Navy Force Structure and Shipbuilding Plans: Background and Issues for Congress

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April 24, 2012

Congressional Research Service
7-5700
www.crs.gov
RL32665

CRS Report for Congress
Prepared for Members and Committees of Congress

Summary

The planned size of the Navy, the rate of Navy ship procurement, and the prospective affordability of the Navy's shipbuilding plans have been matters of concern for the congressional defense committees for the past several years.

In February 2006, the Navy presented to Congress a goal of achieving and maintaining a fleet of 313 ships, consisting of certain types and quantities of ships. On March 28, 2012, the Department of Defense (DOD) submitted to Congress an FY2013 30-year (FY2013-FY2042) shipbuilding plan that includes a new goal for a fleet of about 310-316 ships. The Navy is conducting a force structure assessment, to be completed later this year, that could lead to a refinement of this 310-316-ship plan.

The Navy's proposed FY2013 budget requests funding for the procurement of 10 new battle force ships (i.e., ships that count against the 310-316 ship goal). The 10 ships include one Gerald R. Ford (CVN-78) class aircraft carrier; two Virginia-class attack submarines, two DDG-51 class Aegis destroyers, four Littoral Combat Ships (LCSs), and one Joint High Speed Vessel (JHSV). These ships are all funded through the Shipbuilding and Conversion, Navy (SCN) account.

The FY2013-FY2017 five-year shipbuilding plan contains a total of 41 ships—14 ships, or about 25%, less than the 55 ships in the FY2012 five-year (FY2012-FY2016) shipbuilding plan, and 16 ships less, or about 28%, less than the 57 ships that were planned for FY2013-FY2017 under the FY2012 budget. Of the 16 ships no longer planned for FY2013-FY2017, nine were eliminated from the Navy's shipbuilding plan and seven were deferred to years beyond FY2017. The nine ships that were eliminated were eight Joint High Speed Vessels (JHSVs) and one TAGOS ocean surveillance ship. The seven ships deferred beyond FY2017 were one Virginia-class attack submarine, two LCSs, one LSD(X) amphibious ship, and three TAO(X) oilers. The Navy's proposed FY2013 budget also proposes the early retirement of seven Aegis cruisers and the placement into Reduced Operating Status (ROS) of two LSD-type amphibious ships.

The Navy's FY2013 30-year (FY2013-FY2042) shipbuilding plan, which was submitted to Congress on March 28, 2012 (more than a month after the submission of the FY2013 budget on February 13, 2012), does not include enough ships to fully support all elements of the Navy's 310-316 ship goal over the long run. The Navy projects that the fleet would remain below 310 ships during the entire 30-year period, and experience shortfalls at various points in ballistic missile submarines, cruisers-destroyers, attack submarines, and amphibious ships. The projected cruiser-destroyer and attack submarine shortfalls are smaller than they were projected to be under the FY2012 30-year (FY2012-FY2041) shipbuilding plan, due in part to a reduction in the cruiser-destroyer force-level goal and the insertion of additional destroyers and attack submarines into the FY2013 30-year plan.

CBO is currently preparing its estimate of the cost of the FY2013 30-year shipbuilding plan. In its June 2011 report on the cost of the FY2012 30-year plan, CBO estimated that the plan would cost an average of $18.0 billion per year in constant FY2011 dollars to implement, or about 16% more than the Navy estimated. CBO's estimate was about 7% higher than the Navy's estimate for the first 10 years of the plan, about 10% higher than the Navy's estimate for the second 10 years of the plan, and about 31% higher than the Navy's estimate for the final 10 years of the plan.

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Introduction

This report provides background information and presents potential issues for Congress concerning the Navy's ship force-structure goals and shipbuilding plans. The planned size of the Navy, the rate of Navy ship procurement, and the prospective affordability of the Navy's shipbuilding plans have been matters of concern for the congressional defense committees for the past several years. Decisions that Congress makes on Navy shipbuilding programs can substantially affect Navy capabilities and funding requirements, and the U.S. shipbuilding industrial base.

Background

Navy's Ship Force Structure Goal

Newly Announced Goal for Fleet of About 310-316 Ships

The Navy in February 2006 presented to Congress a goal of achieving and maintaining a fleet of 313 ships, consisting of certain types and quantities of ships. On March 28, 2012, the Department of Defense (DOD) submitted to Congress an FY2013 30-year (FY2013-FY2042) shipbuilding plan that includes a new goal for a fleet of about 310-316 ships. In its report on the FY2013 30-year shipbuilding plan, the Navy refers to this new goal as a goal for a Navy of about 300 ships—perhaps in recognition of the ongoing naval force structure assessment discussed below—but the numbers presented in the report add to a target fleet of about 310-316 ships.[1]

Goal of About 310-316 Ships Is an Interim Target That May Be Refined

The goal for a fleet of about 310-316 ships is an interim target that may be further refined in coming months. DOD states that

> In response to the new strategic priorities and guidance found in [the January 2012 document entitled] *Sustaining U.S. Global Leadership: Priorities for 21st Century Defense*,[2] the Department of Defense is now reviewing and updating the requirements for naval presence and forces and its operational plans for a variety of potential regional contingencies. When these efforts are complete, the DoN [Department of the Navy] will revisit and reassess the force structure judgments and decisions in a supporting Naval Force Structure Assessment (FSA)....
>
> This battle force [totaling about 310-316 ships] is fully capable of meeting the strategic guidance found in *Sustaining U.S. Global Leadership: Priorities for 21st Century Defense*, and adequately sustains the national shipbuilding and naval combat systems design and industrial base.

[1] Department of the Navy, *Annual Report to Congress on Long-Range Plan for Construction of Naval Vessels for FY2013*, April 2012, pp. 4 and 10.

[2] For more on this document, see CRS Report R42146, *In Brief: Assessing DOD's New Strategic Guidance*, by Catherine Dale and Pat Towell.

However the battle force inventory above should be considered an interim planning target pending the outcome of a formal Force Struture Assessment (FSA) and the ongoing Department of Defense review of its operational plans for potential regional contingencies. The final FSA-derived inventory targets will remain valid as long as there are no further changes to defense strategic guidance, the global force management allocation plan, or to Department fiscal guidance. Should changes to any of these three things occur, a further review and assessment of battle force requirements will be necessary.[3]

Goal for Fleet of About 310-316 Ships Compared to Earlier Goals

Table 1 compares the 310-316 ship goal to earlier Navy ship force structure plans.

Table 1. Current 310-316 Ship Force Structure Goal Compared to Earlier Goals

Ship type	Current goal: 310-316 ship plan of March 2012	Revised 313-ship plan of September 2011	Changes to February 2006 313-ship plan announced through mid-2011	February 2006 Navy plan for 313-ship fleet	Early-2005 Navy plan for fleet of 260-325 ships		2002-2004 Navy plan for 375-ship Navy[a]	2001 QDR plan for 310-ship Navy
					260-ships	325-ships		
Ballistic missile submarines (SSBNs)	12-14[b]	12[b]	12[b]	14	14	14	14	14
Cruise missile submarines (SSGNs)	0-4[c]	4[c]	0[c]	4	4	4	4	2 or 4[d]
Attack submarines (SSNs)	~48	48	48	48	37	41	55	55
Aircraft carriers	11	11[e]	11[e]	11[f]	10	11	12	12
Cruisers and destroyers	~90	94	94[g]	88	67	92	104	116
Frigates	0	0	0	0	0	0	0	
Littoral Combat Ships (LCSs)	~55	55	55	55	63	82	56	0
Amphibious ships	~32	33	33[h]	31	17	24	37	36
MPF(F) ships[i]	0	0[i]	0[i]	12[i]	14[i]	20[i]	0[i]	0[i]
Combat logistics (resupply) ships	~29	30	30	30	24	26	42	34
Dedicated mine warfare ships	0	0	0	0	0	0	26[k]	16
Joint High Speed Vessels (JHSVs)	10[l]	10[l]	21[l]	3	0	0	0	0
Other[m]	~23	16	24[n]	17	10	11	25	25
Total battle force ships	**~310-316**	**313**	**328**	**313**	**260**	**325**	**375**	**310 or 312**

Sources: Table prepared by CRS based on U.S. Navy data.

Note: QDR is Quadrennial Defense Review. The "~" symbol means approximately and signals that the number in question may be refined as a result of the Naval Force Structure Assessment currently in progress.

a. Initial composition. Composition was subsequently modified.

[3] Department of the Navy, *Annual Report to Congress on Long-Range Plan for Construction of Naval Vessels for FY2013*, April 2012, pp. 8 and 10.

b. The Navy plans to replace the 14 current Ohio-class SSBNs with a new class of 12 next-generation SSBNs. For further discussion, see CRS Report R41129, *Navy Ohio Replacement (SSBN[X]) Ballistic Missile Submarine Program: Background and Issues for Congress*, by Ronald O'Rourke.

c. Although the Navy plans to continue operating its four SSGNs until they reach retirement age in the late 2020s, the Navy does not plan to replace these ships when they retire,

d. The report on the 2001 QDR did not mention a specific figure for SSGNs. The Administration's proposed FY2001 DOD budget requested funding to support the conversion of two available Trident SSBNs into SSGNs, and the retirement of two other Trident SSBNs. Congress, in marking up this request, supported a plan to convert all four available SSBNs into SSGNs.

e. With congressional approval, the goal will temporarily be reduced to 10 carriers for the period between the retirement of the carrier *Enterprise* (CVN-65) in November 2012 and entry into service of the carrier *Gerald R. Ford* (CVN-78), currently scheduled for September 2015.

f. For a time, the Navy characterized the goal as 11 carriers in the nearer term, and eventually 12 carriers.

g. The 94-ship goal was announced by the Navy in an April 2011 report to Congress on naval force structure and missile defense.

h. The Navy acknowledged that meeting a requirement for being able to lift the assault echelons of 2.0 Marine Expeditionary Brigades (MEBs) would require a minimum of 33 amphibious ships rather than the 31 ships shown in the February 2006 plan. For further discussion, see CRS Report RL34476, *Navy LPD-17 Amphibious Ship Procurement: Background, Issues, and Options for Congress*, by Ronald O'Rourke.

i. Today's Maritime Prepositioning Force (MPF) ships are intended primarily to support Marine Corps operations ashore, rather than Navy combat operations, and thus are not counted as Navy battle force ships. The MPF (Future) ships, however, would have contributed to Navy combat capabilities (for example, by supporting Navy aircraft operations). For this reason, the ships in the planned MPF(F) squadron were counted by the Navy as battle force ships.

j. The Navy no longer plans to acquire an MPF(F) squadron. The Navy, however, has procured or plans to procure six ships that were previously planned for the MPF(F) squadron—three modified TAKE-1 class cargo ships, and three Mobile Landing Platform (MLP) ships. These six ships were included in the total shown for "Other" ships.

k. The figure of 26 dedicated mine warfare ships included 10 ships maintained in a reduced mobilization status called Mobilization Category B. Ships in this status are not readily deployable and thus do not count as battle force ships. The 375-ship proposal thus implied transferring these 10 ships to a higher readiness status.

l. Totals shown include 5 ships transferred from the Army to the Navy and operated by the Navy primarily for the performance of Army missions.

m. This category includes, among other things, command ships and support ships.

n. The increase in this category from 17 ships under the February 2006 313-ship plan to 24 ships under the apparent 328-ship goal included the addition of one TAGOS ocean surveillance ship and the transfer into this category of six ships—three modified TAKE-1 class cargo ships, and three Mobile Landing Platform (MLP) ships—that were previously intended for the planned (but now canceled) MPF(F) squadron.

Navy's Five-Year and 30-Year Shipbuilding Plans

Five-Year (FY2013-FY2017) Shipbuilding Plan

Table 2 shows the Navy's FY2013 five-year (FY2013-FY2017) shipbuilding plan.

Table 2. Navy FY2013 Five-Year (FY2013-FY2017) Shipbuilding Plan

(Battle force ships—i.e., ships that count against 310-316 ship goal)

Ship type	FY13	FY14	FY15	FY16	FY17	Total
Ford (CVN-78) class aircraft carrier	1					1
Virginia (SSN-774) class attack submarine	2	1	2	2	2	9
Arleigh Burke (DDG-51) class destroyer	2	1	2	2	2	9
Littoral Combat Ship (LCS)	4	4	4	2	2	16
LHA(R) amphibious assault ship					1	1
Fleet tug (TATF)				2		2
Mobile Landing Platform (MLP)/Afloat Forward Staging Base (AFSB)		1				1
Joint High Speed Vessel (JHSV)	1					1
TAO(X) oiler				1		1
TOTAL	**10**	**7**	**8**	**9**	**7**	**41**

Source: FY2013 Navy budget submission.

Notes: The MLP/AFSB is a variant of the MLP with additional features permitting it to serve in the role of an AFSB.

Observations that can be made about the Navy's proposed five-year (FY2013-FY2017) shipbuilding plan include the following:

- **Total of 41 ships—16 ships, or 28% less than planned last year.** The FY2013-FY2017 five-year shipbuilding plan contains a total of 41 ships—14 ships, or about 25%, less than the 55 ships in the FY2012 five-year (FY2012-FY2016) shipbuilding plan, and 16 ships less, or about 28%, less than the 57 ships that were planned for FY2013-FY2017 under the FY2012 budget.
- **The 16 ships eliminated or deferred.** Of the 16 ships that are no longer planned for FY2013-FY2017, nine were eliminated from the Navy's shipbuilding plan and seven were deferred to years beyond FY2017. The nine ships that were eliminated were eight Joint High Speed Vessels (JHSVs) and one TAGOS ocean surveillance ship. The seven ships that were deferred beyond FY2017 were one Virginia-class attack submarine, two LCSs, one LSD(X) amphibious ship, and three TAO(X) oilers.
- **Average of 8.2 ships per year.** The FY2013-FY2017 plan includes an average of 8.2 battle force ships per year. The previous two five-year shipbuilding plans included an average of 10 or more battle force ships per year. Given the single-digit numbers of battle force ships that were procured from FY1993 through FY2010, shipbuilding supporters for some time have wanted to increase the shipbuilding rate to 10 or more battle force ships per year. The steady-state replacement rate for a fleet of 310-316 ships with an average service life of 35 years is about 8.9-9.0 ships per year. The average shipbuilding rate since FY1993 has been substantially below 8.9-9.0 ships per year (see **Appendix D**).
- **Five percent reduction in large combat ships.** Although the FY2013-FY2017 five-year shipbuilding plan contains about 28% fewer ships than were planned for FY2013-FY2017 under the FY02012 budget, the percentage reduction in

large combat ships (defined here as aircraft carriers, submarines, destroyers, and amphibious ships) was much smaller. The total number of large combat ships planned for FY2013-FY2017 dropped from 21 in the FY2012 budget to 20 in the FY2013 budget—a reduction of about 5%.

- **Two-year stretch-out in aircraft carrier construction.** Although the FY2013-FY2017 five-year shipbuilding plan retains FY2013 as the year of procurement for the aircraft carrier CVN-79, the FY2013-F23017 plan defers the scheduled delivery date of this ship by two years, to 2022, which is a delivery date that in the past might have been expected for a carrier procured in FY2015. Although it does not show in **Table 2**, the FY2013 budget also retains FY2018 as the year of procurement for CVN-80, the next carrier after CVN-79. As with CVN-79, the FY2013 budget defers the scheduled delivery date of CVN-80 by two years, to 2027, which is a delivery date that in the past might have been expected for a carrier procured in FY2020.
- **Virginia-class submarine deferred from FY2014 to FY2018.** The FY2013-FY017 five-year shipbuilding plan defers one Virginia-class submarine from FY2014 to FY2018. Navy leaders in testimony this year have expressed an interest in finding a way to restore a second Virginia-class submarine to FY014. The Navy this year is also seeking congressional approval for a multiyear procurement (MYP) arrangement[4] for the nine Virginia-class boats currently scheduled for procurement in FY2014-FY2018. Adding a second Virginia-class boat to FY2014 would increase to 10 the number of boats that would be procured under the proposed FY2014-FY2018 MYP arrangement.
- **Start of Ohio-replacement procurement deferred to FY2021.** Although it does not show in **Table 2**, the FY2013 budget defers the scheduled procurement of the first Ohio replacement (SSBN[X]) ballistic missile submarine by two years, from FY2019 to FY2021.
- **DDG-51 destroyer deferred from FY2014 to FY2016.** The FY2013-FY2017 five-year shipbuilding plan defers the scheduled procurement of one DDG-51 destroyer from FY2014 to FY2016. The Navy this year is seeking congressional approval for an MYP arrangement for the nine DDG-51s scheduled for procurement in FY2013-FY2017.
- **LCS procurement reduced in FY2016-FY2017.** The FY2013-FY2017 five-year shipbuilding plan reduces the LCS procurement rate in FY2016 and FY2017 from three ships per year to two ships per year. The Navy still plans on procuring a total of 55 LCSs, so the two LCSs that are no longer planned for FY2016 and FY2017 have been deferred beyond FY2017.
- **LHA(R) amphibious assault ship deferred from FY2016 to FY2017.** The FY2013-FY2017 five-year shipbuilding plan defers the scheduled procurement of the next LHA(R) amphibious assault ship by one year, from FY2016 to FY2017.

[4] For an explanation of MYP, see CRS Report R41909, *Multiyear Procurement (MYP) and Block Buy Contracting in Defense Acquisition: Background and Issues for Congress*, by Ronald O'Rourke and Moshe Schwartz.

- **Start of LSD(X) amphibious ship procurement deferred to FY2018.** The FY2013-FY2017 five-year shipbuilding plan defers from FY2017 to FY2018 the scheduled procurement of the first LSD(X) amphibious ship. LSD(X)s are to replace aging LSD-41/49 class amphibious ships. The Navy testified last year that an FY2017 start for LSD(X) procurement would have been ahead of need (i.e., earlier than needed) for replacing the first retiring LSD-41/49 class ship. The implication was that the FY2017 start date for the LSD(X) under last year's budget reflected industrial-base considerations, and that the Navy no longer feels that adequately supporting the industrial base over the next few years requires an FY2017 start date.
- **AFSB added in FY2014.** The FY2013-FY2017 five-year shipbuilding plan adds an Afloat Forward Staging Base (AFSB) ship in FY2014. This ship will be a variant of the Mobile Landing Platform (MLP) ship. The Navy is also proposing to build the third MLP, which was funded in FY2012, to the modified AFSB design, producing an eventual force of two regular MLPs and two AFSBs. The Navy has canceled the retirement of an existing LPD-type amphibious ship and is now modifying that ship to serve as an interim AFSB, pending the delivery of the two new-built AFSBs.
- **Start of TAO(X) oiler procurement deferred to FY2017.** The FY2013-FY2017 five-year shipbuilding plan defers the start of TAO(X) oiler procurement three years, from FY2014 to FY2017. The addition of the AFSB in FY2014 is intended in part to mitigate the industrial-base impact of deferring the start of TAO(X) procurement.
- **Eight JHSVs eliminated.** The elimination of the eight JHSVs from the FY2013-FY2017 shipbuilding plan reflects a reduction in the Navy's JHSV force-level goal from 21 ships down to 10 ships. A total of nine JHSVs have been procured through FY2012; the JHSV requested for FY2013 is to be the 10th and final ship.
- **Early retirements for seven Aegis cruisers; ROS for two LSD-type amphibious ships.** The FY2013 budget also proposes the early retirement of seven Aegis cruisers and the placement into Reduced Operating Status (ROS) of two LSD-41/49 class amphibious ships in FY2013-FY2014. The seven cruisers would await foreign sale or disposal.

30-Year (FY2013-FY2042) Shipbuilding Plan

Table 3 shows the Navy's proposed FY2013 30-year (FY2013-FY2042) shipbuilding plan, which was submitted to Congress on March 28, 2012, more than a month after the submission of the FY2013 budget on February 13, 2012,[5] and which includes a total of 268 ships.

[5] 10 U.S.C. 231, as most recently amended by Section 1011 of the FY2012 National Defense Authorization Act (H.R. 1540/ P.L. 112-81 of December 31, 2011), states that "The Secretary of Defense shall include [the 30-year shipbuilding plan] with the defense budget materials for a fiscal year...."

Table 3. Navy FY2013 30-Year (FY2013-FY2042) Shipbuilding Plan

FY	CVN	LSC	SSC	SSN	SSBN	AWS	CLF	Supt	Total
13	1	2	4	2				1	**10**
14		1	4	1				1	**7**
15		2	4	2					**8**
16		2	2	2			1	2	**9**
17		2	2	2		1			**7**
18	1	2	3	2		1	1	1	**11**
19		2	3	2				1	**8**
20		2	3	3		1	1	2	**12**
21		2	3	2	1		1		**9**
22		2	3	3		1	1	2	**12**
23	1	3	3	2			1	3	**13**
24		2	3	1	1	2	1	2	**12**
25		3	3	2			1	1	**10**
26		2	3	1	1	1	1		**9**
27		3		1	1		1		**6**
28	1	2		1	1	2	1	1	**9**
29		3		1	1	1	1	1	**8**
30		2	1	1	1	1	1	2	**9**
31		2		1	1	1	1	2	**8**
32		2	1	1	1	2	1	3	**11**
33	1	2		1	1		1	2	**8**
34		2	1	1	1		1	2	**8**
35		2	1	1	1				**5**
36		3	2	1		1			**7**
37		3	3	1					**7**
38	1	3	4	2					**10**
39		3	4	1					**8**
40		3	4	2		2			**11**
41		3	4	1					**8**
42		3	2	2		1			**8**

Source: FY2013 30-year (FY2013-FY2042) shipbuilding plan.

Key: FY = Fiscal Year; **CVN** = aircraft carriers; **LSC** = surface combatants (i.e., cruisers and destroyers); **SSC** = small surface combatants (i.e., Littoral Combat Ships [LCSs]); **SSN** = attack submarines; **SSGN** = cruise missile submarines; **SSBN** = ballistic missile submarines; **AWS** = amphibious warfare ships; **CLF** = combat logistics force (i.e., resupply) ships; **Supt** = support ships.

In devising a 30-year shipbuilding plan to move the Navy toward its ship force-structure goal, key assumptions and planning factors include but are not limited to the following:

- ship service lives;
- estimated ship procurement costs;
- projected shipbuilding funding levels; and
- industrial-base considerations.

The Navy's report on the FY2013 30-year shipbuilding plan states that

> This 30-year shipbuilding plan is based on several key assumptions:

- *The battle force inventory target that forms the basis for the accompanying 30-year shipbuilding report will not change substantially with the Navy Force Structure Assessment or the ongoing Department of Defense review of its operational plans for a variety of potential regional contingencies.* Individual ship targets may vary slightly based on a detailed analysis of Combatant Commander requirements in light of the new defense strategy.

- *Yearly spending on Navy shipbuilding must increase starting in the second FYDP of the near-term period [FY2013-FY2022], and remain at higher levels throughout the mid-term planning period [FY2023-FY2032] before falling down to annual shipbuilding levels nearer to historical averages.* During the 2020s and early 2030s, a large number of surface ships and submarines built during the Cold War build-up in the 1980s and early 1990s—particularly the OHIO-class SSBNs—will reach the end of their service lives. This will inevitably cause the annual shipbuilding expenditures from FY2020 through FY2032 to be higher than those seen from the mid-1990s through 2020.

- *All battle force ships—particularly Large Surface Combatants [i.e., cruisers and destroyers]—will serve to the end of their planned or extended service lives.* In this fiscal environment, the DoN [Department of the Navy] can ill-afford to inflate future shipbuilding requirements by retiring ships earlier than planned.

- *The Department of the Navy will be able to maintain cost control over its major shipbuilding acquisition programs, especially once individual ship classes shift to serial production.* The Department will need to focus on limiting overruns for first ships-of-class.

- *The Department of the Navy must still be able to cover the Manpower, Operations and Maintenance (MPN/O&MN), Weapons Procurement navy (WPN), and Other Procurement Navy (OPN) costs associated with this plan.* DoN leaders are committed to avoiding a "hollow force."[6]

Navy's Projected Force Levels Under 30-Year (FY2013-FY2042) Shipbuilding Plan

Table 4 shows the Navy's projection of force levels for FY2013-FY2042 that would result from implementing the FY2013 30-year (FY2013-FY2042) shipbuilding plan shown in **Table 3**.

[6] Department of the Navy, *Annual Report to Congress on Long-Range Plan for Construction of Naval Vessels for FY2013*, April 2012, p. 19. Italics as in original.

Table 4. Projected Force Levels Resulting from FY2013 30-Year (FY2013-FY2042) Shipbuilding Plan

	CVN	LSC	SSC	SSN	SSGN	SSBN	AWS	CLF	Supt	Total
310-316 ship plan	**11**	**~90**	**~55**	**~48**	**0-4**	**12-14**	**~32**	**~29**	**~33**	**~310-316**
FY13	10	80	35	55	4	14	31	32	24	**285**
FY14	10	78	30	55	4	14	29	32	27	**279**
FY15	11	78	26	54	4	14	28	31	30	**276**
FY16	11	80	30	53	4	14	29	31	32	**284**
FY17	11	82	32	50	4	14	30	29	33	**285**
FY18	11	84	35	51	4	14	31	29	33	**292**
FY19	11	86	39	51	4	14	31	29	35	**300**
FY20	11	87	37	48	4	14	31	29	34	**295**
FY21	11	88	38	48	4	14	31	29	33	**296**
FY22	12	87	40	47	4	14	32	29	33	**298**
FY23	11	89	39	47	4	14	32	29	35	**300**
FY24	11	89	41	46	4	14	34	29	35	**303**
FY25	11	88	43	45	4	14	34	29	33	**301**
FY26	11	89	46	45	2	14	34	29	32	**302**
FY27	12	90	49	44	1	13	33	29	33	**304**
FY28	11	89	52	43	0	12	34	29	33	**303**
FY29	11	87	55	43	0	11	33	29	33	**302**
FY30	11	85	55	43	0	11	33	29	33	**300**
FY31	11	81	55	45	0	11	32	29	33	**297**
FY32	11	80	55	45	0	10	32	29	33	**295**
FY33	11	79	55	46	0	10	33	29	33	**296**
FY34	11	78	55	47	0	10	34	29	33	**297**
FY35	11	80	55	48	0	10	33	29	33	**299**
FY36	11	82	55	49	0	10	33	29	33	**302**
FY37	11	84	55	50	0	10	33	29	33	**305**
FY38	11	86	55	48	0	10	32	29	34	**305**
FY39	11	88	55	49	0	10	32	29	33	**307**
FY40	10	88	55	49	0	10	31	29	33	**305**
FY41	10	89	55	48	0	11	32	29	33	**307**
FY42	10	88	55	49	0	12	31	29	33	**307**

Source: FY2013 30-year (FY2013-FY2042) shipbuilding plan.

Note: Figures for support ships include five JHSVs transferred from the Army to the Navy and operated by the Navy primarily for the performance of Army missions.

Key: FY = Fiscal Year; **CVN** = aircraft carriers; **LSC** = surface combatants (i.e., cruisers and destroyers); **SSC** = small surface combatants (i.e., frigates, Littoral Combat Ships [LCSs], and mine warfare ships); **SSN** = attack submarines; **SSGN** = cruise missile submarines; **SSBN** = ballistic missile submarines; **AWS** = amphibious warfare ships; **CLF** = combat logistics force (i.e., resupply) ships; **Supt** = support ships.

Observations that can be made about the Navy's FY2013 30-year (FY2013-FY2042) shipbuilding plan and resulting projected force levels include the following:

- **Total of 268 ships; average of about 8.9 per year.** The plan includes a total of 268 ships to be procured, compared to 276 ships in the FY2012 30-year (FY2012-FY2041) shipbuilding plan. The total of 268 ships equates to an average of about 8.9 ships per year, which is the approximate average procurement rate (sometimes called the steady-state replacement rate) that would be needed over the long run to achieve and maintain a fleet of about 310-316 ships, assuming an average life of 35 years for Navy ships.
- **Projected fleet remains below 310 ships.** Although the FY2013 30-year plan includes an average of about 8.9 ships per year, the FY2013 30-year plan, like previous 30-year plans, results in a fleet that does not fully support all elements of the Navy's ship force structure goal. The distribution of the 268 ships over the 30-year period, combined with the ages of the Navy's existing ships, results in a projected fleet that would remain below 310 ships during the entire 30-year period and experience shortfalls in ballistic missile submarines, cruisers-destroyers, attack submarines, and amphibious ships.
- **New projected shortfall in ballistic missile submarines.** As a result of the decision in the FY2013 budget to defer the scheduled procurement of the first Ohio replacement (SSBN[X]) ballistic missile submarine by two years, from FY2019 to FY2021, the ballistic missile submarine force is projected to drop to a total of 10 or 11 boats—one or two boats below the 12-boat SSBN force-level goal—during the period FY2029-FY2041.
- **Smaller projected shortfalls in cruisers-destroyers and attack submarines.** The cruiser-destroyer and attack submarine shortfalls under the FY2013 30-year plan are smaller than they were projected to be under the FY2012 30-year plan, due in part to the reduction in the cruiser-destroyer force-level goal to about 90 ships (compared to the previous goal of 94 ships) and the insertion of additional destroyers and attack submarines into the FY2013 30-year plan.
    - **18 more destroyers and 2 more attack submarines in plan.** The FY2013 30-year shipbuilding plan includes 70 destroyers and 46 attack submarines, compared to 52 destroyers and 44 attack submarines in the FY2012 30-year plan. Fifteen of the 18 additional destroyers in the FY2013 plan were added during the final 20 years of the 30-year plan.
    - **Cruiser-destroyer force now projected to bottom out at 78 ships.** Under the FY2013 30-year plan, the cruiser-destroyer force is projected to bottom out in FY2014-FY2015 and FY2034 at 78 ships—12 ships, or 13.3% less than the goal of about 90 ships. Under the FY2012 30-year plan, the cruiser-destroyer force was projected to bottom out in FY2034 at 68 ships—26 ships, 27.7% less than the goal under that plan of 94 ships.
    - **Attack submarine force now projected to bottom out at 43 ships.** Under the FY2013 30-year plan, the attack submarine force is projected to bottom out in FY2028-FY2030 at 43 ships—5 ships, or 10.4% less than the goal of about 48 boats. Under the FY2012 30-year plan, the attack submarine force was projected to bottom out in FY2030 at 39 boats—9 boats, or 18.8% less than the goal of 48 boats.

- **Shortfall in amphibious ships.** The Navy projects that there will be a shortfall of one to four amphibious ships (i.e., 3.1% to 12.5% of the goal of about 32 ships) during the first nine years (FY2013-FY2021) of the 30-year period.

Oversight Issues for Congress

Future Size and Structure of Navy in Light of Strategic and Budgetary Changes

One potential oversight issue for Congress concerns the planned size and structure of the Navy. Changes in strategic and budgetary circumstances have led to a broad debate over the appropriate future size and structure of the military, including the future size and structure of the Navy. Changes in strategic circumstances include, among other things, the winding down of U.S. combat operations in Iraq, the planned winding down of such operations in Afghanistan, and the growth of China's military capabilities.[7] Changes in budgetary circumstances center on reductions in planned levels of defense spending resulting from the Budget Control Act of 2011 (S. 365/P.L. 112-25 of August 2, 2011).

On January 5, 2012, the Administration announced that, in light of the winding down of U.S. combat operations in Iraq, the planned winding down of such operations in Afghanistan, and developments in the Asia-Pacific region, U.S. defense strategy in coming years will include a stronger focus on the Asia-Pacific region.[8] Since the Asia-Pacific region is to a significant degree a maritime and aerospace theater for the United States, this shift in strategic focus is expected by many observers to result in a shift in the allocation of DOD resources toward the Navy and Air Force.

The Navy's current goal for a fleet of about 310-316 ships reflects a number of assumptions and planning factors, including but not limited to the following:

- current and projected Navy missions in support of U.S. military strategy, including both wartime operations and day-to-day forward-deployed operations;
- current and projected capabilities of potential adversaries, including their anti-access/area-denial (A2/AD) capabilities;
- regional combatant commander (COCOM) requests for Navy forces;
- the individual and networked capabilities of current and future Navy ships and aircraft;
- basing arrangements for Navy ships, including numbers and locations of ships homeported in foreign countries;

[7] For more on the growth in China's military (particularly naval) capabilities and its potential implications for required U.S. Navy capabilities, see CRS Report RL33153, *China Naval Modernization: Implications for U.S. Navy Capabilities—Background and Issues for Congress*, by Ronald O'Rourke.

[8] Department of Defense, *Sustaining U.S. Global Leadership: Priorities for 21st Century Defense*, January 2012, 8 pp. For more on this document, see CRS Report R42146, *In Brief: Assessing DOD's New Strategic Guidance*, by Catherine Dale and Pat Towell.

- maintenance and deployment cycles for Navy ships; and
- fiscal constraints.

With regard to the third point above, Navy officials have testified at least three times this year that a Navy of more than 500 ships would be required to fully meet COCOM requests for Navy forces (see **Appendix A**). The difference between a fleet of more than 500 ships and the current goal for a fleet of about 310-316 ships can be viewed as one measure of the operational risk associated with the goal of a fleet of about 310-316 ships. A goal for a fleet of more than 500 ships might be viewed as a fiscally unconstrained goal.

Some study groups have made their own proposals for Navy ship force structure. **Table 5** shows some of these proposals. For purposes of comparison, **Table 5** also shows the Navy's 310-316 ship goal of March 2012.

Table 5. Recent Study Group Proposals for Navy Ship Force Structure

Ship type	Navy's 310-316 ship goal of March 2012	Heritage Foundation (April 2011)	Cato Institute (September 2010)[a]	Independent Panel Assessment of 2010 QDR (July 2010)	Sustainable Defense Task Force (June 2010)	Center for a New American Security (CNAS) (November 2008)	Center for Strategic and Budgetary Assessments (CSBA) (2008)[b]
Submarines							
SSBN	12-14	14[c]	6	14	7	14	12
SSGN	0-4	4	0	4	4	0	2
SSN	~48	55	40	55	37	40	41
Aircraft carriers							
CVN	11	11	8	11	9	8	11
CVE	0	0	0	0	0	0	4
Surface combatants							
Cruiser	~90	88	22	n/a	85	18	14
Destroyer			65	n/a		56	73
Frigate	0	28[d]	14	n/a	0	0	9[e]
LCS	~55		4	n/a	25	48	55
SSC	0	0	0	n/a	0	40	0[f]
Amphibious and Maritime Prepositioning Force (Future) (MPF[F]) ships							
Amphibious ships	~32	37	23	n/a	27	36	33
MPF(F) ships	0	0	0	n/a	n/a	0	3[g]
LSD station ships	0	0	0	n/a	n/a	n/a	7[h]
Other: Mine warfare (MIW) ships; Combat logistics force (CLF) ships (i.e., at-sea resupply ships), and support ships							
MIW	0	14	11	0	0	0	0
CLF ships	~29	33	21	n/a	36	40	31
Support ships	~33	25	27	n/a			31

Ship type	Navy's 310-316 ship goal of March 2012	Heritage Foundation (April 2011)	Cato Institute (September 2010)[a]	Independent Panel Assessment of 2010 QDR (July 2010)	Sustainable Defense Task Force (June 2010)	Center for a New American Security (CNAS) (November 2008)	Center for Strategic and Budgetary Assessments (CSBA) (2008)[b]
TOTAL battle force ships	**~310-316**	**309**	**241**	**346**	**230**	**300**	**326**[i]

Source: Table prepared by CRS based on the following sources: **For Heritage Foundation**: *A Strong National Defense[:] The Armed Forces America Needs and What They Will Cost*, Heritage Foundation, April 5, 2011, pp. 25-26. **For Cato Institute**: Benjamin H. Friedman and Christopher Preble, *Budgetary Savings from Military Restraint*, Washington, Cato Institute, September 23, 2010 (Policy Analysis No. 667), pp. 6, 8-10, and additional information provided by Cato Institute to CRS by e-mail on September 22, 2010. **For Independent Panel Assessment**: Stephen J. Hadley and William J. Perry, co-chairmen, et al., *The QDR in Perspective: Meeting America's National Security Needs In the 21st Century, The Final Report of the Quadrennial Defense Review Independent Panel*, Washington, 2010, Figure 3-2 on pages 58-59. **For Sustainable Defense Task Force**: *Debt, Deficits, and Defense, A Way Forward[:] Report of the Sustainable Defense Task Force*, June 11, 2010, pp. 19-20. **For CNAS**: Frank Hoffman, *From Preponderance to Partnership: American Maritime Power in the 21st Century.* Washington, Center for a New American Security, November 2008. p. 19 (Table 2). **For CSBA**: Robert O. Work, *The US Navy[:] Charting a Course for Tomorrow's Fleet.* Washington, Center for Strategic and Budgetary Assessments, 2008. p. 81 (Figure 5).

Notes: n/a is not addressed in the report. **SSBN** is nuclear-powered ballistic missile submarine; **SSGN** is nuclear-powered cruise missile and special operations forces submarine; **SSN** is nuclear-powered attack submarine; **CVN** is large nuclear-powered aircraft carrier; **CVE** is medium-sized aircraft carrier; **LCS** is Littoral Combat Ship; **SSC** (an acronym created by CRS for this table) is small surface combatant of 1,000+ tons displacement—a ship similar to late-1990s Streetfighter concept; **MPF(F)** is Maritime Prepositioning Force (Future) ship; **LSD** is LSD-41/49 class amphibious ship operating as a station ship for a formation like a Global Fleet Station (GFS); **MIW** is mine warfare ship; **CLF** is combat logistics force (i.e., resupply) ship.

a. Figures shown are for the year 2020; for subsequent years, reductions from these figures would be considered.

b. Figures shown are for the year 2028.

c. The report calls for a force of 280 SLBMs, which appears to equate to a force of 14 SSBNs, each with 20 SLBM tubes.

d. The report calls for a force of 28 small surface combatants, and appears to use the term small surface combatants the same way that the Navy does in the 30-year shipbuilding plan—as a way of collectively referring to frigates and LCSs. The small surface combatants (SSCs) called for in the November 2008 CNAS report are separate from and smaller than the LCS.

e. Maritime Security Frigates.

f. Plan includes 28 patrol craft (PCs) of a few hundred tons displacement each, as well as 29 boat detachments and seven riverine squadrons.

g. Plan shows three Mobile Landing Platform (MLP) ships that the Navy currently plans for the MPF(F) squadron, plus 16 existing current-generation maritime prepositioning force (MPF) ships and 17 existing prepositioning ships for Army and other service/agency equipment. Plan also shows 67 other DOD sealift ships.

h. T-LSDs, meaning LSDs operated by the Military Sealift Command (MSC) with a partly civilian crew.

i. The CSBA report shows a total of 488 units by including 162 additional force units that do not count toward the 310-316 ship goal under the battle force ships counting method that has been used since the early 1980s for public policy discussions of the size of the Navy. These 162 additional force units include 16 existing current-generation maritime prepositioning force (MPF) ships and 17 existing prepositioning ships for Army and other service/agency equipment, 67 other DOD sealift ships, 28 PCs, 29 boat detachments, and certain other small-scale units. The CSBA report proposes a new counting method for naval/maritime forces that includes units such as these in the total count.

A potential key question for Congress concerns whether the U.S. Navy in coming years will be large enough to adequately counter improved Chinese maritime anti-access forces while also adequately performing other missions of interest to U.S. policymakers around the world. Some observers are concerned that a combination of growing Chinese naval capabilities and budget-driven reductions in the size of the U.S. Navy could encourage Chinese military overconfidence and demoralize U.S. allies and partners in the Pacific, and thereby make it harder for the United States to defend its interests in the region.[9] Potential oversight questions for Congress include the following:

- Under the Administration's plans, will the Navy in coming years be large enough to adequately counter to adequately counter improved Chinese maritime anti-access forces while also adequately performing other missions of interest to U.S. policymakers around the world?
- What might be the political and security implications in the Asia-Pacific region of a combination of growing Chinese naval capabilities and budget-driven reductions in the size of the U.S. Navy?
- Are the proposed early retirements of nine Aegis cruisers and the placing of two LSD-41/49 class amphibious ships into Reduced Operating Status (ROS) consistent with the stronger focus on the Asia-Pacific region in DOD's new strategic guidance? What are the potential operational implications of these early retirements? What steps, if any are being taken to preserve a potential for reactivating these nine ships, should circumstances warrant their reactivation?
- If the Navy is reduced in size and priority is given to maintaining Navy forces in the Pacific, what will be the impact on Navy force levels in other parts of the world, such as the Persian Gulf/Indian Ocean region or the Mediterranean Sea, and consequently on the Navy's ability to adequately perform its missions in those parts of the world?
- To what extent could the operational impacts of a reduction in Navy ship numbers be mitigated through increased use of forward homeporting, multiple crewing, and long-duration deployments with crew rotation (i.e., "Sea Swap")? How feasible are these options, and what would be their potential costs and benefits?
- Particularly in a situation of constrained DOD resources, if enough funding is allocated to the Navy to permit the Navy in coming years to maintain a fleet of about 310-316 ships including 11 aircraft carriers, how much would other DOD programs need to be reduced, and what would be the operational implications of those program reductions in terms of DOD's overall ability to counter improved Chinese military forces and perform other missions?[10]

[9] See, for example, Dan Blumenthal and Michael Mazza, "Asia Needs a Larger U.S. Defense Budget," *Wall Street Journal*, July 5, 2011; J. Randy Forbes, "Defence Cuts Imperil US Asia Role," *The Diplomat (*http://the-diplomat.com*)*, October 26, 2011. See also Andrew Krepinevich, "Panetta's Challenge," *Washington Post*, July 15, 2011: 15; Dean Cheng, *Sea Power and the Chinese State: China's Maritime Ambitions*, Heritage Foundation Backgrounder No. 2576, July 11, 2011, p. 10.

[10] For further discussion, see CRS Report RL33153, *China Naval Modernization: Implications for U.S. Navy Capabilities—Background and Issues for Congress*, by Ronald O'Rourke.

Sufficiency of FY2013 30-Year Shipbuilding Plan

Another potential oversight issue for Congress concerns the sufficiency of the FY2013 30-year (FY2012-FY2041) shipbuilding plan. As discussed earlier (see "Navy's Projected Force Levels Under 30-Year (FY2013-FY2042) Shipbuilding Plan"), the plan does not include enough ships to fully support all elements of the 310-316 ship goal over the long run. The Navy projects that the fleet would remain below 310 ships during the entire 30-year period and experience shortfalls at various points in ballistic missile submarines, cruisers-destroyers, attack submarines, and amphibious ships.

Although the projected cruiser-destroyer and attack submarine shortfalls are smaller under the FY2013 30-year plan than they were under the FY2012 30-year plan, the shortfalls in ballistic missile submarines, cruisers-destroyers, attack submarines, and amphibious ships projected under the FY2013 30-year plan could make it difficult for the Navy to fully perform its projected missions in certain years. In light of these projected shortfalls, policymakers may wish to consider various options, including but not limited to the following:

- keeping in active service some or all of the seven Aegis cruisers that the Navy's FY2013 budget proposes for early retirement, and/or the two LSD-41/49 class amphibious ships that the Navy's FY2013 budget proposes shifting to Reduced Operating Status (ROS);
- increasing planned procurement quantities of destroyers and attack submarines, perhaps particularly in years prior to the start of SSBN(X) procurement; and
- extending the service lives of older destroyers to 40 or 45 years, and refueling a small number of older attack submarines and extending their service lives to 40 or more years.

The Navy estimates that keeping in service the seven Aegis cruisers proposed for early retirement would cost a total of a little more than $4 billion over the period FY2013-FY2017. This figure includes costs for conducting maintenance and modernization work on the ships during those years, for operating the ships during those years (including crew costs), and for procuring, crewing, and operating during those years helicopters that would be embarked on the ships.[11]

Regarding the third option above, possible candidates for service life extensions include the first 28 DDG-51 destroyers (i.e., the Flight I/II DDG-51s), the final 23 Los Angeles (SSN-688) attack submarines (i.e., the Improved 688s), and the 3 Seawolf (SSN-21) class attack submarines. Whether such service life extensions would be technically feasible or cost-effective is not clear. Feasibility would be a particular issue for the attack submarines, given limits on submarine pressure hull life.

Extending the service lives of any of these ships could require increasing funding for their maintenance, possibly beginning in the near term, above currently planned levels, so that the ships would be in good enough condition years from now to remain eligible for service life extension work. Such funding increases would be in addition to those the Navy has recently

[11] Source: Transcript of spoken testimony of Vice Admiral William Burke, Deputy Chief of Naval Operations, Fleet Readiness and Logistics, before the Readiness subcommittee of the House Armed Services Committee, March 22, 2012.

programmed for ensuring that its surface ships can remain in service to the end of their currently planned service lives.

As mentioned earlier, the Navy's 30-year shipbuilding plan is based on certain assumptions, including assumptions about ship service lives. The Navy in past years has, for various reasons, retired numerous ships, including surface combatants and attack submarines, well before the ends of their expected service lives. Many of these retirements were due the decision to reduce the size of the Navy following the end of the Cold War. Other instances were due to the material condition of the ships or the projected costs of keeping them mission-effective through the ends of their service lives. If ship service lives in some cases turn out to be shorter than assumed under the 30-year plan, than Navy ship force levels will be smaller in certain years than shown in **Table 4**.

Affordability of FY2013 30-Year Shipbuilding Plan

Another potential oversight issue for Congress concerns the prospective affordability of the FY2013 30-year (FY2013-FY2042) shipbuilding plan. In assessing the prospective affordability of the FY2013 30-year shipbuilding plan, key factors that Congress may consider include estimated ship procurement costs and future shipbuilding funding levels.

Estimated Ship Procurement Costs

As mentioned earlier, the Navy's 30-year shipbuilding plan is based on certain assumptions, including assumptions about ship procurement costs. If one or more Navy ship designs turn out to be more expensive to build than the Navy estimates, then the projected funding levels shown in the 30-year shipbuilding plan will not be sufficient to procure all the ships shown in the plan. Ship designs that can be viewed as posing a risk of being more expensive to build than the Navy estimates include Gerald R. Ford (CVN-78) class aircraft carriers (a program currently experiencing cost growth), Ohio-replacement (SSBNX) class ballistic missile submarines, the Flight III version of the DDG-51 destroyer, and the LSD(X) amphibious ship.

In recent years, the Congressional Budget Office (CBO) has estimated that certain Navy ships would be more expensive to procure than the Navy estimates, and consequently that the Navy's 30-year shipbuilding plan would cost more to implement than the Navy has estimated. CBO is currently preparing its estimate of the cost of the FY2013 30-year shipbuilding plan. In its June 2011 report on the cost of the FY2012 30-year plan, CBO estimated that the plan would cost an average of $18.0 billion per year in constant FY2011 dollars to implement, or about 16% more than the Navy estimated. CBO's estimate was about 7% higher than the Navy's estimate for the first 10 years of the plan, about 10% higher than the Navy's estimate for the second 10 years of the plan, and about 31% higher than the Navy's estimate for the final 10 years of the plan.[12] Some of the difference between CBO's estimate and the Navy's estimate, particularly in the latter years of the plan, was due to a difference between CBO and the Navy in how to treat inflation in Navy shipbuilding. **Table 6** summarizes the Navy and CBO estimates of the FY2012 30-year shipbuilding plan, as presented in the June 2011 CBO report.

[12] Congressional Budget Office, *An Analysis of the Navy's Fiscal Year 2012 Shipbuilding Plan*, June 2011, Table 2 (page 9).

Table 6. Navy and CBO Estimates of Cost of FY2012 30-Year (FY2012-FY2041) Shipbuilding Plan

Funding for new-construction ships, in billions of constant FY2011 dollars

	First 10 years (FY2012-FY2021)	Next 10 years (FY2022-2031)	Final 10 years (FY2032-FY2041)	Entire 30 years (FY2012-FY2041)
Navy estimate	14.6	17.2	14.7	15.5
CBO estimate	15.7	19.0	19.2	18.0
% difference between Navy and CBO estimates	7%	10%	31%	16%

Source: Congressional Budget Office, *An Analysis of the Navy's Fiscal Year 2012 Shipbuilding Plan*, June 2011, Table 2 (Page 9).

Future Shipbuilding Funding Levels

As mentioned earlier, the Navy's 30-year shipbuilding plan is based on certain assumptions, including assumptions about future shipbuilding funding levels. It has been known for some time that funding requirements for the Ohio-replacement (SSBN[X]) ballistic missile submarine program will put considerable pressure on the shipbuilding budget during the middle years of the 30-year plan. Although the FY2013 30-year shipbuilding plan reduces procurement of other types of ships in the middle years of the plan to help accommodate the SSBN(X) program, the Navy still projects that the shipbuilding budget would need to be substantially higher during the middle 10 years of the plan than during the first or last 10 years of the plan. The Navy estimates that, in constant FY2012 dollars, implementing the FY2013 30-year shipbuilding plan would require an average of $15.1 billion per year during the first 10 years of the plan, $19.5 billion per year during the middle 10 years of the plan, and $15.9 billion per year during the final 10 years of the plan. The figure of $19.5 billion per year for the middle 10 years of the plan is about 26% higher than the average of $15.5 billion per year for the first and last 10 years of the plan.

If the "hump" in shipbuilding funding during the middle 10 years of the 30-year plan is not achieved, numerous ships shown for procurement during the middle 10 years of the plan might not be procured. A potential oversight question for Congress is whether the Navy has received a commitment or assurance of some kind from DOD leaders that the Navy will be able to budget for the "hump" in shipbuilding funding during the middle years of the 30-year plan without reducing funding for other Navy program priorities.

Near-Term Options for Adding Ships and Reducing Ship Unit Procurement Costs

Congressional review to date of the Navy's FY2013 5-year and 30-year shipbuilding plans have included, among other things, discussion of near-term options for adding ships to the plan and reducing ship unit procurement costs. These options include the following:

- adding a second Virginia-class attack submarine to FY2014 and, as a consequence, increasing to 10 the number of Virginia-class submarines procured under the proposed FY2014-FY2018 multiyear procurement (MYP) arrangement for the Virginia-class program;

- adding a 10th DDG-51 destroyer to the proposed FY2013-FY2017 MYP arrangement for the DDG-51 program; and
- procuring the aircraft carriers CVN-79 and CVN-80 under a block buy arrangement.

The first two options could mitigate operational risks associated with the projected cruiser-destroyer and attack submarine shortfalls. The third option could reduce the cost of implementing the 30-year shipbuilding plan.

Adding a Second Virginia Class Boat in FY2014—10 Boats in MYP

Navy officials have testified this year that the second Virginia-class boat that had been programmed for FY2014 was deferred to FY2018 in the FY2013 budget submission because FY2014 has become a tight budget year for the Navy, and that the Navy is interested in finding a way, if possible, to restore the procurement of a second Virginia-class boat to FY2014.[13]

The question of whether to procure a second boat in FY2014 is an issue for FY2013 because procuring a second boat in FY2014 could involve adding advance procurement funding for that boat in FY2013. The Navy has testified that procuring a second boat in FY2014 could require about $777 million in advance procurement funding in FY2013 (and a balance of more than $1.2 billion in FY2014).[14] Providing advance procurement funding for the boat in FY2013 would permit the boat to be constructed on a schedule that is more-or-less consistent with what one might expect for a boat procured in FY2014.

Adding advance procurement funding in FY2013, however, is not absolutely required to procure a second boat in FY2014—the boat can be procured in FY2014 without any advance procurement funding in FY2013. Doing so might result in the boat being built on a schedule closer to what one might expect for a boat procured in FY2015, but the boat would still enter service years earlier than it would if it is procured in FY2018.

Finding a way to procure a second Virginia-class boat in FY2014 could involve the use of incremental funding (as opposed to full funding) in the Virginia-class program, at least for the second boat in FY2014, if not also for one or more other Virginia-class boats. Incrementally funding a second boat in FY2014 would involve providing some of the boat's procurement cost in FY2014 and deferring the remainder to one or more subsequent years.

Incremental funding is normally used only for procuring aircraft carriers and LHD/LHA-type amphibious assault ships,[15] but there have been rare cases when individual ships of other types have, for various reasons, been procured with incremental funding. Examples include the third

[13] See, for example, the spoken testimony of Secretary of the Navy Ray Mabus to the House Armed Services Committee on February 16, 2012.

[14] Source: Spoken testimony of Sean Stackley, Assistant Secretary of the Navy for Research, Development, and Acquisition, at an April 19, 2012, hearing before the Seapower subcommittee of the Senate Armed Services Committee, as reflected in the transcript of the hearing.

[15] Incremental funding is allowed for procuring aircraft carriers and LHD/LHA-type amphibious assault ships because using full funding to procure these ships—which are very expensive and which are procured once every several years—can cause a one-year "spike" in Navy shipbuilding funding requirements that can be disruptive to other acquisition programs.

and final Seawolf (SSN-21) class attack submarine, whose procurement was reinstated in FY1996, and each of the three Zumwalt (DDG-1000) class destroyers that were procured in FY2007-FY2009.[16] It can also be noted that ships procured through the National Defense Sealift Fund (NDSF)—including DOD sealift ships and Navy auxiliary ships—in practice are frequently acquired with incremental funding, even though they are nominally funded by Congress with full funding.[17]

The Navy estimates that adding a second Virginia-class boat to FY2014 and increasing to 10 the number of boats in the proposed MYP arrangement would reduce by roughly $700 million the total cost of the other 9 boats in the arrangement.[18] The reduction in cost would come from maintaining a smooth, two-per-year production rate at the GD/EB and NNS, from increased spreading of fixed overhead costs at the shipyards, and from reduced costs for components procured from suppliers in batches of 10 rather than batches of 9. Since the figure of roughly $700 million is roughly equivalent to one-quarter the cost of a Virginia-class submarine, the Navy, in effect, is estimating that adding a second Virginia-class boat to FY2014 and increasing to 10 the number of boats in the proposed MYP arrangement would be roughly 25% self-financing.

Adding a 10th DDG-51 to the DDG-51 MYP

Regarding the possibility of adding a 10th DDG-51 to the proposed FY2013-FY2017 MYP arrangement for the DDG-51 program, Sean Stackley, the Assistant Secretary of the Navy for Research, Development, and Acquisition (i.e., the Navy's acquisition executive), stated the following at a March 29, 2012, hearing on Navy shipbuilding programs before the Seapower and Projection Forces subcommittee, in response to a question about the FY2013 budget's deferral to FY2016 of a second DDG-51 that was previously programmed for FY2014:

> I'd like to address the question regarding the second destroyer in 2014. A couple of important facts: First, the—we restarted DDG-51 construction in—in [FY]2010 and we've got four ships under contract, and a result of the four ships that we've placed under contract is we have prior year savings in this program that are—work in our favor when we consider future procurement for the [DDG-]51s.
>
> We also have a unique situation where we've got competition on this program—two builders building the 51s, and the competition has been healthy with both builders. We also have a very significant cost associated with government-furnished equipment, so not only did we restart construction at the shipyards, we also restarted manufacturing lines at our weapon systems providers.
>
> So in this process we were able to restart 51s virtually without skipping a beat, and we're seeing the continued learning curve that we left off on back with the [FY]2005 procurement.

[16] The first two DDG-1000s were procured in FY2007 and split-funded (i.e., funded with two-year incremental funding) in FY2007-FY2008. The third DDG-1000 was procured in FY2009 and split-funded in FY2009-FY2010.

[17] DOD sealift ships and Navy auxiliary ships can be acquired this way because the full funding provision does not apply to ships procured through the NDSF the same way that it applies to ships funded through the Shipbuilding and Conversion, Navy (SCN) appropriation account. For a discussion, see CRS Report RL31404, *Defense Procurement: Full Funding Policy—Background, Issues, and Options for Congress*, by Ronald O'Rourke and Stephen Daggett, and CRS Report RL32776, *Navy Ship Procurement: Alternative Funding Approaches—Background and Options for Congress*, by Ronald O'Rourke.

[18] Source: Navy briefing to CRS and Congressional Budget Office (CBO), March 16, 2012.

> So when we march into this third multiyear for the 51s we're looking to capitalize on the same types of savings that we saw prior, and our top line, again, allowed for nine ships to be budgeted, but when we go out with this procurement we're going to go out with a procurement that enables the procurement of 10 ships, where that 10th ship would be the second—potentially the second ship in [FY]2014 if we're able to achieve the savings that we're targeting across this multiyear between the shipbuilders in competition as well as the combat systems providers as well as all of the other support and engineering associated with this program.
>
> So we want to leverage the strong learning, we want to leverage the strong industrial base, we want to leverage the competition to get to what we need in terms of both affordability and force structure, and I think we have a pretty good shot at it.[19]

Block Buy for CVN-79 and CVN-80

The Navy currently plans to procure the aircraft carriers CVN-79 and CVN-80 separately, as one-ship procurements. Procuring the two ships together in a block buy could reduce their combined procurement cost. Procuring two aircraft carriers together in a two-ship block buy has been done on two previous occasions. The Navy procured two Nimitz (CVN-68) class aircraft carriers (CVN-72 and CVN-73) together in a block buy in FY1983, and procured another two Nimitz-class aircraft carriers (CVN-74 and CVN-75) together in a block buy in FY1988. The Navy proposed these block buys in the FY1983 and FY1988 budget submissions.[20]

When the FY1983 block buy was proposed, the Navy estimated that the block buy would reduce the combined cost CVN-72 and CVN-73 by 5.6% in real terms.[21] When the FY1988 block buy was proposed, the Navy estimated that the block buy would reduce the combined cost of CVN-74 and CVN-75 by a considerably larger percentage. GAO testified that the savings would be considerably less than the Navy estimated, but agreed that a two-ship acquisition strategy is less expensive than a single-ship acquisition strategy, and that some savings would occur in a two-ship strategy for CVN-74 and CVN-75.[22]

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[19] Source: Transcript of hearing. See also Megan Eckstein, "Navy Looking Into Feasibility Of Procuring 10th DDG In Multiyear Contract," *Inside the Navy*, April 2, 2012.

[20] It can also be noted that the Air Force is procuring two Advanced EHF (AEHF) satellites under a two-satellite block buy that the Air Force proposed and Congress approved in FY2012.

[21] See General Accounting Office, *Request to Fully Fund Two Nuclear Aircraft Carriers in Fiscal Year 1983*, MASAD-82-87 (B-206847), March 26, 1982, 10 pp. The figure of 5.6 was derived by dividing $450 million in non-inflation cost avoidance shown on page 5 by the combined estimated cost of the two ships (absent a block buy) of $8,024 million shown on page 4.

[22] See General Accounting Office, Procurement Strategy For Acquiring Two Nuclear Aircraft Carriers, Statement of Frank Conahan, Assistant Comptroller General, National Security and International Affairs Division, Before the Conventional Forces and Alliance Defense Subcommittee and Projection Forces and Regional Defense Subcommittee of the Senate Armed Services Committee, April 7, 1987, T-NSIAD-87-28, 5 pp. The testimony states on page 2 that "A single ship acquisition strategy is more expensive because materials are bought separately for each ship rather than being combined into economic order quantity buys under a multi-ship procurement." The testimony discounted the Navy's estimated savings of $1,100 million based on this effect on the grounds that if CVN-74 and CVN-75 were not procured in the proposed two-ship block buy, with CVN-74 procured in FY1990 and CVN-75 procured FY1993, it was likely that CVN-74 and CVN-75 would subsequently be procured in a two-ship block buy, with CVN-74 procured in FY1994 and CVN-75 procured in FY1996. For the discussion here, however, the comparison is between the Navy's current plan to procure CVN-79 and CVN-80 separately and the potential alternative of procuring them together in a block buy.

The GAO testimony commented on an additional $700 million in savings that the Navy estimated would be derived (continued...)

The FY1983 and FY1988 block buys each involved procuring two aircraft carriers in a single year. Procuring two carriers in the same year, however, is not mandatory for a two-ship aircraft carrier block buy. The Navy, for example, proposed the block buy for CVN-74 and CVN-75 in the FY1988 budget submission as something that would involve procuring CVN-74 in FY1990 and CVN-75 in FY1993. (Congress, in acting on the FY1988 budget, decided to not only approve the two-ship block buy, but also accelerate the procurement of both CVN-74 and CVN-75 to FY1988.[23]) A block buy on CVN-79 and CVN-80 could leave intact the FY2013 procurement date for CVN-79 and the FY2018 procurement date for CVN-80. This would permit the funding for the two ships to be spread out over the same fiscal years as currently planned, although the amounts of funding in individual years would likely change.

It is too late to implement a complete block buy on CVN-79 and CVN-80, because some of CVN-79, particularly its propulsion plant, has already been purchased. Consequently, the option would be to implement a partial block buy that would include the remaining part of CVN-79 and all of CVN-80.

To illustrate the notional scale of the savings that might result from using a block buy strategy on CVN-79 and CVN-80, it can be noted that if such a block buy were to achieve one-third as much percentage cost reduction as the FY1983 block buy—that is, if it were to reduce the combined procurement cost of CVN 79 and 80 by about 1.9%—that would equate to a savings of roughly $470 million on the currently estimated combined procurement cost of CVN-79 and CVN-80. More refined estimates might be higher or lower than this notional figure of $470 million.

At a March 19, 2012, briefing for CRS and CBO on the CVN-78 program, CRS asked the Navy whether it was considering the possibility of a block buy on CVN-79 and CVN-80. The Navy stated that it had looked into a narrower option of doing joint purchases of some materials for the two ships. CRS asked the Navy to examine the broader option of a block buy along the lines described above, and to inform CRS and CBO of the Navy's estimate of how much it might reduce the combined procurement cost of CVN-79 and CVN-80.

Implementing a block buy on CVN-79 and CVN-80 would require committing to the procurement of CVN-80. Whether Congress would want to commit to the procurement of CVN-80, particularly in light of current uncertainty over future levels of defense spending, is a factor that Congress may consider in assessing the option of doing a block buy. If budgetary

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(...continued)

from improving production continuity between CVN-73, CVN-74, and CVN-75 by stating on page 3 that "It is logical to assume that savings are possible through production continuity but the precise magnitude of such savings is difficult to calculate because of the many variables that affect the outcome." It is not clear how significant savings from production continuity might be in a two-ship block buy for CVN-79 and CVN-80 if the procurement dates for the two ships (FY2013 and FY2018, respectively) are not changed.

The GAO testimony noted that the Navy estimated $500 million in additional savings from avoided configuration changes on CVN-74 and CVN-75 if the ships were procured in FY1990 and FY1993 rather than FY1994 and FY1996. It is not clear how significant the savings from avoided configuration changes might be for a two-ship block buy for CVN-79 and CVN-80.

See also CRS Issue Brief IB87043, *Aircraft Carriers (Weapons Facts)*, 13 pp., updated February 10, 1988 and archived March 24, 1988, by Ronald O'Rourke. The report includes a discussion of the above GAO testimony. The CRS report is out of print and available directly from the author.

[23] See CRS Issue Brief IB87043, *Aircraft Carriers (Weapons Facts)*, 13 pp., updated February 10, 1988 and archived March 24, 1988, by Ronald O'Rourke. The report is out of print and available directly from the author.

circumstances were to lead to a decision to end procurement of Ford-class carriers after CVN-79, then much or all of the funding spent procuring materials for CVN-80 could go to waste.

At a March 29, 2012, hearing on Navy shipbuilding programs before the Seapower and Projection Forces subcommittee of the House Armed Services Committee, Sean Stackley, the Assistant Secretary of the Navy for Research, Development, and Acquisition (i.e., the Navy's acquisition executive), stated the following when asked by Representative Robert Wittman about the possibility of a two-ship block buy on CVN-79 and CVN-80:

> Yes, sir. Let me focus on affordability of the CVN-78 class. We are right now about 40 percent complete construction of the CVN-78 and we're running into some very difficult cost growth issues across the full span—design, material procurement, and production—material procurement on both contractor and government side.
>
> So our first focus right now is to stabilize the lead ship. Let's get cost under control so we can complete this ship as close to schedule at the lowest cost possible.
>
> But in parallel, the Navy is working very closely with the shipbuilder to take a step back and say, one, what are all the lessons we just learned on CVN-78? Two, CVN-78 is a very different ship from the Nimitz [CVN-68]; we cannot expect to build the [CVN-]78 the way we build the [CVN-]68 and—and get to an affordable ship construction plan. So we're pressing on the way the carrier is built—the build plan for the carrier—to arrive at a more affordable CVN-79.
>
> Now, in the process of doing that we'll take a hard look at what opportunity there is across [CVN-]79 and [CVN-]80, recognizing that we're going to be limited, again, by [budget] top line. But there are going to be some opportunities that jump out at us. We don't want to have to replan each carrier. We have a vendor base that is stretched out with the carrier build cycle that for some components that are carrier-unique, that vendor base is—is just struggling to hold on between the five-year gaps.
>
> So we have to take a hard look at where does it make sense after we've gotten to what I'm calling an optimal build plan for CVN-79 and then be able to come back and—and say, OK, here—on CVN-79 here are some opportunities that if we could, in fact, reach out to CVN-80 we can either avoid a gap in a production line or avoid unnecessary cost growth on that follow ship.[24]

Later in the hearing, the following exchange occurred:

> REPRESENTATIVE RICK LARSEN:
>
> Finally, we had some discussion about this question with regard to CVNs and trying to find a way to squeeze some costs out, and one of the ideas was to do some—do block buy of certain components of—of—of CVN components. And have you considered that, and what's your thought on that on block buy on components from [CVN-]79 to [CVN-]80, or whatever, [CVN-]79, [CVN-]79 to [CVN-]80, and so on?
>
> ASSISTANT SECRETARY OF THE NAVY SEAN STACKLEY:

[24] Source: Transcript of hearing.

> Yes, sir. At this point in time the Navy and the shipbuilder are sitting side by side putting together a build plan for CVN-79. We're 40 percent complete construction of the [CVN-]78; we've got a lot that we've got to, I'll say, do different on the [CVN-]79 and follow from the lead ship. It's a very different ship class [compared to the Nimitz class].
>
> So we're taking a hard look at the build plan [for CVN-78]. We need to get that locked down. And associated with that is the complete bill of materials for the Ford class.
>
> At that point in time we'll be able to take a look at...
>
> LARSEN:
>
> On this, call it bill of materials, what does it make sense—what makes sense in terms of looking long term, beyond the immediate ship?
>
> STACKLEY:
>
> Right.
>
> LARSEN:
>
> Are there areas of the industrial base that are stressed to the point that it does make sense to look at coupling the CVN-79 and CVN-80 buy?
>
> STACKLEY:
>
> We're not at that point yet. I described earlier that I think after we get through this build plan review then we'll be able to come back in '14 [FY2014] and identify potential critical items that warrant a block buy approach.[25]

Later in the hearing, Matthew Mulherin, President of NNS and Corporate Vice President of HII, stated the following when asked by Representative Robert Wittman about the possibility of a two-ship block buy on CVN-79 and CVN-80:

> Yes, sir. You know, historically you go back, you were exactly right, if you look at the contracts that bought the CVN- 72 and [CVN-]73 there was huge savings that flowed to the second ship, both in the ability to go buy materials, a block buy and get—get discounts there, but also that you did the engineering up front the first time for both hulls so the second ship you really just had the answer, problem, paper [sic] and some of those kind of things the—the kind of the normal course of business to support the waterfront.
>
> So I wouldn't see any different. I think if we were able to do it both for material, for—for the engineering to be able to go pump out drawings that had two-ship applicability—plus, I think it brings the—the—the CVN—if we were to do a two-ship buy for [CVN-]79 and [CVN-]80 it would ensure CVN-80 was a copy of CVN-79, no change into the contract or very minimal, you're not having a—on the material side you get economic order savings, you don't have to deal with obsolescence.
>
> So absolutely. I think there's huge opportunity to go do that. You know, you talk to the—the vendor base. They would love to see it. It gives them the ability to go look at—at what

[25] Source: Transcript of hearing.

> investments they need, what work is out in front of them, and go invest in—in training and tools to—to be able to go support that.[26]

Legislative Activity for FY2013

FY2013 Funding Request

The Navy's proposed FY2013 budget requests funding for the procurement of 10 new battle force ships (i.e., ships that count against the 310-316 ship goal). The 10 ships include one Gerald R. Ford (CVN-78) class aircraft carrier; two Virginia-class attack submarines, two DDG-51 class Aegis destroyers, four Littoral Combat Ships (LCSs), and one Joint High Speed Vessel (JHSV). These ships are all funded through the Shipbuilding and Conversion, Navy (SCN) account.

CRS Reports Tracking Legislation on Specific Navy Shipbuilding Programs

For funding levels and legislative activity on individual Navy shipbuilding, conversion, and modernization programs, see the following CRS reports:

- CRS Report RS20643, *Navy Ford (CVN-78) Class Aircraft Carrier Program: Background and Issues for Congress*, by Ronald O'Rourke.
- CRS Report R41129, *Navy Ohio Replacement (SSBN[X]) Ballistic Missile Submarine Program: Background and Issues for Congress*, by Ronald O'Rourke.
- CRS Report RL32418, *Navy Virginia (SSN-774) Class Attack Submarine Procurement: Background and Issues for Congress*, by Ronald O'Rourke.
- CRS Report RL32109, *Navy DDG-51 and DDG-1000 Destroyer Programs: Background and Issues for Congress*, by Ronald O'Rourke.
- CRS Report RL33741, *Navy Littoral Combat Ship (LCS) Program: Background, Issues, and Options for Congress*, by Ronald O'Rourke.

[26] Source: Transcript of hearing.

Appendix A. 2012 Testimony on Size of Navy Needed to Fully Meet COCOM Requests

This appendix presents three instances of when Navy officials this year have testified that a Navy of more than 500 ships would be required to fully meet combatant commander COCOM requests for Navy forces.

March 22, 2012, Hearing

At a March 22, 2012, hearing on Navy readiness before the Readiness subcommittee of the House Armed Services Committee, the following exchange occurred:

> REPRESENTATIVE J. RANDY FORBES:
>
> We have a lot of requests for our combatant commanders—of the validated requests that come from combatant commanders. How many ships would it take in our navy, based on your estimation, to meet all of the validated requests from our commanders, combatant commanders?
>
> VICE ADMIRAL WILLIAM R. BURKE, DEPUTY CHIEF OF NAVAL OPERATIONS FOR FLEET READINESS AND LOGISTICS:
>
> Let me—give me just a minute on that, sir.
>
> FORBES:
>
> Please. And if you'd like, on any of these questions, if you'd rather take them for the record and get back I'm OK with that, too.
>
> BURKE:
>
> I'm—no, I'm happy to answer the question. I just want to make sure I elaborate a little to make sure we get—get the point right.
>
> FORBES:
>
> Please.
>
> BURKE:
>
> The—the combatant commander requests come in to the—to the services, and then the—there's a—a very high number of requirements from the services, or from the—the combatant commanders which are then prioritized and adjudicated by the joint staff.
>
> Essentially, a way to adjudicate supply—a lesser supply and a greater demand. So—so those—of those requests that come in, some are determined to be more valid than others, if you will. But to get to your exact question, of those requests that come in from the combatant commanders, if we ...
>
> (CROSSTALK)

FORBES:

Admiral, could—could I just—on the nomenclature, just make sure I'm right, too. As they come in, one of the first weed-out processes is we determine whether they're validated or not. In other words, we go through and make sure they're legal, they don't have the other asset somewhere. And—and then we stamp them as validated.

And then like you said, they go through a process where we then look at the resources we have and allocate what we can. And we adjudicate which ones we can give and which ones we can't. So I want the top number. The—the ones that we have validated and said, "Yes, this is legal, it's a proper request."

Of those combatant commander requests, approximately how many ships would it take us to be able to meet those if we had them?

BURKE:

It would take a navy of over 500 ships to meet the combatant commander requests. And, of course, it would take a similar increase in the aircraft and—and other parts of the—of the Navy, as well, to meet the combatant commander requests.[27]

March 29, 2012, Hearing

At a March 29, 2012, hearing on Navy shipbuilding programs before the Seapower and Projection Forces subcommittee of the House Armed Services Committee, the following exchange occurred:

REPRESENTATIVE DUNCAN D. HUNTER:

If you were to build the amphibs [i.e., amphibious ships] where would you prioritize? I mean, where would you take money out of to be able to get the Marine Corps to where they need to be?

VICE ADMIRAL JOHN TERENCE BLAKE, DEPUTY CHIEF OF NAVAL OPERATIONS FOR INTEGRATION OF CAPABILITIES AND RESOURCES:

Here's the issue we deal with: I don't have the luxury of dealing with any single issue in isolation; I have to deal with it across the entire...

HUNTER:

Well, we can. That's why I'm asking.

BLAKE:

Well, we have to deal with it, though, across the entire portfolio.

HUNTER:

Sure.

[27] Source: Transcript of hearing.

BLAKE:

And so what we have to do is we have to balance the requirement for amphibs, the requirement for surface combatants, the requirement for the carriers, the submarines—every category of ships that we have. And so when we do that we then have to say, all right, as we balance across that where are we going to be able to assume more risk? And that's how we—that's how we end up where we are.

HUNTER:

So you're saying there is less risk but still risk in the Marine Corps being short on amphibs than there are in the other—the rest of the picture?

BLAKE:

No. I'm saying that we have assumed risk in all areas. The best example I can give you: It was only a short time ago, if we tried to fill all the COCOM needs we said the number was around 400 ships we'd need in the fleet. Today—and we see no abatement in that commitment or the...

HUNTER:

No (inaudible) signal.

BLAKE:

Today we look at it and we see that we would—if we wanted to hit 100 percent of all the COCOM requirements we'd need in excess of 500 ships. So what we end up having to do is we go through the—the global management process and we look at it and we say, here are our highest priorities, these are how we are going to address them, and then we—we have those units available and we push that...

HUNTER:

I understand.

I'm going to yield back in just one second.

So I would take from your statement, then, that you did go through a prioritization process and the amphibs are not at the top of that list. And second, when you say that you assume risk all the way around I would argue that when you do your risk assessment and you prioritize your needs the fact that the COCOMs wanted more ships and needed more ships due to the international environment and where we find ourselves with the world today, going down is probably – it's going the wrong way.

We all know that, but I—I would—I would argue that your prioritization—I would like to see that, if you don't mind, the—the way that you analyzed this and the—and the way that you said, hey, we're going to—we're going to keep them there to make sure that we have this over here. That's all I'm asking for.

BLAKE:

OK. When we put it together we do it across the entire spectrum; we don't—and by that I mean, as we look at the entire requirement we say, this is what we need to do in order to be able to meet the COCOM demand signal.[28]

April 19, 2012, Hearing

At an April 19, 2012, hearing on Navy shipbuilding programs before the Seapower subcommittee of the Senate Armed Services Committee, the following exchange occurred:

SENATOR ROGER WICKER:

Admiral Burke and General Mills, from an operational perspective, the Navy budget cost for decreases in large amphibious ships among other categories, in my opening statement, I mentioned that the requests from combatant commanders for amphibious ships has increased over 80 percent in the last five years—a very dramatic number. What is the reason for that and what will be the impact if these requests are—are not met?

VICE ADMIRAL WILLIAM R. BURKE, DEPUTY CHIEF OF NAVAL OPERATIONS FOR FLEET READINESS AND LOGISTICS:

Senator, thanks for the question. You're right, the COCOM demand signal has gone up significantly to the point where if we were to meet their—all their requirements, it would take a Navy of greater than 500 ships.

So, I certainly am not here to begrudge the COCOM demand signal because they have challenges that they're trying to deal with. But—but we can't meet—meet all their demands. So there is a process in the—in the Pentagon run by the joint staff called the Global Force Management process by which they take in the COCOM requirements and adjudicate that along with the forces we have to come to a reasonable allocation of—of force. And so that's the—that's a process we're dealing with today. We've been using that process for a number of years, and I would expect we will continue to use that process in the future to—to bridge the gap between supply and demand.[29]

[28] Source: Transcript of hearing.

[29] Source: Transcript of hearing.

Appendix B. Using Past Ship Force Levels to Assess Proposed Force Levels

One possible method for assessing proposals for the future size and structure of the Navy is to compare them to historical figures for total Navy fleet size. Historical figures for total fleet size, however, might not be a reliable yardstick for assessing the appropriateness of proposals for the future size and structure of the Navy, particularly if the historical figures are more than a few years old, because the missions to be performed by the Navy, the mix of ships that make up the Navy, and the technologies that are available to Navy ships for performing missions all change over time.

The Navy, for example, reached a late-Cold War peak of 568 battle force ships at the end of FY1987,[30] and as of April 24, 2012, had declined to a total of 282 battle force ships. The FY1987 fleet, however, was intended to meet a set of mission requirements that focused on countering Soviet naval forces at sea during a potential multi-theater NATO-Warsaw Pact conflict, while the April 2012 fleet is intended to meet a considerably different set of mission requirements centered on influencing events ashore by countering both land- and sea-based military forces of potential regional threats other than Russia, including improved Chinese military forces and non-state terrorist organizations. In addition, the Navy of FY1987 differed substantially from the April 2012 fleet in areas such as profusion of precision-guided air-delivered weapons, numbers of Tomahawk-capable ships, and sophistication of C4ISR systems.[31]

In coming years, Navy missions may shift again, and the capabilities of Navy ships will likely have changed further by that time due to developments such as more comprehensive implementation of networking technology and increased use of ship-based unmanned vehicles.

The 568-ship fleet of FY1987 may or may not have been capable of performing its stated missions; the 282-ship fleet of April 2012 may or may not be capable of performing its stated missions; and a fleet years from now with a certain number of ships may or may not be capable of performing its stated missions. Given changes over time in mission requirements, ship mixes, and technologies, however, these three issues are to a substantial degree independent of one another.

For similar reasons, trends over time in the total number of ships in the Navy are not necessarily a reliable indicator of the direction of change in the fleet's ability to perform its stated missions. An increasing number of ships in the fleet might not necessarily mean that the fleet's ability to perform its stated missions is increasing, because the fleet's mission requirements might be increasing more rapidly than ship numbers and average ship capability. Similarly, a decreasing

[30] Some publications have stated that the Navy reached a peak of 594 ships at the end of FY1987. This figure, however, is the total number of active ships in the fleet, which is not the same as the total number of battle force ships. The battle force ships figure is the number used in government discussions of the size of the Navy. In recent years, the total number of active ships has been larger than the total number of battle force ships. For example, the Naval History and Heritage Command (formerly the Naval Historical Center) states that as of November 16, 2001, the Navy included a total of 337 active ships, while the Navy states that as of November 19, 2001, the Navy included a total of 317 battle force ships. Comparing the total number of active ships in one year to the total number of battle force ships in another year is thus an apples-to-oranges comparison that in this case overstates the decline since FY1987 in the number of ships in the Navy. As a general rule to avoid potential statistical distortions, comparisons of the number of ships in the Navy over time should use, whenever possible, a single counting method.

[31] C4ISR stands for command and control, communications, computers, intelligence, surveillance, and reconnaissance.

number of ships in the fleet might not necessarily mean that the fleet's ability to perform stated missions is decreasing, because the fleet's mission requirements might be declining more rapidly than numbers of ships, or because average ship capability and the percentage of time that ships are in deployed locations might be increasing quickly enough to more than offset reductions in total ship numbers.

Previous Navy force structure plans, such as those shown in **Table 1**, might provide some insight into the potential adequacy of a proposed new force-structure plan, but changes over time in mission requirements, technologies available to ships for performing missions, and other force-planning factors suggest that some caution should be applied in using past force structure plans for this purpose, particularly if those past force structure plans are more than a few years old. The Reagan-era plan for a 600-ship Navy, for example, was designed for a Cold War set of missions focusing on countering Soviet naval forces at sea, which is not an appropriate basis for planning the Navy today.[32]

[32] Navy force structure plans that predate those shown in **Table 1** include the Reagan-era 600-ship plan of the 1980s, the Base Force fleet of more than 400 ships planned during the final two years of the George H. W. Bush Administration, the 346-ship fleet from the Clinton Administration's 1993 Bottom-Up Review (or BUR, sometimes also called Base Force II), and the 310-ship fleet of the Clinton Administration's 1997 QDR. The table below summarizes some key features of these plans.

Features of Recent Navy Force Structure Plans

Plan	600-ship	Base Force	1993 BUR	1997 QDR
Total ships	~600	~450/416[a]	346	~305/310[b]
Attack submarines	100	80/~55[c]	45-55	50/55[d]
Aircraft carriers	15[e]	12	11+1[f]	11+1[f]
Surface combatants	242/228[g]	~150	~124	116
Amphibious ships	~75[h]	51[i]	41[i]	36[i]

Source: Prepared by CRS based on DOD and U.S. Navy data.
a. Commonly referred to as 450-ship plan, but called for decreasing to 416 ships by end of FY1999.
b. Original total of about 305 ships was increased to about 310 due to increase in number of attack submarines to 55 from 50.
c. Plan originally included 80 attack submarines, but this was later reduced to about 55.
d. Plan originally included 50 attack submarines but this was later increased to 55.
e. Plus one additional aircraft carrier in the service life extension program (SLEP).
f. Eleven active carriers plus one operational reserve carrier.
g. Plan originally included 242 surface combatants but this was later reduced to 228.
h. Number needed to lift assault echelons of one Marine Expeditionary Force (MEF) plus one Marine Expeditionary Brigade (MEB).
i. Number needed to lift assault echelons of 2.5 MEBs. Changing numbers needed to meet this goal reflect in part changes in the design and capabilities of amphibious ships.

Appendix C. Independent Panel Assessment of 2010 QDR

The law that requires DOD to perform QDRs once every four years (10 U.S.C. 118) states that the results of each QDR shall be assessed by an independent panel. The report of the independent panel that assessed the 2010 QDR was released on July 29, 2010. The independent panel's report recommended a Navy of 346 ships, including 11 aircraft carriers and 55 attack submarines.[33] The report stated the following, among other things:

- "The QDR should reflect current commitments, but it must also plan effectively for potential threats that could arise over the next 20 years.… we believe the 2010 QDR did not accord sufficient priority to the need to counter anti-access challenges, strengthen homeland defense (including our defense against cyber threats), and conduct post-conflict stabilization missions." (Page 54)
- "In this remarkable period of change, global security will still depend upon an American presence capable of unimpeded access to all international areas of the Pacific region. In an environment of 'anti-access strategies,' and assertions to create unique 'economic and security zones of influence,' America's rightful and historic presence will be critical. To preserve our interests, the United States will need to retain the ability to transit freely the areas of the Western Pacific for security and economic reasons. Our allies also depend on us to be fully present in the Asia-Pacific as a promoter of stability and to ensure the free flow of commerce. A robust U.S. force structure, largely rooted in maritime strategy but including other necessary capabilities, will be essential." (Page 51)
- "The United States will need agile forces capable of operating against the full range of potential contingencies. However, the need to deal with irregular and hybrid threats will tend to drive the size and shape of ground forces for years to come, whereas the need to continue to be fully present in Asia and the Pacific and other areas of interest will do the same for naval and air forces." (Page 55)
- "The force structure in the Asia-Pacific needs to be increased. In order to preserve U.S. interests, the United States will need to retain the ability to transit freely the areas of the Western Pacific for security and economic reasons. The United States must be fully present in the Asia-Pacific region to protect American lives and territory, ensure the free flow of commerce, maintain stability, and defend our allies in the region. A robust U.S. force structure, one that is largely rooted in maritime strategy and includes other necessary capabilities, will be essential." (Page 66)
- "Force structure must be strengthened in a number of areas to address the need to counter anti-access challenges, strengthen homeland defense (including defense against cyber threats), and conduct post-conflict stabilization missions: First, as a Pacific power, the U.S. presence in Asia has underwritten the regional stability that has enabled India and China to emerge as rising economic powers. The

[33] Stephen J. Hadley and William J. Perry, co-chairmen, et al*, The QDR in Perspective: Meeting America's National Security Needs In the 21st Century, The Final Report of the Quadrennial Defense Review Independent Panel*, Washington, 2010, Figure 3-2 on page 58.

United States should plan on continuing that role for the indefinite future. The Panel remains concerned that the QDR force structure may not be sufficient to assure others that the United States can meet its treaty commitments in the face of China's increased military capabilities. Therefore, we recommend an increased priority on defeating anti-access and area-denial threats. This will involve acquiring new capabilities, and, as Secretary Gates has urged, developing innovative concepts for their use. Specifically, we believe the United States must fully fund the modernization of its surface fleet. We also believe the United States must be able to deny an adversary sanctuary by providing persistent surveillance, tracking, and rapid engagement with high-volume precision strike. That is why the Panel supports an increase in investment in long-range strike systems and their associated sensors. In addition, U.S. forces must develop and demonstrate the ability to operate in an information-denied environment." (Pages 59-60)

- "To compete effectively, the U.S. military must continue to develop new conceptual approaches to dealing with operational challenges, like the Capstone Concept for Joint Operations (CCJO). The Navy and Air Force's effort to develop an Air-Sea Battle concept is one example of an approach to deal with the growing anti-access challenge. It will be necessary to invest in modernized capabilities to make this happen. The Chief of Naval Operations and Chief of Staff of the Air Force deserve support in this effort, and the Panel recommends the other military services be brought into the concept when appropriate." (Page 51; a similar passage appears on page 67)

In recommending a Navy of 346 ships, the independent panel's report cited the 1993 Bottom-Up Review (BUR) of U.S. defense plans and policies. **Table C-1** compares the Navy's 310-316 ship goal of March 2012 to the 346-ship Navy recommended in the 1993 BUR (as detailed partly in subsequent Navy testimony and publications) and the ship force levels recommended in the independent panel report.

Table C-1. Comparison of Navy's 310-316 ship goal, Navy Plan from 1993 BUR, and Navy Plan from 2010 QDR Review Panel

Ship Type	Navy's 310-316 ship goal of September 2011	Bottom-Up Review (BUR) (1993)	2010 QDR Independent Review Panel (July 2010)
SSBNs	12-14	18	14
		(SSBN force was later reduced to 14 as a result of the 1994 Nuclear Posture Review)	
SSGNs	0-4	0	4
		(SSGN program did not yet exist)	
SSNs	~48	45 to 55	55
		(55 in FY99, with a long-term goal of about 45)	
Aircraft carriers	11 active	11 active + 1 operational/reserve	11 active
Surface combatants	~145	124	n/a
		(114 active + 10 frigates in Naval Reserve Force; a total of 110-116 active ships was also cited)	
Cruisers and destroyers	*~90*	*n/a*	*n/a*
Frigates	*0*	*n/a*	*n/a*
	(to be replaced by LCSs)		
LCSs	*~55*	*0*	*n/a*
		(LCS program did not exist)	
Amphibious ships	~32	41	n/a
	(30 operational ships needed to lift 2.0 MEBs)	(Enough to lift 2.5 MEBs)	
Dedicated mine warfare ships	0	26	n/a
	(to be replaced by LCSs)	(LCS program did not exist)	
CLF ships	~29	43	n/a
Support ships	~33	22	n/a
TOTAL ships	**~310-316**	**346**	**346**
		(numbers above add to 331-341)[a]	

Source: Table prepared by CRS. ***Sources for 1993 Bottom-Up Review:*** Department of Defense, *Report on the Bottom-Up Review*, October 1993, Figure 7 on page 28; Department of the Navy, *Highlights of the FY 1995 Department of the Navy Budget*, February 1994, p. 1; Department of the Navy, *Force 2001, A Program Guide to the U.S. Navy*, 1994 edition, p. 15; Statement of VADM T. Joseph Lopez, U.S. Navy, Deputy Chief of Naval Operations (Resources, Warfare Requirements & Assessments), Testimony to the Military Forces and Personnel Subcommittee of the House Armed Services Committee, March 22, 1994, pp. 2-5. ***Source for independent panel report:*** Stephen J. Hadley and William J. Perry, co-chairmen, et al., *The QDR in Perspective: Meeting*

America's National Security Needs In the 21st Century, The Final Report of the Quadrennial Defense Review Independent Panel, Washington, 2010, Figure 3-2 on pages 58-59.

Notes: n/a is not addressed in the report. **SSBN** is nuclear-powered ballistic missile submarine; **SSGN** is nuclear-powered cruise missile and special operations forces submarine; **SSN** is nuclear-powered attack submarine; **LCS** is Littoral Combat Ship; **MPF(F)** is Maritime Prepositioning Force (Future) ship; **CLF** is combat logistics force (i.e., resupply) ship; **MEB** is Marine Expeditionary Brigade.

a. The Navy testified in 1994 that the planned number was adjusted from 346 to 330 to reflect reductions in numbers of tenders and early retirements of some older amphibious ships.

In a letter dated August 11, 2010, Secretary of Defense Robert Gates provided his comments on the independent panel's report. The letter stated in part:

> I completely agree with the Panel that a strong navy is essential; however, I disagree with the Panel's recommendation that DoD should establish the 1993 Bottom Up Review's (BUR's) fleet of 346 ships as the objective target. That number was a simple projection of the then-planned size of [the] Navy in FY 1999, not a reflection of 21st century, steady-state requirements. The fleet described in the 2010 QDR report, with its overall target of 313 to 321 ships, has roughly the same number of aircraft carriers, nuclear-powered attack submarines, surface combatants, mine warfare vessels, and amphibious ships as the larger BUR fleet. The main difference between the two fleets is in the numbers of combat logistics, mobile logistics, and support ships. Although it is true that the 2010 fleet includes fewer of these ships, they are all now more efficiently manned and operated by the Military Sealift Command and meet all of DoD's requirements….
>
> I agree with the Panel's general conclusion that DoD ought to enhance its overall posture and capabilities in the Asia-Pacific region. As I outlined in my speech at the Naval War College in April 2009, "to carry out the missions we may face in the future… we will need numbers, speed, and the ability to operate in shallow waters." So as the Air-Sea battle concept development reaches maturation, and as DoD's review of global defense posture continues, I will be looking for ways to meet plausible security threats while emphasizing sustained forward presence – particularly in the Pacific.[34]

[34] Letter dated August 11, 2010, from Secretary of Defense Robert Gates to the chairmen of the House and Senate Armed Services and Appropriations Committees, pp. 3 and 4. The ellipsis in the second paragraph appears in the letter.

Appendix D. Size of the Navy and Navy Shipbuilding Rate

Size of the Navy

Table D-1 shows the size of the Navy in terms of total number of ships since FY1948; the numbers shown in the table reflect changes over time in the rules specifying which ships count toward the total. Differing counting rules result in differing totals, and for certain years, figures reflecting more than one set of counting rules are available. Figures in the table for FY1978 and subsequent years reflect the battle force ships counting method, which is the set of counting rules established in the early 1980s for public policy discussions of the size of the Navy.

As shown in the table, the total number of battle force ships in the Navy reached a late-Cold War peak of 568 at the end of FY1987 and began declining thereafter.[35] The Navy fell below 300 battle force ships in August 2003 and included 282 battle force ships as of April 24, 2012.

As discussed in **Appendix B**, historical figures for total fleet size might not be a reliable yardstick for assessing the appropriateness of proposals for the future size and structure of the Navy, particularly if the historical figures are more than a few years old, because the missions to be performed by the Navy, the mix of ships that make up the Navy, and the technologies that are available to Navy ships for performing missions all change over time. For similar reasons, trends over time in the total number of ships in the Navy are not necessarily a reliable indicator of the direction of change in the fleet's ability to perform its stated missions. An increasing number of ships in the fleet might not necessarily mean that the fleet's ability to perform its stated missions is increasing, because the fleet's mission requirements might be increasing more rapidly than ship numbers and average ship capability. Similarly, a decreasing number of ships in the fleet might not necessarily mean that the fleet's ability to perform stated missions is decreasing, because the fleet's mission requirements might be declining more rapidly than numbers of ships, or because average ship capability and the percentage of time that ships are in deployed locations might be increasing quickly enough to more than offset reductions in total ship numbers.

[35] Some publications have stated that the Navy reached a peak of 594 ships at the end of FY1987. This figure, however, is the total number of active ships in the fleet, which is not the same as the total number of battle force ships. The battle force ships figure is the number used in government discussions of the size of the Navy. In recent years, the total number of active ships has been larger than the total number of battle force ships. For example, the Naval History and Heritage Command (formerly the Naval Historical Center) states that as of November 16, 2001, the Navy included a total of 337 active ships, while the Navy states that as of November 19, 2001, the Navy included a total of 317 battle force ships. Comparing the total number of active ships in one year to the total number of battle force ships in another year is thus an apples-to-oranges comparison that in this case overstates the decline since FY1987 in the number of ships in the Navy. As a general rule to avoid potential statistical distortions, comparisons of the number of ships in the Navy over time should use, whenever possible, a single counting method.

Table D-1. Total Number of Ships in the Navy Since FY1948

FY[a]	Number	FY[a]	Number	FY[a]	Number
1948	737	1970	769	1992	466
1949	690	1971	702	1993	435
1950	634	1972	654	1994	391
1951	980	1973	584	1995	373
1952	1,097	1974	512	1996	356
1953	1,122	1975	496	1997	354
1954	1,113	1976	476	1998	333
1955	1,030	1977	464	1999	317
1956	973	1978	468	2000	318
1957	967	1979	471	2001	316
1958	890	1980	477	2002	313
1959	860	1981	490	2003	297
1960	812	1982	513	2004	291
1961	897	1983	514	2005	282
1962	959	1984	524	2006	281
1963	916	1985	541	2007	279
1964	917	1986	556	2008	282
1965	936	1987	568	2009	285
1966	947	1988	565	2010	288
1967	973	1989	566	2011	284
1968	976	1990	547	2012	
1969	926	1991	526	2013	

Source: Compiled by CRS using U.S. Navy data. Numbers shown reflect changes over time in the rules specifying which ships count toward the total. Figures for FY1978 and subsequent years reflect the battle force ships counting method, which is the set of counting rules established in the early 1980s for public policy discussions of the size of the Navy.

a. Data for earlier years in the table may be for the end of the calendar year (or for some other point during the year), rather than for the end of the fiscal year.

Shipbuilding Rate

Table D-2 shows past (FY1982-FY2012) and requested (FY2013-FY2017) rates of Navy ship procurement.

Table D-2. Battle Force Ships Procured or Requested, FY1982-FY2017

(Procured FY1982-FY2012; requested FY2013-FY2017)

82	**83**	**84**	**85**	**86**	**87**	**88**	**89**	**90**	**91**	**92**	**93**	**94**	**95**	**96**	**97**	**98**	**99**
17	14	16	19	20	17	15	19	15	11	11	7	4	4	5	4	5	5
00	**01**	**02**	**03**	**04**	**05**	**06**	**07**	**08**	**09**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**
6	6	6	5	7	8	4[a]	5[a]	3[a]	8	7	10	11[b]	*10*	*7*	*8*	*9*	*7*

Source: CRS compilation based on Navy budget data and examination of defense authorization and appropriation committee and conference reports for each fiscal year. The table excludes non-battle force ships that do not count toward the 310-316 ship goal, such as certain sealift and prepositioning ships operated by the Military Sealift Command and oceanographic ships operated by agencies such as the National Oceanic and Atmospheric Administration (NOAA).

a. The totals shown for FY2006, FY2007, and FY2008, reflect the cancellation two LCSs funded in FY2006, another two LCSs funded in FY2007, and an LCS funded in FY2008.

b. The total shown for FY2012 includes two JHSVs—one that was included in the Navy's FY2012 budget submission, and one that was included in the Army's FY2012 budget submission. Until FY2012, JHSVs were being procured by both the Navy and the Army. The Army was to procure its fifth and final JHSV in FY2012, and this ship was included in the Army's FY2012 budget submission. In May 2011, the Navy and Army signed a Memorandum of Agreement (MOA) transferring the Army's JHSVs to the Navy. In the FY2012 DOD Appropriations Act (Division A of H.R. 2055/P.L. 112-74 of December 23, 2011), the JHSV that was in the Army's FY2012 budget submission was funded through the Shipbuilding and Conversion, Navy (SCN) appropriation account, along with the JHSV that the Navy had included in its FY0212 budget submission. The four JHSVs that were procured through the Army's budget prior to FY2012, however, are *not* included in the annual totals shown in this table.

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