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# Navy Littoral Combat Ship (LCS): Background and Issues for Congress

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## Summary

The Littoral Combat Ship (LCS) is to be a small, fast Navy surface combatant with modular weapon systems. Two industry teams are developing separate designs for the LCS. Section 124 of the conference report on the FY2006 defense authorization bill (H.R. 1815) limits the cost of the fifth and sixth LCSs to $220 million per ship. The conference report on the FY2006 defense appropriations bill (H.R. 2863) approves funding for the procurement of three LCSs in FY2006. For a longer discussion of the LCS program, see CRS Report RL32109, *Navy DD(X), CG(X), and LCS Ship Acquisition Programs: Oversight Issues and Options for Congress*, by Ronald O'Rourke. This report will be updated as events warrant.

## Background

The Navy announced the LCS program in November 2001 as part of a proposed family of next-generation Navy surface combatants that also includes the much-larger DD(X) destroyer and CG(X) cruiser.[1] The LCS is to be a small, fast surface combatant that would use modular "plug-and-fight" mission payload packages, including unmanned vehicles (UVs). The primary intended missions of the LCS are countering enemy mines, submarines, and fast attack craft (i.e., "swarm boats") in heavily contested littoral (near-shore) waters. Secondary LCS missions include intelligence, surveillance, and reconnaissance (ISR); maritime intercept; special operations forces (SOF) support; and logistics support for movement of personnel and supplies. Some observers believe the LCS might also be suitable for homeland defense operations.

[1] For more on the DD(X) and CG(X), see CRS Report RL32109, *Navy DD(X), CG(X), and LCS Ship Acquisition Programs: Oversight Issues and Options for Congress*, by Ronald O'Rourke.

December 2005 press reports indicate that the Navy wants to build a total of 55 LCSs.[2] The first LCS was procured in FY2005 and the Navy requested funding for the second in the FY2006 budget.

On May 27, 2004, the Navy awarded contracts to teams led Lockheed Martin and General Dynamics (GD) for final system design of two "Flight 0" versions of the LCS, with options for detailed design and construction of up to two LCSs each. The Lockheed team is to build the first LCS, while the GD team is to build the second. The Navy wants to build at least a few LCSs to the two Flight 0 designs before deciding whether to continue building one design, the other, or both. Lockheed plans to build its LCSs at Marinette Marine of Marinette, WI, and Bollinger Shipyards of Louisiana and Texas; GD plans to build its LCSs at Austal USA of Mobile, AL. These yards are not among the six yards that have built the Navy's major warships in recent years.

The Navy is acquiring the first and second LCSs through the Navy's research and development account rather than the Navy's ship-procurement account. The Navy is procuring LCS mission modules through the Other Procurement, Navy (OPN) account rather than the Navy's ship-procurement account. **Table 1** shows funding for the LCS program through FY2011. The Navy wants LCSs to have a unit procurement cost of no more than $220 million, exclusive of their mission modules. Figures from **Table 1** for FY2009-FY2011 (when steady-state production of five ships per year is programmed) suggest that when the cost of mission modules is added in, the LCS program might have an average ship procurement cost of about $388 million, and that a program of 55 LCSs might therefore have a total acquisition (i.e., research and development plus procurement) cost of about $22.1 billion.

The conference report (H.Rept. 108-622 of July 20, 2004) on the FY2005 defense appropriations bill (H.R. 4613/P.L. 108-287 of August 5, 2004) approved the Navy's plan to build the first two LCSs using research and development funds rather than shipbuilding funds, funded the first LCS's construction cost, required the second LCS to be built to the second LCS design now being developed, prohibited the Navy from requesting funds in FY2006 to build a third LCS, and required all LCSs built after the lead ships of each design to be funded in the Navy's shipbuilding account.

## Issues for Congress

**Total Acquisition Cost.** Although this CRS report estimates that a 55-ship LCS program might have a total acquisition cost of about $22.1 billion, Navy officials acknowledge that the cost of individual LCS mission modules and the ratio of mission modules to LCSs is not yet clear, and that the potential total acquisition cost of the LCS program, including mission modules, is therefore uncertain. Supporters could argue that total program acquisition cost will become clearer as the Navy works through the details of the program. Critics could argue that a major acquisition program like the LCS program should not proceed at full pace until its potential total costs are better understood.

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[2] Christopher P. Cavas, "U.S. Ship Plan To Cost 20% More," *Defense News*, December 5, 2005: 1, 8; and David S. Cloud, "Navy To Expand Fleet With New Enemies in Mind," *New York Times*, December 5, 2005.

## Table 1. LCS Program Funding, FY2002-FY2009

(millions of then-year dollars; totals may not add due to rounding)

| | 03 | 04 | 05 | 06 | 07 | 08 | 09 | 10 | 11 | Total thru FY11 |
|---|---|---|---|---|---|---|---|---|---|---|
| **Research, Development, Test & Evaluation, Navy (RDT&EN) account** | | | | | | | | | | |
| Ship 1 construction | 0 | 0 | 212.5 | 0 | 0 | 0 | 0 | 0 | 0 | 212.5 |
| Ship 2 construction | 0 | 0 | 0 | 240.5 | 0 | 0 | 0 | 0 | 0 | 240.5 |
| Procurement of ship long-lead items | 0 | 0 | 16.0 | 0 | 0 | 0 | 0 | 0 | 0 | 16.0 |
| Ships 1and 2 outfitting/post delivery | 0 | 0 | 0 | 8.7 | 36.7 | 36.7 | 7.1 | 0 | 0 | 89.2 |
| LCS ship development | 35.3 | 158.3 | 224.2 | 117.3 | 130.8 | 57.7 | 37.1 | 37.9 | 16.4 | 815.0 |
| LCS mission package project | 0 | 0 | 0 | 209.9 | 131.6 | 65.3 | 57.1 | 80.6 | 34.3 | 578.8 |
| **Subtotal RDT&EN** | 35.3 | 158.3 | 452.6 | 576.5 | 299.2 | 159.8 | 101.3 | 118.4 | 50.6 | 1952.0 |
| **Shipbuilding and Conversion, Navy (SCN) account** | | | | | | | | | | |
| Ships 3-22, *(qty)* | 0 | 0 | 0 | 0 | 542.4 *(2)* | 779.7 *(3)* | 1127.2 *(5)* | 1112.3 *(5)* | 1110.3 *(5)* | 4671.9 *(20)* |
| **Subtotal SCN** | 0 | 0 | 0 | 0 | 542.4 | 779.7 | 1127.2 | 1112.3 | 1110.3 | 4671.9 |
| **Other Procurement, Navy (OPN) account (for LCS mission modules)** | | | | | | | | | | |
| **Subtotal OPN** | 0 | 0 | 0 | 36.8 | 108.4 | 221.5 | 748.8 | 738.7 | 813.7 | 2667.9 |
| **Weapons Procurement, Navy (WPN) account** | | | | | | | | | | |
| **Subtotal WPN** | 0 | 0 | 0 | 0 | 0 | 0 | 48.3 | 48.4 | 59.3 | 156.0 |
| **TOTAL** | 35.3 | 158.3 | 452.6 | 613.3 | 950.0 | 1161.0 | 2025.6 | 2017.8 | 2033.9 | 9447.8 |

**Source:** Navy FY2006 budget justification books.

**Funding Strategy for Mission Modules.** **Table 1** suggests that the Navy's plan to procure LCS mission modules in the Other Procurement, Navy (OPN) account may result in 35% to 40% of the LCS program's total procurement costs being funded through this account. Supporters of this plan could argue that procuring LCS mission modules in the OPN account is consistent with the practice of procuring ship weapons (e.g., missiles and gun shells) through the Weapon Procurement, Navy (WPN) appropriation account or the Procurement of Ammunition, Navy and Marine Corps (PANMC) appropriation. Skeptics could argue that the LCS mission modules are not missiles and gun shells, but rather elements of the ships' combat systems, and that funding the modules through the OPN account rather than the ship-procurement account would effectively obscure a significant portion of total LCS program procurement costs by placing it in a part of the Navy's budget that is less visible to Congress.

**Industrial Base.** Supporters of the current plan to build LCSs in yards other than the two current surface combatant builders — General Dynamics' Bath Iron Works (BIW) and Northrop Grumman's Ship Systems (NGSS) division — could argue that this will help constrain LCS construction costs because the yards in question have lower overhead costs than BIW or NGSS. Skeptics could argue that BIW and NGSS have considerable unused building capacity, that building LCSs at BIW or NGSS could reduce the cost of other Navy shipbuilding programs being performed at these yards by spreading BIW's or NGSS' fixed overhead costs over a larger amount of shipbuilding work, and

that building LCSs at yards other than those that already build major ships for the Navy will create one or more additional shipyards with a strong dependence on Navy shipbuilding contracts and thereby exacerbate the current excess-capacity situation in Navy shipbuilding.

**Potential Options for Congress.** Potential options for Congress for the LCS program include the following:

- shift procurement of LCS mission modules to the Navy's ship-procurement account to make these costs more visible to Congress;
- procure a few LCSs and then evaluate them in exercises before deciding whether to put the LCS into larger-scale series production;[3]
- procure LCSs at a rate of up to 10 per year to get LCSs into the fleet sooner and achieve better production economies of scale;
- procure LCSs at a rate of less than five per year so as to reduce annual LCS funding requirements;
- terminate the LCS program (and the DD(X) program) and instead procure a new-design frigate as a common replacement;[4] and
- terminate the LCS program and invest more in other littoral-warfare improvements.

## Legislative Activity for FY2006

**FY2006 Defense Authorization Bill (H.R. 1815/S. 1042).** Section 124 of the conference report on H.R. 1815 limits the cost of the fifth and sixth LCSs to $220 million per ship, with the limit to become effective with the budget that request funds for the procurement of the two ships. (This will likely be the FY2007 budget.) The section also requires an annual report on the content, cost, and number of LCS mission packages, and states that no funds may be used for procurement of LCSs or LCS mission packages after the procurement of the first four LCSs until the Navy certifies in writing that stable designs exist for the LCS.

**FY2006 Defense Appropriations Bill (H.R. 2863).** The conference report on H.R. 2863 approves funding for the procurement of three LCSs in FY2006. The report approves $582.7 million in research and development funding for the LCS program, a $6.2-million increase over the requested amount. This total includes funding for the procurement of one LCS, as requested by the Navy. The conference report also includes an $440 million in the Shipbuilding and Conversion, Navy (SCN) account, not requested by the Navy, for the procurement of two additional LCSs. Of the $6.2-million increase in research and development funding, $3.0 million is to be used for remote operation of active sonar technology (ROAST), $2.2 million is for unmanned surface vehicle concepts and technology solutions, and $1.0 million is for antisubmarine warfare multistatic sensor mission planing upgrade and LCS mission package projects.

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[3] For a discussion of this option see Robert O. Work, *Naval Transformation and the Littoral Combat Ship*, Center for Strategic and Budgetary Assessments, Feb. 2004.

[4] For a discussion of this option, see U.S. Congressional Budget Office, *Transforming the Navy's Surface Combatant Force*, Mar. 2003, pp. 4-17.

The conference report states that "The conferees agree to the report on Littoral Combat Ship (LCS) mission modules proposed by the House, and specify that such report should include cost estimates for these modules by fiscal year." The **House Appropriations Committee**, in its report (H.Rept. 109-119 of June 10, 2005) on **H.R. 2863**, stated:

> The Committee directs that, prior to obligation of SCN funds for the third and fourth "flight zero" LCS ships, the Navy certify in writing to the congressional defense committees that the ship designs from each prime contractor are sufficiently stable to allow further construction. The Committee also believes that, while the LCS ship itself is of stable and mature design, the mission modules essential to LCS warfighting capabilities are less mature. A number of these technologies have not been demonstrated in an operational environment, and cost estimates for the mission modules appear immature as well. To address this issue, the Committee directs the Navy to submit, not later than February 1, 2006, a report on the development and procurement plan for LCS mission modules, including a description of the development status of each subsystem. (p. 146) crsphpgw