

CBO TESTIMONY

Statement of
J. Michael Gilmore
Assistant Director
and
Eric J. Labs
Principal Analyst

Potential Costs of the Navy's 2006 Shipbuilding Plan

before the
Subcommittee on Projection Forces
Committee on Armed Services
U.S. House of Representatives

March 30, 2006

This document is embargoed until it is delivered at 4:00 p.m. (EST), Thursday, March 30, 2006. The contents may not be published, transmitted, or otherwise communicated by any print, broadcast, or electronic media before that time.



CONGRESSIONAL BUDGET OFFICE
SECOND AND D STREETS, S.W.
WASHINGTON, D.C. 20515

Report Documentation Page

*Form Approved
OMB No. 0704-0188*

Public reporting burden for the collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington VA 22202-4302. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to a penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number.

1. REPORT DATE 30 MAR 2006	2. REPORT TYPE	3. DATES COVERED 00-00-2006 to 00-00-2006	
4. TITLE AND SUBTITLE CBO Testimony. Potential Costs of the Navy's 2006 Shipbuilding Plan		5a. CONTRACT NUMBER	
		5b. GRANT NUMBER	
		5c. PROGRAM ELEMENT NUMBER	
6. AUTHOR(S)		5d. PROJECT NUMBER	
		5e. TASK NUMBER	
		5f. WORK UNIT NUMBER	
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) Congressional Budget Office, Ford House Office Building 4th Floor, Second and D Streets, SW, Washington, DC, 20515-6925		8. PERFORMING ORGANIZATION REPORT NUMBER	
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)		10. SPONSOR/MONITOR'S ACRONYM(S)	
		11. SPONSOR/MONITOR'S REPORT NUMBER(S)	
12. DISTRIBUTION/AVAILABILITY STATEMENT Approved for public release; distribution unlimited			
13. SUPPLEMENTARY NOTES The original document contains color images.			
14. ABSTRACT			
15. SUBJECT TERMS			
16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT
a. REPORT unclassified	b. ABSTRACT unclassified	c. THIS PAGE unclassified	
			18. NUMBER OF PAGES 16
			19a. NAME OF RESPONSIBLE PERSON

Mr. Chairman, Congressman Taylor, and Members of the Subcommittee, we appreciate the opportunity to appear before you today to discuss the costs associated with the Navy's new plan for a 313-ship fleet. The Congressional Budget Office's (CBO's) ongoing analysis of the Navy's shipbuilding program, the Navy's new report on shipbuilding over the next 30 years, and the description of the ship program in the Future Years Defense Program (FYDP) indicate the following:

- The Navy's new shipbuilding plan projects average annual costs for the 2007-2011 FYDP of about \$14.9 billion, or about 27 percent higher in real terms than the funding the Navy has received during the past six years.¹
- CBO's estimate for shipbuilding costs through 2011 is about 10 percent higher than the Navy's, implying average annual costs through 2011 that are about 40 percent greater than those during the past six years.
- Through 2035, CBO estimates, the Navy's proposed shipbuilding plan would cost about \$20.5 billion annually, or about 70 percent more than the funding provided for ship construction over the past six years.

Shipbuilding Under the 2007-2011 FYDP and the Navy's New Shipbuilding Report

On February 6, 2006, the Secretary of the Navy submitted its *Report to Congress on Annual Long-Range Plan for Construction of Naval Vessels for FY2007*. That report outlined a requirement for a fleet of 313 ships composed of the following:

- 11 aircraft carriers;
- 62 guided missile destroyers (DDGs);
- 7 DD(X) destroyers;
- 19 guided missile cruisers;
- 55 littoral combat ships (LCSs);
- 48 attack submarines;
- 4 guided missile submarines;
- 14 ballistic missile submarines;
- 31 amphibious ships;

1. Unless otherwise noted, the costs described in this statement are expressed in 2007 dollars.

- 12 future maritime prepositioning force, or MPF(F), vessels, constituting one MPF(F) squadron; and
- 50 logistics and support ships.

The FYDP would have the Navy build 51 battle force ships between 2007 and 2011. The Navy's long-range plan would add an additional 218 ships between 2012 and 2035, for a total of 269 ships, or about 9.3 per year (see Figure 1).

It should be noted, however, that, if implemented as described, the Navy's new shipbuilding plan would not sustain a 313-ship fleet over the long term. Initially, the number of battle force ships would increase from about 280 today to 329 in 2019. By 2035, however, the fleet would decline to fewer than 300 ships. In particular, relative to the goals in its plan, the Navy would experience a shortfall in attack submarines (40 submarines in 2028 and 2029 versus a requirement of 48) and in guided missile destroyers (46 in 2035 versus a requirement of 62). The shortfalls would result from not replacing Los Angeles class submarines or Arleigh Burke class destroyers as quickly as they are projected to retire in the next two decades (see Figure 2). In addition, the Navy's plan does not envision replacing the four SSGN guided missile submarines when they retire in the 2020s. Including those additional ships would add an average of about \$2.5 billion per year to the costs of the Navy's plan.

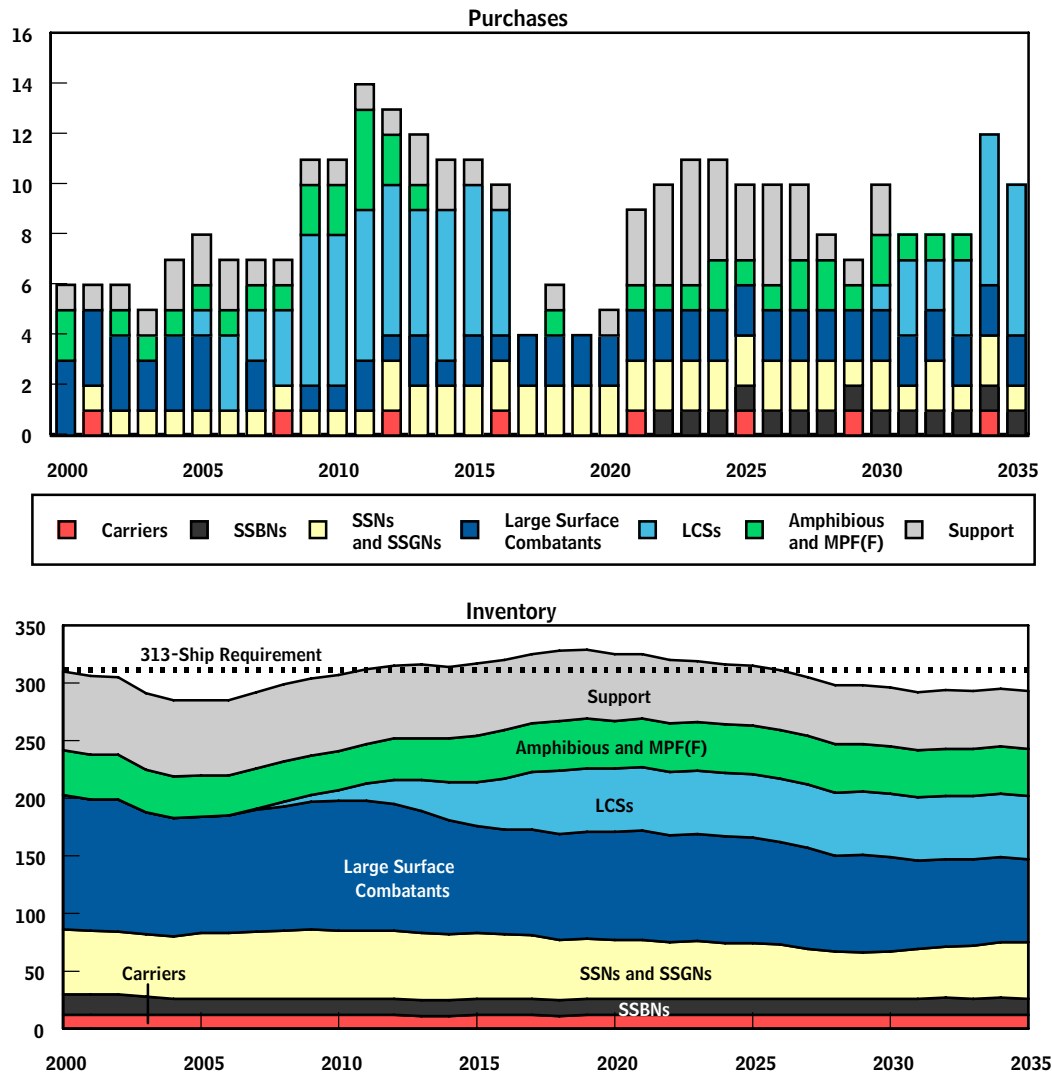
Shipbuilding Costs Under the 2007-2011 FYDP

According to the budgetary information provided in the new 30-year shipbuilding plan, the Navy estimates that the costs for buying new ships and refueling its nuclear-powered vessels would average about \$14.9 billion a year over the 2007-2011 FYDP. (Spending would start from a low of around \$11.1 billion in 2007 and then climb to \$18.4 billion by 2011.) That amount is about 27 percent greater than the \$11.7 billion that the Navy spent on average each year between 2000 and 2005. According to the Navy's estimates, funding for new construction alone would average \$13.4 billion per year between 2007 and 2011, compared with an annual average of \$10.2 billion between 2000 and 2005.

However, CBO's estimates for the costs of the Navy's proposed shipbuilding program indicate that the costs between 2007 and 2011 could be higher. CBO estimates that costs for constructing new ships and refueling nuclear-powered ships would average \$16.4 billion per year between 2007 and 2011, about 10 percent more than the costs in the Navy's plan and 40 percent more than the amounts the Navy has spent on shipbuilding recently. CBO estimates that the annual costs for new construction alone could average \$15.0 billion, or about 12 percent more than the amount in the Navy's plan.

Figure 1.

Annual Purchases and Inventory Implied by the Navy's 313-Ship Plan

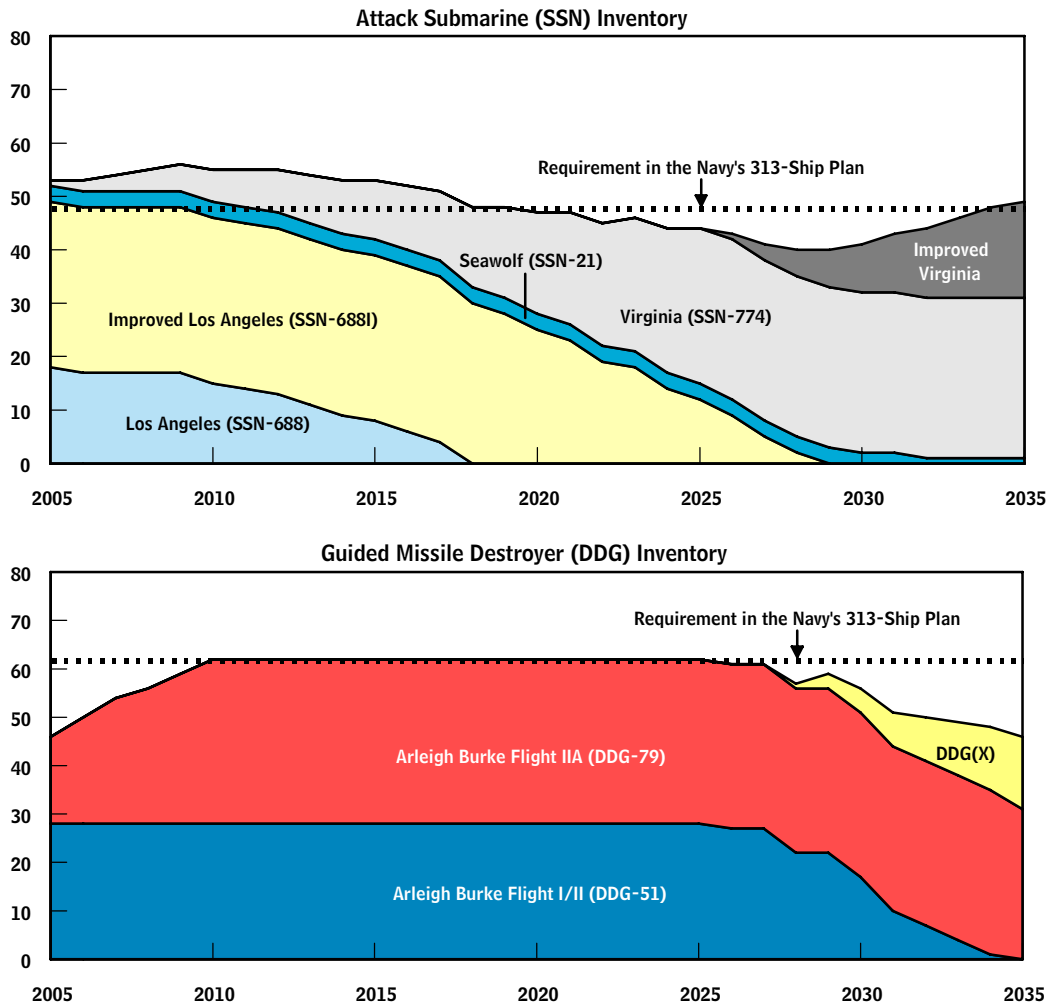


Source: Congressional Budget Office.

Note: LCSs = littoral combat ships; MPF(F) = future maritime prepositioning force; SSBNs = ballistic missile submarines; SSNs = attack submarines; SSGNs = guided missile submarines; large surface combatants include cruisers, destroyers, and frigates.

Figure 2.

Inventory of Attack Submarines and Guided Missile Destroyers Under the Navy's 313-Ship Plan



Source: Congressional Budget Office.

The Navy's Estimate of Costs in Its 30-Year Shipbuilding Report

In its report to the Congress, the Navy stated that building all of the ships required over the next 30 years would cost an average \$13.4 billion per year in 2005 dollars—or \$14.4 billion per year in 2007 dollars. Nuclear refuelings would add about \$1 billion per year. The Navy did not indicate how much the mission modules for the littoral combat ships or the modernization of surface combatants, which are funded from accounts other than the Navy's shipbuilding funds, could add to the total cost of its plan. The figure of about \$15.5 billion per year for new-ship

construction and nuclear refuelings is about 30 percent higher than the average annual amount that the Navy has spent on those activities between 2000 and 2005.

To pay for the ships in the 30-year plan, the Navy assumed that its total obligational authority—the top line—would grow with the overall rate of inflation for Department of Defense programs. In other words, the Navy assumed zero real growth in its overall budget for the next 30 years. Thus, to devote a higher proportion of its budget to shipbuilding than it has recently, the Navy made three key assumptions:

- Spending on operations and maintenance in the Navy's accounts would grow only with the rate of inflation; in other words, it would experience zero real growth.
- Spending on research and development, which was at a historical high in 2006 at about \$19 billion, would fall by \$4 billion or \$5 billion by 2012 and remain at that level through the next 30 years.
- Any real increase in pay and benefits for military personnel would be offset by reductions in the number of military personnel in the Navy—its end strength—so that there would also be zero real growth in the Navy's total amount for personnel compensation.

In addition, senior Navy leaders have stated that to pay for all of the ships in the plan, they would have to meet strict cost goals for major ship types. Those goals (or targets) would, in some cases, require the Navy to reduce the costs of major ship platforms already in production and, in other cases, allow little or no growth in the costs of prospective new ships relative to the costs of the ones they would replace.

Specifically, in order to build two attack submarines a year starting in 2012 as planned, the cost of each of those vessels would have to fall from about \$2.6 billion today to \$2.1 billion. Under the Navy's plan, replacements for the Ohio class ballistic missile submarines—which the Navy last built in 1991—would cost no more than \$3.0 billion each, even though ballistic missile submarines are typically much larger than attack submarines. (For example, the Ohio class ballistic missile submarine is more than twice as large as the Virginia class attack submarine, but the cost target is only 11 percent more than what the Virginia class costs today.) New surface combatants, in particular the replacement for the Arleigh Burke class destroyer, would cost no more than \$1.9 billion each under the Navy's plan—whereas the Arleigh Burke destroyer costs \$1.8 billion when built at a rate of one a year and \$1.4 billion when built at a rate of two per year.

Amphibious ships would, on average, cost no more than \$1.4 billion each, compared with \$1.4 billion to \$2.6 billion for such ships being built today. The one exception is the Navy's goal for the CVN-21 class aircraft carrier, which, at an aver-

age of \$9.4 billion each, is higher than the Navy's anticipated cost for the first CVN-21 of \$8.1 billion—excluding nonrecurring detail design (at about \$2.4 billion) that is usually associated with the first ship of a new class.

The Navy plans to pursue aggressive cost-cutting efforts to reduce the costs of ships now under construction, including the DD(X) destroyer and the Virginia class attack submarine, both of which the Navy currently projects will cost more than its goals for at least the next five years. For ships that would be built in the far term, the Navy derived its cost goals by fixing the proportion of the shipbuilding budget that could be devoted to a particular category of ships. Thus, the Navy's cost goals for those ships are not based on a specific design, size, or set of capabilities.

Inflation in Shipbuilding

An important component of the Navy's and CBO's analyses is the role of inflation in the construction of naval ships. According to the Navy's analysis of the inflationary component of past cost increases in shipbuilding programs, the Department of Defense's overall procurement inflator underestimates the inflation that has actually occurred in the naval shipbuilding industry. On the basis of that analysis, the Navy provided CBO with a composite inflator that reflects the growth in labor and material costs that the industry has experienced in the past and expects to experience through at least 2011. According to that analysis, inflation in the Navy's shipbuilding is expected to be about 1.3 percentage points higher per year, on average, than the price increases expected for the Department of Defense's procurement programs overall. (Actual inflation over the past 10 years for naval ships has also been about 1.7 percentage points higher each year than the average.) The Navy incorporated that higher level of inflation in its budget request for fiscal year 2007 and the associated Future Years Defense Program. In both the Navy's and CBO's analyses, the increase yields real growth in the future costs of ships. For example, a ship that costs \$2.5 billion to build in 2007 would cost \$3.0 billion to build (in 2007 dollars) in 2020.

CBO's Projection of the Navy's 313-Ship Plan

As mentioned earlier, the new 30-year shipbuilding report would have the Navy buy a total of 269 ships over the 2007-2035 period—or an average of about 9.3 ships per year.² CBO estimates that those purchases would require an average annual shipbuilding budget of about \$19.4 billion for new construction alone. That

2. In December 2005, the Subcommittee requested that CBO evaluate the shipbuilding requirements and budgetary resources needed to implement the Navy's 313-ship plan. That plan had not yet been submitted to the Congress, and CBO based its analysis on publicly available information. The discussion in this section updates that analysis (cited on the inside back cover of this testimony) with actual data from the Navy's new shipbuilding report.

amount is about one-third more than the Navy's estimate of a little more than \$14.4 billion and about 90 percent more than the \$10.2 billion per year that the Navy spent on new-ship construction between 2000 and 2005 (see Figure 3). Including the costs of refueling nuclear-powered aircraft carriers and submarines would raise CBO's estimate to about \$20.5 billion a year, on average, between 2007 and 2035.

Those figures exclude the costs of the modernization of surface combatants and the mission modules that are to provide much of the littoral combat ships' combat capability, because the Navy plans to fund those items from accounts other than the ones normally associated with ship construction. However, such modernization programs have been funded from shipbuilding accounts in the past, and in other ship programs, such as that for the DD(X), the combat capability of a ship is included in the ship's costs and funded as part of the ship's construction. Including those items—that is, funding new-ship construction, nuclear refuelings, the modernization of surface combatants, and mission modules for LCSs—would require an average of \$21.5 billion annually, CBO estimates.³

The Costs of Fully Funding the 313-Ship Requirement

As noted previously, the Navy's new 30-year shipbuilding plan would not build enough ships to meet its 313-ship requirement; specifically, it would fall short for three types of vessels: guided missile destroyers, attack submarines, and guided missile submarines. One way to maintain about 62 DDGs—the number needed to meet the Navy's requirement—would be to start the replacement for the Arleigh Burke class DDG-51s a few years earlier, buying the first ship in 2020 rather than in 2023, as under the Navy's plan, and quickly increasing the construction rate to three ships per year by 2022. Ensuring that the attack submarine force does not fall below 48 submarines would require increasing the construction rate for submarines from one per year today to three per year for at least eight years after 2015. Maintaining the force of four guided missile submarines would require developing and buying replacements for the four Ohio class SSGNs when they retire from the fleet in the 2020s. By CBO's estimates, incorporating the costs for those three types of ships to meet the Navy's requirement could raise the average annual budget for new construction to about \$21.6 billion and for shipbuilding overall to about \$23.8 billion.

Individual Ship Programs

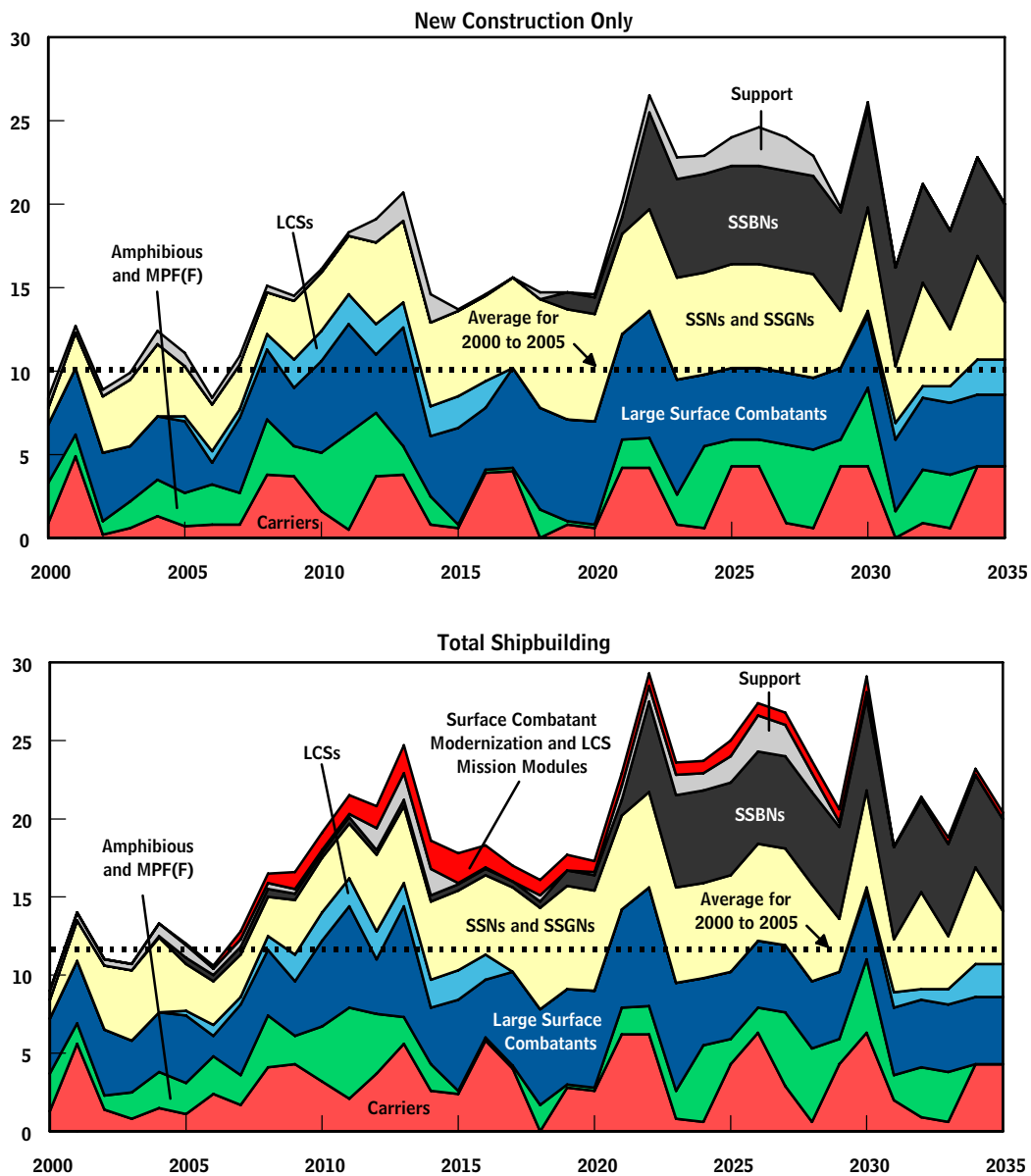
In estimating the costs of the Navy's new shipbuilding plan, CBO used both Navy data on actual costs for ships now under construction and historical relationships between the cost and weight of ships. To apply those relationships to ships to be built in the far term for which the Navy has yet to develop even a notional

3. The Navy has not stated how many mission modules it plans to buy for each LCS. CBO assumed that the Navy would buy an average of two per ship.

Figure 3.

Annual Costs Implied by the Navy's 313-Ship Plan

(Billions of 2007 dollars)



Source: Congressional Budget Office.

Notes: Total shipbuilding includes new-ship construction, refuelings of nuclear-powered ships, programs to modernize surface combatants, and the mission modules for the littoral combat ships. The modernization of surface combatants and mission modules for LCSs are expected to be funded from accounts other than those traditionally associated with shipbuilding.

Amounts for 2006 exclude supplemental funding related to Hurricane Katrina.

LCSs = littoral combat ships; MPF(F) = future maritime prepositioning force; SSNs = attack submarines; SSGNs = guided missile submarines; SSBNs = ballistic missile submarines; large surface combatants include cruisers, destroyers, and frigates.

design—such as the prospective replacements for the Arleigh Burke guided missile destroyers and the Ohio class ballistic missile submarines—CBO needed to make assumptions about the size and capabilities of future ships.

Surface Combatants

The Navy’s plan would buy seven DD(X) destroyers at a rate of one per year starting in 2007. The Navy has stated that it hopes for the first two ships to cost \$3.1 billion each and the next three, \$2.4 billion apiece. However, CBO estimates that the cost of the first ship would be \$4.7 billion and that the average cost for the seven ships would be \$3.6 billion (see Table 1). CBO’s estimate for the DD(X) and other large surface combatants is based on historical relationships between cost and weight, using the DDG-51 and CG-47 classes as comparisons.

In addition, the Navy intends to begin buying a new missile-defense surface combatant, the CG(X) cruiser, in 2011. CBO assumed that a CG(X) would use the same hull—and cost about the same—as a DD(X) destroyer. However, the CG(X)s would have a lower average cost than the DD(X)s because more of them would be bought (19 between 2011 and 2023) and because some CG(X)s would be purchased at a rate of two per year.

The Navy’s 313-ship plan would also maintain a fleet of 62 Arleigh Burke class destroyers (DDG-51s). CBO assumed that those ships would be modernized and would serve for about 35 years, which is consistent with the Navy’s plan. Under that assumption, the first replacement for the DDG-51—a DDG(X)—would need to be purchased in 2020.⁴ For its analysis, CBO assumed that the new DDG(X) would be somewhat larger than the DDG-51 but smaller than the DD(X) destroyer, because it would be unlikely to carry the advanced gun systems that the DD(X) has. (In particular, CBO assumed that the DDG(X) would displace about 11,000 tons at full load.)

In CBO’s projection, those replacement destroyers (bought at a rate of two per year) would cost an average of about \$2.2 billion apiece—the same cost per thousand tons as today’s Arleigh Burke destroyers. The Navy’s cost target for DDG replacements is \$1.9 billion each.

Finally, the Navy’s new shipbuilding plan would build 55 littoral combat ships between 2005 and 2017. Because the service life of those ships is assumed to be 25 years, the Navy would also need to begin building replacements in 2030. The LCS is a different kind of warship than the Navy usually buys in that the program is divided into two components: the sea frame and mission modules. The sea frame, the ship itself, will be built with the ability to switch mission modules, or combat

4. If the DDG-51s lasted only 30 years—generally, the Navy retires large surface combatants after 30 years or less even if their notional service lives are longer—replacements would need to start being purchased earlier.

Table 1.

Comparison of the Navy's Cost Goals and CBO's Cost Estimates for Major New Ships

(Billions of 2007 dollars)

Program	Average Per-Ship Cost Over the 2007-2035 Period ^a	
	Navy ^b	CBO ^c
CVN-21 Nuclear-Powered Aircraft Carrier	9.4	9.6 ^d
DD(X) Destroyer	2.8	3.6
CG(X) Cruiser	2.7	3.2 ^e
DDG(X) Destroyer (Replacement for Arleigh Burke class)	1.9	2.2
Virginia Class Attack Submarine	2.1	2.7
Improved Virginia Class Attack Submarine	2.1	3.2
SSBN(X) Ballistic Missile Submarine (Replacement for Ohio class)	3.1	6.1
Amphibious Ships	1.4	2.3

Source: Congressional Budget Office.

- a. The total amount of money spent on a ship program from 2006 to 2035 divided by the total number of ships bought in that program.
- b. Based on a briefing by the Navy for CBO and the Congressional Research Service, February 10, 2006.
- c. CBO's estimates are generally based on historical relationships between cost and weight for individual types of ships and incorporate the higher inflation in the naval shipbuilding industry (compared with that in other Department of Defense procurement programs).
- d. Because the Navy's estimate for the CVN-21 program was higher than an estimate based on a historical relationship between cost and weight, CBO relied on the Navy's estimate, adjusted for the higher level of inflation expected in the shipbuilding industry.
- e. The CG(X) has a lower average cost than the DD(X) because it is to be bought largely at a rate of two per year, reducing its average unit cost, whereas the DD(X) is to be bought at a rate of one per year.

systems, depending on which mission is required. Currently, the Navy envisions three types of mission modules, applicable for countermine warfare, antisubmarine warfare, and anti-surface-craft warfare. The Navy has not yet determined, however, how many mission modules it plans to buy for each sea frame.

Originally expected to cost \$235 million per sea frame, the average unit cost for the 18 LCSs that the Navy wants to buy between 2009 and 2011—the years the

program reaches full production under the 2007-2011 FYDP—has grown by about 33 percent in real terms since the submission of the President’s 2006 budget and the associated FYDP. Although some of that increase is associated with the inclusion of program management costs that were not in last year’s budget, the increase suggests the difficulty that the Navy may have in meeting its cost targets for the larger, much more complex combatants in its shipbuilding plan.

The littoral combat ship is relatively small (at around 2,800 tons, versus 9,200 tons and larger for destroyers and other surface combatants), relies largely on existing technology, and does not require highly complex combat and power distribution systems. In addition, in developing the LCS, the Navy wants to maintain for the foreseeable future two contractor teams and thus two different LCS designs, arguing that the approach promotes competition and keeps costs down. Those advantages, which will not exist for the larger combatants that the Navy needs to build, have not prevented substantial growth in the cost of the LCS program.

Submarines

The attack submarine force continues to be a major source of demand on the Navy’s resources. Under the 313-ship plan, the Navy would buy two attack submarines a year beginning in 2012 (including Improved Virginia class submarines starting around 2020). That procurement rate would continue until 2029 and then alternate between one and two subs a year. The Navy’s plan and CBO’s analysis do not envision the continued use of guided missile submarines beyond the 2020s, once the existing Ohio class SSGNs retire from service in the fleet.

Senior Navy leaders have stated—and the Navy’s new shipbuilding plan assumes—that the cost of the Virginia class submarine needs to be reduced by about 20 percent, to \$2.1 billion each, before the Navy would be able to buy two per year in 2012. However, according to the Navy’s estimates, the submarine requested in the President’s 2007 budget will cost about \$2.6 billion. Of that amount, approximately 30 percent—around \$800 million—is for equipment furnished by the government, and the remainder is to be provided by the shipyard building the vessel. If the needed savings are intended to be derived from the shipyard, its costs will have to be reduced by almost 30 percent to achieve the Navy’s cost goal for those submarines. According to CBO’s analysis, the average cost of attack submarines built during the 2007-2035 period would be \$3.0 billion apiece. In addition, CBO assumed that the Improved Virginia class, the construction of which would start in 2020, would cost no less to build than the original Virginia class did.

In addition to the attack submarine forces, the new 30-year shipbuilding plan would maintain a force of 14 ballistic missile submarines (SSBNs) through 2035. Consequently, beginning in 2022, the Navy would need to buy replacement SSBNs at a rate of one per year. The design, cost, and capabilities of that replacement vessel are one of the most significant uncertainties in the Navy’s and CBO’s analyses. The Navy’s plan assumes that the first ship of a new class of ballistic

missile submarines—an SSBN(X)—would cost \$3.8 billion and that subsequent ships would cost about \$3.0 billion. The average cost for 14 SSBN(X)s would be about \$3.1 billion.

Some Navy officials believe that meeting the cost target for a new ballistic missile submarine will probably require a modified and enlarged Virginia class submarine to replace the Ohio class.⁵ Such an approach, however, raises several issues. The D-5 Trident missile used on the Ohio class SSBNs could not be accommodated on a modified Virginia class submarine unless the missile tubes were installed at an angle. Because all previous ballistic missile submarines have had their missile tubes installed in a vertical position in the hull, the Navy is not certain whether the D-5 missiles could be successfully launched from angled tubes. Alternatively, the Navy could build an SSBN based on the Virginia class but then design and build a new set of missiles—at a significant cost—to fit within the shorter missile tubes that the new class would carry.

Adopting an approach consistent with the Navy’s plan, CBO assumed that the Navy would buy 14 new SSBNs and that those submarines would be smaller than today’s Ohio class SSBNs. CBO assumed a new design displacing around 15,000 tons submerged—making the submarine roughly twice the size of a Virginia but nearly 4,000 tons less than an Ohio. Such a submarine could be equipped with 16 tubes for launching Trident missiles, rather than the 24 tubes in the Ohio class. On the basis of what the Navy is paying today for a Virginia class submarine, CBO estimates that the average cost of the new SSBN would be about \$6 billion each. A smaller new design with only 12 or eight missile tubes could cost \$700 million to \$1.4 billion less, respectively.

Aircraft Carriers

The Navy’s 313-ship plan would reduce the number of aircraft carriers to 11 from the current 12. CBO assumed that the reduction would occur by retiring the *John F. Kennedy*, as the Navy proposed in its 2006 budget. Over the 2007-2035 period, the Navy’s plan would purchase seven CVN-21 class aircraft carriers—at an average cost that CBO estimates would be \$9.6 billion each.

Because an estimate based on a historical relationship between cost and weight was lower, CBO relied on the Navy’s estimate for the first two CVN-21 class ships, which includes substantial amounts for the nonrecurring detail design associated with the first and second ships of the class. For the remaining ships, CBO used the Navy’s estimate for the first two but excluded the nonrecurring detail design and adjusted the estimate for the higher level of inflation expected in the shipbuilding industry. The cost goal that the Navy has for aircraft carriers—\$9.4 bil-

5. Others Navy officials do not consider such a modification to be feasible and are preparing to design a new class of ballistic missile submarines.

lion—is based on allocating a fixed proportion of the Navy’s shipbuilding budget to those ships.

Finally, in estimating costs for the aircraft carrier program, CBO assumed that all of the current Nimitz class carriers would operate for at least 50 years, with a refueling at about 23 years of age.

Amphibious and Maritime Prepositioning Ships

The Navy’s 313-ship plan calls for a force of 31 amphibious ships organized around nine expeditionary strike groups. Each group would include one large amphibious assault ship (LHA or LHD class ship), one amphibious transport dock (LPD), and one dock landing ship (LSD). The Navy’s 313-ship plan completes the LPD-17 class at nine ships, falling one short of the goal of 10, and maintains nine LHA or LHD class ships by buying replacements for them when appropriate. Under the 2007-2011 FYDP, two LHA(R)s are to be purchased, one in 2007 and one in 2010. With the Navy’s new shipbuilding plan, six replacements for the Wasp class LHDs would be purchased in the 2020s and the 2030s. In addition, 12 replacements for today’s LSDs, which start reaching the end of their service lives in about 15 years, would be purchased in the far term. The Navy’s cost targets for amphibious ships average \$1.4 billion each.

CBO assumed that all future amphibious assault ships would not be substantially larger than the first LHA(R), which is a variant of the existing LHD design. The Navy informed CBO that its plan assumed that future large-deck amphibious ships would look much like the first LHA(R), which it expects to purchase this year. Under that assumption, the average cost for the LHA(R)s, LHD replacements, and LSD(X)s would be \$2.3 billion each, CBO estimates. However, the President’s 2007 budget submission suggests that the LHA(R) the Navy wants to buy in 2010 would be a larger and more expensive design than the 2007 LHA(R). If all future large-deck amphibious assault ships are of a larger design than what is currently planned, then the costs for the 313-ship plan will be higher than CBO has estimated.

In a June 2005 report to the Congress, the Navy outlined the future of the maritime prepositioning force, describing a new MPF(F) squadron with 12 new ships, most of which would be based on designs of existing amphibious or support ships. The squadron would include two LHA(R)s; an LHD; three modified large, medium-speed roll-on/roll-off ships (LMSRs); three modified-design T-AKE support ships; three mobile landing platforms; and two ships from existing maritime prepositioning squadrons. The Navy’s 313-ship plan, however, appears to forgo a modified T-AKE design; instead, the Navy would build the same versions that are currently under construction, thus reducing their cost by about \$200 million per ship relative to the estimate in the June 2005 report. The Navy also plans to use an existing LHD in the fleet in the MPF(F) squadron. However, the Navy’s shipbuilding plan does not include buying a replacement for that ship, representing another shortfall

in the plan. With those changes, the Navy plans to buy one such squadron and estimates its acquisition cost at about \$11.1 billion. CBO's estimate of the cost of that squadron is a little higher, at about \$13.0 billion. The difference largely results from CBO's higher cost estimates for the LHA(R).

Selected CBO Publications on the Navy's Shipbuilding

Resource Implications of the Navy's 313-Ship Plan (December 16, 2005)

Resource Implications of the Navy's Interim Report on Shipbuilding
(April 25, 2005)

The Future of the Navy's Amphibious and Maritime Prepositioning Forces
(November 2004)

Transforming the Navy's Surface Combatant Force (March 2003)

Increasing the Mission Capability of the Attack Submarine Force (March 2002)