

# CRS Report for Congress

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

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Prepared for Members and  
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## Summary

In February 2006, as part of its FY2007 budget submission, the Navy proposed a future ship force structure of 313 ships, including, among other things, 14 ballistic missile submarines (SSBNs), 4 cruise missile submarines (SSGNs), 48 attack submarines (SSNs), 11 (and eventually 12) aircraft carriers, 88 cruisers and destroyers, 55 Littoral Combat Ships (LCSs), 31 amphibious ships, and a Maritime Prepositioning Force (Future), or MPF(F), squadron with 12 new-construction amphibious and sealift-type ships. The Navy reiterated this 313-ship force structure plan in February 2007 and February 2008 as part of its FY2008 and FY2009 budget submissions.

In February 2008, the Navy submitted its proposed five-year (FY2009-FY2013) shipbuilding plan and an associated 30-year (FY2009-FY2038) shipbuilding plan. These shipbuilding plans are intended to support the achievement and maintenance of the 313-ship fleet.

The FY2009-FY2013 five-year shipbuilding plan includes a total of 47 new-construction ships in FY2009-FY2013 — a reduction of 13 ships, or about 22%, from the 60 new-construction ships that were planned for FY2009-FY2013 under the FY2008-FY2013 shipbuilding plan that was submitted to Congress in February 2007. Most of the 13-ship reduction is due to an 11-ship reduction in the number of Littoral Combat Ships (LCSs) planned for FY2009-FY2013.

In terms of numbers of ships included, the Navy's FY2009-FY2038 30-year shipbuilding plan is generally adequate to achieve and maintain a fleet of about 313 ships. The plan's adequacy in this regard is due in part to Navy decisions this year to extend the service lives of 62 destroyers and four amphibious ships. The plan does not include enough ships to fully support certain elements of the 313-ship fleet consistently over the long run; projected shortfalls include 4 SSGNs, 7 SSNs, and two MPF(F) ships.

Although types and numbers of ships to be procured in the FY2009-FY2038 30-year shipbuilding plan have not changed substantially from last year's (FY2008-FY2037) 30-year plan, the Navy appears to have increased its estimate of the average annual cost of the plan by about 40% in real (i.e., inflation-adjusted) terms. The Navy's new estimate, which is much closer to earlier Congressional Budget Office (CBO) estimates of the cost of the Navy's 30-year plan, substantially intensifies the question of the affordability and executibility of the Navy's 30-year plan. In addition, the Navy's new cost estimate, unlike last year's, does not include the cost of 12 new ballistic missile submarines (SSBNs) that are included in the 30-year plan. Including the cost of these 12 SSBNs could increase the average annual cost of the 30-year plan by about \$1.3 billion to \$2.5 billion per year.

This report will be updated as events warrant.

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

## Introduction and Issue for Congress

In February 2006, as part of its FY2007 budget submission, the Navy proposed a future ship force structure of 313 ships, including, among other things, 14 ballistic missile submarines (SSBNs), 4 cruise missile submarines (SSGNs), 48 attack submarines (SSNs), 11 (and eventually 12) aircraft carriers, 88 cruisers and destroyers, 55 Littoral Combat Ships (LCSs), 31 amphibious ships, and a Maritime Prepositioning Force (Future), or MPF(F), squadron with 12 new-construction amphibious and sealift-type ships. The Navy reiterated this 313-ship force structure plan in February 2007 and February 2008 as part of its FY2008 and FY2009 budget submissions.

In February 2008, the Navy submitted its proposed five-year (FY2009-FY2013) shipbuilding plan and an associated 30-year (FY2009-FY2038) shipbuilding plan. These shipbuilding plans are intended to support the achievement and maintenance of the 313-ship fleet.

## Some Initial Observations On The FY2009 Shipbuilding Plan

In terms of potential oversight issues for Congress, the following initial observations, among others, can be made about the proposed five-year (FY2009-FY2013) and 30-year (FY2009-FY2038) shipbuilding plans:

- **13-Ship Reduction In Number of Ships Planned For FY2009-FY2013.** The FY2009-FY2013 five-year shipbuilding plan includes a total of 47 new-construction ships in FY2009-FY2013 — a reduction of 13 ships, or about 22%, from the 60 new-construction ships that were planned for FY2009-FY2013 under the FY2008-FY2013 shipbuilding plan that was submitted to Congress in February 2007. Most of the 13-ship reduction is due to an 11-ship reduction in the number of Littoral Combat Ships (LCSs) planned for FY2009-FY2013. The Navy restructured the LCS program in 2007 in response to significant cost growth and schedule delays in the construction of the first LCSs that came to light during 2007.
- **Roughly 40% Apparent Increase In Estimated Cost For 30-Year Plan.** Although types and numbers of ships to be procured in the FY2009-FY2038 30-year shipbuilding plan have not changed

substantially from last year's (FY2008-FY2037) 30-year plan,<sup>1</sup> the Navy appears to have increased its estimate of the average annual cost of the plan by about 40% in real (i.e., inflation-adjusted) terms. The Navy last year estimated that the FY2008-FY2037 plan would cost an average of \$14.4 billion per year in FY2007 dollars. The Navy's new estimated cost for the FY2009-FY2038 plan appears to be roughly \$20.1 billion per year in FY2007 dollars.<sup>2</sup> This new estimate, which is much closer to earlier Congressional Budget Office (CBO) estimates of the cost of the Navy's 30-year plan, substantially intensifies the question of the affordability and executibility of the Navy's 30-year plan. In addition, as noted below, the Navy's new cost estimate, unlike last year's, does not include the cost of 12 new ballistic missile submarines (SSBNs) that are included in the 30-year plan. Including the cost of these 12 SSBNs could increase the average annual cost of the 30-year plan by about \$1.3 billion to \$2.5 billion per year.

- **MPF(F) Amphibious Assault Ship Proposed For NDSF.** The FY2009-FY2013 shipbuilding plan proposes to procure a modified amphibious assault ship (LHA) in FY2010, with advance procurement funding in FY2009, through the National Defense Sealift Fund (NDSF). The ship would form part of the MPF(F) squadron. The NDSF is a fund used for procuring Department of Defense (DOD) sealift ships and Navy auxiliary ships. The Senate Armed Services Committee, in its report (S.Rept. 110-77 of June 5, 2007) on the FY2008 defense authorization bill (S. 1547), stated that it “does not agree with funding development and procurement for amphibious assault ships within the NDSF. This ship type is specifically not included within the scope of sealift vessels eligible for NDSF, defined within section 2218 of title 10, United States Code.” (Page 429)
- **Funding Provided In FY2008 For Much Of 11<sup>th</sup> TAKE-1 Class Ship In Effect Requested For Second Time In FY2009.** The FY2009-FY2013 shipbuilding plan requests funding for the procurement of an 11<sup>th</sup> Lewis and Clark (TAKE-1) class dry cargo ship in FY2009, even though Congress nominally provided the funding for this ship in FY2008. The Navy, in other words, is in

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<sup>1</sup> The FY2009-FY2038 plan includes 296 ships, or about 1.7% more than the 291 ships in the FY2008-FY2037 plan. The types of ships procured under the two plans are essentially the same, and the total numbers of each type being procured are similar.

<sup>2</sup> The Navy estimates that the first 12 years (FY2009-FY2020) of the FY2009-FY2038 plan would cost an average of \$15.8 billion per year in FY2007 dollars to implement. Although the Navy's report on the 30-year plan does not provide an estimated average annual cost for the 18 later years (FY2021-FY2038) of the 30-year plan, visual inspection of a graph in the report suggests that the average figure for this period is roughly \$22.9 billion a year in FY2007 dollars. The 30-year average of \$15.8 billion per year for 12 years and \$22.9 billion per year for 18 years is about \$20.1 billion per year.

effect requesting Congress in FY2009 to fund much of the procurement cost of the 11<sup>th</sup> ship for a second time. The situation arises because the Navy is using much of the funding provided for the procurement of the tenth TAKE to pay for \$280 million in cost growth on the first nine ships in the program, and much of the funding provided for the 11<sup>th</sup> TAKE to complete the funding for the tenth. The Navy can use TAKE funding in this way because TAKEs are funded through the NDSF, which is not subject to the full funding provision that governs most DOD procurement. If the TAKEs had instead been funded through the Navy's shipbuilding budget — the Shipbuilding and Conversion, Navy (SCN) appropriation account — the \$280 million needed to pay for the cost growth on the first nine ships would have been requested in the “completion of prior-year shipbuilding” line item in the SCN account, which arguably would have made the \$280 million in cost growth on the first nine TAKEs more visible in budget-justification documents.

- **No Funding For Tenth LPD-17 Class Amphibious Ship.** The FY2009-FY2013 shipbuilding plan does not include funding for the procurement of a tenth San Antonio (LPD-17) class amphibious ship. Congress, as part of its action on the FY2008 defense budget, provided \$50 million in advance procurement funding for a tenth LPD-17 to be procured in a fiscal year after FY2008. The 313-ship plan calls for a total of ten LPD-17s, and a tenth LPD-17 is included in both the Navy and Marine Corps FY2009 Unfunded Requirements Lists (URLs).
- **Second Virginia-class Submarine in FY2011.** The FY2009-FY2013 shipbuilding plan includes funding for the procurement of a second Virginia (SSN-774) class submarine in FY2011. Congress, as part of its action on the FY2008 defense budget, provided \$588 million in advance procurement funding for a second Virginia-class submarine in a year prior to FY2012. Although the Navy placed this additional submarine in FY2011, Congress has the option of accelerating the funding of this submarine to FY2010 or FY2009.
- **Cost of 12 Ballistic Missile Submarines (SSBNs) Not Included.** The Navy's report on the FY2009-FY2038 30-year shipbuilding plan notes that the procurement cost of the 12 SSBNs in the plan is not included in the Navy's total estimated cost of the plan. Why this cost is not included is not made clear in the Navy's report. According to July 2007 testimony from CBO, the Navy in 2007 estimated the average unit procurement cost of these SSBNs at \$3.3 billion in FY2008 dollars, while the CBO estimated them at an average of \$6.3 billion each. Using these figures, the total procurement cost of these 12 SSBNs would be \$39.6 billion by the Navy's estimate, and \$75.6 billion by CBO's estimate. Adding this cost into the 30-year plan would increase the average annual funding requirement of the 30-year plan by about \$1.3 billion, according to

the Navy's 2007 estimate, or about \$2.5 billion, according to CBO's 2007 estimate.

- **Five-year Service Life Extension For DDG-51s.** The FY2007-FY2036 30-year plan submitted to Congress in February 2006 resulted in a projected long-range cruiser-destroyer shortfall of about 26 ships. The FY2008-FY2037 30-year plan submitted to Congress in February 2007 reduced the projected cruiser-destroyer shortfall to about 10 ships by adding additional destroyers to the final years of the plan. The FY2009-FY2038 30-year shipbuilding plan submitted in February 2008 erases the remaining projected shortfall, and produces a small surplus in cruisers and destroyers, by factoring in a five-year extension of the service lives of the Navy's Arleigh Burke (DDG-51) class Aegis destroyers. The Navy's report on the FY2009-FY2038 30-year plan acknowledges that extending the service lives of these ships will require additional maintenance work, and that the cost of this work is not included in the estimated cost of the 30-year plan.
- **Service Life Extensions for Four Amphibious Ships.** The FY2008-FY2037 30-year plan submitted to Congress in February 2007 showed the Navy maintaining a force of 30 amphibious ships — one fewer than the 31-ship requirement in the Navy's 313-ship force structure plan. The FY2009-FY2038 30-year plan submitted to Congress in February 2008 maintains a force of 32 or 33 ships, which is about what Marine Corps officials have stated that they require as a minimum number. (As noted above, however, the Navy's FY2009-FY2013 shipbuilding plan does not include funding for the procurement of a 10th LPD-17, even though the 31-ship amphibious force in the Navy's 313-ship plan includes 10 LPD-17s.) The increase in projected force levels compared to last year's figures is accomplished not by adding additional amphibious ships to the shipbuilding plan, but by assuming service life extensions for two Austin (LPD-4) class amphibious ships and two Tarawa (LHA-1) class amphibious assault ships.

The issue for Congress is how to respond to the Navy's proposed five-year (FY2009-FY2013) and 30-year (FY2009-FY2038) shipbuilding plans. Decisions that Congress makes regarding Navy force structure and shipbuilding programs could significantly affect future U.S. military capabilities, Navy funding requirements, and the Navy shipbuilding industrial base.

## Background

### Navy's Proposed 313-Ship Fleet

*What types of ships are included in the 313-ship proposal, and how does this proposal compare to previous Navy ship force structure proposals?*

**Table 1** shows the composition of the Navy's 313-ship proposal and compares it to other recent Navy force structure proposals. The 313-ship proposal can be viewed as roughly consistent with other recent Navy ship force-structure proposals.

**Table 1. Recent Navy Ship Force Structure Proposals**

Ship type	2006 Navy proposal for 313-ship fleet	Early-2005 Navy proposal for fleet of 260-325 ships		2002-2004 Navy proposal for 375-ship Navy <sup>a</sup>	2001 QDR plan for 310-ship Navy
		260-ships	325-ships		
Ballistic missile submarines (SSBNs)	14	14	14	14	14
Cruise missile submarines (SSGNs)	4	4	4	4	2 or 4 <sup>b</sup>
Attack submarines (SSNs)	48	37	41	55	55
Aircraft carriers	11/12 <sup>c</sup>	10	11	12	12
Cruisers, destroyers, frigates	88	67	92	104	116
Littoral Combat Ships (LCSs)	55	63	82	56	0
Amphibious ships	31	17	24	37	36
MPF(F) ships <sup>d</sup>	12 <sup>d</sup>	14 <sup>d</sup>	20 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>
Combat logistics (resupply) ships	30	24	26	42	34
Dedicated mine warfare ships	0	0	0	26 <sup>e</sup>	16
Other <sup>f</sup>	20	10	11	25	25
<b>Total battle force ships</b>	<b>313/314</b>	<b>260</b>	<b>325</b>	<b>375</b>	<b>310 or 312</b>

**Sources:** U.S. Navy data.

- Initial composition. Composition was subsequently modified.
- The report on the 2001 QDR did not mention a specific figure for SSGNs. The Administration's proposed FY2001 Department of Defense (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.
- 11 carriers, and eventually 12 carriers.
- Today's 16 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 Navy's planned MPF (Future) ships, however, may be capable of

- contributing to Navy combat capabilities (for example, by supporting Navy aircraft operations). For this reason, MPF(F) ships are counted here as battle force ships.
- e. The figure of 26 dedicated mine warfare ships includes 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.
  - f. Includes, among other things, command ships and support ships.

## Potential for Changing 313-Ship Proposal

*Could the Navy change the 313-ship proposal at some point?*

The Navy in 2006 stated in general that it may change the 313-ship proposal at some point. The Navy in 2007 and 2008 has suggested more specifically that it may change the planned numbers of amphibious ships, MPF(F) ships, and SSBNs.

**In General.** A May 2006 Navy planning document stated that the

Navy will continue to refine capability and capacity requirements in POM-08 [the Program Objective Memorandum for the FY2008 budget] by reviewing the force mix against emerging and evolving threats. [The] Navy will conduct an analytic review and analysis of potential alternative capacity and capability mixes that will support Joint Force requirements and enable stable shipbuilding and procurement accounts.<sup>3</sup>

**Amphibious and MPF(F) Ships.** The Navy's February 2007 report on the 30-year (FY2008-FY2037) shipbuilding plan stated:

Future combat operations may require us to revisit many of the decisions reflected in this report, including those associated with amphibious lift. As the Navy embarks on production of the Maritime Prepositioning Force in this FYDP, the Navy will continue to analyze the utility of these ships in terms of their contribution to, and ability to substitute for, the assault echelon forces in the Navy's future battle-force inventory. The current force represents the best balance between these forces available today. However, changing world events and resulting operational risk associated with the various force structure elements that make up these two components of overall lift will be analyzed to ensure the Navy is not taking excessive risk in lift capability and capacity. While there needs to be a balance between expeditionary and prepositioning ships for meeting the overall lift requirement, future reports may adjust the level of support in one or both of these solutions. Any adjustments made in these capabilities will have to be accommodated in light of the resources available and could require the Navy to commit additional funding to this effort in order to support the overall balance of our shipbuilding program.<sup>4</sup>

The Navy's February 2008 report on the 30-year (FY2009-FY2038) shipbuilding plan stated that the Department of the Navy "is reviewing options to

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<sup>3</sup> U.S. Department of the Navy, *Navy Strategic Plan In Support of Program Objective Memorandum 08*, May 2006, p. 11.

<sup>4</sup> U.S. Navy, *Report to Congress on Annual Long-Range Plan for Construction of Naval Vessels for FY 2008*, p. 5.

increase assault echelon amphibious lift to 33 ships to meet USMC requirements.”<sup>5</sup>  
The report also states:

The Commandant of the Marine Corps has determined that a minimum of 33 amphibious ships is necessary to support their assault echelon lift requirements; specifically, he has requested a force of 11 aviation capable amphibious ships, 11 LPDs and 11 LSDs. The Chief of Naval Operations supports the Commandant's determination.<sup>6</sup>

**SSBNs.** The Navy testified in March 2007 that its next-generation ballistic missile submarines (SSBNs) are to be fueled with a nuclear fuel core sufficient for the ships’ entire expected service lives. Consequently, the Navy testified, these SSBNs, in contrast to today’s SSBNs, would not need a mid-life nuclear refueling. As a result, the Navy testified, the Navy in the future may be able to meet its requirements for SSBN deployments with a force of 12 SSBNs rather than 14.<sup>7</sup> This testimony suggested that the Navy might at some point change the required number of SSBNs in the 313-ship plan from 14 to 12. The Navy’s February 2008 report on the FY2009-FY2038 30-year shipbuilding plan continues to state that the 313-ship force-structure includes 14 SSBNs, but the FY2009-FY2038 30-year shipbuilding plan includes 12 ballistic missile submarines (SSBNs) rather than 14.

## Modified Description of Required Number of Aircraft Carriers

*Has the Navy modified its description of the number of aircraft carriers in the 313-ship proposal?*

In late-March 2007, the Navy modified its description of the number of aircraft carriers in the 313-ship proposal. From February 2006 through early March 2007, the Navy described the 313-ship proposal as one centered on, among other things, 11 aircraft carriers.<sup>8</sup> In late March 2007, the Navy modified its description of the 313-ship proposal to one centered on, among other things, 11, and eventually 12, aircraft carriers, the modification being the addition of the phrase “and eventually 12.”<sup>9</sup>

The Navy’s modification of its description of the number of aircraft carriers in the 313-ship proposal occurred about a week after the decommissioning of the aircraft carrier John F. Kennedy (CV-67), which occurred on March 23, 2007. The decommissioning of the Kennedy reduced the Navy’s carrier force from 12 ships to

<sup>5</sup> U.S. Navy, *Report to Congress on Annual Long-Range Plan for Construction of Naval Vessels for FY 2009*, p. 5.

<sup>6</sup> U.S. Navy, *Report to Congress on Annual Long-Range Plan for Construction of Naval Vessels for FY 2009*, p. A-3.

<sup>7</sup> Navy testimony to Senate Armed Services Committee, March 29, 2007 (transcript of hearing).

<sup>8</sup> See, for example, Navy testimony before the House Armed Services Committee on March 1, 2007 (transcript of hearing).

<sup>9</sup> See, for example, Navy testimony before the Defense subcommittee of the Senate Appropriations Committee on March 28, 2007, and before the Senate Armed Services Committee on March 29, 2007 (transcripts of hearings).

11. The Navy had proposed decommissioning the Kennedy in its FY2006 and FY2007 budgets, and opponents of the Kennedy's retirement had resisted the proposal. If the Navy, prior to the Kennedy's decommissioning, had described the 313-ship fleet as one centered on, among other things, 11, and eventually 12, aircraft carriers, opponents of the Kennedy's decommissioning might have cited the "eventually 12" part as evidence that the Navy really requires 12 carriers, not just 11.<sup>10</sup>

The Navy's February 2008 report on the FY2009-FY2038 30-year shipbuilding plan states that the 313-ship plan includes 11 carriers and does not include a reference to "eventually 12" carriers, but the long-range force projection in the report continues to show a total of 12 carriers in FY2019 and subsequent years.

## **Navy Shipbuilding Plans**

*What ships are proposed for procurement in the Navy's shipbuilding plans?*

**FY2009-FY2013 Shipbuilding Plan.** Table 2 shows the Navy's FY2009-FY2013 ship-procurement plan.

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<sup>10</sup> For additional discussion of the debate over the Kennedy's retirement, see CRS Report RL32731, *Navy Aircraft Carriers: Retirement of USS John F. Kennedy — Issues and Options for Congress*, by Ronald O'Rourke.

**Table 2. Navy FY2009-FY2013 Ship-Procurement Plan**  
(Ships funded in FY2007 and FY2008 shown for reference)

	FY07	FY08	FY09	FY10	FY11	FY12	FY13	Total FY09-FY13
CVN-21		1				1		1
SSN-774	1	1	1	1	2	2	2	8
DDG-1000	2 <sup>a</sup>	0 <sup>a</sup>	1	1	1	1	1	5
CG(X)					1		1	2
LCS	0 <sup>b</sup>	1	2	3	3	4	6	18
LPD-17		1						0
LHA(R)	1							0
TAKE	1	0 <sup>c</sup>	2 <sup>c</sup>					2
JCC(X)						1		1
TATF								0
JHSV <sup>d</sup>			1	1	1	1	1	5
MPF(F) TAKE								0
MPF(F) LHA(R)				1				1
MPF(F) LMSR						1		1
MPF(F) MLP				1		1	1	3
<b>Total</b>	5	4 <sup>c</sup>	7	8	8	12	12	47
<b>Subtotal: ships other than LCSs</b>	5	3	5	5	5	8	6	29

**Source:** Navy FY2009 budget submission.

**Key:** CVN-21 = Ford (CVN-21) class nuclear-powered aircraft carrier. SSN-774 = Virginia (SSN-774) class nuclear-powered attack submarine. CG(X) = CG(X) class cruiser. DDG-1000 = Zumwalt (DDG-1000) class destroyer. CG(X) = CG(X) class cruiser. LCS = Littoral Combat Ship. LPD-17 = San Antonio (LPD-17) class amphibious ship. LHA(R) = LHA(R) class amphibious assault ship. TAKE = Lewis and Clark (TAKE-1) class resupply ship. TAKE-MPF(F) = Modified TAKE intended for MPF(F) squadron. MPF(F) LHR(A) (also called MPF(F) Aviation) = Modified LHA(R) intended for MPF(F) squadron. LMSR-MPF(F) = Modified large, medium-speed, roll-on/roll-off (LMSR) sealift ship intended for MPF(F) squadron. MLP-MPF(F) = Mobile Landing Platform ship intended for MPF(F) squadron. TATF = oceangoing fleet tug. JCC(X) = Joint command and control ship. JHSV = Joint High-Speed Vessel transport ship.

- Two DDG-1000s were procured in FY2007 using split-funding (i.e., incremental funding) in FY2007 and FY2008.
- Although two LCSs were originally funded in FY2007, the Navy canceled these ships as part of its 2007 restructuring of the LCS program.
- Although Congress funded the procurement of one TAKE for Navy use in FY2008, the Navy is using much of this funding to complete the cost of the TAKE funded in FY2007. (The Navy is using much of the funding that Congress had provided for the FY2007 TAKE in turn to pay for cost growth on TAKEs procured in earlier years.) The Navy consequently now records zero TAKEs as procured in FY2008 (rather than one), and the total number of ships of all kinds procured in FY2008 as four (rather than five). One of the two TAKEs requested for FY2009 is the same TAKE that Congress originally funded in FY2008.
- Ships shown are those being procured for Navy use. Additional JHSVs are being procured separately for Army use and are not shown in the Navy's shipbuilding plan.

**30-Year (FY2009-FY2038) Shipbuilding Plan.** Table 3 below shows the Navy's 30-year (FY2009-FY2038) ship-procurement plan.

**Table 3. Navy 30-Year (FY2009-FY2038) Shipbuilding Plan**  
(including FY2009-FY2013 FYDP)

FY	Ship type (see key below)										
	CVN	SC	LCS	SSN	SSGN	SSBN	AWS	CLF	MPF (F)	Supt	TOTAL
09		1	2	1				1	1	1	7
10		1	3	1					2	1	8
11		2	3	2						1	8
12	1	1	4	2					2	2	12
13		2	6	2					1	1	12
14		1	6	2					2	2	13
15		2	6	2					1	2	13
16	1	2	6	2			1				12
17		2	6	2			1			1	12
18		2	6	2			1	1		1	13
19		2	4	2		1				1	10
20		2		2			2	2		2	10
21	1	2		2				2			7
22		2		2		1	1	2		2	10
23		1		2			1	2		3	9
24		2		2		1	1	2		2	10
25	1	3		2		1		2		2	11
26		3		2		1	2	2			10
27		3		2		1					6
28		3		2		1	1				7
29	1	3		1		1	1	1		1	9
30		3		2		1	1			1	8
31		3		1		1		1		1	7
32		3	1	2		1	2	1		1	11
33		3		1		1		1		1	7
34	1	3	2	2			1			1	10
35		3	5	1			1			1	11
36		3	5	2			1				11
37		3	5	1							9
38	1	3	5	2			2				13

**Source:** Report to Congress on Annual Long-Range Plan for Construction of Naval Vessels for FY 2009.

**Key:** FY = Fiscal Year; CVN = aircraft carriers; SC = surface combatants (i.e., cruisers and destroyers); LCS = Littoral Combat Ships; SSN = attack submarines; SSGN = cruise missile submarines; SSBN = ballistic missile submarines; AWS = amphibious warfare ships; CLF = combat logistics force (i.e., resupply) ships; MPF(F) = Maritime Prepositioning Force (Future) ships; Supt = support ships.

## Oversight Issues for Congress

### Appropriateness of 313-Ship Proposal

*Does the 313-ship proposal include appropriate numbers of ships?*

**Number of Aircraft Carriers.** Some observers have questioned whether the Navy's proposed total of 11 aircraft carriers through FY2018 will be sufficient, particularly in light of past Navy plans that have called for 12 carriers, the Navy's testimony in 2007 that the 313-ship proposal includes a requirement for an eventual total of 12 carriers, and Navy plans to increase the carrier force back to 12 ships in 2019 and maintain it at that level thereafter. The latter two points, they argue, suggest that the Navy would actually prefer to have 12 carriers between now and FY2019, rather than 11.

Observers have expressed concern that the current carrier force of 11 ships will temporarily decline further, to 10 ships, during the 33-month period between the scheduled retirement of the carrier *Enterprise* (CVN-65) in November 2012 and scheduled the entry into service of its replacement, the carrier *Gerald R. Ford* (CVN-78), in September 2015. Even if an 11-carrier force is adequate, these observers argue, a 10-carrier force might not be, even if only for a 33-month period.

10 USC §5062 requires the Navy to maintain an aircraft carrier force of at least 11 operational ships. The Navy for FY2009 is requesting a legislative waiver from Congress that would permit the Navy to reduce the carrier force to 10 operational ships for the 33-month between the retirement of the *Enterprise* and the entry into service of the *Ford*. The Navy made the same request as part of its FY2008 budget submission.

**Number of Attack Submarines.** Some observers have questioned whether the Navy's proposed total of 48 attack submarines will be sufficient, and have suggested that a total of 55 or more would be more appropriate, particularly in light of requests for forward-deployed attack submarines from U.S. regional military commanders, and the modernization of China's naval forces, including its submarine force. The issue is discussed in more detail other CRS reports.<sup>11</sup>

**Number of Amphibious Ships.** Some observers have questioned whether the Navy's proposed total of 31 amphibious ships will be sufficient. As mentioned earlier, the Marine Corps has stated that a total of 33 would be more appropriate, on the grounds that 33 are needed meet the Marine Corps' requirement for having 30 operationally available amphibious ships (i.e., ships not in overhaul) at any one time, and since the requirement for 30 operational ships itself represents a reduction from

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<sup>11</sup> CRS Report RL32418, *Navy Attack Submarine Force-Level Goal and Procurement Rate: Background and Issues for Congress*, by Ronald O'Rourke; and CRS Report RL33153, *China Naval Modernization: Implications for U.S. Navy Capabilities — Background and Issues for Congress*, by Ronald O'Rourke.

a desired Marine Corps total of 34 operational ships. The issue is discussed in more detail in another CRS report.<sup>12</sup>

For additional discussion of the appropriateness of the total number of ships (313) being proposed by the Navy, see **Appendix A**.

## **Adequacy of Shipbuilding Plans for Maintaining 313 Ships**

*Do the Navy's shipbuilding plans adequately support the 313-ship proposal?*

**Table 4** shows the Navy's projection of future force levels that would result from fully implementing the Navy's FY2009-FY2038 30-year shipbuilding plan. As can be seen in the table, the plan is generally adequate to achieve and maintain a fleet of about 313 ships. The plan's adequacy in this regard is due in part to Navy decisions this year to extend the service lives of 62 destroyers and four amphibious ships.

The FY2009-FY2038 30-year plan does not include enough ships to fully support certain elements of the 313-ship fleet consistently over the long run; as discussed below, projected shortfalls include 4 SSGNs, 7 SSNs, and two MPF(F) ships. The Navy's report on the 30-year plan states: "While in the main this plan achieves the necessary raw numbers of ships and sustains the shipbuilding industrial base, there are certain time periods where the ship mix, and therefore inherent capability of the force, varies from that required as a result of funding constraints and the timing of legacy fleet service life limits."<sup>13</sup>

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<sup>12</sup> CRS Report RL32513, *Navy-Marine Corps Amphibious and Maritime Prepositioning Ship Programs: Background and Oversight Issues for Congress*, by Ronald O'Rourke.

<sup>13</sup> U.S. Navy, *Report to Congress on Annual Long-Range Plan for Construction of Naval Vessels for FY 2009*, p. 5.

**Table 4. Navy Projection of Future Force Levels**  
(resulting from implementation of 30-year shipbuilding plan shown in **Table 3**)

F Y	Ship type (see key below)											
	C V N	S C	L C S	S S N	S S G N	S S B N	A W S	C L F	M I W	M P F (F)	S u p t	T O T A L
09	11	109	2	53	4	14	31	31	14	0	17	286
10	11	111	2	52	4	14	32	30	14	0	17	287
11	11	113	2	52	4	14	34	28	14	0	17	289
12	11	110	3	53	4	14	34	29	14	0	18	290
13	10	107	8	54	4	14	33	29	14	1	19	293
14	10	99	11	51	4	14	33	30	14	1	20	287
15	11	94	14	51	4	14	33	30	14	2	21	288
16	11	92	18	49	4	14	33	30	14	4	22	291
17	11	92	24	50	4	14	33	30	13	6	24	301
18	11	93	30	49	4	14	32	30	13	7	26	309
19	12	93	36	50	4	14	32	30	11	9	24	315
20	12	94	42	48	4	14	32	30	10	9	24	319
21	12	95	48	48	4	14	32	30	7	9	24	323
22	12	94	54	47	4	14	32	30	6	10	24	327
23	12	94	55	47	4	14	32	30	2	10	24	324
24	12	94	55	46	4	14	32	30	1	10	24	322
25	12	93	55	45	4	14	33	30	0	10	24	320
26	12	91	55	44	2	14	33	30	0	10	24	315
27	12	91	55	43	1	13	33	30	0	10	24	312
28	12	89	55	41	0	13	33	30	0	10	24	307
29	12	91	55	41	0	13	33	30	0	10	24	309
30	12	94	55	42	0	12	33	30	0	10	24	312
31	12	96	55	44	0	12	33	30	0	10	24	316
32	12	99	55	45	0	12	33	30	0	10	24	320
33	12	101	55	47	0	12	33	30	0	10	24	324
34	12	100	55	49	0	12	33	30	0	10	24	325
35	12	98	55	50	0	12	33	30	0	10	24	324
36	12	95	55	52	0	12	33	30	0	10	24	323
37	12	94	55	53	0	12	33	30	0	10	24	323
38	12	94	55	53	0	12	32	30	0	10	24	322

**Source:** Report to Congress on Annual Long-Range Plan for Construction of Naval Vessels for FY 2009.

**Key:** FY = Fiscal Year; CVN = aircraft carriers; SC = surface combatants (i.e., cruisers and destroyers); LCS = Littoral Combat Ships; SSN = attack submarines; SSGN = cruise missile submarines; SSBN = ballistic missile submarines; AWS = amphibious warfare ships; CLF = combat logistics force (i.e., resupply) ships; MIW = mine warfare ships; MPF(F) = Maritime Prepositioning Force (Future) ships; Supt = support ships.

As shown in **Table 5**, the Navy over the last three years has been reducing projected shortfalls in the 30-year shipbuilding plan relative to certain elements of the 313-ship force structure. The largest reduction has been in a projected shortfall of cruisers and destroyers, where a projected shortfall of 26 ships two years ago was reduced 10 ships last year by adding more destroyers in the final years of the 30-year

plan, and then reduced to zero this year due to a new decision to extend the service lives of 62 DDG-51 destroyers by five years.

**Table 5. Shortfalls in 30-Year Shipbuilding Plans Relative To 313-Ship Force Structure**

	30-Year Shipbuilding Plan		
	2006 (FY07-FY36) plan	2007 (FY08-FY37) plan	2008 (FY09-FY37) plan
<b>Amphibious ships</b>	1	1	0 <sup>a</sup>
<b>Cruise missile submarines (SSGNs)</b>	4	4	4
<b>Attack submarines (SSNs)</b>	8	8	7
<b>Cruisers and destroyers</b>	~26	~10	0
<b>MPF(F) ships</b>	0	0	2
<b>Total</b>	~39	~26	13

**Source:** CRS analysis of Navy data.

- a. Although there is no shortfall in the total number of amphibious ships, the amphibious force includes 9 LPD-17 class ships, as opposed to the 10 LPD-17s called for in the 313-ship plan.

**Amphibious Ships.** Although there is no projected shortfall in the total number of amphibious ships, the projected amphibious force includes nine LPD-17 class ships, as opposed to the ten LPD-17s called for in the 313-ship plan. The Navy's report on the FY2009-FY2038 shipbuilding plan states:

While the mix of the 33 [amphibious] ships reflected in this plan differs slightly from the USMC requirement, it represents acceptable risk considering the amphibious ships planned for decommissioning are not scheduled for dismantling or sinking to permit mobilization at a later date if required. The decommissioning ships are being replaced with newer more capable LPD 17 and LHA 6 class ships. The Navy will maintain the 33-ship requirement for amphibious shipping through the FYDP while these new ships are integrated into the battleforce. Consequently, there will be no amphibious ship capability gaps through at least FY 2019.<sup>14</sup>

**Converted Trident Submarines (SSGNs).** Although the 313-ship plan calls for four SSGNs, the 30-year shipbuilding plan includes no replacements for the four current SSGNs, which the Navy projects will reach retirement age and leave service in FY2026-FY2028. The Navy's report on the 30-year shipbuilding plan states:

Plans for recapitalization [i.e., replacement] of the OHIO class submarines that have been converted to SSGN have been deferred until their warfighting

<sup>14</sup> U.S. Navy, *Report to Congress on Annual Long-Range Plan for Construction of Naval Vessels for FY 2009*, p. A-3.

utility can be assessed. Should their replacement be required, it will be necessary to integrate their procurement with other ship and submarine recapitalization efforts planned for the post-FY 2020 period.<sup>15</sup>

**Attack Submarines (SSNs).** Although the 313-ship plan calls for a total of 48 SSNs, the 30-year shipbuilding plan does not include enough SSNs to maintain a force of 48 boats consistently over the long run. The Navy projects that the SSN force will drop below 48 boats in 2022, reach a minimum of 41 boats (14.6% less than the required figure of 48) in FY2028 and FY2029, and remain below 48 boats through 2033. The Navy has completed a study on various options for mitigating the projected SSN shortfall. One of these options is to procure one or more additional SSNs in the period FY2008-FY2011. Some Members have expressed support for this option. The issue is discussed in more detail in another CRS report.<sup>16</sup>

**Cruisers and Destroyers.** As mentioned earlier, the FY2009-FY2038 30-year shipbuilding plan erases last year's 10-ship projected shortfall in cruisers and destroyers, and produces a small surplus of cruisers and destroyers, by extending the service lives of 62 DDG-51 class destroyers by five years. Although the 30-year plan assumes this five-year service life extension for the DDG-51s, a February 11, 2008, press report states that the Navy is still studying the option of performing this service life extension and has not officially decided to do it.<sup>17</sup>

**MPF(F) Ships.** The projected two-ship shortfall in MPF(F) ships is due to a decision to drop two Lewis and Clark (TAKE-1) class dry cargo ships from the shipbuilding plan. These two ships were previously planned for procurement in FY2010 and FY2011. Navy officials have stated the two ships were removed from the plan pending the completion of a study on the MPF(F) concept of operations, and that the two ships might be put back into the shipbuilding plan next year, following the completion of this study.<sup>18</sup>

**Aircraft Carriers.** As mentioned earlier, the Navy projects that the carrier force will drop from the current figure of 11 ships to 10 ships for a 33-month period between the scheduled retirement of the carrier Enterprise (CVN-65) in November 2012 and scheduled the entry into service of its replacement, the carrier Gerald R. Ford (CVN-78), in September 2015. The Navy projects that the force will increase to 12 carriers starting in FY2019, when CVN-79 is commissioned.

10 USC §5062 requires the Navy to maintain an aircraft carrier force of at least 11 operational ships. As it did for FY2008, the Navy for FY2009 is requesting a

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<sup>15</sup> U.S. Navy, *Report to Congress on Annual Long-Range Plan for Construction of Naval Vessels for FY 2009*, p. 8.

<sup>16</sup> CRS Report RL32418, *Navy Attack Submarine Force-Level Goal and Procurement Rate: Background and Issues for Congress*, by Ronald O'Rourke.

<sup>17</sup> Zachary M. Peterson, "Destroyer Extension Part of 313-Ship Plan," *NavyTimes.com*, February 11, 2008.

<sup>18</sup> See, for example, U.S. Navy, *Report to Congress on Annual Long-Range Plan for Construction of Naval Vessels for FY 2009*, p. 9.

legislative waiver from Congress that would permit the Navy to reduce the carrier force to 10 operational ships for the 33-month between the retirement of the Enterprise and the entry into service of the Ford.

## **Affordability and Executibility of Shipbuilding Plans**

*Are the Navy's shipbuilding plans affordable and executable?*

As mentioned earlier, although types and numbers of ships to be procured in the FY2009-FY2038 30-year shipbuilding plan have not changed substantially from last year's (FY2008-FY2037) 30-year plan,<sup>19</sup> the Navy appears to have increased its estimate of the average annual cost of the plan by about 40% in real (i.e., inflation-adjusted) terms. The Navy last year estimated that the FY2008-FY2037 plan would cost an average of \$14.4 billion per year in FY2007 dollars. The Navy's new estimated cost for the FY2009-FY2038 plan appears to be roughly \$20.1 billion per year in FY2007 dollars.<sup>20</sup> This new estimate substantially intensifies the question of the affordability and executibility of the Navy's 30-year plan. In addition, the Navy's new cost estimate, unlike last year's, does not include the cost of new ballistic missile submarines (SSBNs) that are included in the 30-year plan. Including the cost of these 12 SSBNs could increase the average annual cost of the 30-year plan by about \$1.3 billion to \$2.5 billion per year.<sup>21</sup>

In 2006 and 2007, the Navy's position was that for its shipbuilding plan to be affordable and executable, five things needed to happen:

- The Navy's overall budget needed to remain more or less flat (not decline) in real (inflation-adjusted) terms;
- Navy Operation and Maintenance (O&M) spending needed to remain flat (not grow) in real terms;

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<sup>19</sup> The FY2009-FY2038 plan includes 296 ships, or about 1.7% more than the 291 ships in the FY2008-FY2037 plan. The types of ships procured under the two plans are essentially the same, and the total numbers of each type being procured are similar.

<sup>20</sup> The Navy estimates that the first 12 years (FY2009-FY2020) of the FY2009-FY2038 plan would cost an average of \$15.8 billion per year in FY2007 dollars to implement. Although the Navy's report on the 30-year plan does not provide an estimated average annual cost for the 18 later years (FY2021-FY2038) of the 30-year plan, visual inspection of a graph in the report suggests that the average figure for this period is roughly \$22.9 billion a year in FY2007 dollars. The 30-year average of \$15.8 billion per year for 12 years and \$22.9 billion per year for 18 years is about \$20.1 billion per year.

<sup>21</sup> As mentioned earlier, according to July 2007 testimony from CBO, the Navy in 2007 estimated the average unit procurement cost of these SSBNs at \$3.3 billion in FY2008 dollars, while the CBO estimated them at an average of \$6.3 billion each. Using these figures, the total procurement cost of these 12 SSBNs would be \$39.6 billion by the Navy's estimate, and \$75.6 billion by CBO's estimate. Adding this cost into the 30-year plan would increase the average annual funding requirement of the 30-year plan by about \$1.3 billion, according to the Navy's 2007 estimate, or about \$2.5 billion, according to CBO's 2007 estimate.

- Navy Military Personnel (MilPer) spending needed to remain flat (not grow) in real terms;
- Navy research and development (R&D) spending needed to decrease from recent levels and remain at the decreased level over the long run; and
- Navy ships needed to be built at the Navy's currently estimated prices.

The Navy said that the first four things were needed for the Navy to be able to increase the shipbuilding budget from an average in FY2002-FY2007 of about \$9.6 billion per year in FY2008 dollars to a long-term average of about \$15.4 billion per year in FY2008 dollars — an increase of about 60% in real terms.<sup>22</sup> (The figure of \$15.4 billion in FY2008 dollars is equivalent to the earlier-cited figure of \$14.4 billion in FY2007 dollars.) The fifth thing on the list, the Navy said, was needed if all the ships in the shipbuilding plan were to be affordable within an average annual shipbuilding budget of \$15.4 billion in FY2008 dollars.

Some observers in 2006 and 2007 questioned whether all five of the above things would happen, arguing the following:

- The need in coming years to fund an increase in Army and Marine end strength could, within an overall DOD budget that remains more or less flat in real terms, require funding to be transferred from the Air Force and Navy budgets to the Army and Marine Corps budgets, which could, for a time at least, lead to a real decline in the Air Force and Navy budgets.
- DOD in the past has not been fully successful in meeting its goals for controlling O&M costs.
- The Navy does not have full control over its MilPer costs — they can be affected, for example, by decisions that Congress makes on pay and benefits.
- While the Navy may be able to decrease R&D spending in coming years as a number of new systems shift from development to procurement, it may be difficult for the Navy to keep R&D spending at that reduced level over the long run, because the Navy at some point will likely want to start development of other new systems.

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<sup>22</sup> Source: CBO telephone conversation with CRS, May 31, 2006. See also Statement of J. Michael Gilmore, Assistant Director, and Eric J. Labs, Principal Analyst, [On] Potential Costs of the Navy's 2006 Shipbuilding Plan, [Testimony] before the Subcommittee on Projection Forces Committee on Armed Services U.S. House of Representatives, March 30, 2006.

- Several Navy shipbuilding programs have experienced significant cost growth in recent years, and CBO estimates that Navy ships will cost substantially more to build than the Navy estimates.

If one or more of the five required things listed above did not happen, it was argued in 2006 and 2007, it might become difficult or impossible to execute the Navy's shipbuilding plans. The risk of the plan becoming unexecutable, it was argued, might become particularly acute starting in FY2011-FY2013, when the Navy planned to increase procurement rates for cruisers and destroyers and for submarines.

The roughly 40% increase this year in the Navy's estimate of the average annual cost of the 30-year plan would appear to invalidate by a substantial margin the fifth item on the Navy's list.

The Navy's new estimate of the cost to implement the plan is much closer to earlier Congressional Budget Office (CBO) estimates of the cost of the Navy's 30-year plan. CBO estimated in 2007 that the Navy's shipbuilding plan could cost an average of about \$20.8 billion per year in constant FY2008 dollars to execute.

As shown in **Table 6**, CBO in 2006 estimated that if the Navy in coming years does not receive or cannot devote more budgetary resources to ship construction, and if the Navy retains roughly the same proportionate mix of ship types as called for in the 313-ship proposal, the fleet could eventually be reduced to a total of 211 ships, or about 33% fewer than called for in the 313-ship proposal.

**Table 6. CBO Estimate of Potential Fleet Size**

Ship type	Proposed 313-ship fleet	CBO Estimate
Ballistic missile submarines (SSBNs)	14	10
Cruise missile submarines (SSGNs)	4	0
Attack submarines (SSNs)	48	35
Aircraft carriers	11	7
Cruisers, destroyers, frigates	88	54
Littoral Combat Ships (LCSs)	55	40
Amphibious ships	31	15
MPF(F) ships	12	12
Combat logistics and support ships	50	38
<b>Total battle force ships</b>	<b>313</b>	<b>211</b>

**Sources:** Congressional Budget Office, *Options for the Navy's Future Fleet*, May 2006, pp. xviii-xx.

## **FY2009 Legislative Activity**

The Navy's five-year (FY2009-FY2013) and 30-year (FY2009-FY2038) shipbuilding plans were submitted in early February, as part of the Navy's FY2009 budget submission.

## Appendix A. Additional Discussion on Appropriateness of 313-Ship Fleet

**Historical Fleet Size and Previous Force Plans.** One possible method for assessing the appropriateness of the total number of ships being proposed by the Navy is to compare that number to historical figures for total fleet size. Historical figures for total fleet size, however, might not be a reliable yardstick for assessing the appropriateness of the Navy's proposed 313-ship fleet, 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,<sup>23</sup> and as of February 14, 2008, had declined to a total of 279 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 February 2008 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 non-state terrorist organizations. In addition, the Navy of FY1987 differed substantially from the February 2008 fleet in areas such as profusion of precision-guided air-delivered weapons, numbers of Tomahawk-capable ships, and sophistication of C4ISR systems.<sup>24</sup>

In coming years, Navy missions may shift again, to include, as a possible example, a greater emphasis on being able to counter improved Chinese maritime military capabilities.<sup>25</sup> In addition, 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.

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<sup>23</sup> Some publications, such as those of the American Shipbuilding Association, 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 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 apple-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.

<sup>24</sup> C4ISR stands for command and control, communications, computers, intelligence, surveillance, and reconnaissance.

<sup>25</sup> For a discussion, see CRS Report RL33153, *China Naval Modernization: Implications for U.S. Navy Capabilities — Background and Issues for Congress*, by Ronald O'Rourke.

The 568-ship fleet of FY1987 may or may not have been capable of performing its stated missions; the 279-ship fleet of February 2008 may or nor may not have been 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 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.<sup>26</sup>

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<sup>26</sup> 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
<b>Total ships</b>	~600	~450/416 <sup>a</sup>	346	~305/310 <sup>b</sup>
<b>Attack submarines</b>	100	80/~55 <sup>c</sup>	45-55	50/55 <sup>d</sup>
<b>Aircraft carriers</b>	15 <sup>e</sup>	12	11+1 <sup>f</sup>	11+1 <sup>f</sup>
<b>Surface combatants</b>	242/228 <sup>g</sup>	~150	~124	116
<b>Amphibious ships</b>	~75 <sup>h</sup>	51 <sup>i</sup>	36 <sup>i</sup>	36 <sup>i</sup>

**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.

(continued...)

**Current Force-Planning Issues.** Current force-planning issues that Congress may consider in assessing the appropriateness of the Navy's 313-ship proposal include the following:

- naval requirements for what the administration refers to as the global war on terrorism (GWOT) and for irregular conflicts such as insurgencies;
- naval requirements for countering improved Chinese maritime military forces;
- new technologies that may affect U.S. Navy ship capabilities;
- additional forward homeporting and the Sea Swap concept;
- DOD's increased emphasis on achieving full jointness in U.S. military plans and operations; and
- potential tradeoffs between funding Navy requirements and funding competing defense requirements.

Each of these is discussed briefly below.

***Global War on Terrorism and Irregular Warfare.*** The potential effects of the GWOT and irregular conflicts such as insurgencies on requirements for U.S. ground forces have received much attention in recent months. The potential effects of these factors on requirements for U.S. naval forces has received somewhat less attention. In terms of ships, possible effects on requirements for U.S. naval forces include an increased emphasis on one or more of the following:

- ships (such as attack submarines, surface combatants, or aircraft carriers) that can conduct offshore surveillance of suspected terrorists and irregular military forces using either built-in sensors or embarked unmanned vehicles;
- ships (such as surface combatants, particularly smaller ones like the LCS) and smaller surface craft for conducting coastal patrol and intercept operations, including countering small boats and craft and countering pirate-like operations;<sup>27</sup>

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<sup>26</sup> (...continued)

- 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. Note how number needed to meet this goal changed from Base Force plan to the BUR plan — a result of new, larger amphibious ship designs.

<sup>27</sup> Coast Guard cutters may also be well suited for such operations.

- ships (such as attack submarines) for covertly inserting and recovering Navy special operations forces, known as SEALs;<sup>28</sup>
- ships (such as amphibious ships) for supporting smaller-scale Marine Corps operations ashore; and
- ships (such as aircraft carriers or large-deck amphibious assault ships) that can launch strike-fighters armed with smaller-scale precision guided weapons.

Although the primary stated missions of the LCS relate to defeating littoral anti-access forces of opposing countries rather than to countering terrorists, some observers view the inclusion of 55 LCSs in the Navy's proposed 313-ship fleet as evidence that the proposal is aimed in part at meeting operational demands associated with the Navy's role in the GWOT. Supporters of the Navy's planned MPF(F) squadron argue that this squadron could be valuable in sea-based counter-terrorist operations. In addition, the Navy in recent years has taken some actions that reflect a stated specific interest in increasing the Navy's role in the GWOT. Among these are the establishment of a Navy riverine force that is to consist of three squadrons of 12 boats each, and a total of about 700 personnel. These boats, as small craft, are not included in the Navy's proposed total of 313 ships.<sup>29</sup>

**Chinese Maritime Military Forces.** China's naval modernization has potential implications for required U.S. Navy capabilities in terms of preparing for a conflict in the Taiwan Strait area, maintaining U.S. Navy presence and military influence in the Western Pacific, and countering Chinese ballistic missile submarines. Preparing for a conflict in the Taiwan Strait area could place a premium on the following: on-station or early-arriving Navy forces, capabilities for defeating China's maritime anti-access forces, and capabilities for operating in an environment that could be characterized by information warfare and possibly electromagnetic pulse (EMP) and the use of nuclear weapons.

China's naval modernization raises potential issues concerning the size of the Navy; the Pacific Fleet's share of the Navy; forward homeporting of Navy ships in the Western Pacific; the number of aircraft carriers, submarines, and ASW-capable platforms; Navy missile defense, air-warfare, anti-air warfare (AAW), antisubmarine warfare (ASW), and mine warfare programs; Navy computer network security; and EMP hardening of Navy systems. Aircraft carriers, cruisers and destroyers, and attack submarines are viewed by some observers as ships that might be particularly appropriate for countering improved Chinese maritime military forces.<sup>30</sup>

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<sup>28</sup> SEAL stands for Sea, Air, and Land.

<sup>29</sup> For further discussion of the Navy's role in the GWOT, see CRS Report RS22373, *Navy Role in Global War on Terrorism (GWOT) — Background and Issues for Congress*, by Ronald O'Rourke.

<sup>30</sup> 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.

**New Technologies.** New technologies that will likely affect the capabilities of Navy ships in coming years, and consequently the number of ships that may be needed to perform a given set of missions, include improved radars and other sensors (including miniaturized sensors); improved computers and networking systems; unmanned vehicles; reduced-size, precision-guided, air-delivered weapons; electromagnetic rail guns; directed-energy weapons (such as lasers); and integrated electric-drive propulsion technology, to name just a few. Historically, the effect of improving technology has often been to increase the capability of individual Navy ships and thereby permit a reduction in the number of Navy ships needed to perform a stated set of missions. However, some analysts believe that networking technology and reduced-sized sensors may argue in favor of a more distributed force structure that includes a larger number of smaller ships such as the LCS.

**Forward Homeporting and Sea Swap.** The Navy in recent years has increased the number of forward-homeported ships by, for example, transferring three SSNs to Guam. The Navy in recent years has also experimented with the concept of deploying a Navy ship for an extended period of time (e.g., 12, 18, or 24 months, rather than the traditional deployment period of six months) and rotating successive crews out the ship every six months — a concept the Navy calls Sea Swap. Other things held equal, homeporting additional Navy ships in forward locations such as Guam and Hawaii, and applying the Sea Swap concept to a significant portion of the fleet, could reduce, perhaps substantially, the total number of Navy ships needed to maintain a certain number of Navy ships in overseas operating areas on a day-to-day basis. For some types of ships, additional forward homeporting and use of Sea Swap might reduce the number of ships needed for maintaining day-to-day forward deployments below the number needed for fighting conflicts. In such cases, fully implementing the force-level economies suggested by forward homeporting and Sea Swap could leave the Navy with inadequate forces for fighting conflicts.<sup>31</sup>

**Jointness.** DOD's increased emphasis on achieving increased jointness (i.e., coordination and integration of the military services) in U.S. military plans and operations could lead to reassessments of requirements for Navy capabilities that were originally determined in a less-joint setting. Areas where U.S. Navy capabilities overlap with the those of the Air Force or Army, and where total U.S. capabilities across the services exceed DOD requirements, might be viewed as candidates for such reassessments, while capabilities that are unique to the Navy might be viewed as less suitable for such reassessments. An example of a broad area shared by the Navy, Air Force, and Army is tactical aviation, while an example of an area that is usually regarded as unique to the Navy is antisubmarine warfare.

**Competing Defense Priorities.** A final issue to consider are the funding needs of other defense programs. In a situation of finite defense resources, funding certain Navy requirements may require not funding certain other defense priorities. If so, then the issue could become how to allocate finite resources so as to limit operational risk over the various missions involving both Navy and non-Navy mission requirements.

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<sup>31</sup> For additional discussion of Sea Swap, see CRS Report RS21338, *Navy Ship Deployments: New Approaches — Background and Issues for Congress*, by Ronald O'Rourke.

## Appendix B. Size of Navy and Navy Shipbuilding Rate

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.<sup>32</sup> The Navy fell below 300 battle force ships in August 2003 and included 279 battle force ships as of February 14, 2008.

**Table 7** below shows past (FY1982-FY2008) and projected (FY2009-FY2013) rates of Navy ship procurement.

**Table 7. Battle Force Ships Procured or Projected, FY1982-FY2013**

(Procured FY1982-FY2008; *projected* FY2009-FY2013)

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

**Source:** CRS compilation based on 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 313-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 and FY2007 have been adjusted downward to reflect the Navy's decision to cancel two LCSs funded in FY2006 and another two LCSs funded in FY2007.

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<sup>32</sup> Some publications, such as some of those of the American Shipbuilding Association, 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 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 apple-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.