



Highlights of [GAO-05-255](#), a report to congressional committees

## Why GAO Did This Study

To conduct operations in littorals—shallow coastal waters—the Navy plans to build a new class of surface warship: the Littoral Combat Ship (LCS). LCS is being designed to accomplish its missions through systems operating at a distance from the ship, such as helicopters and unmanned vehicles, and that will be contained in interchangeable mission packages. The Navy is using an accelerated approach to buy the LCS, building the ships in “flights.” Flight 0, consisting of four ships, will provide limited capability and test the LCS concept. The schedule allows 12 months between the delivery of the first Flight 0 ship and the start of detailed design and construction for Flight 1 ships. Estimated procurement cost of the Flight 0 ships is \$1.5 billion.

The Congress directed GAO to review the LCS program. This report assesses the analytical basis of LCS requirements; the Navy’s progress in defining the concept of operations; the technical maturity of the mission packages; and the basis of recurring costs for LCS.

## What GAO Recommends

GAO recommends that the Navy analyze the effect of larger surface threats on LCS operations, incorporate the impact of LCS into helicopter force structure, and sufficiently experiment with Flight 0 ships before selecting a Flight 1 design. The Department of Defense partially concurred with GAO’s recommendations.

[www.gao.gov/cgi-bin/getrpt?GAO-05-255](http://www.gao.gov/cgi-bin/getrpt?GAO-05-255).

To view the full product, including the scope and methodology, click on the link above. For more information, contact Paul Francis at (202) 512-2811 or [francispl@gao.gov](mailto:francispl@gao.gov).

## DEFENSE ACQUISITIONS

# Plans Need to Allow Enough Time to Demonstrate Capability of First Littoral Combat Ships

## What GAO Found

The formal analysis of requirements for U.S. littoral combat operations—conducted after the Navy established the LCS program—examined a number of options, such as the extent to which existing fleet assets or joint capabilities could be used. While the Navy concluded that the LCS remained the best option, it focused on LCS requirements for combating small boats. The Navy did not conduct an analysis of the impact of larger surface threats LCS may face. Such threats may increase the risk to LCS operations when no other nearby U.S. forces are available to help.

The Navy has developed both a broad concept and more detailed plans on how the LCS will be employed. It has also identified a number of challenges that could put the LCS concept at risk, such as manning, logistics, and communications. For example, reduced manning—a key goal of the LCS program—may not be achievable because maintaining and operating the ship’s mission packages, such as the MH-60 helicopter, may require more sailors than the current design allows. Further, the Navy has not yet incorporated the numbers of helicopters that will be needed to fulfill LCS’ s concept of operation into its force structure and procurement plans. If the Navy’s efforts to meet these challenges are not successful, the Navy may not have sufficient time to experiment with the Flight 0 ships and integrate lessons learned into planning and designing for follow-on ships.

While the Navy designed the first LCS to rely on proven technologies and systems, a number of technologies to be used in LCS’s mission packages have yet to be sufficiently matured—that is, they have not been demonstrated in an operational environment—increasing the risk of cost and schedule increases if the technologies do not work as intended. Technologies must also be demonstrated for systems on the LCS seaframe. Other factors may affect the availability of mature technologies and subsystems, such as making the modifications necessary for adaptation to the LCS and transitioning projects from the laboratory to production. Collectively, these technology issues pose an additional challenge to the Navy’s ability to sufficiently experiment with Flight 0 ships in time to inform the design efforts for follow-on ships.

Procurement costs for the Flight 0 ships remain uncertain. The basis for the seaframe cost target—\$220 million—appears to be more defined than for the mission packages, as the Navy has performed various cost analyses that consider the challenges in detailed design and construction. The Navy seeks to meet the cost target by trading between capability and cost. Cost data for the Flight 0 mission packages are not as firm in part because of the uncertainties associated with immature technologies.