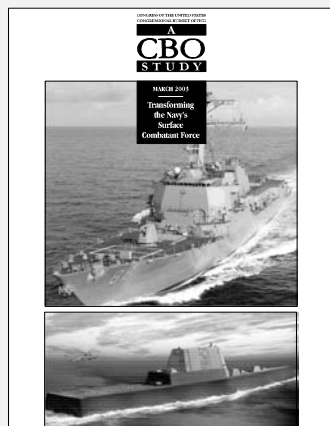


Transforming the Navy's Surface Combatant Force



The U.S. Navy has about 300 ships, including 115 surface combatants (cruisers, destroyers, and frigates). Recently, senior Navy officials have argued that the nation needs a larger fleet: 375 ships, including a force of 160 surface combatants. That force would include next-generation cruisers and destroyers as well as new, much smaller vessels called littoral combat ships, which are intended to ensure the Navy's freedom of action in the world's coastal waters. The new surface combatants are an important element of the Administration's plans for transforming the Navy. However, at the same time that the Navy hopes to expand the fleet, it plans to retire many existing surface combatants early.

Reaching the Navy's new force goal by building more surface combatants would require a substantial increase in funding for ship construction, which could crowd out other initiatives, including different transformation efforts and ship programs. A new study by the Congressional Budget Office, *Transforming the Navy's Surface Combatant Force*, concludes that there are several alternative ways to modernize and transform surface combatants while maintaining the current level of funding. Those

alternatives involve delaying the transition to next-generation ships by making the most of the existing surface combatant force, accelerating the transition to next-generation ships by retiring much of the existing force early, or buying fewer next-generation ships by assigning multiple crews to new classes of surface combatants. All of those approaches would produce a larger and more capable group of ships over 25 years than the Navy has today with no increase in average real spending.

The Bush Administration came into office announcing its intention to transform the military into a more effective and lethal force. Perhaps the most visible transformation effort involving the Navy is the drive to modernize the surface combatant force. That force, which represents more than one-third of the Navy's fleet, comprises cruisers, destroyers, and frigates. (It excludes aircraft carriers, amphibious ships, and support ships.) Over the next 10 to 15 years, the Navy plans to retire one class of destroyers, modernize its cruisers and frigates, and introduce three new classes of surface combatants. That plan—which is at the heart of the Navy's effort to expand the total fleet from a little over 300 ships to 375 ships—would produce a force of 160 surface combatants 25 years from now, compared with today's force of 115 surface combatants.

The resources needed for that expansion, however, are much larger than what the Navy now spends on surface combatants. Thus, without large budget increases, transforming the surface combatant force could crowd out funding for other ship programs.

The Congressional Budget Office (CBO) examined three alternative approaches for structuring the surface combatant

force that would limit average annual spending on procurement and direct operation and support costs to roughly the amount spent last year: \$6.6 billion (in 2003 dollars). The Navy could cap average spending at that level and still have a larger and more capable force of surface combatants in 25 years. However, the additional money that the Navy would spend under its plan would provide an even bigger and more effective force than would any of CBO's options.

The Resource Implications of Modernizing the Force

At present, the Navy's force of surface combatants comprises 17 Spruance class destroyers, 27 Ticonderoga class cruisers, 33 Oliver Hazard Perry class frigates, and 38 Arleigh Burke class destroyers. Although they continue to be adapted for other missions, those ships constitute the final Cold War generation of surface combatants designed for open-ocean naval warfare against the Soviet Union.

The Navy proposes to introduce a new generation of surface combatants designed to confront new threats and perform new missions. With the demise of the Soviet fleet, Navy leaders have refocused their attention on influencing events

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on land and operating in crowded coastal regions. The Navy expects the next generation of ships, designed especially for coastal areas, to reduce the risks that U.S. naval forces might face in that operating environment (such as risks from mines, quiet diesel-electric submarines, and small, fast attack boats armed with antiship missiles) and to increase the ability of those forces to attack targets on land.

The Navy's Modernization Plan

The Navy's transformation plan would retire all Spruance class destroyers and the first five Ticonderoga class cruisers by late 2006—well before the end of their expected service lives. It would also upgrade the combat systems and reliability of the remaining Ticonderogas and Perry class frigates. The Navy's main focus, however, is on buying the DD(X) future destroyer, starting in 2005; the littoral combat ship (LCS), also starting in 2005; and the CG(X) future cruiser, beginning around 2014.

The DD(X) is intended to be a stealthy, multimission ship with an emphasis on land attack. It is expected to carry one or two 155-millimeter advanced gun systems capable of hitting targets up to 100 nautical miles away and as many as 128 vertical launch system cells for longer-range land-attack missiles. The Navy may buy up to 16 DD(X)s.

The littoral combat ship is intended to be much smaller than the DD(X). The Navy wants it to be a "focused-mission" ship with a modular design, in which combat systems could be changed depending on what mission the ship was assigned to perform. At any given time, the LCS could be configured to carry out one of three missions: mine countermeasures, antiboat operations, or littoral antisubmarine warfare. The Navy has not stated officially how many littoral combat ships it plans to buy, but CBO assumed that the number is 56—consistent with statements by Navy officials and with briefings that CBO has received.

The CG(X) would also be a multimission ship, emphasizing air and ballistic missile defense. Although the Navy has also not said how many of the new cruisers it intends to purchase, current Navy operating concepts imply a force of between 24 and 42 CG(X)s. CBO assumed that the Navy would buy 32 of the new cruisers through 2025.

Under that transformation plan—which CBO refers to as the Navy's 160-ship plan—the envisioned inventory of 160 surface combatants would consist of 88 cruisers and des-

troyers capable of providing long-range air defense as well as 16 DD(X) destroyers and 56 littoral combat ships (*see Figure 1*).

Budgetary Implications of the Navy's Plan

The Navy's 160-ship plan would require greater resources than the surface combatant force has received in recent years or would receive under the President's budget request for fiscal year 2004. That request envisions that the Navy will spend \$3.2 billion in 2004—or about 28 percent of its ship-building budget—to buy surface combatants. In contrast, by CBO's estimate, the Navy would need to spend an average of \$5.9 billion a year (in 2003 dollars) on procurement between 2003 and 2025 to implement the 160-ship plan.

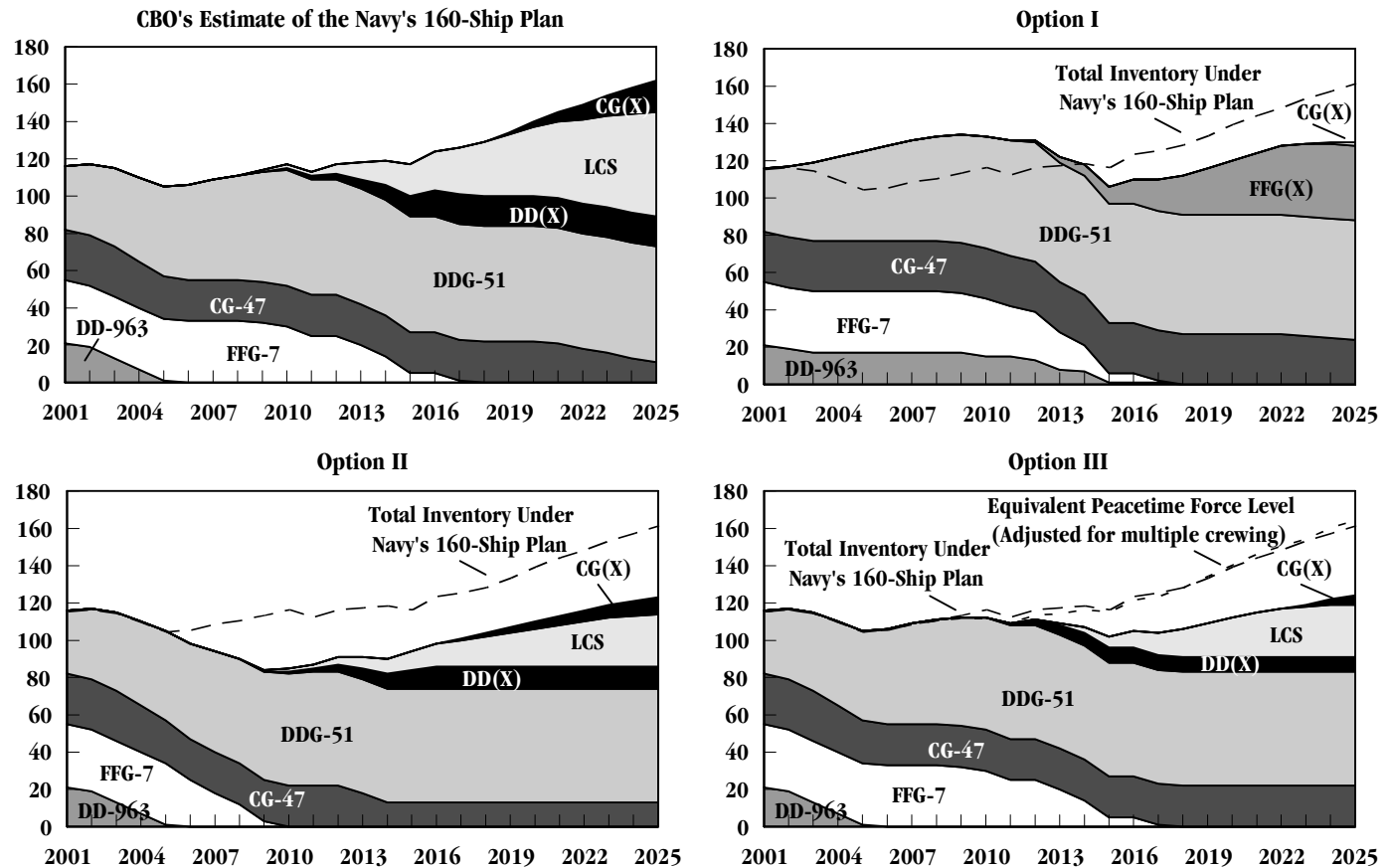
At the same time, other components of the Navy will need greater resources if Navy leaders are to achieve their overall force goal of 375 ships. CBO estimates that meeting that goal would require an average budget for ship construction of almost \$17 billion a year between 2011 and 2020—or about \$3 billion more than the average required for the 2003-2010 period and twice what the Navy spent between 1990 and 2002 (*see Table 1 on page 4*).

The Navy's ship construction budget has had a growing shortfall in recent years, and building a larger surface combatant force would exacerbate that problem. Before 2002, the Navy's total force goal for ships was officially about 300. (That goal was set in the 1997 Quadrennial Defense Review and appeared to be retained in the 2001 review.) Sustaining a 300-ship Navy indefinitely—that is, in steady state—would require spending about \$11 billion a year on ship procurement, CBO estimates. But since 1990, the Navy has spent only about \$8.5 billion per year, on average. Thus, the total shortfall in ship construction relative to the spending needed to maintain a steady-state fleet of around 300 ships now stands at almost \$39 billion. (The shortfall relative to the 375-ship goal would be about \$58 billion.) The bulk of that shortfall involves attack submarines.

In the past year, senior Navy admirals have argued that they need 375 ships to perform all of the missions asked of the service. By far the biggest change in force goals is the increase in the desired number of surface combatants to 160. In short, the Navy is proposing a major expansion of the surface combatant force that will require considerable resources at the same time that other ship programs will need more funding if current force levels are to be maintained.

Figure 1.

Inventory of Surface Combatants Under the Navy's 160-Ship Plan and Three Alternatives, 2001-2025



Source: Congressional Budget Office.

Note: DD-963 = Spruance class general-purpose destroyer; FFG-7 = Oliver Hazard Perry class guided-missile frigate; CG-47 = Ticonderoga class guided-missile cruiser; DDG-51 = Arleigh Burke class guided-missile destroyer; DD(X) = future general-purpose destroyer; LCS = littoral combat ship; CG(X) = future guided-missile cruiser; FFG(X) = future guided-missile frigate.

Structuring the Future Force at Today's Funding Level

Transforming the surface combatant force need not be as expensive a proposition as the Navy's 160-ship plan would be. CBO examined three different options to structure the force, each of which would require no more than an average of about \$6.6 billion a year (in 2003 dollars) for procurement and direct operation and support costs between 2003 and 2025. The three approaches emphasize different trade-offs between keeping the current generation of ships and transforming the force over the next two decades.

Option I: Delay the Transition to Next-Generation Ships by Making the Most of the Existing Fleet

The surface combatants of the current Cold War generation are still formidable fighting ships. This option would keep

many of them through the end of their notional service lives to ease the shortage of ships that Navy admirals have argued now exists. The Spruance class destroyers would be retained and upgraded, as would the Ticonderoga class cruisers and Perry class frigates. The CG(X) would be delayed for five years, and the DD(X) and littoral combat ship would be canceled. In their place, the Navy would build a next-generation frigate that was more capable than the LCS but smaller and less costly than the DD(X). That frigate would perform all three of the LCS's missions (mine countermeasures, antiboat operations, and littoral antisubmarine warfare), and it would have strong defensive capabilities to make it better able to survive in a littoral environment. Overall, this force would be larger than the force of the Navy's 160-ship plan over the next 10 years but smaller thereafter (see Figure 1).

Table 1.**Average Annual Spending for Ship Construction**

(In billions of 2003 dollars)

Category	Force Goal (Number of ships)	Actual Average Annual Spending, 1990-2002	Steady-State Funding Required (Based on 1997 and 2001 QDR force goals) ^a	Cumulative Surplus or Shortfall (-) Relative to Steady- State Funding, 1990-2002	Projected Average Annual Spending ^b	
					2003- 2010	2011- 2020
Surface Combatants	116	3.6	3.4 ^c	2.0 ^c	5.1	6.2
Attack Submarines ^d	58	1.3	3.9	-34.1	4.2	6.3
Ballistic Missile Submarines	14	0.3	0.8	-7.1	0.6	0.4
Aircraft Carriers	12	1.4	1.4	-0.5	2.0	2.1
Amphibious Ships	36	0.9	1.1	-1.8	0.6	0.9
Other	<u>70</u>	<u>0.9</u>	<u>0.7</u>	<u>2.9</u>	<u>1.0</u>	<u>1.0</u>
Total	306	8.5	11.3^c	-38.7^c	13.5	16.9

Source: Congressional Budget Office.

Note: QDR = Quadrennial Defense Review.

- a. The steady state represents the annual spending required to maintain the fleet at the level of the force goals, which are very close to current levels.
- b. CBO projection based on the Navy's proposed 375-ship fleet, including 160 surface combatants.
- c. If the requirement for surface combatants was 160, the steady-state budget would be \$5.2 billion a year and the cumulative 1990-2002 shortfall would be \$19 billion. Thus, the total steady-state budget would be \$13.1 billion and the total shortfall would be \$58 billion.
- d. These numbers represent a slight change from the force goals in the 1997 and 2001 QDRs. They assume 54 attack submarines and four Trident submarines converted to a guided-missile configuration, whereas the 1997 QDR called for 50 attack submarines, and the 2001 QDR seemed to affirm a force goal of 55 attack submarines.

Option II: Accelerate the Transition to Next-Generation Ships by Retiring Much of the Existing Force Early

Under this option, the Navy would more aggressively pursue the new capabilities and ships promised by next-generation technology. To free up funds for that effort, it would dramatically cut the surface combatant force in the short term. It would upgrade the combat systems and reliability of 13 Ticonderoga class cruisers; of the other 14, the first five would be retired by 2006 and the rest by 2014, well before the end of their notional 35-year service life. This approach would retire all Spruance class destroyers by 2006 and all Perry class frigates by 2010. It would buy 12 DD(X)s, accelerate the procurement of the CG(X) to 2012, and purchase only 30 littoral combat ships, starting in 2005. In short, this option would reduce the programs of the Navy's plan to fit them within a smaller funding level (see *Figure 1*).

Option III: Buy Fewer Next-Generation Ships by Assigning Multiple Crews to New Ship Classes

Under this option, the Navy would transform the surface combatant force through a different operating concept—using three crews to operate two ships. By doing so, the Navy could provide the same overseas presence as under its 160-ship plan but with a smaller fleet and for less money.

Although multiple-crewed ships can provide about twice the peacetime presence of single-crewed ships, they offer no extra benefit during a war. (Wartime capability is based on the actual number of surface combatants in the force.)

This option would also retire the Spruance class destroyers early and upgrade all but the first five Ticonderoga class cruisers as well as the Perry class frigates. It would buy eight DD(X)s and 28 littoral combat ships. The CG(X) would be delayed until 2018, and only 15 would be purchased. Those new classes of ships would use multiple crews and thus spend more time at sea, so they would cost more to operate than single-crewed ships would. Under this option, the surface combatant force would increase to 124 ships by 2025, but the multiple-crewing concept would make that force equal to 165 single-crewed ships in peacetime (see *Figure 1*).

Contact: This brief is based on *Transforming the Navy's Surface Combatant Force* (March 2003) by Eric J. Labs. It and other CBO publications are available at www.cbo.gov.

Related CBO Publications: *The Long-Term Implications of Current Defense Plans* (January 2003); *Increasing the Mission Capability of the Attack Submarine Force* (March 2002).