

SYM-AM-20-077



PROCEEDINGS  
OF THE  
SEVENTEENTH ANNUAL  
ACQUISITION RESEARCH SYMPOSIUM

---

**Acquisition Research:  
Creating Synergy for Informed Change**

**May 13–14, 2020**

**Published: April 17, 2020**

Approved for public release; distribution is unlimited.

Prepared for the Naval Postgraduate School, Monterey, CA 93943.

Disclaimer: The views represented in this report are those of the author and do not reflect the official policy position of the Navy, the Department of Defense, or the federal government.



ACQUISITION RESEARCH PROGRAM:  
CREATING SYNERGY FOR INFORMED CHANGE

The research presented in this report was supported by the Acquisition Research Program of the Graduate School of Defense Management at the Naval Postgraduate School.

To request defense acquisition research, to become a research sponsor, or to print additional copies of reports, please contact any of the staff listed on the Acquisition Research Program website ([www.acquisitionresearch.net](http://www.acquisitionresearch.net)).



ACQUISITION RESEARCH PROGRAM:  
CREATING SYNERGY FOR INFORMED CHANGE

# Navy Shipbuilding: Increasing Focus on Sustainment Early in the Acquisition Process Could Save Billions

## Why the GAO Did This Study

The U.S. Navy requested over \$40 billion each of the last three years to build, operate, and sustain its fleet. Acquisition decisions made as ships are developed and built can have a long-term effect on sustainment costs and ship quality.

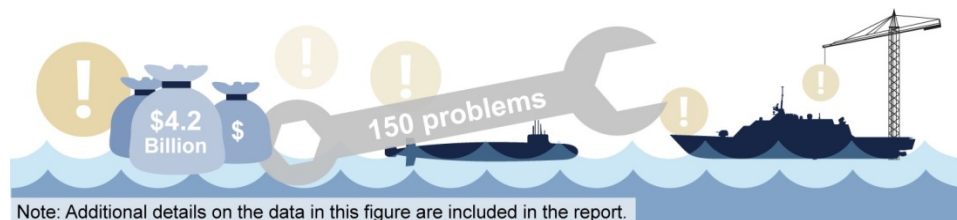
The GAO was asked to assess the extent to which the Department of Defense (DoD) considers and plans for sustainment when acquiring weapons. Among other objectives, this report assesses the extent to which

- 1) Navy ship programs deliver ships to the fleet that can be sustained as planned;
- 2) the Navy develops and uses effective sustainment requirements during acquisition;
- 3) ship programs are effectively identifying and evaluating sustainment risks in planning documents; and
- 4) leadership considers programs' sustainment planning and outcomes.

The GAO reviewed DoD and Navy acquisition policy and guidance, evaluated acquisition plans, collected sustainment metrics, and conducted interviews with more than 100 organizations, including program office and fleet units. The GAO assessed 11 classes of shipbuilding programs (all nine that delivered warships during the last 10 years, as well as two newer classes of ships).

## What the GAO Found

The Navy has delivered warships to its fleet over the past 10 years—such as aircraft carriers, destroyers, and submarines—that require more effort to sustain than initially planned. In assessing how these classes of ships are sustained, the GAO found 150 examples of class-wide problems, such as unreliable ship systems. These problems stemmed from shipbuilding programs not identifying, evaluating, or mitigating sustainment risks during the acquisition process. The GAO found that it would cost the Navy \$4.2 billion to correct just the 30% of these problems for which the Navy had data on estimated repair costs (see Figure 1).



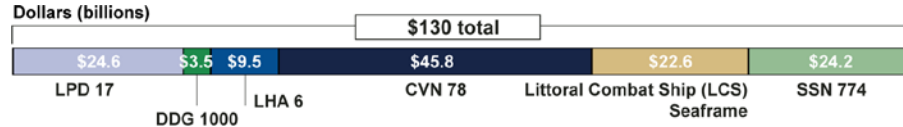
Source: GAO analysis of Department of Defense and Navy documentation. | GAO-20-2

Figure 1. Problems Requiring More Sustainment Effort than Planned Across Multiple Ships in a Class

The GAO found that shipbuilding programs' requirements for sustainment reflect weaknesses with how DoD policy defines these requirements for ships. Sustainment requirements should influence acquisition decisions that determine the sustainability of a ship class, such as the ship's design. However, the Navy's sustainment requirements do not

provide key information on how reliable and maintainable mission-critical systems should be and therefore, cannot adequately inform acquisition decisions.

The GAO also found that shipbuilding programs did not consistently address sustainment risks in acquisition planning documents. For example, the operating and support costs included in cost estimates did not capture all sustainment risks that could affect costs or evaluate sensitivity to changing sustainment assumptions, contrary to DoD and Navy cost estimating guidance. As a result, for six shipbuilding programs whose costs the GAO could assess, the Navy had underestimated sustainment costs by \$130 billion, as shown in Figure 2.



Source: GAO analysis of Department of Defense and Navy documentation. | GAO-20-2

Figure 2. Operating and Support Cost Estimate Growth for Six Ship Classes

The Navy has begun making some changes to its acquisition oversight process, such as developing sustainment program baselines and adding a sustainment oversight review. While positive, these changes focus on considering sustainment after key decisions are made early in the acquisition process. The GAO also found that the DoD is not required to provide detailed information about shipbuilding programs' sustainment cost growth to Congress. As such, Congress does not have full insight into the extent of shipbuilding programs' cost growth and why such growth occurred

### What the GAO Recommends

The GAO is making one matter for congressional consideration to enhance oversight and 11 recommendations to help the DoD and the Navy improve ship sustainment.

The DoD concurred with eight and partially concurred with three recommendations but did not describe specific actions, which the GAO believes are necessary to improve sustainment outcomes.

**See the full report here: [GAO-20-2](#).**





ACQUISITION RESEARCH PROGRAM  
GRADUATE SCHOOL OF DEFENSE MANAGEMENT  
NAVAL POSTGRADUATE SCHOOL  
555 DYER ROAD, INGERSOLL HALL  
MONTEREY, CA 93943

[WWW.ACQUISITIONRESEARCH.NET](http://WWW.ACQUISITIONRESEARCH.NET)