

# GAO Highlights

Highlights of [GAO-19-255T](#), a testimony before the Subcommittee on Coast Guard and Maritime Transportation, Committee on Transportation and Infrastructure, House of Representatives

## Why GAO Did This Study

To maintain heavy polar icebreaking capability, the Coast Guard, in collaboration with the Navy, plans to acquire up to three new heavy polar icebreakers. The Navy plans to award a contract in 2019 for the polar icebreaker program. GAO has found that before committing resources, successful acquisition programs begin with sound business cases, which include plans for a stable design, mature technologies, a reliable cost estimate, and a realistic schedule.

This statement addresses, among other things, the key acquisition risks facing the polar icebreaker program. This statement is primarily based on GAO's April 2018 and September 2018 reports examining the Coast Guard's polar icebreaker acquisition, and also draws from GAO's extensive body of published work examining the Coast Guard's and the Navy's shipbuilding efforts. In its prior work, GAO analyzed Coast Guard and Navy guidance, data, and documentation, and interviewed Coast Guard and Navy officials.

## What GAO Recommends

In September 2018, GAO recommended, among other things, that the polar icebreaker program update program baselines following a preliminary design review, conduct a technology readiness assessment, re-evaluate its cost estimate, and develop a schedule according to best practices. DHS concurred with all of GAO's recommendations and identified actions it plans to take to address them.

View [GAO-19-255T](#). For more information, contact Marie A. Mak at (202) 512-4841 or [makm@gao.gov](mailto:makm@gao.gov).

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# COAST GUARD ACQUISITIONS

## Addressing Key Risks Is Important to Success of Polar Icebreaker Program

### What GAO Found

The Coast Guard—a component of the Department of Homeland Security (DHS)—did not have a sound business case in March 2018, when it established the cost, schedule, and performance baselines for its heavy polar icebreaker acquisition program, because of risks in four key areas:

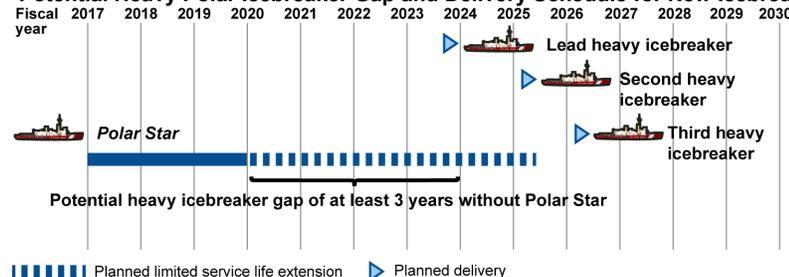
**Design.** The Coast Guard set program baselines before conducting a preliminary design review, which puts the program at risk of having an unstable design, thereby increasing the program's cost and schedule risks. While setting baselines without a preliminary design review is consistent with DHS's current acquisition policy, it is inconsistent with acquisition best practices. Based on a prior GAO recommendation, DHS is currently evaluating its policy to better align technical reviews and acquisition decisions.

**Technology.** The Coast Guard intends to use proven technologies for the program, but did not conduct a technology readiness assessment to determine the maturity of key technologies prior to setting baselines. Coast Guard officials indicated such an assessment was not necessary because the technologies the program plans to employ have been proven on other icebreaker ships. However, according to best practices, such technologies can still pose risks when applied to a different program or operational environment, as in this case. Without such an assessment, the program's technical risk is underrepresented.

**Cost.** The lifecycle cost estimate that informed the program's \$9.8 billion cost baseline was not fully reliable because it only partially met GAO's best practices for being credible. It did not quantify the range of possible costs over the entire life of the program. As a result, the cost estimate may underestimate the total funding needed for the program. However, the estimate substantially met GAO's best practices for being comprehensive, well-documented, and accurate.

**Schedule.** The Coast Guard's planned delivery dates were not informed by a realistic assessment of shipbuilding activities, but rather driven by the potential gap in icebreaking capabilities once the Coast Guard's only operating heavy polar icebreaker—the *Polar Star*—reaches the end of its service life (see figure).

**Potential Heavy Polar Icebreaker Gap and Delivery Schedule for New Icebreakers**



Source: GAO analysis of U.S. Coast Guard documents. | GAO-19-255T

GAO's analysis of selected lead ships for other shipbuilding programs found the icebreaker program's estimated construction time of 3 years is optimistic. As a result, the Coast Guard is at risk of not delivering the icebreakers when promised and the potential gap in icebreaking capabilities could widen.