



Highlights of [GAO-08-804](#), a report to Subcommittee on Seapower, Committee on Armed Services, U.S. Senate

Why GAO Did This Study

In October 2008, the U.S. Navy will begin construction of the first of two lead DDG 1000 Zumwalt-class destroyers—at an expected cost of \$6.3 billion. Given the history of cost growth on shipbuilding programs, as well as the Navy's request for approval of a third ship, GAO was asked to assess the progress of the program. GAO examined (1) whether key systems can be delivered on time and work as intended (2) design maturity (3) shipyard readiness and (4) whether lead and follow-on DDG 1000 ships can be built within budget. To accomplish this, our work included analysis of schedules, ship progress reviews and cost estimates; interviews with Navy and other officials; and our own past work.

What GAO Recommends

GAO is recommending

- the design be completed before starting ship construction,
- award of contracts for the third ship be delayed until costs of the lead ship are better understood, and
- the production milestone review be held before contracts for the third ship are awarded.

The Department of Defense concurred or partially concurred with the first and third recommendations. It did not agree to delay the third ship, citing potential cost and other impacts.

This report also contains a matter for congressional consideration aimed at providing additional insight into the program.

To view the full product, including the scope and methodology, click on [GAO-08-804](#). For more information, contact Paul Francis at (202) 512-4841 or francis@gao.gov.

DEFENSE ACQUISITIONS

Cost to Deliver Zumwalt-Class Destroyers Likely to Exceed Budget

What GAO Found

From the outset, DDG 1000 has faced a steep challenge framed by technical sophistication, demanding mission requirements, and a somewhat unforgiving schedule. The Navy conceived a thoughtful strategy to meet these demands and has had success with several technologies and its design approach. Yet, the program did not proceed as planned and the Navy recently realigned the construction schedule for the first two ships to provide more time to finish key systems and software. Still, the Navy will produce—and in some cases install—key systems on the ship before fully demonstrating and testing them. Software development has proven challenging; the Navy certified the most recent software release before it met about half of its requirements. At this point—the first year of a 6-year construction schedule for the lead ships—the Navy may have exhausted its options for solving future problems without adding money and time.

The Navy expects to achieve a greater degree of design maturity before starting construction than has been the case on previous surface combatant programs. To meet this goal, the Navy will be pressed to complete a large amount of design work by October 2008 when construction will begin. From August 2007 through May 2008, the shipbuilders finished work on 16 of the 100 design “zones” that make up the ship, leaving 84 zones to finish the final design phases in the 5 months leading up to the start of construction.

Both shipyards that will build DDG 1000 are preparing for construction through facility enhancements and production improvements. However, uncertainty remains. The ship's deckhouse will be built primarily from composite rather than steel and the shipbuilder is still refining the process for large scale composite manufacturing and assembly. Workforce instability could also prevent shipbuilders from fully realizing expected efficiencies.

The full costs of constructing the two lead ships have not been entirely recognized or funded. The risk of cost growth is high in part because of the potential for late delivery of key systems and software and difficulties in constructing and integrating sections of the ship, like the deckhouse. Remaining funds may not be sufficient to buy key components and pay for other work not yet under contract. The Navy has already requested funding for a third ship and plans to contract for this ship with options for four more ships in fiscal year 2009. The Navy will not have enough data then on the actual costs of the lead ships to develop realistic prices for follow-on ships. As currently planned, all ships will be under contract and all but one under construction before the Department of Defense holds the production milestone review in 2013.