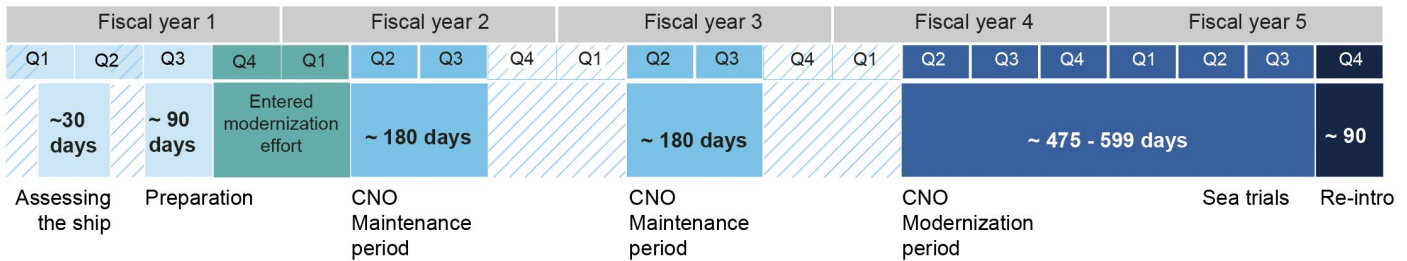
Cruiser Modernization Approach

Cruiser modernization consisted of several maintenance periods. For a given cruiser, following a 90-day preparation period, the cruiser entered the modernization effort.¹¹ At that point, the ownership of the ships was transferred from the fleet to NAVSEA 21. This started the planned 4-year time frame for modernization.

As part of the modernization effort each ship was planned to go through one or two 180-day CNO maintenance periods. These were followed by a CNO dry dock maintenance period with an expected duration of about 1.5 years, during which most of the modernization work was to be accomplished. For purposes of this report, we will refer to this dry dock maintenance period as the “modernization period.” The Navy planned for a break in between each of the periods to ensure that the modernization effort for each ship spanned 4 years, according to officials. Figure 3 represents an example of the planned maintenance periods for a cruiser undergoing modernization. The Navy planned for each ship’s modernization and the 4-year time frame to conclude with sea trials, typically conducted after major work is done on a ship.

¹¹The preparation period is a continuous maintenance period. As previously discussed, a continuous maintenance period involves non-major repair work.

Figure 3: Example of Cruiser Modernization Strategy for One Ship



Break periods

CNO Chief of Naval Operations

Source: GAO analysis of Navy data. | GAO-25-106749

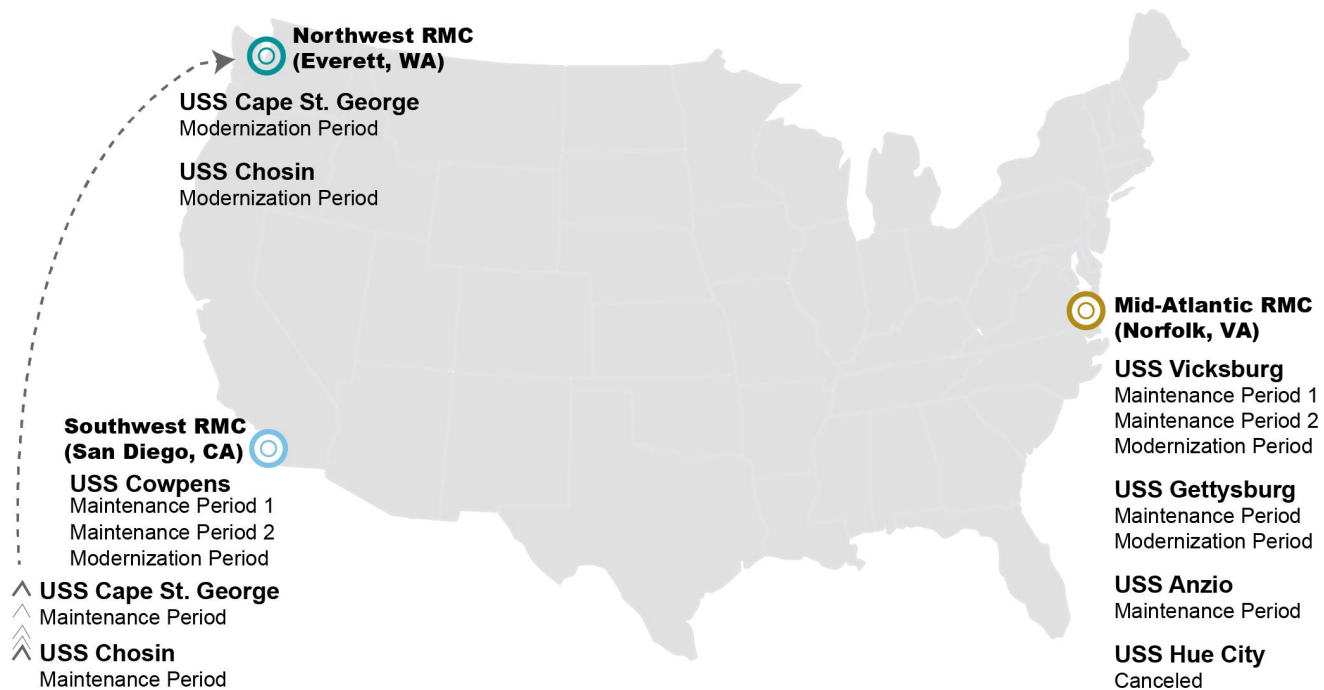
The Navy generally contracted for each cruiser’s maintenance and modernization periods separately.¹² The contractor location determines which RMC is responsible for administering the contracts and conducting quality assurance.

Figure 4 shows the seven cruisers that entered cruiser modernization. As shown, five of the seven ships began modernization periods, while the Navy discontinued work on one ship (USS Anzio) after beginning a maintenance period, and never started work on one ship (USS Hue City).¹³ Figure 4 summarizes the maintenance and modernization periods and responsible RMC for each ship.

¹²The Navy contracted for the maintenance and modernization periods using “stand-alone” contracts as well as orders placed under indefinite delivery/indefinite quantity (IDIQ) contracts. IDIQ contracts do not specify exact times for delivery of supplies or services at contract award; the Navy establishes those via orders placed during contract performance. In this report we use the word “contracts” to encompass both delivery orders placed under IDIQ contracts and stand-alone contracts that the Navy used to execute cruiser modernization. While there are 13 maintenance and modernization periods, there are only 12 corresponding contracts, due to one contract including two ships.

¹³We discuss these ships in more detail later in the report.

Figure 4: Location of Cruiser Chief of Naval Operations Maintenance and Modernization Periods



Regional Maintenance Center (RMC)

Source: GAO analysis of Navy information; LogoStockimages/stock.adobe.com (map). | GAO-25-106749

Note: This table only shows Chief of Naval Operations maintenance periods. Some of the cruisers, such as USS Gettysburg, had shorter and lower dollar continuous maintenance periods interspersed throughout their modernization.

Upcoming Surface Ship Maintenance and Modernization Efforts

In prior work, we identified that the Navy continues to face delays in building new ships to meet its current 355-ship force-level goal.¹⁴ Therefore maintaining, modernizing, and extending the service lives of surface ships already in the fleet is crucial. Currently, the Navy plans to perform CNO maintenance and modernization periods on its destroyer and amphibious fleets in the next 10 years. These surface ship maintenance and modernization efforts are critical for ensuring that the Navy has enough ships to execute missions such as air and missile defense and supporting Marines in their missions.

The Navy has started to modernize its other large surface combatants, the Arleigh Burke class (DDG 51) Flight IIA Destroyers, through an effort called DDG Modernization 2.0. Currently in its early stages, this modernization, as previously mentioned, is estimated to cost more than \$10 billion to modernize 23 DDGs over a span of 15 years. The ships will receive three different modernizations, including an upgrade to the newest and most capable radar, according to Navy officials. While DDG Modernization 2.0 is in the planning stages,

¹⁴GAO, *Navy Shipbuilding: Increasing Supervisors of Shipbuilding Responsibility Could Help Improve Outcomes*, [GAO-22-104655](#) (Washington, D.C.: Apr. 12, 2022).

the Navy has completed a modernization period for one destroyer and reported awarding contracts for two additional destroyers as part of an early effort to better understand the complexities of DDG modernization.

Further, the Navy is planning various potential service life extensions and modernizations to ensure it can meet the statutory requirement to have 31 operational amphibious warfare ships in the fleet.¹⁵ The Navy is examining the possibility of extending the service life for selected amphibious assault ships. In addition, the Navy is planning significant maintenance and modernization efforts for the amphibious transport dock ships to ensure they are operationally available until the end of their expected 40-year service life and that they remain operationally relevant. The Navy expects the midlife maintenance to cost more than \$1.8 billion for the 13 amphibious transport dock ships currently in the fleet. Additionally, officials are in the early stages of planning the modernization effort and said the Navy had not yet developed budget estimates for the effort.

Navy Spent about \$3.7 Billion on Cruiser Modernization, Experienced Significant Quality Issues, and Recently Deployed One of These Ships

The Navy spent about \$3.7 billion on cruiser modernization since 2015 and has failed to meet its objectives. Of the 11 ships the Navy intended to modernize, it now plans to deploy only three. These three ships will not gain 5 years of service life. The Navy has divested four of the cruisers prior to finishing modernization and without providing any operational value to the Navy, thereby wasting the \$1.84 billion already spent to modernize them. The Navy decided to divest these ships, in part, due to a lack of funding to finish them, according to Navy officials. The three ships that have completed or are planned to complete modernization were scheduled for only one deployment before the Navy planned to divest them, however it has now extended their service lives and plans to decommission them in fiscal year 2030. In total, the Navy experienced approximately 36 percent cost growth on the cruisers it attempted to modernize and has cumulatively experienced over 15 years of schedule delays. Further, the Navy experienced significant quality issues implementing the cruiser modernization effort.

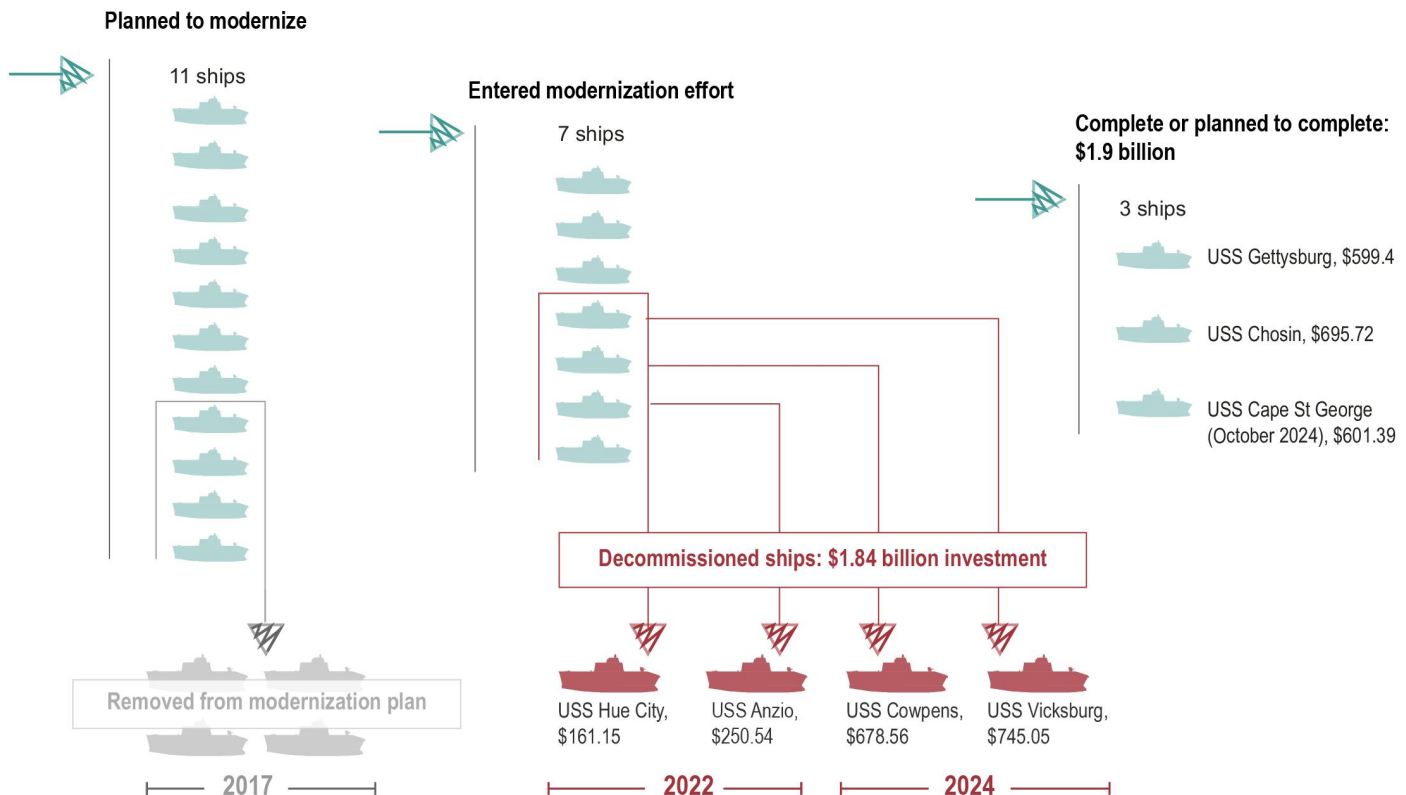
Navy Planned to Modernize 11 Ships but Expects to Return Only Three to Active Service

The Navy spent about \$3.7 billion on seven of the 11 cruisers it intended to put through the modernization effort. It has deployed only one of these ships, though its initial plans called for completing the modernization of all 11 ships by the 1st quarter of fiscal year 2026. The Navy removed the remaining four ships from the effort in 2017 due to a lack of funding, according to officials. See figure 5 for the status of cruiser modernization as of August 2024.

¹⁵10 U.S.C. § 8062(b). We published a report on amphibious fleet acquisition, maintenance, and modernization in December 2024. See GAO, *Amphibious Warfare Fleet: Navy Needs to Complete Key Efforts to Better Ensure Ships are Available for Marines*, [GAO-25-106728](#) (Washington, D.C.: Dec. 3, 2024).

Figure 5: Status of Navy Cruiser Modernization as of August 2024

Dollars (in millions)



Source: GAO analysis of Navy data. | GAO-25-106749

Notes: The dollars spent noted in the figure are as of September 30, 2023. Officials told us the Navy has obligated an additional \$26 million on cruiser modernization in fiscal year 2024.

Of the seven ships that entered the modernization effort, the Navy has divested four of them without completing modernization or deploying them. This is after incurring costs of \$1.84 billion as of the end of fiscal year 2023 to maintain and modernize them. As shown in figure 5, these ships are USS Hue City, USS Anzio, USS Cowpens, and USS Vicksburg. USS Cowpens and USS Vicksburg have each undergone about 8 years of maintenance and modernization. But Navy officials told us that, as of May 2024, these ships would have required significant effort to complete their modernizations. For USS Cowpens, the Program Office estimated that, as of June 2022, it would have taken about \$88 million and about 3 more years to complete the ship. However, officials managing the day-to-day work on USS Cowpens stated that they had not quantified the work remaining to complete the ship. As an example of outstanding issues on this ship, figure 6 shows a picture from June 2023 of rust and corrosion on the deck plate and holes in USS Cowpens’s flooring.

Figure 6: USS Cowpens Flooring Nearly 8 Years into Modernization



Source: U.S. Navy. | GAO-25-106749

Similarly, in July 2024, the Navy divested USS Vicksburg with significant work remaining to complete the modernization. In September 2023, MARMC officials stated that the Navy would have been able to finish the ship with an additional \$100 million by fiscal year 2025. However, these officials noted that this estimate did not include the cost of dry docking, which is necessary to fix the ship’s nonfunctional sonar dome—a critical element of the Anti-Submarine Warfare mission area. Program Office officials said it would have cost about \$120 million to complete USS Vicksburg’s modernization. However, the RMC and Program Office’s estimates were likely optimistic, as a senior fleet forces official stated that USS Vicksburg is “years away” from completion. In addition, we observed during our tour of USS Vicksburg in September 2023 that modernization was largely incomplete. According to fleet officials, USS Vicksburg has since been cannibalized for parts for USS Gettysburg and other cruisers. Figure 7 shows the combat information center during our ship tour in September 2023 with consoles wrapped and disconnected and, therefore, unusable.

Figure 7: USS Vicksburg's Combat Information Center 7 Years into Modernization



Source: U.S. Navy. | GAO-25-106749

The Navy still plans to complete and deploy the remaining three cruisers—USS Gettysburg, USS Chosin, and USS Cape St. George—on which it had spent approximately \$1.9 billion as of the end of fiscal year 2023, according to Program Office officials. Despite the plan for each ship to gain 5 years of service life, none of the three ships will. We discuss this in more detail later in the report.

USS Gettysburg completed its modernization, including sea trials, in February 2023. The Navy's Board of Inspection and Survey determined the ship meets the minimum standard to get to sea.¹⁶ However, in January 2024 the Navy's Board of Inspection and Survey identified several outstanding issues during an inspection of the ship's condition. For example, several elements of the weapons systems were inoperable or degraded and there were structural issues throughout the ship. Since the inspection, the Navy has addressed several of these issues and the ship completed 18 days at sea in June 2024 in preparation for deployment. During this time at sea, USS Gettysburg completed a successful missile launch and intercept using its updated combat systems software.

The Navy deployed USS Gettysburg in September 2024 with its carrier strike group. Prior to the deployment, the ship's crew told us that parts continued to be a problem, including steering gears and hydraulic power unit solenoid valves, among others. To address this problem, the Navy used parts from the decommissioned cruisers. According to the ship's crew, propulsion plant and electric system failures were key concerns for the USS Gettysburg deployment. Navy officials told us that future deployment plans for USS Gettysburg depend

¹⁶The Navy's Board of Inspection and Survey inspects newly constructed and in-service ships to assess and track the material condition of the Navy's active fleet.

on how the ship does during its September 2024 deployment. However, the shipbuilding plan shows that the Navy plans to divest the ship in fiscal year 2026 after it completes its deployment.

USS Chosin also completed its modernization and sea trials in February 2024. The Navy's Board of Inspection and Survey plans to inspect the ship in fiscal year 2025, according to Navy officials. The Navy plans to deploy USS Chosin within the next few years before its planned divestment in fiscal year 2027.

USS Cape St. George is still undergoing modernization and the Navy plans to conduct sea trials in fiscal year 2025. Like USS Gettysburg and USS Chosin, the Navy currently plans to deploy USS Cape St. George at least once before divesting the ship in fiscal year 2027, according to senior Navy officials.

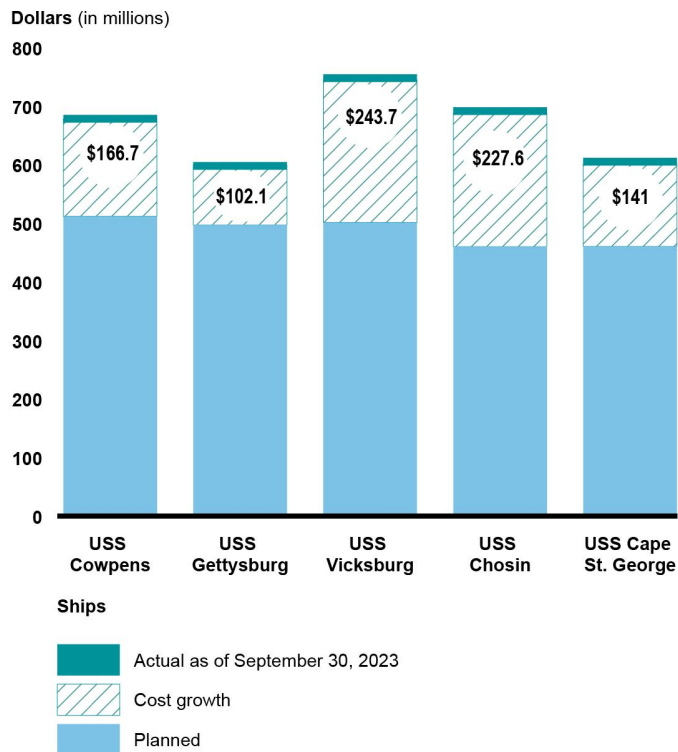
In November 2024, the Navy extended the service lives of USS Gettysburg, USS Chosin, and USS Cape St. George. The Navy now plans to decommission all three ships in fiscal year 2030.

Cruiser Modernization Experienced Significant Cost Growth and Schedule Delays

The Navy planned to spend approximately \$2.44 billion to complete maintenance and modernization work on the five cruisers that finished maintenance and transitioned to modernization periods—USS Cowpens, USS Vicksburg, USS Gettysburg, USS Chosin, and USS Cape St. George. We found that the maintenance and modernization work on those five cruisers experienced approximately \$881 million in cost growth beyond the planned \$2.44 billion.¹⁷ This is a 36 percent cost increase. Figure 8 summarizes overall cost growth for the five cruisers that reached their modernization periods.

¹⁷Two of the cruisers, USS Hue City and USS Anzio were decommissioned after entering the cruiser modernization effort, but before they reached their modernization periods. Therefore, we did not assess their overall cost growth.

Figure 8: Cruiser Modernization Cost Growth as of September 2023



Source: GAO analysis of Navy data. | GAO-25-106749

Accessible Data for Figure 8: Cruiser Modernization Cost Growth as of September 2023

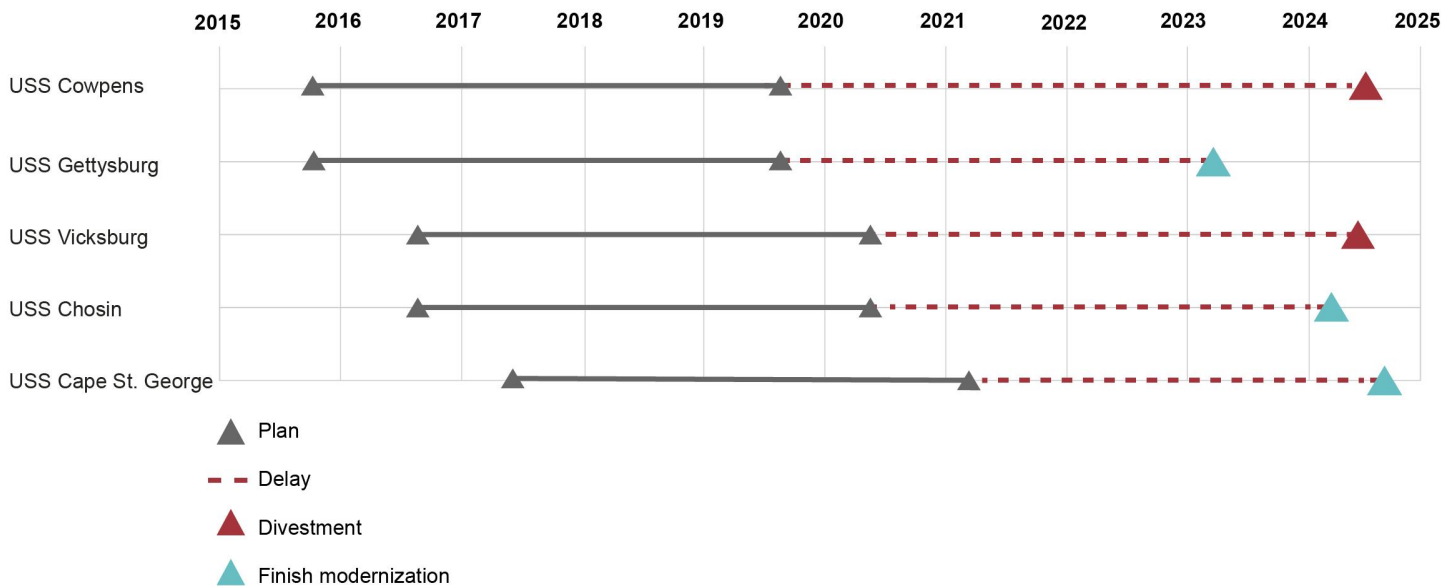
Ships	Planned (dollars, in millions)	Cost growth (dollars, in millions)
USS Cowpens	511.9	166.6
USS Gettysburg	497.3	102.1
USS Vicksburg	501.4	243.6
USS Chosin	460.1	227.6
USS Cape St George	460.4	140.9

Source: GAO analysis of Navy data. | GAO-25-106749

Note: The cost and cost growth shown in this figure include procurement of government furnished equipment, planning, program management, engineering support and testing, combat systems, and the maintenance and modernization periods.

In addition to the cost growth, these five cruisers experienced extensive schedule delays. As previously mentioned, the Navy planned for each cruiser to undergo modernization for 4 years. However, the five cruisers that reached their modernization periods have faced schedule delays beyond the 4-year period, ranging from 3 to nearly 5 years (see fig. 9). The Navy originally planned for the maintenance and modernization periods to occur sequentially with gaps in between each period as shown in figure 3. However, these delays caused maintenance and modernization periods for individual ships to overlap. Figure 9 summarizes the delays.

Figure 9: Cruiser Modernization Schedule Delays Through Completion (as of August 2024)



Source: GAO analysis of Navy data. | GAO-25-106749

Cruiser Modernization Efforts Hindered by Poor Quality

The Navy experienced widespread contractor performance and quality issues across all five cruisers that entered modernization. The Navy documents contractor performance using the Contractor Performance Assessment Reporting System (CPARS) which is the government’s tool for evaluating the contractor’s performance at certain intervals. CPARS evaluations are like report cards for the contractor that evaluate areas such as quality, schedule, and management. These evaluations provide relevant performance information for award decisions for future government contracts. The Navy completed CPARS evaluations for only 16 of the 49 evaluation periods.¹⁸ In 13 out of the 16 completed CPARS evaluations the Navy documented significant quality issues.¹⁹

In addition, Navy’s RMCs issued over 1,400 Corrective Action Requests (CAR) to contractors, requesting that the contractors correct their work. According to the Navy, CARs are one of the most effective tools for quality

¹⁸See appendix I for details on our identification of the evaluation periods.

¹⁹FAR subpart 42.15 provides policies and establishes responsibilities for recording and maintaining contractor performance information. FAR 42.1503(b) requires the use of specific performance evaluation factors (e.g., technical, schedule/timeliness) and a five scale rating system: Exceptional, Very Good, Satisfactory, Marginal and Unsatisfactory.

assurance used when contractor work is deficient.²⁰ One of the two ships that entered modernization but failed to complete the program had the most instances of poor quality (see table 1).

Table 1: Cruiser Modernization Corrective Action Requests (CAR) by Ship

Ship	Number of CARs
Ship 1	76
Ship 2	205
Ship 3	247
Ship 4	448
Ship 5	197
Ship 6	236
Grand total	1,409

Source: GAO Analysis of Corrective Action Request Data. | GAO-25-106749

The following summarizes various quality issues for the five cruisers that completed maintenance and started modernization:

Ship 6. Ship 6 had the third most CARs issued among the cruisers undergoing modernization. Work related to the sonar dome is one example of repeated poor-quality work by the contractor on Ship 6. The sonar dome is located on the bottom of the hull and houses electronic equipment used for detection, navigation, and ranging. As part of the modernization effort, the contractor was to inspect the sonar dome rubber window while the ship was in dry dock. The contractor found that the window needed replacement. The government purchased a new rubber window and modified the contract to include window installation. However, Navy-provided documentation states the contractor began installation prematurely and without the presence of the manufacturer or representatives from the ship’s crew. The ship’s crew, upon learning of the installation, arrived at the ship to find the contractor had damaged the new sonar dome rubber window. The Navy wrote a CAR identifying the damage to government-furnished material caused by the contractor. Neither the Navy nor the contractor could fix the buckle in the window, as shown in figure 10. RMC officials told us the Navy then purchased a second, new window, which was installed 4 months later. According to Navy officials, the new window cost over \$1.07 million and the government did not seek compensation from the contractor.²¹

²⁰Corrective Action Requests (CAR) are the method by which the Navy requests the contractor to correct specific nonconformities and to initiate preventive action to eliminate the cause of nonconformities. There are four levels— called “methods”—which classify both minor and major nonconformities. Method A is administrative in nature or can be corrected on the spot or within one–three days; Method B is a major nonconformity that could result in hazardous or unsafe conditions for the user; Method C is a for systemic or critical nonconformities where immediate management action is required; a Method D is used when a Method C fails to obtain satisfactory results or severity of the situation warrants.

²¹The Navy provided the first sonar dome rubber window to the contractor as Government Furnished Material. RMC officials told us the Navy purchased a second new rubber window after the contractor damaged the first one. According to RMC officials, they planned to recoup funds from the contractor to pay for the second rubber window, but the Navy chain of command directed them not to pursue it.

Figure 10: Damaged Rubber Window of Sonar Dome



Source: U.S. Navy. | GAO-25-106749

The same contractor then conducted a required sonar dome pressurization test. This test seeks to ensure that there are no water leaks from the sonar dome that would damage the electronic equipment inside the dome equipment room or leak into other areas of the ship. The initial test failed, showing pressure loss was coming from large cables that run from the dome to other parts of the ship that are part of the degaussing system.²² According to Navy documentation, in attempting to correct the pressure loss, the contractor used unauthorized materials such as plastic wrap, tape with common store bought super glue, expanding foam, and as seen on television sealant product, as shown in figure 11.

²²Degaussing is part of a system that reduces the likelihood that the ship is detectable or sets off underwater mines.

Figure 11: Use of Unauthorized Interventions, Including as Seen on Television Sealant Product and Plastic Wrap (left), Expanding Foam, Tape, and Common Store Bought Super Glue (right) as Documented by the Navy



Source: U.S. Navy. | GAO-25-106749

After 13 failed retests and an 8-month delay, the contractor, with government approval, severed critical degaussing cables and installed nickel caps sealing off the sonar dome. According to officials, as a result of these and other quality issues, the Navy deprioritized Ship 6 and, as such, removed it from dry dock—prior to completing the sonar dome repair work—to accommodate another ship. Thus, if the Navy had wanted to complete sonar dome work on Ship 6, it would have had to return the ship to the dry dock. This would have been significantly more time consuming and costly than repairing it while it was already in dry dock. Because of these additional costs and the condition of the vessel, in its fiscal year 2024 President's Budget Request, the Navy included the divestment of Ship 6. According to the Navy, congressional decision-makers did not oppose the divestment, and the Navy is proceeding with it.

Ship 4. Across the ship's three maintenance and modernization periods, Ship 4 received the most CARs, 448, of any cruiser in this modernization effort and almost twice as many as the next highest ship at 247. The contractor for Ship 4 received several CARs for repeated quality issues. For example, ship's crew officials told us about welding issues during our tour of the ship, which were also documented in CARs. The Navy issued two CARs for welds that were too close together and had a high chance of cracking as well as several welds that were not structurally sound. These deficiencies were found during surveillance by maintenance oversight officials. These CARs were categorized as major nonconformities. They were closed as satisfactory by maintenance oversight officials after the contractor corrected the welds.

In addition, across multiple contractors the Navy documented significant issues with work quality. Because of the condition of the vessel and costs to complete the ship, in its fiscal year 2024 President's Budget Request, the Navy included divestment of Ship 4. According to the Navy, congressional decision-makers did not oppose the divestment, and the Navy is proceeding with it.

Ship 5. Across the ship's maintenance and modernization periods, Ship 5 received 197 CARs. As an example of a quality problem, Ship 5 had issues with gun foundations (see fig. 12). Navy contract oversight officials said that the contractor replaced the gun foundations as part of the contract's scope, but the contractor installed them at the incorrect height. To correct this issue, the foundations had to be removed and reinstalled, which caused a 4-month delay. In addition, the gun could not fire without hydraulic fluid leaking. Ship's crew officials told us that they did not discover this issue until combat systems sea trials. The Navy has since corrected these issues. The Navy did not submit any CPARS evaluations for the contractor's seven evaluation periods. We discuss the factors contributing to the failure to submit CPARS evaluations later in the report.

Figure 12: Ship 5 Gun

Source: U.S. Navy. | GAO-25-106749

Ship 3. Across the ship's maintenance and modernization periods, the contractors for Ship 3 received 247 CARs. For this ship, the contractor was executing the maintenance period while the Navy was competing the follow-on modernization contract. According to Navy maintenance officials, when the Navy awarded the modernization contract to a different contractor, the original contractor stopped working on the ship and left its tools and equipment on board. The Navy did not terminate the contract for default. According to Navy officials, the contractor for the modernization contract completed the work and this was done to prevent losing expired funding. However, this situation resulted in significant inefficiencies that affected quality. For example, an official who worked on both the maintenance and modernization periods, stated that Ship 3 was in bad condition when it left the maintenance period contractor and the modernization contractor had to spend significant resources to repair the ship prior to beginning modernization.

CPARS evaluations showed that the Navy documented poor contractor quality across many of the evaluation periods. In these ratings, the Navy stated that the work was highly complex, including difficult welding that the contractor was not prepared to accomplish. One contractor strongly disagreed and the government reviewing official increased one rating.

Ship 2. Across the ship's two maintenance and modernization periods, the contractors for Ship 2 received 205 CARs. As an example, several CARs were issued for welding nonconformities mostly due to failure to meet joint requirements, not adhering to standard procedures, and weld joints not straight or offset as required. According to one of these CARs, an RMC quality assurance specialist noticed in a single day that five contractor personnel in three separate areas of the ship were using incorrect welding methods not in accordance with the requirements. While the CAR was closed as satisfactory, the ship's crew stated, during our ship tour in October 2023, that welding is an ongoing issue. Across the contractors, the Navy only submitted one CPARS evaluation for the six evaluation periods.

Insufficient Planning Led to Poor Execution and Outcomes

Even though the Navy used more than \$2 billion of procurement funding for cruiser modernization, it did not implement planning and oversight tools typical of high dollar major defense acquisition programs following the major capability acquisition pathways because it is not an acquisition program. Further, the Navy also failed to factor key elements into its planning, such as the condition of the ships and stakeholder involvement, including RMC officials and Port Engineers. This resulted in significant amounts of unplanned work that negatively impacted the execution of the cruiser modernization program.

Cruiser Modernization Effort Did Not Include Key Planning and Oversight Tools

The Navy did not develop key program planning and oversight tools and documents for the cruiser modernization effort, such as an acquisition strategy, independent cost estimate, risk management plan, baseline, and Navy program oversight meetings, according to Navy officials. The cruiser modernization effort was not required to implement these elements because it was not a program within DOD's acquisition system.²³ Nevertheless, these tools could have been used to support Navy program managers, senior leadership, as well as stakeholders in the DOD and Congress to plan, manage, and oversee large Navy modernization efforts. Table 2 provides our assessment on the extent to which the Navy used key acquisition planning and oversight tools on the cruiser modernization effort.

²³In January 2020, DOD established the Adaptive Acquisition Framework. This framework supports the Defense Acquisition System with the objective of delivering effective, suitable, survivable, sustainable, and affordable solutions to the end user in a timely manner. The Adaptive Acquisition Framework includes six "pathways" for selection based the character and risk of the capability being acquired. The pathways are urgent capability acquisition, middle tier of acquisition, major capability acquisition, software acquisition, defense business systems, and acquisition of services. Many of the planning and oversight tools discussed in this report are connected with the major capability acquisition pathway. This pathway supports major defense acquisition programs, major systems, and other complex acquisitions. Major capability acquisitions are subject to regulatory and statutory information requirements, except where waivers and exceptions apply. DODI 5000.02, Operation of the Adaptive Acquisition Framework (Effective: Jan. 23, 2020).

Table 2: Planning and Oversight Tools for Programs Using DOD’s Major Capability Acquisition Pathway Compared to the Navy’s Cruiser Modernization Effort

Acquisition planning tool	Description	Impact of not using acquisition planning tool
Acquisition strategy	A comprehensive integrated plan that identifies the acquisition approach and key framing assumptions. It describes the business, technical, product support, security, and supportability strategies that the Program Manager plans to employ to manage program risks and meet program objectives.	Navy officials told us that the Navy did not have a comprehensive acquisition strategy to meet the program objectives of cruiser modernization, such as inducting each of the 11 cruisers into modernization for no more than 4 years or extending the service lives of the cruisers by 5 years, from 35 to 40 years. The Navy did outline standards for its 2-4-6 modernization effort and develop acquisition plans for the individual ship modernization periods. However, it did not document a comprehensive acquisition strategy for the overall modernization effort. Among other issues, an acquisition strategy could have helped prevent maintenance period delays, which contributed to overlap of modernization periods and postponed deployments.
Cost estimate	Provides an in-depth cost estimate that covers the entire life cycle of the program. The estimate should include analysis to support decision making that identifies and evaluates alternative courses of action that may reduce cost and risk and result in more affordable programs and less costly systems.	<p>The Navy did not develop a cost estimate or assessment that covered the cruiser modernization program with significant depth. The Navy provided some cost estimate documents, but the documentation either did not include all 11 cruisers intended for modernization or provided information in slide format at a very high level. Additionally, these estimates were below the contractor offers received and the contract amounts awarded.</p> <p>The Navy also did not seek an independent review of its cost estimate documents. An independent cost estimate is one of the best and most reliable methods for validating an estimate. It provides an independent review of expected costs and tests the program office’s estimate for reasonableness. Had the Navy developed a sufficient cost estimate, it could have more accurately forecasted the true cost of conducting these modernizations and would have had better information for decision making throughout the effort.</p>
Risk management plan	Provides program risks and associated risk mitigation plans. Typically detailed in the program acquisition strategy and presented at all relevant decision points and milestones.	The Navy did not document specific risks or take steps to mitigate risk during cruiser modernization, according to Navy officials. For example, as discussed above, the Navy planned for months-long gaps between the cruisers’ modernization periods. However, when the cruiser modernization periods experienced schedule delays, the Navy had no method of preventing various maintenance and modernization periods from overlapping. When these periods overlap, there are risks that need to be identified and addressed, such as conflicting contractor work schedules. Without a risk management approach, the Navy waited for risks to be realized. According to a DOD report, this often sparks a ripple effect that results in additional delays. For the Navy, this could lead to incomplete, out of sequence, and insufficient work that must be redone. A more comprehensive risk management plan would have assessed these potential challenges thoroughly and identified more effective mitigation strategies.

Acquisition planning tool	Description	Impact of not using acquisition planning tool
Baseline	Documents the program cost, schedule, and performance baseline. A baseline allows tracking and reporting of cost and schedule deviations above certain thresholds from initial estimates through the life of the project.	The Navy did not track the progress of cruiser modernization against its original cost and schedule baselines or report deviations to leadership. For example, as delays occurred, goals were updated in briefing documents to leadership that did not address divergence from original plans. As a result, senior leaders did not have information that could have improved decision making throughout the modernization program.
Integrated Master Schedule	An integrated and reliable schedule can realistically reflect changes, show when major events are expected, and show the completion dates for all activities leading up to them. This can help determine if the program's parameters are realistic and achievable.	Given the \$3.7 billion cost of this effort, a master schedule could have been developed to integrate various types of work (e.g., modernization periods and maintenance periods). A master schedule would also have enabled the Navy to manage the critical work necessary to achieve the cruiser modernization effort and make decisions to remove some work from the scope when it was clear that the efforts were going much longer than planned. A master schedule would have also provided the means to gauge progress, identify and resolve potential problems, and promote accountability at all levels of the program. Without such a schedule, the Navy was unable to adjust to changes from the planned schedule without significant delays.
Navy leadership/stakeholder meetings	Provides a setting in which the Program Office and other involved Navy organizations can brief Navy leadership on progress. These gate reviews are at key junctures that allow leadership to weigh in on decisions made, offer feedback, and provide accountability.	The Navy did not participate in a gate process for the cruiser modernization effort, according to Navy officials. While leadership was briefed on the status of cruiser modernization, following a standard gate process would have provided a mechanism for involving leadership more actively at key milestones. These meetings would have provided the cruiser modernization effort with an environment in which progress could be tracked, and the Program Office could be held accountable. As a result of not holding these meetings, leadership had fewer opportunities to weigh in on and compare the progress of cruiser modernization efforts to initial objectives.

Source: GAO analysis of Department of Defense (DOD) Instruction 5000.85, and Navy Instruction 5000.2G, and Navy data. | GAO-25-106749

DOD typically uses these tools for programs using the major capability acquisition pathway. While the Navy did not identify the cruiser modernization effort as an acquisition program within DOD's acquisition system, use of these acquisition tools could have served as a model to identify appropriate cost and schedule objectives for the effort as well as identify and resource risks.²⁴ Of the \$3.7 billion that the Navy spent on the cruisers, \$2 billion were procurement dollars—used to buy new capability—while the remaining funding was maintenance dollars. When procurement funding dollars reach similar levels for acquisition programs, reporting requirements associated with larger DOD acquisition category programs (highlighted in table 2)—while some may not be relevant to cruiser modernization—could be leveraged to facilitate oversight of Navy modernization efforts.²⁵ Acquisition programs of this size using the major capabilities acquisition pathway are generally required to establish an acquisition cost and schedule baseline prior to program start, report any significant

²⁴Department of Defense, *Office of the Under Secretary of Defense for Acquisition and Sustainment*, DOD Instruction 5000.85: Major Capability Acquisition (Aug. 6, 2020).

²⁵DOD Instruction 5000.85 provides descriptions and dollar thresholds for acquisition program categories (ACAT). The ACAT I has a spending threshold of \$3.065 in FY2020 constant dollars for procurement. The ACAT II threshold for this spending is \$920 million.

deviations from the established baseline—also known as a “breach”—and provide information on risk management to senior leadership.²⁶

We have previously recommended that DOD manage other modernizations and large projects as separate acquisition programs to encourage the use of acquisition planning tools. In 2016, we reported on modernization efforts for the F-35 aircraft. In that review, we endorsed the approach to use planning tools for some aspects of the program and recommended that DOD expand its use of acquisition planning tools to the full program.²⁷ Further, in 2018, we found that the Navy was not conducting cost, schedule, and risk assessments to help manage the future dismantling of the first nuclear powered aircraft carrier—CVN 65—a complex project estimated to cost more than \$1 billion. In assessing this issue, we determined that while many requirements for DOD acquisition programs were not relevant to dismantlement and disposal, the Navy should leverage elements of the acquisition planning tools associated with larger DOD programs to facilitate oversight of CVN 65 dismantlement and disposal.²⁸

Other leading practices and standards also support using acquisition planning tools for large projects, such as ship modernization. For example, GAO’s Cost Estimating and Assessment Guide states that having a realistic estimate of projected costs makes for effective resource allocation and increases the probability of a program’s success.²⁹ Additionally, the *Standards for Internal Control in Federal Government* state that to identify and mitigate risk, program objectives such as a baseline for cost and schedule should be clearly defined in measurable terms so performance in attempting to achieve those objectives can be assessed.³⁰

Navy officials responsible for the upcoming DDG Modernization 2.0 are using some acquisition planning tools, even though DOD and Navy policy do not require they do so. Officials recognize the benefit that using these tools could have on managing a major modernization effort. For example, the Navy developed an acquisition strategy for the effort and officials from the new program office established for this modernization effort told us that they are developing a group specifically focused on identifying, documenting, and resourcing risks. Program leadership told us that even though they are not required to use these acquisition planning tools, these tools and a disciplined approach to planning are critical to the success of the more than \$10 billion program. For example, DDG Modernization 2.0 officials are developing an integrated master schedule.

²⁶The Defense Acquisition University’s Adaptive Acquisition Framework Document Identification tool identifies statutory and regulatory program information requirements for programs using certain AAF pathways, including the major capability acquisition pathway, as referenced in DOD Instruction 5000.85. The information requirements include acquisition program baselines, statutory program breach definitions, risk management strategies, and other requirements. See <https://www.dau.edu/aafdid>.

²⁷We recommended DOD to hold a Milestone B review and manage modernization as a separate and distinct major defense acquisition program. DOD did not concur with this recommendation, but we continue to believe this recommendation is valid as discussed in the report. [GAO- F-35 Joint Strike Fighter: Continued Oversight Needed as Program Plans to Begin Development of New Capabilities, GAO-16-390](#) (Washington, D.C., Apr. 14, 2016).

²⁸We recommended that DOD require the Navy to obtain an independent cost estimate, complete a risk management plan, and approve a cost and schedule baseline prior to beginning the CVN 65 dismantlement and disposal. DOD concurred with these recommendations. As of August 2023, the Navy has obtained an independent cost estimate. As of July 2024, the Navy has yet to complete a risk management plan and approve a cost and schedule baseline. ([GAO-18-523](#)).

²⁹GAO, *GAO Cost Estimating and Assessment Guide: Best Practices for Developing and Managing Program Costs*, [GAO-20-195G](#) (Washington, D.C., Mar. 12, 2020).

³⁰GAO, *Standards for Internal Control in the Federal Government*, [GAO-14-704G](#) (Washington, D.C., Sept. 10, 2014).

However, the Navy has yet to incorporate all the tools listed in table 2, such as participating in gate meetings, that could have set the cruiser modernization on a more successful path.

By not using acquisition planning tools, the Navy did not adequately plan for modernizing the cruisers. It is too late to do so for the cruiser modernization effort. The Navy will be investing at least \$10 billion in other modernization efforts, including the DDG. Without requiring these modernization efforts to use the acquisition planning tools that major acquisition programs following the major capability acquisition pathway generally use, the Navy may miss the opportunity to use these tools to better manage future efforts.

Navy Faced Numerous Challenges to Accurately Planning Cruiser Maintenance and Modernization Work

The Navy experienced significant challenges planning each ship's maintenance and modernization periods. The three most common factors that inhibited the planning for these maintenance and modernization periods included: (1) ship condition, (2) planning time frames, and (3) ship ownership and inactivation of the cruisers, based on our interviews with NAVSEA 21, the Program Office, OPNAV, CNRMC, RMCs, and Port Engineers.

Ship Condition

The Navy did not sufficiently track and, thus, did not fully understand, the condition of the cruisers prior to modernization. NAVSEA 21, Program Office, and OPNAV officials told us that, in hindsight, the cruisers were in worse condition than they realized. Navy officials noted that this was primarily due to the Navy deferring maintenance by cancelling maintenance periods throughout the lives of these ships. As an example, fuel tank cracks, likely the result of cancelled maintenance according to OPNAV officials, have been an ongoing challenge during USS Vicksburg's modernization. In some cases, the Navy deferred planned maintenance to address critical national security priorities. For example, according to OPNAV officials, the Navy deferred cruiser maintenance periods during the 2000s due to the operational need for the cruisers during the Global War on Terror. Then, Navy officials told us the Navy canceled maintenance periods for the cruisers between 2011 and 2014, because the Navy was planning to divest the cruisers. Once Congress provided funding for the modernization effort, the Navy tried to gain information on the condition of the cruisers.³¹ For example, for seven of the cruisers that entered the cruiser modernization effort, the Navy completed pre-modernization surveys to assess the condition of the ships and ship checks between 2015 and 2019. Navy officials told us that the pre-modernization surveys were comprehensive and robust. However, the high volume of unplanned work indicates that these efforts to gain information were unable to make up for years of not tracking ship condition and deferring maintenance. We have previously found that deferred maintenance creates a backlog of maintenance tasks and can contribute to the Navy deciding to decommission a ship due to its condition.³²

Starting in 2010, the Navy has made changes to better track ship condition, but the improvements from these changes are too late to help the cruiser fleet. Deferred maintenance and lack of knowledge on the condition of ships was a known issue across the Navy surface fleet, which led to a 2010 assessment of Navy Surface

³¹See Consolidated and Further Continuing Appropriations Act, 2015, Pub. L. No. 113-235, div. C, tit. VIII, § 8110 (2014).

³²[GAO-22-105032](#).

Force readiness.³³ The report found that Surface Force readiness had degraded over several years. Among other things, ship maintenance requirements had not been adequately identified or resourced. Following that report, in November 2010, the Navy established the Surface Maintenance Engineering Planning Program (SURFMEPP). SURFMEPP is tasked with providing centralized class maintenance and modernization planning, and management of maintenance strategies. SURFMEPP also assesses the extent to which ships' maintenance requirements have been met. For example, in 2014, SURFMEPP started to publish reports on priority repair work that could affect ship service life. Further, in 2016, SURFMEPP started to develop Life Cycle Health assessments for the surface fleet, which provide an annual overall health score and a condition assessment for each ship.

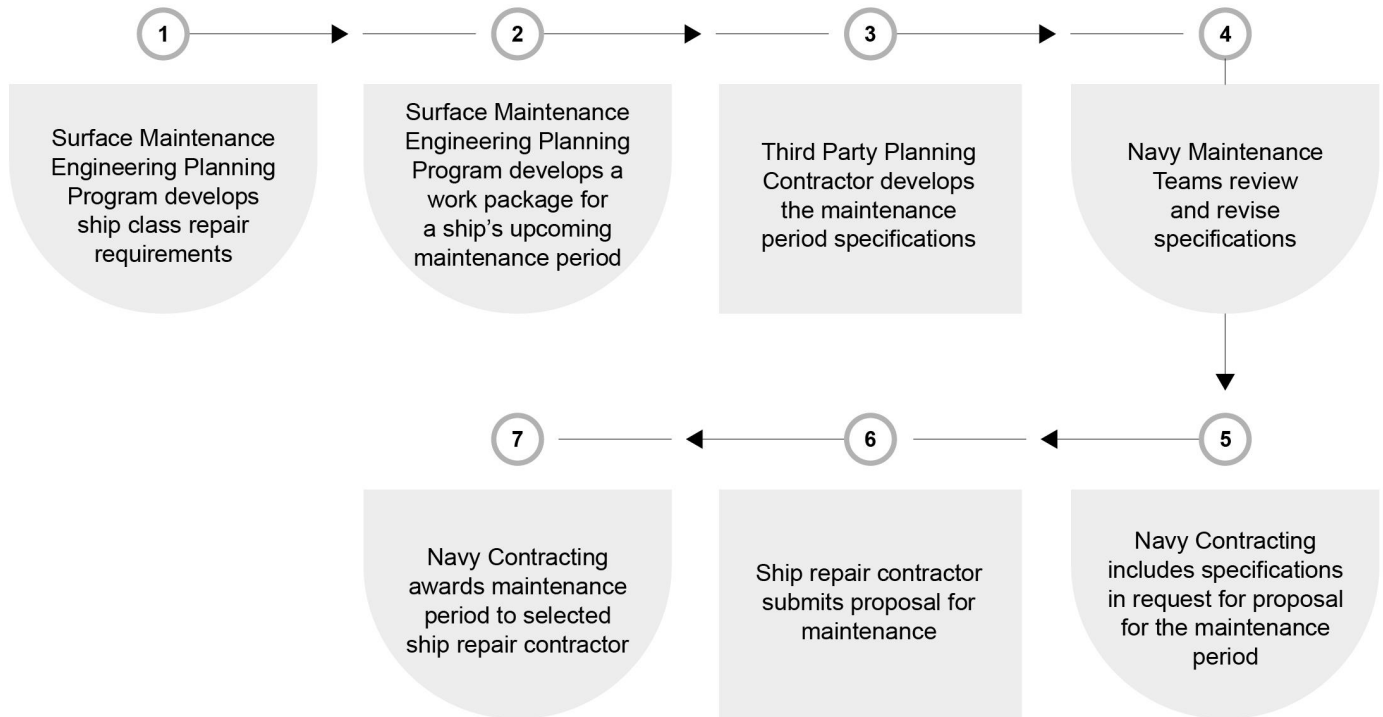
Navy officials told us that they have continued to improve the information they have on the condition of ships. For example, they said they have conducted more robust assessments of the condition of Navy ships and are better tracking what required maintenance needs to be completed. The Navy's improvements are helping its ability to track ship condition and improve the probability that ships meet their service lives. However, these improvements are more impactful as a preventive measure on newer ships that have yet to fall behind than for older ships where the Navy has already deferred significant maintenance and lost track of condition, as happened with the cruisers.

Planning Time Frames for CNO Maintenance Periods

In 2015, the Navy changed the process and time frame for planning. As previously noted, the cruiser modernization effort involves both maintenance and modernization work. The Navy now uses a planning contractor to develop work specifications, rather than relying on planners of the ship repair contractors as it did previously. Work specifications are sets of instructions to help the lead contractor understand and complete the work. If, after performance begins, the needed work is within the scope of the contract but does not match the work specified in the contract, the Navy modifies the contract to accommodate the unplanned or poorly specified work. As previously mentioned, cruiser modernization also began in 2015. Thus, the new planning process was used for most of cruiser modernization. The maintenance planning process is depicted in figure 13 below.

³³A Fleet Review Panel conducted the assessment. The Commanders of U.S. Pacific Fleet and U.S. Fleet Forces directed Vice Admiral Balisle, USN-Ret., to convene and lead a Fleet Review Panel to assess surface force readiness in the areas of manning, training, and maintenance and to recommend corrective actions.

Figure 13: Navy Maintenance Period Planning Process for Surface Ships Since 2015



Source: GAO presentation of Navy information. | GAO-25-106749

Note: As previously mentioned, maintenance periods also involve modernization. The process outlined above also applies to maintenance periods during which modernization occurs.

To facilitate planning, the Navy has set milestones to award contracts a specific number of days before work begins. The milestones established in 2015 applied to most of the cruiser maintenance and modernization planning. Planning for a maintenance period contract, including the scope of work and specifications, was to be complete 155 days before contract award and the contract was to be awarded 60 days prior to the start of work. In January 2020, after cruiser modernization planning was complete and all the contracts had been awarded, the Navy extended the time frames for completion of maintenance period planning. Now, the Navy aims to complete planning 350 days before contract award, with contract award 120 days prior to the start of work.

Program Office and RMC officials noted that planning the scope of work and work specifications for maintenance period contracts 155 days prior to contract award makes it challenging to have an accurate work package. This is because even if the third-party planners and maintenance stakeholders, for example RMC officials, have an accurate assessment of ship condition, the condition of a ship is likely to change throughout the planning process prior to the start of work. However, at the same time, the Navy reported that these maintenance period contracts require more advanced planning to ensure adequate time to develop the procurement package and compete the contract. Completing planning and awarding a contract earlier is beneficial because it allows for the earlier procurement of long lead time material and the Navy has reported that this also allows the contractor to be involved earlier. However, RMC officials noted this as an area of concern because the condition of a ship degrades over time, and it provides less time for planning which is a labor-intensive process.

Navy officials continue to try to improve the planning process, but balancing these competing goals is difficult. For example, Navy officials stated that the DDG Modernization 2.0 effort has used undefinitized contract actions for the DDG Modernization contracts to have more flexibility in planning timeline requirements.³⁴ The Navy stated that its expectation is that all remaining maintenance periods will have definitized contracts at award.

Ship Ownership and Inactivation

As the cruisers entered the modernization effort, the Navy inactivated the cruisers, transferring ownership—meaning the overall technical, acquisition, and execution authority—from the fleet to NAVSEA. This was part of an attempt to reduce crew size and save money on crew costs, according to OPNAV officials. However, inactivating the ships and reducing the crew made it more difficult for program officials to understand the condition of and maintain the ships, thus inhibiting accurate planning for the modernization effort. For example, according to Navy officials, it was hard to assess the condition of inactivated ship systems. Further, because the ships had reduced crews of 45 sailors and the systems were turned off, these systems further deteriorated. This additional deterioration was difficult to identify until the Navy increased the crew size and started to reactivate the ships midway through each ship’s modernization period.

Also due to the transfer in ship ownership, the Navy deviated from its typical work specification development process. The NAVSEA guidance outlining cruiser modernization states that NAVSEA 21 is accountable and responsible for maintenance period planning. According to RMC officials, the NAVSEA Program Office’s involvement in planning was atypical, because normally the RMCs in conjunction with the port engineers—the maintenance officials who are the most familiar with the condition of the ships—would work with the planning contractor to develop specifications for maintenance availabilities. As a result, according to RMC officials, this approach contributed to incorrect specifications. RMC officials and port engineers told us that the Program Office did not incorporate their feedback into work specifications developed by the planning contractor for the cruiser maintenance and modernization periods. Program Office officials said that they knew there was a rush to plan cruiser modernization, which could have resulted in the RMCs feeling like they were not included in specification development. In addition, they stated that the issues described by the RMC officials and port engineers were a result of the change in ownership of the cruisers.

Officials across the Navy organizations we met with told us that a lesson learned from cruiser modernization is that the Navy should not transfer ownership or inactivate a ship undergoing modernization to this extent again. OPNAV officials stated that the challenges associated with transferring ownership and inactivating a ship are Navy lessons learned being applied to DDG Modernization 2.0. However, officials noted that the Navy has not codified this lesson learned into policy. *Standards for Internal Control in the Federal Government* state that management should identify, analyze, and respond to risks.³⁵ OPNAV officials agreed that the lessons learned should be codified in policy but added that the Navy could need to do something similar, such as inactivate the ship, reduce the crew size, and transfer ship ownership to save money in a budget constrained environment. They also stated that Navy leadership needs to retain flexibility. However, doing so would likely significantly

³⁴The Defense Federal Acquisition Regulation Supplement (DFARS) defines an undefinitized contract action as any contract action for which the contract terms, specifications, or price are not agreed upon before performance is begun under the action. DFARS 217.7401. Undefinitized contract actions are generally used when negotiation of a definitive contract action is not possible in sufficient time to meet the government’s requirements and the government’s interest demands that the contractor be given a binding commitment so that contract performance can begin immediately.

³⁵[GAO-14-704G](#).

increase the risk of the Navy experiencing poor outcomes, as occurred with the cruiser modernization effort. Without codifying this lesson learned into policy, the Navy may revisit this idea once again when faced with future cost constraints.

Planning Issues and Unplanned Work Impacted the Navy’s Ability to Efficiently Manage Cruiser Modernization Effort

As a result of its ineffective planning, the Navy experienced high volumes of unplanned work. This led to delays and cost increases from which the cruiser effort could not recover. For example, one of the cruisers had over 2,500 unplanned work items across three contracts that had a total contract price increase of over \$103 million. According to maintenance officials, the administrative processing and repair time to address these 2,500 items contributed to preventing the Navy from achieving its cost and schedule goals. Further, Navy contracting officials stated they have attempted some efforts to reduce contract administration times through contracting initiatives.

Planning Shortfalls Led to Unplanned Work

As a result of poor planning and inaccurate specifications, the Navy experienced numerous instances of unplanned work on its cruiser maintenance and modernization contracts, resulting in cost and schedule delays discussed earlier. Unplanned work generally divides into two categories—new work and growth work. Growth work is when tasks are added to related work items already specified in the contract, such as discovering significant corrosion upon dismantling a piece of equipment. New work is when tasks are added that are not related to items already specified in the contract. As shown in table 3, the Navy experienced over 9,000 contract changes due to growth work that, on average, took 47 days to process. This does not include the time to execute the work.

According to RMC officials, this high volume of unplanned work largely derailed the cruiser modernization schedule because the Navy could not process the contract changes in time to keep these efforts on track. When unplanned work is discovered, the Navy must determine if the work should be added to the contract and if so, define the task(s), communicate to the contractor the need for the contract change, request a contractor proposal, negotiate the price, and modify the contract. To navigate a high volume of work, an efficient process is critical since, according to the Navy, increasing the speed and accuracy of processing changes is a driver to on-time availability completion. While speed is critical, especially when faced with a high volume of changes, accuracy in the underlying documentation and negotiating a fair and reasonable price is also important and takes time. Table 3 shows the number of processing days due to growth work across all six cruiser modernization ships that began maintenance or modernization work.

Table 3: Cruiser Modernization Growth Work Change Processing Times from Creation to Settlement

Growth work change reason	Total changes	Average days per change
Work that could not be planned	3,809	42.39
Drawing, Specification, or Technical Document Issue	2,655	55.43
Other	1,337	49.49
Removal from scope of work	1,223	40.98
Total	9,024	46.71

Source: GAO analysis of Navy request for contract change data. | GAO-25-106749

Note: From creation to settlement is defined as the time between change issuance to contractor and price settlement. In addition, the Other category consists of obstruction in work area, testing issue, funding unavailable, ship condition not reflected in contract requirements, material issues (unavailable, defective, not ordered) and acts of nature. Removal from scope of work refers to work deleted due to change in schedule, lack of funds, descoping work, work completed prior to availability or defer work to later maintenance period. The start for the process time is the "Creation Date" field in the Navy Maintenance Database for request for contract changes. The process time end is the "Settled Date" field in same database. This table includes the growth work across all six cruiser modernization ships that began maintenance or modernization work.

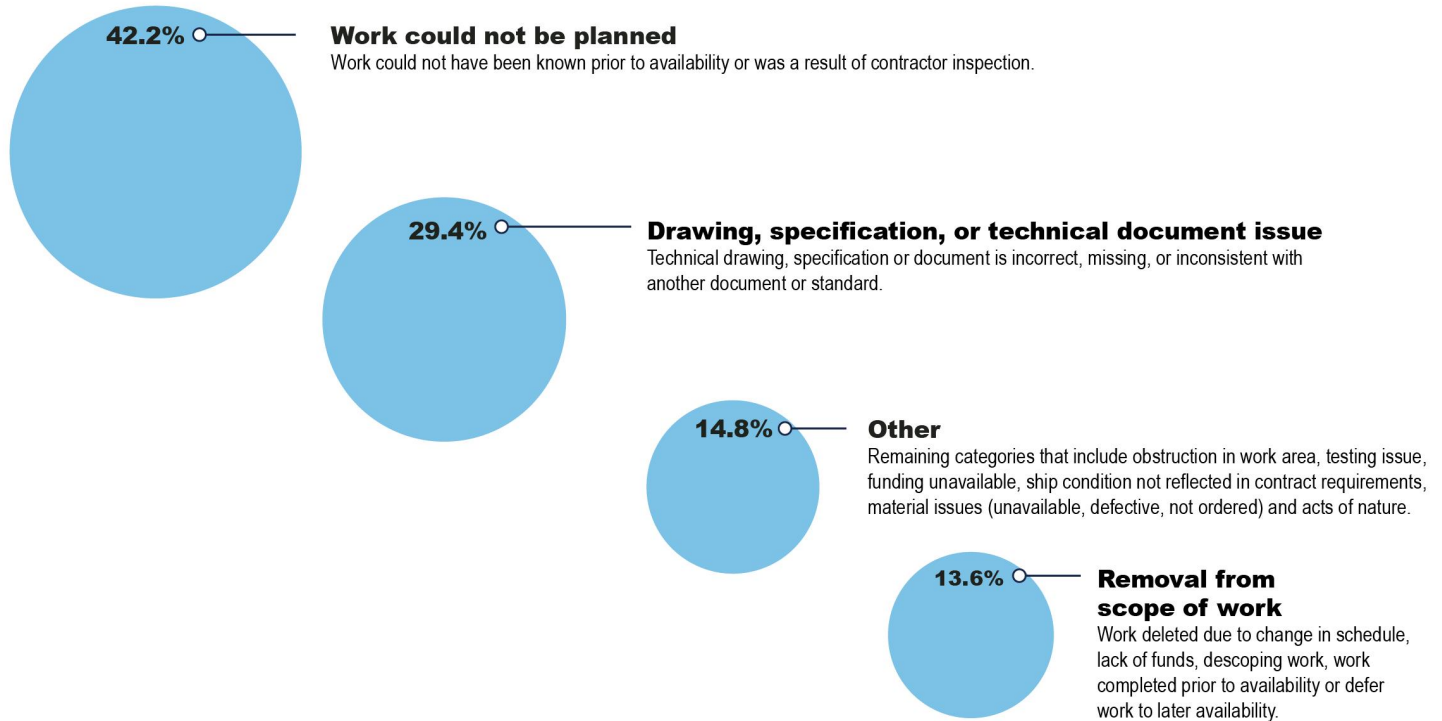
Contractors typically do not begin work on the growth work changes until processing is complete and prices have been agreed to. This can lead to out of sequence work if too many changes accrue. The Navy stated that requesting additional funding through an upward obligation request is a time-consuming process that can contribute to higher processing times.³⁶ About \$179 million in upward obligations was needed between 2019 and 2024. The delay caused by the changes significantly contributed to the cruisers' schedule delays.

We assessed the Navy's data and found that nearly all the changes across 13 maintenance and modernization periods were due to growth work. Further, our analysis of Navy growth work data identified that over 70 percent of those contract changes had two causes: (1) work that could not be planned, and (2) drawing, specification, or technical document issues.³⁷ Figure 14 shows the breakdown of the categories of growth work changes for the cruiser maintenance and modernization periods.

³⁶Department of the Navy, Office of the Assistant Secretary of the Navy, (Financial Management and Comptroller), *Financial Management Policy Manual, 2016*. Expired funds may generally be used for obligation adjustments, commonly referred to as upward obligation adjustments, resulting from within scope contract changes, as well as out of scope changes or other new obligations for which legal authority exists to use expired funds.

³⁷When Navy personnel enter a change into the Navy Maintenance Database, they choose a code to state the reason for the change. "Work that could not be planned" is comprised of four of the Navy's category names for growth work. While much of this category results from conditions found when a contract requires the contractor to open an item and inspect it, some may be preventable through better adherence to maintenance or knowledge of ship condition.

Figure 14: Categories of Contract Changes Due to Growth Work across 12 Contracts for Cruiser Modernization



Source: GAO analysis of Navy request for contract change data. | GAO-25-106749

While 42.2 percent of the changes were categorized by Navy officials as work that it could not plan, the Navy likely could have prevented some of this growth work with a better life-cycle maintenance plan. A life-cycle maintenance plan is a comprehensive analysis of forecasted repairs, directive repairs, associated support services, and a fixed percentage of the resources for Fleet Alterations to provide requirements for a maintenance event that conforms to the Fleets' constraints. For example, a better understanding of the ship's condition could inform the Navy of areas likely needing work, common problems across the ship class, and maintenance work that has not been done.

A second category, totaling 29.4 percent, are changes due to the Navy providing missing, incorrect, or inconsistent drawings, specifications, or technical documents to the contractor. In our past work, Navy officials have said omissions and inaccuracies with ship documentation disrupt the contractor's ability to sequentially plan and perform work in line with cost and schedule goals.³⁸ For example, maintenance oversight officials noted that 75 percent of the work for a ship maintenance and modernization period is planning, and the consequence of improper planning is high volumes of growth work.

The Navy states it has yet to fully assess the root causes of why the cruiser planning and specification effort was ineffective and codify resulting strategies into Navy maintenance policy documents to implement lessons learned for future surface ship modernizations. Several Navy officials stated that the cruiser effort is unique because, as previously mentioned, in addition to significant deferred maintenance for the ships, the Navy

³⁸GAO-17-54.

transferred ownership of the ships to NAVSEA, reduced the crew sizes, and inactivated the ships. However, we have previously found that the Navy often experiences planning challenges and growth work across surface fleet maintenance.³⁹ In addition, the Vice Chief of Naval Operations released a memorandum in April 2024 that directed its staff to investigate maintenance planning and roles and responsibilities for amphibious ships.⁴⁰

Standards for Internal Control in Federal Government state management should identify, analyze, and respond to risks—by acceptance, avoidance, reduction or sharing—related to achieving the defined objectives.⁴¹ The Navy has stated that growth work is expected in maintenance and modernization periods, and early-stage planning to avoid or reduce a great volume of growth work is necessary to manage risk. Analyzing the root causes of the cruiser modernization growth work would provide the Navy with important insights to develop effective approaches during the planning stages for future efforts such as the upcoming DDG modernization.

Efforts to Reduce Lengthy Contract Change Process

The Navy has made several attempts to reduce the delays and administrative burden caused by growth work. NAVSEA 02 officials noted that contract changes have been a problem for years. As a result, beginning in 2018, they implemented some tools to reduce processing times for contract changes due to growth work.

- Level of Effort to Completion initiative is used in six of the 12 cruiser contracts. The Navy sets aside a pre-funded set number of hours and material costs when a contract is awarded to fund growth work that contractors regularly discover during execution. Thus, it is not necessary to separately negotiate each item.
- Small Dollar Value Growth contract term is used in three of the 12 cruiser contracts. It specifically addresses schedule delays due to growth work items valued at \$25,000 or less. This contract term allows the Navy and the contractor to agree on a set price—usually between \$8,000 and \$10,000 according to Navy officials—to be used for a growth work item of value equal to or less than \$25,000, eliminating the time-consuming negotiation of small dollar growth work.

The Navy's goal for processing growth work contract changes is 7 days. When using the Level of Effort to Completion initiative, the goal is 5 to 7 days. When using the Small Dollar Value Growth contract term, the goal is shortened to 1 to 2 days. As discussed above, the processing time for contract changes for cruiser modernization overall exceeded 46 days on average. Table 4 shows the contract change cycle times when using the two streamlining contract tools for growth work compared to the average times without use of a streamlining contract tool.

³⁹[GAO-21-172](#).

⁴⁰We also previously reported that unplanned work was the main factor for maintenance delays for aircraft carriers and submarines. GAO, *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).

⁴¹[GAO-14-704G](#).

Table 4: Cruiser Maintenance and Modernization Growth Work Contract Change Cycle Time, 2016 to 2023

Contract change process tool	Total changes	Average days per change	Decrease in days (compared to no tool used)	Goal (in days)	Days over goal
No special tool used	7,646	50.87	N/A	7	43.87
Level of effort to completion	464	47.11	3.76	5-7	40.11
Small dollar value growth	1,111	21.33	29.54	1-2	19.33

Source: GAO analysis of contract change cycle times. | GAO-25-106749

While processing times for cruiser modernization growth work are still far above the 7-day goal established by the Navy, use of the two contracting tools did reduce cycle times, as shown above. The Navy continues to implement initiatives to shorten the contract change process time and address other factors of cycle time. Navy contracting officials stated they have analyzed these processes and discussed the results with industry. Delays were found to be in two main areas: contractor proposal submissions to the Navy and negotiation of the final price adjustment. Navy contracting officials stated they have attempted to address the delay in receiving contractor proposals by including contract terms through which they could assess monetary penalties for late proposals.

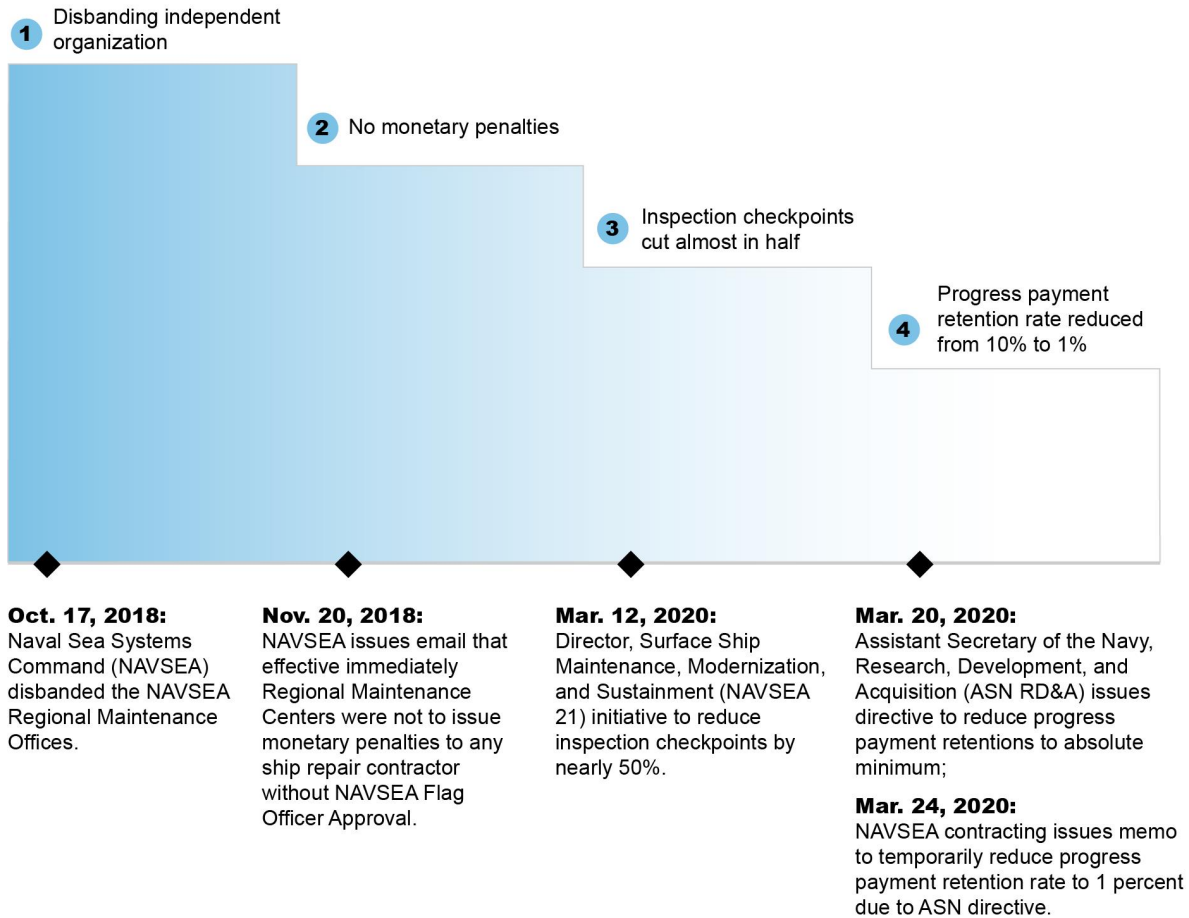
Weakened Quality Assurance Tools and Uncoordinated Work Hindered Cruiser Modernization Oversight

Despite widespread instances of poor-quality work during the cruiser modernization effort, NAVSEA senior leadership discouraged RMCs and contracting officials from fully using key quality assurance tools to maintain the industrial base and a positive working relationship with the ship repair industry. This reduced the RMC’s ability to ensure that contractors were producing quality work. Further, Navy guidance does not set forth clear roles that enable coordination among several key stakeholders within the Navy, which further inhibited effective oversight of work.

Navy Took Actions That Weakened Use of Contract Quality Assurance Tools

From 2018 to 2020, Navy senior leadership discouraged the use of or removed four key quality assurance tools for all of Navy surface ship repair and maintenance. While each of these actions may have had merit, the sum of these actions has weakened the Navy’s ability to ensure contractors respond when oversight organizations find quality issues. The Navy took these actions while six cruisers were undergoing maintenance and modernization. The four key quality assurance tools are: (1) monetary penalties, (2) reviews by independent organizations focused on surface ship quality at the RMCs, (3) payment retentions, and (4) inspection checkpoints. In addition, the RMCs did not consistently complete or retain copies of CPARS evaluations which provide relevant information for future contract awards through documentation of contractor performance under prior contracts. Figure 15 provides the timeline for the Navy’s actions which hindered quality control.

Figure 15: Timeline of Navy’s Actions That Hindered Quality Control Over Navy Ship Maintenance and Modernization



Source: GAO analysis of Navy data. | GAO-25-106749

As found in a Navy Maintenance Policy dated January 15, 2021, the Department of the Navy Acquisition Reform strategy includes a goal to build a continuous dialogue with industry to identify mutually beneficial opportunities and practices. While NAVSEA leadership did not respond to our requests to discuss this issue, officials across several offices told us that the Navy wants to maintain a positive working relationship with the contractors because of its dependence on them to maintain, repair, and modernize its fleet. However, in this instance, its efforts to do so resulted in making it more difficult for the Navy to leverage quality control measures.

Restricting the use of monetary penalties. In November 2018, Navy’s RMC leadership (NAVSEA) provided interim guidance that, effective immediately, RMCs were not to assess any monetary penalties to ship repair contractors without prior NAVSEA senior leadership approval.⁴² As examples of such penalties, the direction referenced quality assurance surveillance plans and liquidated damages. This change in policy required

⁴²Specifically, the interim guidance instructed RMC not to send “any punitive monetary correspondence” to any ship repair contractors without prior NAVSEA Flag Officer approval. For simplicity, we refer to the prohibited action as “monetary penalties.”

oversight officials to gain permission from high-level officials—2- and 3-star admirals—before assessing monetary penalties for poor work. Previously, no senior leadership approval was required.

One vehicle through which the Navy can administer monetary penalties is Quality Assurance Surveillance Plans (QASP). According to the Federal Acquisition Regulation (FAR), these plans should be prepared along with the contract's statement of work and should specify all work requiring surveillance, and the method of surveillance.⁴³ QASPs were included in the four modernization period contracts. Each plan listed evaluation areas and associated deductions from payments for not meeting the standards in the contract. These available deductions ranged from \$1,000 per incident to \$5,000 per day. In response to pervasive poor workmanship, one RMC assessed two QASP deductions following the November 2018 email with approval from the 2-star admiral level. According to officials from the three RMCs and NAVSEA contracting officials, no other QASP deductions were assessed during the cruiser maintenance and modernization periods and any attempts to assess deductions were not approved by leadership.⁴⁴ Without the discretion to assess monetary penalties, the RMCs have lost one of their tools to enforce quality assurance.

Disbanding independent RMC oversight organizations. In October 2018, senior leadership within NAVSEA disbanded the NAVSEA Regional Maintenance Offices (NRMO) due to the perception that the structure was ineffective to accomplish change at RMCs. These organizations were established in 2013 to provide independent oversight over the quality and safety of ship repair, including cruiser modernization. While in operation, these organizations participated in critiques to improve the quality of the RMCs' oversight processes and ensure root causes were identified, documented, and resolved. For example, a 2021 Navy investigation report for a ship fire found that the NRMOs added value to the RMCs by providing effective oversight and stated that the NRMOs should be restored.

As of May 2024, the Navy had yet to restore the NRMOs or any organization with a similar purpose. *Standards for Internal Control in Federal Government* state that independence is critical in organizations to prevent wasting resources.⁴⁵ An independent organization that oversees and prioritizes quality without needing to consider other factors, such as the industrial base, could have increased cruiser modernization quality control. Without having in place an independent organization such as the NRMOs, the Navy's ability to ensure that they receive quality work during ship maintenance and modernization periods can be limited.

Reducing retentions. Progress payments are a type of contract financing that allow the contractor to bill and receive partial payment before the government's acceptance of supplies or services.⁴⁶ Retentions are amounts withheld from a contractor's progress payments. Under the FAR, the government's customary progress payment rate is 80 percent (meaning 20 percent is retained), or 85 percent for small businesses (meaning 15

⁴³FAR 46.401(a).

⁴⁴Navy contracting officials told us that they rarely, if ever, assess liquidated damages under liquidated damages clauses. The FAR states that liquidated damages are used to compensate the government for probable damages related to the harm that is caused by late delivery or untimely performance of a contract. See FAR 11.501(b). The FAR also states that liquidated damages are not punitive and are not negative performance incentives. Id.

⁴⁵GAO-14-704G.

⁴⁶The FAR describes progress payments based on cost and progress payments based on a percentage or stage of completion. FAR subpart 32.5; FAR 32.102(e). In this report, we use the term "progress payments" to refer only to progress payments based on costs. Progress payments based on percentage or stage of completion typically are used on shipbuilding and construction contracts.

percent is retained).⁴⁷ By statute, however, the rate for progress payments on a Navy contract for repair, maintenance, or overhaul of a naval vessel must not be less than 90 percent, or 95 percent for small businesses.⁴⁸ Thus, retentions on contracts for Navy ship repair must not exceed 10 percent, or 5 percent for small businesses. According to the Navy, retentions are intended to ensure the contractor completes the planned work on time and addresses any defects discovered after completion but before the government's final acceptance.

The Navy initially reduced retentions to provide ship repair contractors with additional cash flow during the COVID emergency. On March 20, 2020, Navy senior leadership issued a memorandum directing immediate reduction of retentions on existing efforts to an absolute minimum. As a result, on March 24, 2020, Navy contracting leadership issued a memorandum directing the NAVSEA contracting enterprise to temporarily reduce retentions from 10 percent down to 1 percent on existing contracts.⁴⁹ The directive lists exceptions, which include contractor performance issues, that allow the retention rate to be above 1 percent but states that retentions are not to exceed 10 percent. In June 2020, Southwest RMC raised the retention rate back to 10 percent for the USS Cowpens contract due to noncompliant submissions of schedule and documentation in support of its progress. It remained at 10 percent until November 2022 when the RMC reduced it back down to 1 percent.

On May 8, 2023, DOD reinstated the 20 percent retention rate for contracts awarded on or after July 7, 2023 (and continued 5 percent for small businesses).⁵⁰ The Navy did not extend the direction in the Navy contracting leadership's March 24, 2020, memorandum to continue a reduction of retentions at 1 percent based on the COVID emergency. However, the Navy continues to use a 1 percent retention rate for the cruiser contracts and is also retaining only 1 percent on the initial DDG Modernization 2.0 contracts. Navy officials have documented that progress payments are beneficial for contractors because they substantially increase shipyard cash flows—decreasing contractors' need for short term commercial loans to finance their operations and increasing profitability while reducing their risk.⁵¹ However, reducing retentions inhibits the Navy's ability to incentivize ship repair contractors to provide complete and quality work.

Reducing inspection checkpoints. In early March 2020, NAVSEA leadership finalized and implemented an initiative that decreased the number of inspection checkpoints during a ship repair and modernization period by almost 50 percent. Before work can be accepted by the Navy, quality assurance personnel inspect it and determine if it meets contract requirements. Complex work sometimes involves in-process inspections, called

⁴⁷See FAR 32.501-1(a). The customary progress payment rate for DOD contracts also is 80 percent, but for contracts with small businesses, DOD's customary rate is 90 percent. DFARS 232.501-1(a); Through a class deviation, however, the current DOD progress payment rate for small business is 95 percent. Class Deviation 2020-O0010, Revision 2—Progress Payment Rates. This rate reflects a temporary increase that occurred in March, 2020, in response to the COVID-19 national emergency. Id.

⁴⁸10 U.S.C § 3808(a).

⁴⁹As described above, by statute, the retention rate for progress payments on Navy contracts for repair of naval vessels shall not exceed 10 percent, or 5 percent for small businesses, which differs from the broader DOD retention rate of 20 percent (or 5 percent for small businesses).

⁵⁰A class deviation dated May 8, 2023, by the Office of the Under Secretary of Defense, Acquisition and Sustainment, reinstated the DOD progress payment rate to its pre-COVID amount of 80 percent for large businesses, effective July 7, 2023. Class Deviation 2020-O0010, Revision 2—Progress Payment Rates.

⁵¹See SEA 21 and CNRMC, Retentions Strategy (Feb. 1, 2022), (briefing to House Armed Services Committee in response to H. Rep. No. 117-118 (2021)); see also H. Rep. No. 117-118 at 194 (2021).

checkpoints, to ensure critical work is done in accordance with contract specifications. According to a March 12, 2020, NAVSEA memorandum, the Navy reduced the number of inspection checkpoints during ship repair and modernization periods to improve contractor efficiency and reduce the RMC's checkpoint burden. Navy senior leadership, in the memorandum, stated that this initiative would aid in on-time delivery. Further, according to Program Office officials, the initiative removed low-risk checkpoints that "should really be common sense," meaning that the quality assurance personnel should not need to review the work.

However, oversight officials from the RMCs told us that this initiative resulted in reduced government oversight for contractor quality and allowed poor quality work to persist. Officials from one of the RMCs stated that reducing the checkpoints increased the difficulty of effectively overseeing contractor quality. A separate Navy official familiar with the initiative said that the ship repair industry pushed for the reduction in checkpoints because checkpoints increase the time it takes for a contractor to do its work. They added that identifying checkpoints to remove was challenging because many of them were critical for effective oversight. We have previously found that checkpoints are a vital oversight tool used by leading companies when overseeing ship contracts.⁵² With decreased checkpoints, the Navy is at risk of having less insight into work quality.

Failing to complete CPARS evaluations. In addition to the above actions directed by Navy leadership, Navy maintenance officials also failed to complete many of their contractor evaluations. Past performance is relevant information for future contract award decisions. The CPARS is the official source for past performance information.⁵³ The FAR generally requires agencies to enter evaluations into CPARS at least annually and at the time the work under a contract or order is completed.⁵⁴ Repeated contractor poor performance can affect them receiving an award for a future contract, which one Navy official said is a way to hold contractors accountable for their quality.

We found that, in 67 percent of the cases, Navy RMCs did not prepare CPARS evaluations as required by the FAR.⁵⁵ This resulted in an incomplete contractor past performance history and lack of documented performance feedback to the contractor. Figure 16 shows completed and missing CPARS evaluations across all evaluation periods within the cruiser modernization effort.

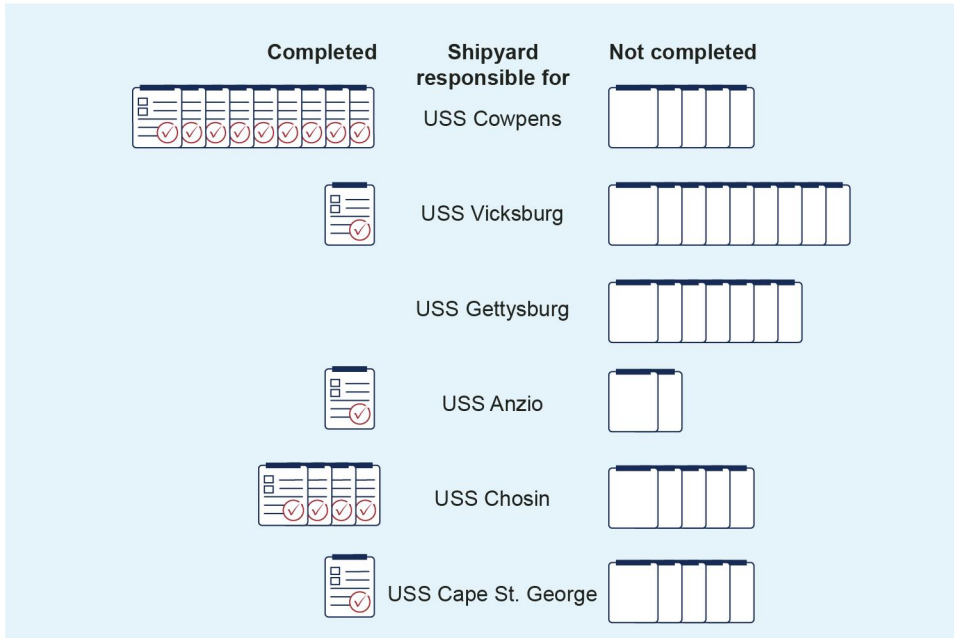
⁵²GAO, *Navy Shipbuilding Opportunities Exist to Improve Practices Affecting Quality*, [GAO-14-122](#) (Washington, D.C.: Nov. 2013).

⁵³FAR 42.1501(b).

⁵⁴See FAR 42.1502(a). FAR 42.1502(d) states that for single-agency task-order and delivery-order contracts, the contracting officer may require performance evaluations for each order above the simplified acquisition threshold when such evaluations would provide more useful past performance information than that in the overall contract evaluation. The Navy orders we reviewed were placed under single-agency delivery-order contracts.

⁵⁵For the orders in our review, this finding reflects that for the evaluation period at issue, CPARS included no evaluation for either the order or the base IDIQ contract under which the order was placed. See appendix I for details on our identification of the evaluation periods described throughout this section of the report.

Figure 16: Completion of Contractor Performance Assessment Reporting System Evaluations for Each Evaluation Period in Maintenance and Modernization Contracts, 2015 to 2023



Source: GAO analysis of Navy data. | GAO-25-106749

The FAR has generally required the completion of at least annual past performance evaluations since September 3, 2013, before the start of the cruiser modernization effort.⁵⁶ However, the RMCs prepared only 16 CPARS evaluations for the 49 CPARS evaluation periods across the maintenance and modernization periods. RMC officials gave the following reasons why they did not complete CPARS evaluations for 33 of the 49 evaluation periods, they: (1) did not know there was an annual CPARS evaluation requirement, (2) could not find the CPARS evaluation, or (3) thought there was a change in the FAR that did not require them to submit one.⁵⁷

NAVSEA contracting officials conduct triannual audits of the RMCs' contract administration, which includes reviewing the RMC completion of CPARS evaluations. In 2020, NAVSEA contracting officials assessed one RMC with a significant finding for late and not completed CPARS evaluations which was an elevated rating from the audit 3 years before when it was identified as a weakness.⁵⁸ In 2017, the RMC had 4 late CPARS evaluations and in 2020 had 39 late evaluations. In 2022, the Navy assessed another RMC with a watch item regarding meeting CPARS evaluation processing time. The audit stated that the RMC is trending positively but still not at 100 percent compliance. In 2023, the third RMC improved in CPARS evaluations earning no significant findings, deficiencies, weaknesses, or watch items. However, in the 2020 audit there was a deficiency, repeated from the 2018 audit due to the internal instruction not stating that CPARS evaluations are

⁵⁶46 Fed. Reg. 46,783, 46,784, 46,788 (Aug. 1, 2013).

⁵⁷CPARS retains evaluations for 3 years after completion of a contract. Of the nine cruiser evaluations that the Navy did not provide and that the RMCs told us they could not find, five of them should still be in the CPARS system.

⁵⁸The audits have seven types of findings: strengths, promising practices, best practices, significant findings, deficiencies, weaknesses, and watch items.

to be accomplished “at least annually.” The deficiency was corrected in 2021 with an update to the internal instruction. Until the Navy consistently completes CPARS evaluations, it is at risk of not having the ability to fully evaluate and use past performance in awarding future contracts.

While not directly addressed in the memorandum and directives listed above, the Navy’s weakening of quality assurance tools also diminished the ability of the Navy to use CARs to improve contractor performance. CARs identify nonconforming contractor work and request contractor correction and preventative action to eliminate the cause. With the Navy’s decisions to weaken the tools discussed above, the Navy’s oversight teams have less of an incentive to identify and escalate quality issues without the tools that can help ensure contractor compliance. A senior NAVSEA Program Office official and Navy oversight officials stated that, without monetary penalties, CARs are significantly less effective for ensuring the Navy receives quality work. Further, officials from one of the RMCs that oversaw maintenance and modernization for four of the seven ships told us that NAVSEA senior leadership directed them, in 2021, to stop issuing CARs. Our review of the CARs issued during cruiser modernization found that the monthly average number of CARs decreased by one-third—from 18 per month down to 12 per month—from 2021 through 2023 across all RMCs overseeing cruiser work. The actions taken by the Navy indirectly affected the strength of an RMC quality assurance tool used to ensure quality work by contractors.

According to the OPNAV Maintenance Policy for Navy Ships, the technical complexity of present-day ships reinforces the need for strict compliance with administrative and technical direction to ensure conformance to technical requirements during maintenance. Even seemingly trivial or minor deviations from requirements can result in the loss of life and degradation of ships’ readiness. Further, *Standards for Internal Control in the Federal Government* instruct management to remediate identified internal control deficiencies on a timely basis.⁵⁹ Without reassessing its approach to quality assurance—including restrictions on the use of oversight tools, completion of CPARS evaluations, and the lack of an independent organization to oversee quality at RMCs—the Navy will likely continue to experience poor quality work on its future surface ships modernizations. Poor quality on surface ships puts ship readiness at risk costing the government more time and money.

Key Stakeholders Do Not Have Clear Oversight Roles to Manage Coordination

The Navy experienced challenges overseeing its maintenance and modernization efforts for cruisers and other surface ships, in part, because key stakeholders do not have clear roles for coordinating complex work packages during maintenance and modernization periods. For example, while key Navy fleet guidance identified RMCs as responsible for all oversight, RMCs do not have the ability to ensure that all stakeholders act in coordination with the larger CNO maintenance period effort. Further, in a 2024 report about Navy modernization on surface ships, NAVSEA also found that this fleet guidance conflicts with other guidance, leading to uncoordinated work among key stakeholders.⁶⁰ As a result, the Navy has experienced late and incomplete schedules, gaps in oversight, and inefficient working arrangements during these CNO periods across cruiser modernization and other surface ship modernization efforts.

Clarifying responsibilities among key stakeholders during maintenance and modernization is crucial because many different stakeholders need to work on the same ship at the same time. Among others, the lead

⁵⁹GAO-14-704G.

⁶⁰Department of the Navy, *Critique of Navy Modernization on Surface Ships Executed by Alteration Installation Teams, Revision 4* (Mar. 13, 2024).

maintenance contractor, modernization team contractors, and Navy oversight officials need to complete work within confined time and space on ships. Modernization team contractors are not subcontractors, but, rather, have contracts directly with the Navy, like the lead maintenance contractors. During a CNO period, the Navy conducts various types of maintenance and modernization work run by different program offices throughout the service. That is, when systems onboard a cruiser need to be upgraded during a CNO or other maintenance period, the program office responsible for that system—not the fleet or the ship sustainment program office—is responsible for securing funds and contracting for the system to be modernized. For any given CNO period, multiple modernization team contractors may need access to the ship and may also need to shut down other key systems to conduct their work. Thus, these modernization team contractors must work closely with the lead contractors responsible for the bulk of ship maintenance and some modernization during a CNO period to properly sequence work. Table 5 explains the different roles and responsibilities of key stakeholders during a CNO period.

Table 5: Responsibilities of Key Stakeholders Responsible for Ship Maintenance and Modernization

Key stakeholders	Responsibility
Regional Maintenance Centers	Administer contract and oversee lead contractor for the repair, maintenance, and modernization of surface ships and oversee Chief of Naval Operations (CNO) periods.
Lead contractor	Responsible for the bulk of the maintenance and modernization work during a CNO period.
Navy system program offices	Responsible for the life cycle management of their assigned programs and supporting ship systems in sustainment, such as radars, communication systems, and combat systems among many others.
Navy life cycle and ship sustainment program offices	Responsible for managing critical modernization, maintenance, training, and inactivation programs.
Modernization team contractors	Responsible for executing the modernization of a specific system or component. They are not subcontractors, but, rather, have contracts directly with the Navy.
Fleet	Responsible for maintaining ships and ensuring that the ships are ready for missions.
Ship's force	Responsible for maintaining and operating the ship. During CNO period, the crew is often responsible for keeping up with regularly scheduled maintenance among many other activities.

Source: GAO analysis of U.S. Navy data. | GAO-25-106749

The lead contractor for a CNO period is typically responsible, with oversight from the RMC, for integration of all work schedules. However, because there is no contractual relationship between the lead contractor and the modernization team contractor, the lead contractor is not necessarily able to obtain needed information from the modernization team contractors. At the same time, the Navy system program offices have no direct command relationship with the Navy ship modernization and sustainment program offices. Additionally, according to the Joint Fleet Maintenance Manual, RMCs are responsible for overseeing the lead contractor's coordination. However, due to the weakening of quality tools as previously discussed, the RMCs cannot ensure that the lead contractor or the modernization team contractors produce quality work on time.

NAVSEA has acknowledged issues with integrating and overseeing key stakeholders during CNO periods. Specifically, in March 2024, NAVSEA issued a report that identified inconsistent guidance produced by several different organizations within different levels of command. According to the report, this led to “ambiguous” organization and responsibilities resulting in uncoordinated work schedules and oversight.⁶¹ For example, the

⁶¹Ibid.

report found that one Navy modernization process manual listed responsibilities for the RMCs that were not aligned with the key fleet guidance articulating RMC’s responsibilities. We also found that guidance specific to cruiser modernization created overlapping responsibilities. For example, NAVSEA’s guidance for the cruiser modernization effort stated that the Program Office is responsible for similar activities as those of RMCs, such as resolving schedule conflicts and overseeing the readiness of the ships and crews assigned to the modernization effort.⁶² Further, the Navy’s guidance does not make it clear what actions the RMCs can take to ensure that Navy program offices’ work packages are coordinated with the larger CNO period effort.

These unclear responsibilities among key stakeholders create significant issues for the completion of CNO periods on time with the expected level of quality. In October 2023, a DOD-sponsored analysis on shipyard modernization capability acknowledged these oversight issues and found that poor integration of work led to schedule churn and maintenance delays.⁶³ We also found that these issues result in quality issues and delays during CNO periods. On USS Vicksburg, for example, crew told us that improper sequencing of work led to delays for the contractors installing equipment and incomplete cabling and electrical distribution, as shown in figure 17. They also told us that these issues led to 22 tons of electronic equipment sitting idle with no air conditioning. Officials said a lack of temperature control caused problems preserving the computer equipment used to operate the Aegis Combat System aboard USS Vicksburg and that most likely a large portion of the electronic equipment is not salvageable. As another example, crew aboard USS Chosin told us that a modernization team contractor was unable to test a key system because the ship’s ventilation was not working. This caused a delay in ensuring that all key systems were operational.

Figure 17: Incomplete Cabling and Electrical Distribution on USS Vicksburg



Source: U.S. Navy. | GAO-25-106749

Additionally, an amphibious ship (LPD 27) began a complex CNO period in January 2023 but did not have a complete schedule until 5 months later—more than halfway through the original timeline for the CNO period. Navy maintenance and ship officials told us that the lead contractor could not get the necessary data from the modernization team contractors to make a complete schedule. As a result, according to these officials, there was significant out-of-sequence work, such as when modernization team contractors arrived at the ship when no one knew they were planning to arrive. This caused significant churn as teams of subcontractors had to discontinue work due to unscheduled work taking priority. As another example, the Navy reported experiencing a significant setback after more than 300 welds on a key ship propulsion system component were found to be

⁶²Department of the Navy, *Ticonderoga Class Cruiser and Dock Landing Ship Modernization Execution Guidance*, NAVSEA Instruction 9000.1 (June 9, 2016).

⁶³Center for Naval Analyses, *Assessing Industrial Capacity to Execute Future Surface Ship Maintenance* (Oct. 10, 2023).

poorly done. The error was discovered much later than it should have been because of a lack of clarity among Navy officials about which organization was responsible for checking the welds since they were completed by a modernization team contractor. The RMCs, which caught the issue, thought the welds were checked by the Navy program office that contracted for the work, but the program office did not check the welds.

The Navy has yet to fully address this issue for future efforts. The DDG Modernization 2.0 effort incorporates three major modernizations across at least 20 ships that involve different program offices, modernization team contractors, and oversight groups. Officials from the DDG Modernization 2.0 Program Office told us that they have not made specific changes to address the risk of coordination challenges, as they do not expect DDG Modernization 2.0 to experience the same challenges as cruiser modernization. For example, despite the issues experienced during cruiser modernization, the officials said they did not see integration and oversight of modernization team contractors as a potential challenge. They stated that this would not be an issue because the new program office was established to provide additional oversight into the planning and execution of its efforts and because it plans to follow Navy policy. However, without establishing clear roles for managing coordination, it is unclear how the Navy will accomplish these coordination activities.

The Naval Sea Systems Command identified several corrective actions in its March 2024 report that would help identify clear roles for managing work coordination, including the following:

- Review and revise three pieces of guidance to better align responsibilities.
- Revise policy to include a requirement for a modernization team coordinator position for all CNO periods to ensure compliance and coordination with RMCs and the lead contractor.

These corrective actions are estimated for completion by the end of July and December 2024, respectively. However, as of September 2024, the Navy had not revisited and addressed its conflicting guidance. While the Navy identified various offices responsible for implementing the corrective actions, it did not set up a process to ensure these offices were accountable for implementing the actions. The Navy's 2022 Get Real Get Better standards—a Navy initiative to standardize leadership and problem-solving behaviors—includes specifying which organizations are responsible for leading various Navy efforts.⁶⁴ Further, *Standards for Internal Control in Federal Government* also instruct management to assign responsibility and delegate authority to achieve the entity's objectives.⁶⁵ Without addressing these issues in a timely manner, inefficient and uncoordinated work will likely to continue to cause CNO periods to be late and over cost, and gaps in addressing poor quality in future modernization efforts.

Navy Has Neither Extended the Service Lives of the Modernized Cruisers as Planned Nor Supported Its Divestment Decisions

Although the Navy is on track to complete modernization for three of its cruisers (USS Gettysburg, USS Chosin, and USS Cape St. George), it does not plan to extend their service lives by 5 years, from 35 to 40 years, as originally planned and as directed in the 2015 National Defense Authorization Act for the two ships

⁶⁴Department of the Navy, *Chief of Naval Operations Navigation Plan (2022)*.

⁶⁵[GAO-14-704G](#).

that would begin modernization in fiscal year 2015.⁶⁶ Further, the Navy currently plans to divest these three cruisers without fully assessing the implications to its force structure, including costs, benefits, and risks.

In total, by not extending the service lives of any of the 11 cruisers as planned, the Navy will lose 55 years of operational cruisers, compared to its original plans. That is, the Navy originally planned to extend by 5 years the service life of the 11 cruisers it intended to modernize. Further, the Navy originally stated that the years cruisers spent undergoing modernization would not count toward the ships' service lives—which would push the ships' decommissioning dates further into the future. For example, as shown in table 6, the Navy planned to extend USS Gettysburg's original decommission date by 9 years—to 2035—but is now planning to divest the ship in fiscal year 2026—its original date—even though the ship finished modernization at a cost of nearly \$600 million.

Table 6: Changes in USS Gettysburg's Decommissioning Date, Pre- and Post-Modernization and Current Divestment Date

Original end of service life (pre-modernization planned decommission date)	Time spent in modernization (new planned decommission date)	Service life extension (post-modernization decommission date)	Current divestment date according to the Navy's Fiscal Year 2025 30-Year Shipbuilding Plan
2026	4 years (2030)	5 years (2035)	2026

Source: GAO analysis of Navy data. | GAO-25-106749

Note: Although the Navy originally planned to extend the service life of modernized cruisers by 5 years, the Navy never extended the ships' service life. Instead of extending the service lives of the cruisers, the Navy now plans to deploy the three ships that completed modernization for one deployment before divesting them. Figure 18 shows the Navy's initial plans for cruiser service life extension versus the actual outcomes for the three ships that completed or are planned to complete modernization.

⁶⁶FY15 NDAA required the Navy to begin the modernization of two cruisers during fiscal year 2015 and specified that the modernization was to achieve a service life of 40 years. Carl Levin and Howard P. "Buck" McKeon National Defense Authorization Act for Fiscal Year 2015. Pub. L. No. 113-291, § 1026(c)(1)(C) (2014). In response, the Navy's plan for modernization was based around achieving a service life of 40 years for all 11 cruisers.

Figure 18: Changes in Cruiser Decommission and Divestment Dates

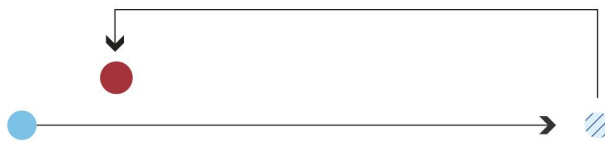
Fiscal year FY22 FY23 FY24 FY25 FY26 FY27 FY28 ——— FY29 - FY 34 ——— FY35 FY36 FY37 FY38

Ship

Gettysburg



Chosin



Cape St. George



Source: GAO analysis of Navy data. | GAO-25-106749

Note: The Navy decided to retire the three cruisers in the figure above after service lives of only 34, 35, and 36 years. Under the Navy’s plan for modernization, all 11 cruisers were to achieve an expected service life of 40 years. DOD uses the term “divest” to describe the retirement of a ship before the end of its expected service life. Accordingly, this report uses the term “divest” when discussing the three ships that will complete modernization. In November 2024, the Navy decided to extend the service lives of the three ships and plans to decommission them in fiscal year 2030.

According to its fiscal year 2025 30-year shipbuilding plan, the Navy plans to divest these cruisers after their deployments. However, this divestment decision is not based on the full knowledge of the condition of the ships and associated operational implications because the Navy has not completed a comprehensive assessment of costs, benefits, and risks of divesting the ships, as well as of ship conditions.⁶⁷ OPNAV officials stated that in general they do not see the value the cruisers bring to the fleet. The cruisers are unreliable due to longstanding issues such as hull cracking and are also less capable than destroyers, according to OPNAV officials. However, these officials also acknowledged they have yet to conduct inspections to understand the condition and reliability of the modernized ships. Further, we found that while cruisers do not have an integrated air missile defense system, the modernized cruisers’ capabilities are comparable to Flight IIA DDGs, especially considering vertical launch cells and radar systems.

⁶⁷The numbers and types of ships used to balance the Navy’s current and future mission requirements are outlined in the Navy’s annual long-range plan for construction of naval vessels. This 30-year shipbuilding plan formulates the baseline for decisions concerning which battle force ship types should be divested. According to the Navy’s FY2025 shipbuilding plan, the Navy plans to divest USS Gettysburg in fiscal year 2026 and USS Chosin and USS Cape St. George in fiscal year 2027.

In addition to the modernized cruisers and Flight IIAs DDGs, the Navy is relying on the delivery of its new class of destroyers, Flight III DDGs, to sustain air and missile defense as cruisers phase out of operations. These new destroyers are experiencing significant delivery delays—with some ships falling more than 2 years behind schedule—but are equipped with the newest radar and combat systems. The Navy plans for Flight III DDGs to take over the air defense role from the cruisers over the next 5 to 10 years and expects them to be more capable than the Flight IIAs and cruisers once delivered.

According to the Navy's 2020 inactivation policy for naval vessels, the Navy is required to assess and document the operational impact of retiring assets before they reach their decommission dates. The Navy's policy for inactivating ships requires the Navy to identify any gaps in capability that will occur with the early divestment of each ship and recommend strategies to mitigate those gaps.⁶⁸ However, if a ship reaches its expected service life, the Navy does not need to conduct a capability gap analysis to justify its retirement. Thus, the extent to which the Navy needs to do these assessments on the three modernized cruisers hinges on the Navy taking into account the 5-year service life extensions that it originally planned for these ships. Because the Navy never officially extended the service life and decommission year for the modernized cruisers, Navy officials told us that the inactivation policy's requirement to document capability assessments applies to only one of the three cruisers that have or are scheduled to complete modernization (USS Cape St. George, which is now scheduled for divestment in fiscal year 2027, a year earlier than its original decommission year, 2028). However, as previously stated, based on initial plans and legislation, the service life for the cruisers should have been extended by 5 years (into the mid-late 2030s).⁶⁹

Further, the Navy's policy defines expected service life as simply the number of years a naval ship is expected to be in service, and Navy documents show that the three cruisers that completed modernization were expected to be in service until fiscal year 2038. In addition to the Navy policy, GAO's Assessment Methodology for Economic Analysis emphasizes the importance of comprehensively assessing costs, benefits, and risks.⁷⁰ We found that the documentation that the Navy did provide on divesting the cruisers did not comprehensively assess the costs, benefits, and risks of divesting the cruisers. Therefore, in our view, the policy should apply to all three cruisers that completed their modernization.

Assessing the benefits, costs, and risks of divesting the cruisers before making divestment decisions would allow the Navy to detail the extent to which the decisions and actions affect not only the condition of their ships today, but the operational availability and force structure in the years to come. Without a full and comprehensive assessment of divesting the newly modernized cruisers, the Navy is at risk of making uninformed divestment decisions in the future and missing out on potential capability for the fleet.

After we discussed our findings with the Navy in June 2024 and provided the Navy our draft report in August 2024, the Navy said that it assessed the service lives of the three cruisers finishing the modernization effort. Subsequently, the Navy announced in November 2024, that it plans to extend the service lives of the three cruisers and that this decision adds 10 years of cumulative ship service life.

⁶⁸Department of the Navy, *General Policy for the Inactivation, Retirement, and Disposition of U.S. Naval Vessels*, OPNAVINST 4770.5J (Sept. 4, 2020).

⁶⁹Pub. L. No. 113-291, § 1026(c)(1)(C).

⁷⁰GAO, *Assessment Methodology for Economic Analysis*.

Conclusions

While it is too late to salvage the cruiser modernization effort, failure to learn critical lessons poses risk to the future of the Navy's surface fleet as it begins significant modernization efforts for other ship classes. This is particularly true for DDG Modernization 2.0 and the amphibious ship service life extension and modernization. While some issues were unique to the cruiser effort, we observed shortfalls that span across the planning and execution of Navy ship maintenance and modernization periods. Effectively modernizing ships is critical since the United States cannot build enough ships to increase the size of the fleet while also divesting ships before the end of their service lives.

In terms of planning, the Navy did not use available and critical planning tools, including risk management plans and cost estimates, to ensure that it properly accounted for key risks when planning the cruiser modernization effort. This resulted in a high volume of growth work that derailed cruiser maintenance and modernization. As the Navy dealt with the consequences of poor planning, NAVSEA leadership weakened the RMC's ability to use four key contract oversight tools. While each individual decision may have had merit, the sum of these actions has weakened the Navy's ability to ensure contractors respond when oversight organizations find quality issues. Oversight was further stymied by the Navy's lack of clear and commonly understood responsibilities, leading to inefficient and uncoordinated work. Until the Navy takes steps to address these issues, such as assessing root causes of growth work and how the Navy can ensure quality work on ship maintenance contracts, it is at risk of experiencing the same challenges during upcoming surface ship modernizations, such as DDG Modernization 2.0. Lastly, the Navy did not thoroughly assess all operational implications of divesting the three ships that completed modernization.

Recommendations for Executive Action

We are making six recommendations to the Department of the Navy:

The Secretary of the Navy should ensure that Commander, NAVSEA updates policy requiring NAVSEA 21 to consider requiring that future large-scale modernization and maintenance efforts implement planning and oversight tools used in acquisition programs. (Recommendation 1)

The Secretary of the Navy should codify the cruiser modernization lesson learned that the ownership of vessels should not be transferred from the fleet to NAVSEA for major modernization efforts. (Recommendation 2)

The Secretary of the Navy should direct the Chief of Naval Operations and Commander, NAVSEA to assess root causes of cruiser modernization growth work, develop root cause mitigation strategies, codify the strategies in policy, and apply them to other surface ship maintenance and modernization efforts. (Recommendation 3)

The Secretary of the Navy should direct Commander, NAVSEA to re-assess its approach to overall quality assurance, including restrictions on the use of critical quality assurance tools, completion of CPARS evaluations, and the lack of an independent organization to oversee quality at RMCs, to ensure contractors are held accountable for quality. (Recommendation 4)

The Secretary of the Navy should direct Commander, NAVSEA and the Chief of Naval Operations to assign specific responsibility and accountability for implementing, in a timely manner, the corrective actions identified in the 2024 NAVSEA report about modernization on surface ships. (Recommendation 5)

The Secretary of the Navy should ensure that the Chief of Naval Operations documents a comprehensive assessment on operational implications of its plan to divest the three modernized cruisers in fiscal years 2026 and 2027. (Recommendation 6)

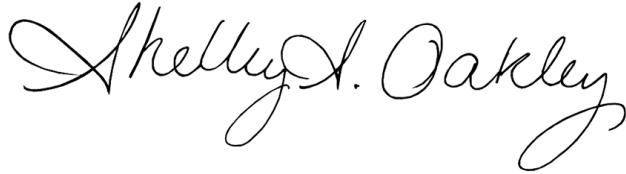
Agency Comments

We provided a draft of this report to DOD and the Navy for review and comment. The Navy concurred with all 6 of our recommendations. The Navy's comments are reproduced in appendix II. The Navy also provided technical comments, which we incorporated as appropriate.

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

If you or your staff have any questions concerning this report, please contact me at (202) 512-4841 or oakleys@gao.gov. Contact points for our offices of Congressional Relations and Public Affairs may be found on the

last page of this report. Staff members making key contributions to this report are listed in appendix III.

A handwritten signature in black ink that reads "Shelby S. Oakley". The signature is written in a cursive, flowing style.

Shelby S. Oakley
Director, Contracting and National Security Acquisitions

Appendix I: Objectives, Scope, and Methodology

This report assesses the extent to which (1) the Navy met its objectives for cruiser modernization; (2) the Navy's planning affected cruiser modernization outcomes; (3) the Navy exercised effective quality control and oversight of cruiser modernization; and (4) the Navy extended the cruiser service lives as planned and considered the benefits, costs, and risks of decommissioning the cruisers that will complete modernization.

To determine the extent to which the Navy met its objectives for cruiser modernization, we reviewed Navy documents, including planning briefing documents and internal policies and guidance established by the Office of the Chief of Naval Operations (OPNAV) and Naval Sea Systems Command (NAVSEA) establishing the cruiser modernization effort from 2015, to understand the effort's objectives. We then reviewed Navy documents and data, such as program briefings and cruiser modernization cost data tracked by the Cruiser Modernization Program Office and compared this to the cruiser modernization objectives. Our focus was on the seven cruisers that entered modernization from 2015 to 2019 (USS Cowpens, USS Gettysburg, USS Vicksburg, USS Chosin, USS Anzio, USS Cape St. George, and USS Hue City). We assessed the reliability of the Program Office cost data by comparing selected cost data, such as data for the ships' maintenance and modernization periods, to the corresponding contracts. We found that the data was reliable for our first objective.

Also as part of our first objective, to understand the quality of work on the ships, a critical element of completing each ship's modernization, and the status of the cruisers, we toured and met with ship's crew (including the Commanding Officer, Executive Officer, and Chief Engineer) for each of the five cruisers that have not yet been decommissioned—USS Cowpens, USS Gettysburg, USS Vicksburg, USS Chosin and USS Cape St. George. We also interviewed Regional Maintenance Centers (RMC), Port Engineers, Naval Sea Systems Command (NAVSEA) Director for Surface Ship Maintenance, Modernization and Sustainment, Surface Ship Modernization Program Office (Program Office), Office of the Chief of Naval Operations for Surface Warfare (OPNAV N96), Surface Forces Pacific, and Surface Forces Atlantic to understand the status of the cruisers. In total, we interviewed more than 100 Navy officials. We identified the extent to which there were quality issues on the ships. To determine this, we interviewed the RMCs, Port Engineers, and crew for the five ships that we toured; and the representatives of relevant contractors on challenges faced during modernization. We also requested and reviewed Request for Contract Changes (RCC) and Corrective Action Request (CAR) data from the Navy Maintenance Database as well as Contractor Performance Assessment Reporting System (CPARS) evaluations from the Navy for all 12 maintenance contracts. We analyzed the CAR data to determine the total quantity of CARs, totals broken out by ship and method level, and to gather deficiency information. We reviewed the CPARS evaluations to identify evaluation factor ratings.

For our second objective, to determine the extent to which the Navy's plans included key planning and oversight elements, we requested key documents for oversight, such as an acquisition program baseline, cost estimate, and acquisition strategy. We compared the extent to which the Navy completed these documents for cruiser modernization to DOD acquisition reporting elements and GAO's Cost Estimating and Assessment Guide.¹ Additionally, we compared the Navy's cruiser modernization planning materials with *Standards for*

¹GAO, *GAO Cost Estimating and Assessment Guide: Best Practices for Developing and Managing Program Costs*, [GAO-20-195G](#) (Washington, D.C., Mar. 12, 2020).

Internal Control in the Federal Government on identifying and mitigating risk.² To gather information about plans for future modernization efforts and understand what lessons from cruiser modernization will be applied to the upcoming DDG Modernization 2.0 program, we also interviewed officials from the DDG Modernization 2.0 Program Office.

To determine the extent to which the Navy's planning affected outcomes, we interviewed the various stakeholders involved in planning, including Navy organizations such as the Program Office, RMCs, Surface Maintenance Engineering Planning Program, NAVSEA Contracting, and Port Engineers, as well as two planning contractors. We interviewed these stakeholders to obtain their perspectives on the planning process for cruiser modernization, including planning challenges, how work packages and specifications were developed and how this is connected to cost and schedule growth caused by growth work. We analyzed interviews with the Program Office, OPNAV, CNRMC, RMCs, and Port Engineers to identify common planning challenges.

Also as part of our second objective, to understand the causes of growth work we requested data from the RMCs, NAVSEA Contracting, and the Program Office regarding growth work on the 12 contracts awarded for cruiser modernization. We received data pulled from Naval Maintenance Database (NMD) regarding Request for Contract Changes which we then used to isolate the changes due to growth work, analyze the government code classifying the reason for the request, and identified which changes involved the small-dollar growth value and level of effort to completion contract terms. From that data, we sorted by the government code classifying the reason for the request, to determine the quantity per code. We created broader categories to assign to each RCC stemming from growth work, determined total quantities and percentages for each category. We also calculated the process time for each change by subtracting the creation date of the RCC from the settled date, as defined by Commander, Navy RMC (CNRMC). That calculation was then used to determine the average process time per RCC and the average time of those changes that involved small-dollar value growth and level of effort to completion contract terms. We also reviewed the contracts for terms related to shortening the RCC process times. We assessed the reliability of the NMD data by comparing the data to the contracts and modifications. We also provided questionnaires to the RMCs inquiring about the quality of the data, any limitations on use of the data, guidance applicable to system, users of system, and how data was pulled. NMD is the directed system of record for all depot maintenance, according to one RMC. We determined the NMD data were reliable for the purpose of collecting and analyzing RCC and CAR data. We then compared the Navy's planning efforts and efforts to reduce growth work with federal internal control standards on identifying, analyzing, and responding to risks.

To determine the effectiveness of quality oversight in the cruiser modernization, we interviewed the Commander, Navy RMC (CNRMC), RMCs, NAVSEA Contracting, and the Program Office on their ability to oversee cruiser modernization and challenges they faced in overseeing the cruiser modernization contracts. We reviewed CPARS evaluations to determine the extent to which the Navy completed annual past performance evaluations for the cruiser maintenance and modernization contracts and orders in our review as required by the Federal Acquisition Regulation (FAR) subpart 42.15 Contractor Performance Information. Where CPARS did not include at least one evaluation over a 1-year period, we determined the evaluation periods based on 1-year increments from the date of any CPARS evaluation found in CPARS or, where there was no evaluation in CPARS, based on 1-year periods from the contract or order award date, not to exceed the date the contract or order expired. Where CPARS included no evaluation for an evaluation period, we

²GAO, *Standards for Internal Control in the Federal Government*, [GAO-14-704G](#) (Washington, D.C., Sept. 10, 2014).

provided the Navy with our list of evaluation periods, and we requested that the Navy provide any related evaluations. In response, the Navy provided reasons the evaluations were not completed (as described in our report) or stated that no evaluation could be found. We also reviewed the contracts and modification documents to identify relevant clauses and terms in the maintenance and modernization contracts, such as Quality Assurance Surveillance Plan attachments and Liquidated Damages clauses. In addition, we reviewed Navy policy memorandums on Retention Rates and Checkpoint Reductions along with other oversight tools. We compared the Navy's quality oversight processes and tools to Navy policy, including COMUSFLTFORCOMINST 4790.3 Joint Fleet Maintenance Manual (JFMM), OPNAV 4700.7M Maintenance Policy for Navy Ships, as well as FAR subpart 37.5, Management Oversight of Service Contracts, and FAR part 46 Quality Assurance.

Also, for our third objective, to determine the effectiveness of maintenance and modernization period oversight, we interviewed officials from Navy offices involved in tracking and managing the schedule of cruiser modernization as well as those that oversee contract execution in this effort, such as the Program Office, RMCs, Port Engineers, and modernization teams. We also reviewed the JFMM and Navy instruction on cruiser modernization, which designate specific roles for accountability in modernization efforts. We compared the Navy's cruiser modernization effort's oversight of schedule and integration of modernization teams with the Navy's 2022 Get Real Get Better standards which instruct management to specify leadership. In addition, we compared the Navy's processes for overseeing cruiser modernization with federal internal control standards on responsibility and accountability as well as risk.

To determine the extent to which the Navy considered the benefits, costs, and risks of decommissioning the cruisers it expects to finish modernizing and briefly redeploy, we reviewed the Navy's analyses of the costs and benefits of decommissioning the cruisers and documentation of decisions to decommission the cruisers. We compared the Navy's efforts to identify the benefits, costs, and risks of these decisions to the requirements outlined by the Navy's General Policy for the Inactivation, Retirement, and Disposition of U.S. Naval Vessels and GAO's Assessment Methodology for Economic Analysis.³ We also interviewed Navy operational organizations involved in the cruiser modernization effort, including OPNAV N96, Surface Forces Pacific, and Surface Forces Atlantic to obtain their perspective on the extent to which the Navy has considered all operational implications of decommissioning the cruisers soon after modernization. Additionally, we reviewed the Navy's Fiscal Year 2025 30-year shipbuilding plan to determine the most current plans for the three cruisers expected to complete modernization.

We conducted this performance audit from March 2023 to December 2024 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.

³Department of the Navy, *General Policy for the Inactivation, Retirement, and Disposition of U.S. Naval Vessels*, OPNAVINST 4770.5J (Sept. 4, 2020) and GAO, *Assessment Methodology for Economic Analysis*, [GAO-18-151SP](#) (Washington, D.C., April 2018).

Appendix II: Comments from the Department of Defense



THE ASSISTANT SECRETARY OF THE NAVY
(RESEARCH, DEVELOPMENT, AND ACQUISITION)
1000 NAVY PENTAGON
WASHINGTON, DC 20350-1000

NOV 25 2024

Ms. Shelby Oakley
Director, Contracting and National Security
U.S. Government Accountability Office
441 G Street, NW
Washington DC 20548

Dear Ms. Oakley:

This is the Department of Defense (DoD) response to the Government Accountability Office (GAO) Draft Report, GAO-24-106749, "NAVY SHIP MODERNIZATION: Poor Cruiser Outcomes Demonstrate Need for Better Planning and Quality Oversight In Future Efforts," dated August 23, 2024 (GAO Code 106749).

The Department appreciates the opportunity to comment on the draft report. Attached are technical comments (enclosure 1) and the responses to recommendations 1, 2, 3, 4, 5, and 6 (enclosure 2). No sensitivity items were noted.

For further questions regarding this report, please contact is Ms. Katie Powers who can be reached at 703-967-3791 or via email at katherine.e.powers11.civ@mail.mil.

Sincerely,

A handwritten signature in blue ink that reads "Nicholas H. Guertin".

Nickolas H. Guertin

Attachments:
As stated

**GAO DRAFT REPORT DATED AUGUST 23, 2024
GAO-24-106749 (GAO CODE 106749)**

**“NAVY SHIP MODERNIZATION: POOR CRUISER OUTCOMES DEMONSTRATE
NEED FOR BETTER PLANNING AND QUALITY OVERSIGHT IN FUTURE
EFFORTS”**

**DEPARTMENT OF NAVY’S RESPONSE
TO THE GAO DRAFT REPORT RECOMMENDATIONS**

RECOMMENDATION 1: The GAO recommends that the Secretary of the Navy should ensure that Commander, NAVSEA updates policy requiring NAVSEA 21 to consider requiring that future large-scale modernization and maintenance efforts implement planning and oversight tools used in acquisition programs.

DON RESPONSE: DON concurs with the recommendation. DON will update policy to require that future large-scale modernization and maintenance efforts implement planning and oversight tools used in acquisition programs. This approach has been adopted and is being implemented in the DDG Modernization 2.0 Program Office which was stood up earlier this year.

RECOMMENDATION 2: The GAO recommends that the Secretary of the Navy should codify the cruiser modernization lesson learned that the ownership of vessels should not be transferred from the fleet to NAVSEA for major modernization efforts.

DON RESPONSE: DON concurs with the recommendation. DON will codify the cruiser modernization lessons learned that ownership of vessels will not be transferred from the fleet to NAVSEA for major modernization efforts.

RECOMMENDATION 3: The GAO recommends that the Secretary of the Navy should direct the Chief of Naval Operations and Commander, NAVSEA to assess root causes of cruiser modernization growth work, develop root cause mitigation strategies, codify the strategies in policy, and apply them to other surface ship maintenance and modernization efforts.

DON RESPONSE: DON concurs with the recommendation. DON will assess root causes of cruiser modernization growth work, develop root cause mitigation strategies, codify the strategies in policy, and apply them as appropriate to other surface ship maintenance and modernization efforts.

RECOMMENDATION 4: The GAO recommends that the Secretary of the Navy should direct Commander, NAVSEA to re-assess its approach to overall quality assurance, including restrictions on the use of critical quality assurance tools, completion of CPARS evaluations, and the lack of an independent organization to oversee quality at RMCs, to ensure contractors are held accountable for quality.

DON RESPONSE: DON concurs with the recommendation. NAVSEA will re-assess its approach related to critical quality assurance (QA) tools and CPARS evaluations. The revised approaches will be adopted and implemented on NAVSEA’s ship repair/modernization contracts.

**DEPARTMENT OF NAVY'S RESPONSE
TO THE GAO DRAFT REPORT RECOMMENDATIONS**

GAO-24-106749 (GAO CODE 106749)

RECOMMENDATION 5: The GAO recommends that the Secretary of the Navy should direct Commander, NAVSEA and the Chief of Naval Operations to assign specific responsibility and accountability for implementing, in a timely manner, the corrective actions identified in the 2024 NAVSEA report about modernization on surface ships.

DON RESPONSE: DON concurs with the recommendation. DON will assign specific responsibility and accountability for implementing, in a timely manner, the corrective actions identified in the 2024 NAVSEA report about modernization on surface ships.

RECOMMENDATION 6: The GAO recommends that the Secretary of the Navy should ensure that the Chief of Naval Operations documents a comprehensive assessment on operational implications of its plan to divest the three modernized cruisers in fiscal years 2026 and 2027.

DON RESPONSE: DON concurs with the recommendation. Secretary of the Navy will ensure that the Chief of Naval Operations documents the assessment on operational implications of its plan to divest the three modernized cruisers in fiscal years 2026 and 2027.

Accessible Text for Appendix II: Comments from the Department of Defense

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Nickolas H. Guertin

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As stated

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GAO-24-106749 (GAO CODE 106749)**

"NAVY SHIP MODERNIZATION: POOR CRUISER OUTCOMES DEMONSTRATE NEED FOR BETTER PLANNING AND QUALITY OVERSIGHT IN FUTURE EFFORTS"

**DEPARTMENT OF NAVY'S RESPONSE
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DON RESPONSE: DON concurs with the recommendation. Secretary of the Navy will ensure that the Chief of Naval Operations documents the assessment on operational implications of its plan to divest the three modernized cruisers in fiscal years 2026 and 2027.

Appendix III: GAO Contact and Staff Acknowledgments

GAO Contact

Shelby S. Oakley, (202) 512-4841 or oakleys@gao.gov

Staff Acknowledgments

In addition to the contact named above, Laurier Fish, Assistant Director; Diana Moldafsky, Assistant Director; Miranda J. Wickham, Analyst-in-Charge; Sarah Goubeaux; Laura Greifner; Luke Hagemann; Brittany Morey; Kieran Pierce; Matthew T. Crosby; and Robin M. Wilson made key contributions to this report.

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