

GAO Highlights

Highlights of [GAO-23-105949](#), a report to the Committee on Transportation and Infrastructure, House of Representatives

Why GAO Did This Study

The U.S. Coast Guard, a component within DHS, has stated that it does not have enough polar icebreakers to meet its missions in the Arctic and Antarctic. To address the gap, the Coast Guard is partnering with the Navy to procure three heavy polar icebreakers, known as Polar Security Cutters. The Coast Guard plans to invest at least \$11.6 billion for acquisition, operations, and maintenance of these cutters.

GAO was asked to review the acquisition of the PSC, including the progress of the design phase, and efforts to maintain and extend the life of the *Polar Star*, the current active heavy polar icebreaker. This report addresses the (1) factors that contributed to the PSC program's design delays, (2) extent to which the program has established realistic schedule and cost baselines, and (3) status of efforts to maintain and extend the life of the *Polar Star* until the PSCs are operational. GAO reviewed Coast Guard program and contract documentation and interviewed PSC and Navy program officials, as well as shipbuilder representatives.

What GAO Recommends

GAO is making two recommendations, including that DHS ensures the design is sufficiently mature before the Coast Guard starts cutter construction and that DHS ensures the Coast Guard adds the third PSC delivery date into its acquisition program baseline. DHS concurred with both recommendations.

View [GAO-23-105949](#). For more information, contact Marie A. Mak at (202) 512-4841 or makm@gao.gov.

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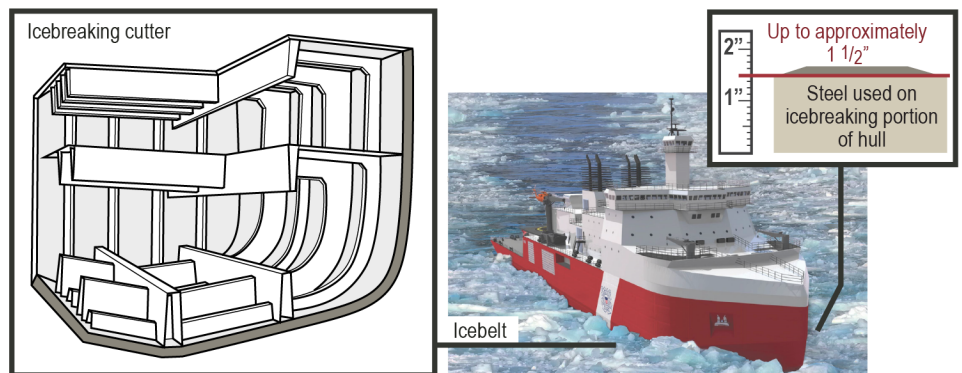
COAST GUARD ACQUISITIONS

Polar Security Cutter Needs to Stabilize Design Before Starting Construction and Improve Schedule Oversight

What GAO Found

The Polar Security Cutter's (PSC) design is not yet mature, which has led to an extended design phase and contributed to a 3-year schedule delay in the shipyard, with construction of the first cutter now planned for March 2024. Coast Guard officials attribute the extended design phase to various challenges. For example, icebreaking hulls require thick steel—up to twice as thick as a non-icebreaker—and a dense framing structure that has been challenging to plan for the PSC. Additionally, Coast Guard officials stated that U.S.-based shipbuilders have limited expertise designing and building heavy polar icebreakers.

Notional Depiction of the Polar Security Cutter's Thick Hull and Dense Framing



Source: Bollinger Mississippi Shipbuilding (image on right); GAO analysis of Bollinger Mississippi Shipbuilding and Coast Guard information (data); GAO (illustration). | GAO-23-105949

Starting construction with an immature design is contrary to leading practices. In another ongoing Coast Guard program, GAO found that construction started before the design was mature, resulting in costly rework and schedule delays.

The PSC program likely has unreliable schedule and cost estimates. The primary reasons are:

- The acquisition program baseline includes a delivery date for the first PSC but not for the third PSC. At a minimum, without a delivery date for the third cutter, the Department of Homeland Security (DHS) may have fewer opportunities for oversight if the program experiences schedule delays in the years before the program is expected to be declared fully operational.
- Key shipyard business systems that track labor hours, costs, and schedule performance were determined not to be acceptable for use, which affects the reliability of data. The Coast Guard and shipyard are taking steps to address the data limitations and GAO will continue to monitor progress.

The Coast Guard intends for its sole remaining, almost 50-year-old heavy polar icebreaker, the *Polar Star*, to be available until at least the second PSC is operational. The Coast Guard has efforts underway to maintain and extend the life of this cutter. However, the *Polar Star's* deteriorating systems present challenges, with top issues related to propulsion and electrical systems. The Coast Guard's assessments of the hull found it in good structural condition.