STATEMENT OF

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BEFORE THE

HOUSE ARMED SERVICES COMMITTEE

SUBCOMMITTEE ON SEAPOWER AND EXPEDITIONARY FORCES

HEARING ON

NAVY FORCE STRUCTURE AND CAPABILITIES

JANUARY 20, 2010

NOT FOR PUBLICATION
UNTIL RELEASED BY
HOUSE ARMED SERVICES COMMITTEE

Chairman Taylor, Ranking Member Akin, distinguished members of the subcommittee, thank you for the opportunity to appear before you today to discuss future Navy force structure and capabilities, particularly in light of recent press reports about draft versions of the Navy's FY2011 budget and shipbuilding plan.[1] These press reports suggest that the Navy's FY2011 budget submission could include, among other things,

- a proposed change in required ship force levels from 313 ships to 324 ships;
- a 5-year shipbuilding plan with about 50 ships, of which about half would be relatively inexpensive Littoral Combat Ships (LCSs) and Joint High Speed Vessels (JHSVs);
- a 30-year shipbuilding scenario showing significant reductions in ship-procurement rates in the period FY2019-FY2033 as a possible consequence of procuring new ballistic missile submarines (SSBNs) in those years; and
- a proposal to cancel the CG(X) cruiser program in favor of procuring improved DDG-51 destroyers.

This statement discusses the above points as well as other related issues, including demands for ballistic missile defense (BMD)-capable cruisers and destroyers resulting from the Administration's new plan for European missile defense.

Reported Change In Required Ship Force Levels

A December 2009 press report on a draft version of the Navy's FY2011 30-year (FY2011-FY2040) shipbuilding plan stated that the plan included a proposal to replace the current requirement for 313 battle force ships, which was first presented to Congress in February 2006, with a new requirement for 324 battle force ships. **Table 1** compares the 313- and 324-ship requirements by ship category.

[1]These reports include the following: Christopher P. Cavas, "Next-Generation U.S. Warship Could Be Taking Shape," *Defense News*, November 2, 2009: 18, 20; Christopher J. Castelli, "Navy Confronts $80 Billion Cost Of New Ballistic Missile Submarines (Updated)," *Inside the Pentagon*, December 3, 2009; Christopher J. Castelli, "Navy Raises 313-Ship Goal To 324, Boosts Focus on Missile Defense," *Inside the Navy*, December 7, 2009; Christopher J. Castelli, "Draft Shipbuilding Report Reveals Navy Is Killing CG(X) Cruiser Program," *Inside the Navy*, December 7, 2009; Amy Butler, "STSS Prompts Shift in CG(X) Plans," *Aerospace Daily & Defense Report*, December 11, 2009: 1-2; Christopher J. Castelli, "Pentagon Restores Submarine, Seabasing Ships In Budget Endgame," *Inside the Pentagon*, January 7, 2010; Tony Capaccio, "Gates Tells Navy to Buy 17 Littoral Combat Ships Through 2015," *Bloomberg.com*, January 11, 2010.

Table 1. Comparison of Existing 313-Ship Requirement to Reported New 324-Ship Requirement

	313-ship plan	Reported 324-ship plan	Change from 313-ship plan
Ballistic missile submarines (SSBNs)	14	12	- 2
Cruise missile/SOF submarines (SSGNs)	4	0	- 4
Attack submarines (SSNs)	48	48	
Aircraft carriers (CVNs)	11	11	
Cruisers and destroyers	88	96	+ 8
Littoral Combat Ships (LCSs)	55	55	
Amphibious ships	31	33	+ 2
Subtotal above	***251***	***255***	***+ 4***
MPF(F)[a] ships	12	0	- 12
Combat Logistics Force (CLF)[b] ships	30	30	
Support ships	20	39	+ 19
Subtotal MPF(F), CLF, Support	***62***	***69***	***+ 7***
Total battle force ships	**313**	**324**	**+ 11**

Source: Christopher J. Castelli, "Navy Raises 313-Ship Goal To 324, Boosts Focus on Missile Defense," *Inside the Navy*, December 7, 2009.

a. MPF(F) is Maritime Prepositioning Force (Future).

b. These are underway replenishment (i.e., at-sea resupply) ships.

Observations that can be made in comparing the 313- and 324-ship requirements include the following:

- Although there has been speculation that the Quadrennial Defense Review (QDR) might reduce the required number of aircraft carriers from 11 to 10 or 9, the reported 324-ship requirement would maintain the current requirement for 11 carriers.

- The eight-ship increase in the required number of cruisers and destroyers appears related at least in part to demands for BMD-capable cruisers and destroyers.

- The largest single increase — 19 ships — is for support ships. This increase may be due largely to an increase in the required number of Joint High Speed Vessels (JHSVs). The 313-ship requirement originally included a few JHSVs; the reported 324-ship requirement may include more than 20.

- The reported 324-ship requirement eliminates the requirement for a 12-ship squadron of next-generation Maritime Prepositioning Force (Future) (MPF[F]) ships. A draft version of the report on the Navy's FY2011 30-year (FY2011-FY2040) shipbuilding plan reportedly states that the MPF(F) concept is "valid

but not currently within the Navy's fiscal reach."[2] The MPF(F) squadron would give the Navy and Marine Corps (and the Department of Defense [DOD] generally) the capability to use prepositioning ships to assemble landing forces (including personnel) at sea, and to launch and sustain operations ashore directly from a position at sea, without need for an intermediary land base. Having such a capability has been viewed by MPF(F) supporters as critical for responding to projected threats to intermediate land bases. Instead of the MPF(F) squadron, the Navy under the reported 324-ship requirement would enhance the three existing squadrons of current-generation maritime prepositioning ships. This enhancement would improve the three squadrons' current ability to transfer equipment and supplies ashore, but it would not give them the MPF(F) squadron's intended ability to assemble landing forces (including personnel) at sea and launch and to sustain operations ashore directly from a position at sea. In this sense, eliminating the requirement for the MPF(F) squadron would mean the elimination of a new operational concept for prepositioning ships that supporters believed was needed to adequately respond to the future operating environment.

- The two-ship increase in required numbers of amphibious ships would bring the amphibious force requirement to the number (33) that Navy and Marine Corps leaders have agreed is minimally sufficient for meeting the goal of having enough amphibious lift for the assault echelons (AEs) of 2.0 Marine Expeditionary Brigades (MEBs). The 33-ship figure is based on 15 ships for each MEB (AE), plus three extra ships to account for the roughly 10% of amphibious ships that are in overhaul at any given time. As discussed in some detail in a CRS report, the figure of 15 ships per MEB (AE) is a fiscally constrained figure that requires about 20% of the MEB AE's vehicles and about 12% of its cargo to be shifted to the assault follow-on echelon (AFOE), creating some operational risk. To reduce the need for transferring vehicles and cargo from the AE to the AFOE, the Marine Corps would prefer a figure of 17 ships per MEB (AE). The resulting figure of 34 ships, plus four additional ships to account for those in overhaul, results in a fiscally less-constrained amphibious ship goal of 38 ships.[3] The Marine Corps reportedly reiterated its preference for a 38-ship amphibious force in December briefings to congressional staff.[4]

- Under the reported 324-ship requirement, the Navy's four existing SSGNs would remain in service to the late-2020s, as previously planned, but there would be no requirement to replace them upon retirement with new SSGNs.

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[2]Christopher J. Castelli, "Navy Raises 313-Ship Goal To 324, Boosts Focus on Missile Defense," *Inside the Navy*, December 7, 2009. Unlike MPF(F) ships, older-generation maritime prepositioning ships are not considered battle force ships and consequently are not counted toward the 313- or 324-ship totals.

[3]CRS Report RL34476, *Navy LPD-17 Amphibious Ship Procurement: Background, Issues, and Options for Congress*, by Ronald O'Rourke.

[4]Zachary M. Peterson, "Marine Corps Continues To Support DDG-1000, 38-Ship Amphib Fleet," *Inside the Navy*, January 11, 2010.

Reported 5-Year Shipbuilding Plan

The reported 5-year (FY2011-FY2015) shipbuilding plan shown in **Table 2** is based on December 2009 and January 2010 press reports.[5] The January 2010 press reports essentially amended the draft 5-year shipbuilding plan that was reported in December 2009 by adding five more ships — a second Virginia-class attack submarine (SSN) in FY2015, two LCSs (one each in FY2012 and FY2013, for a total of 17 across the FYDP), and two Mobile Landing Platform (MLP) ships (for a total of three across the FYDP). The actual 5-year shipbuilding plan that is to be submitted next month may differ in a few details from the plan shown in **Table 2**, but **Table 2** is accurate enough to support the discussion below.

Table 2. Reported 5-Year (FY2011-FY2015) Shipbuilding Plan

	FY11	FY12	FY13	FY14	FY15	Total
SSN	2	2	2	2	2	10
CVN-78			1			1
DDG-51	2	1	2	1	2	8
LCS	2	3	4	4	4	17
LPD-17		1				1
LHA-6	1					1
MLP	1		1		1	3
JHSV	1	2	2	2	2	9
TATF(X)					1	1
Total	**9**	**9**	**12**	**9**	**12**	**51**

Sources: Christopher J. Castelli, "Navy Raises 313-Ship Goal To 324, Boosts Focus on Missile Defense," *Inside the Navy*, December 7, 2009; Christopher J. Castelli, "Pentagon Restores Submarine, Seabasing Ships In Budget Endgame," *Inside the Pentagon*, January 7, 2010; Tony Capaccio, "Gates Tells Navy to Buy 17 Littoral Combat Ships Through 2015," *Bloomberg.com*, January 11, 2010.

Observations that can be made in assessing the reported 5-year shipbuilding plan shown in **Table 2** include the following:

- The plan includes an average of 10.2 ships per year. This is an increase from the single-digit numbers of ships that have been funded each year since FY1993. Shipbuilding supporters for some time have wanted to increase the shipbuilding rate to 10 or more ships per year. A rate of 10.2 ships per year is above the steady-state replacement rate for a fleet of 324 ships with an average service life of 35 years, which is about 9.3 ships per year.

- Although LCSs and JHSVs account for less than 25% of the Navy's reported 324-ship requirement, they account for about 50% of the ships (26 of 51) to be

[5]Christopher J. Castelli, "Navy Raises 313-Ship Goal To 324, Boosts Focus on Missile Defense," *Inside the Navy*, December 7, 2009; Christopher J. Castelli, "Pentagon Restores Submarine, Seabasing Ships In Budget Endgame," *Inside the Pentagon*, January 7, 2010; Tony Capaccio, "Gates Tells Navy to Buy 17 Littoral Combat Ships Through 2015," *Bloomberg.com*, January 11, 2010.

procured under the reported 5-year plan. In this sense, these relatively inexpensive ships[6] are over-represented in the 5-year shipbuilding plan relative to their portion of the 324-ship requirement, making it easier to procure an average of 10 ships per year for a reported total of $13 billion to $15 billion per year. At some point in the future, when the LCS and JHSV programs run their course and are no longer over-represented in the shipbuilding plan, procuring an average of 10 ships per year could become a considerably more expensive proposition. On this basis, the reported 5-year shipbuilding program shown in **Table 2** does not necessarily imply that the Navy has solved the challenge it faces concerning the long-term affordability of its shipbuilding plans.

- The reported plan contains only two amphibious ships (one LHA-6 in FY2011, and one LPD-17 in FY2012). This could result in a substantial dip in workload starting in FY2013 at Northrop Grumman Shipbuilding's (NGSB's) Gulf Coast yards (the Avondale yard upriver from New Orleans, LA, and the Ingalls yard at Pascagoula, MS), particularly if General Dynamics' Bath Iron Works (GD/BIW) of Bath, ME, which builds destroyers along with the Ingalls yard, receives one-half (or more) of the 1.5 DDG-51 destroyers per year that are in the plan. The dip in workload at NGSB's Gulf Coast yards could be deep enough to prompt speculation about a possible consolidation of some kind at these yards.

Reported 30-Year Shipbuilding Plan

Table 3 and **Table 4** are taken from a December 7, 2009, press report on a draft version of the Navy's 30-year (FY2011-FY2040) shipbuilding plan.[7] The tables show two shipbuilding scenarios. In one of these scenarios (**Table 3**), the Navy pays for 12 next-generation SSBNs without receiving an offsetting increase to the shipbuilding budget (i.e., the Navy pays for the 12 SSBNs "out of hide"). In the other scenario (**Table 4**), the Navy receives an offsetting increase to the shipbuilding budget to pay for these 12 ships. **Table 5** shows differences in total ship quantities between **Table 4** and **Table 3**.

The Navy reportedly is estimating the unit procurement cost of the new SSBN preliminarily at $6 billion to $7 billion, and the shipbuilding plan in **Table 3** reduces annual funding for procuring ships other than SSBNs by roughly that amount during the period FY2019-FY2033, when the SSBNs are procured. This would reduce funding for the procurement of ships other than SSBNs during that period by an annual amount roughly equivalent to one-half of the shipbuilding budget.

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[6] Although the estimated procurement cost of the LCS sea frame has more than doubled since the early years of the program, the LCS remains a relatively inexpensive combatant ship in the sense that the procurement cost of an LCS with a representative embarked mission package is still only a fraction of that of other combatant ships, such as aircraft carriers, submarines, cruisers and destroyers, and amphibious ships. JHSVs, with a unit procurement cost of about $200 million, are (with the exception of the TAT[F], a fleet tug) the least expensive ships in the 5-year shipbuilding plan.

[7] **Table 3** and **Table 4** do not include the five ships — one SSN in FY2015, one LCS each in FY2012 and FY2013, and two MLPs — that January 2010 press reports state have been added to the FY2011-FY2015 portion of the shipbuilding plan.

Table 3. Reported Draft 30-Year Shipbuilding Plan — *If Navy Pays For New SSBNs Without Receiving Offsetting Increase to Shipbuilding Budget*

FY	CVNs	SCs	LCSs	SSNs	SSBNs	Amph	CLF	Supt	Total
11		2	2	2		1		1	8
12		1	2	2		1	1	2	9
13	1	2	3	2				2	10
14		1	4	2				2	9
15		2	4	1				3	10
16		1	3	2		1		2	9
17		2	3	2		1		3	11
18	1	1	2	1			1	3	9
19		1	1	2	1	1		2	8
20		1	1	2			1	3	8
21		2	1	2				1	6
22		1	1	2	1	2	1	3	11
23	1	1	1	1				3	7
24		1	1	1	1		1	2	7
25		1	1	1	1	1			5
26		1	1	1	1		1		5
27		1	1	1	1	1			5
28	1	1	1	1	1	1	1		7
29		1	1	1	1				4
30		1	1	1	1		1	1	6
31		1	1	1	1	1		1	6
32		1	1	1	1	1	1	1	7
33	1	2	1	1	1			1	7
34		2	1	1		1	1	1	7
35		2	1	2				1	6
36		2	1	1		1	1	1	7
37		2	1	2		1		1	7
38	1	2	1	1		1	1	1	8
39		2	1	2				1	6
40		2	1	1		1	1	1	7
Total	**6**	**43**	**45**	**43**	**12**	**17**	**13**	**43**	**222**

Source: *Inside the Navy*, December 7, 2009.

Notes: SCs are surface combatants (destroyers and cruisers); **Amph** are amphibious ships; **Supt** are support ships.

Table 4. Reported Draft 30-Year Shipbuilding Plan — *If Navy Receives Offsetting Increase to Shipbuilding Budget To Pay For New SSBNs*

FY	CVNs	SCs	LCSs	SSNs	SSBNs	Amph	CLF	Supt	Total
11		2	2	2		1		1	8
12		1	2	2		1	1	2	9
13	1	2	3	2				2	10
14		1	4	2				2	9
15		2	4	1				3	10
16		1	3	2		1		2	9
17		2	3	2		1		3	11
18	1	1	2	1			1	3	9
19		2	2	2	1	1	1	3	12
20		1	2	2			1	2	8
21		2	2	2		2	1		9
22		2	2	2	1		1	2	10
23	1	2	2	1		1	1	3	11
24		2	2	2	1		1	2	10
25		2	2	1	1	1	1	1	9
26		2	2	2	1	1	1		9
27		2	2	2	1	1	1		9
28	1	2	2	1	1		1		8
29		3	2	2	1	1	1		10
30		3		1	1	1	1	2	9
31		3		1	1	1	1	2	9
32		3	1	1	1		1	2	9
33	1	3		1	1	1	1	2	10
34		3	2	1			1	2	9
35		3	2	2		2	1	2	12
36		2	2	1			1	2	8
37		2	2	2		1		2	9
38	1	2	2	1				2	8
39		2	2	2		2		2	10
40		2	2	1					5
Total	**6**	**62**	**60**	**47**	**12**	**20**	**20**	**51**	**278**

Source: *Inside the Navy*, December 7, 2009.
Notes: SCs are surface combatants (destroyers and cruisers); **Amph** are amphibious ships; **Supt** are support ships.

Table 5. Difference in ship quantities between Table 4 and Table 3.

	CVNs	SCs	LCSs	SSNs	SSBNs	Amph	CLF	Supt	Total
Table 4	6	62	60	47	12	20	20	51	278
Table 3	6	43	45	43	12	17	13	43	222
Difference	nc	- 19	- 15	- 4	nc	- 3	- 7	- 8	- 56
Difference (%)	nc	- 31%	- 25%	- 9%	nc	- 15%	- 35%	- 16%	- 20%

Source: Prepared by CRS based on data in Table 3 and 4.
Notes: SCs are surface combatants (destroyers and cruisers); **Amph** are amphibious ships; **Supt** are support ships; **nc** is no change.

Observations that can be made in assessing the figures in **Table 3**, **Table 4**, and **Table 5** include the following:

- If the Navy pays for the SSBNs "out of hide" and allocates resulting reductions to other shipbuilding programs as shown in **Table 3**, the total number of ships procured would be reduced by 56, or about 20%. The largest numerical reductions would occur in procurement of cruisers and destroyers (19 ships) and LCSs (15 ships). The largest percentage reductions would occur in procurement of combat logistics force (CLF) ships (35%) and cruisers and destroyers (31%).

- If the Navy pays for the SSBNs "out of hide" and allocates resulting reductions to other shipbuilding programs as shown in **Table 3**, procurement rates for surface ships of all kinds during the period FY2019-FY2033 would be reduced to levels low enough to make a substantial consolidation of some kind of the surface ship construction industrial base a distinct possibility, if not a likelihood.

- By drafting the two shipbuilding scenarios in **Table 3** and **Table 4**, the Navy is in effect reviving a debate that has occurred from time to time as to whether an individual military service should pay "out of hide" for military force structure elements that serve a national mission of strategic nuclear deterrence. CRS testimony to this subcommittee two years ago stated that the Navy appeared to be reviving (or reserving the option of reviving) this debate by not including the procurement cost of the SSBNs in the FY2009 30-year shipbuilding plan.[8]

Reported Resulting Long-Term Force Levels

Table 6 and **Table 7**, which are taken from the December 7, 2009, press report on a draft version of the Navy's 30-year (FY2011-FY2040) shipbuilding plan, show the ship force levels that the Navy projects would result from the ship-procurement rates shown in **Tables 3** and **Table 4**, respectively.

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[8]See Statement of Ronald O'Rourke, Specialist in Naval Affairs, Congressional Research Service, Before the House Armed Services Committee Subcommittee on Seapower and Expeditionary Forces Hearing on The Navy Shipbuilding Budget Request, March 14, 2008, which stated on page 8 that:

> The Navy's SSBNs perform a mission of strategic nuclear deterrence, which can be viewed as more a national mission than a Navy one. From time to time in past years, observers have discussed whether it is appropriate for one service or another to be required to use funds from its own budget to pay for the performance of a national mission like strategic nuclear deterrence. The Navy's decision in the FY2009 30-year shipbuilding plan to exclude the cost of the 12 SSBNs from its estimated cost to implement the plan might be interpreted as a signal that, in light of its shipbuilding recapitalization financing challenge, the Navy is reviving (or reserving the option of reviving) this discussion in connection with the cost of the 12 replacement SSBNs.

Table 6. Projected Force Levels Resulting From Table 3 *(i.e., If Navy Pays For New SSBNs Without Receiving Offsetting Increase to Shipbuilding Budget)*

FY	CVNs	SCs	LCSs	SSNs	SSGNs	SSBNs	Amph	MIW	CLF	Supt	Total
11	11	110	2	53	4	14	29	14	30	17	284
12	11	107	4	54	4	14	30	14	32	17	287
13	10	102	7	55	4	14	30	14	32	19	287
14	10	96	9	55	4	14	30	14	34	20	286
15	11	91	11	54	4	14	31	14	34	22	286
16	11	93	14	51	4	14	33	14	34	24	292
17	11	92	18	51	4	14	33	13	34	27	297
18	11	94	22	50	4	14	33	13	34	29	304
19	11	94	25	51	4	14	33	11	34	30	307
20	12	96	28	49	4	14	33	10	34	31	311
21	12	96	30	48	4	14	35	7	34	32	312
22	12	95	31	47	4	14	35	6	33	33	310
23	11	94	32	47	4	14	36	2	32	36	308
24	11	93	33	45	4	14	36	1	32	37	306
25	12	91	34	44	4	14	35	0	31	36	301
26	12	88	35	43	2	14	35	0	31	36	296
27	12	86	36	42	1	13	34	0	28	37	289
28	11	83	37	40	0	13	35	0	28	37	284
29	11	79	38	39	0	13	34	0	26	36	276
30	12	75	39	38	0	12	32	0	26	35	269
31	12	70	40	40	0	12	31	0	24	34	263
32	11	67	41	40	0	12	31	0	25	34	261
33	11	65	41	41	0	12	30	0	25	33	258
34	11	62	42	42	0	12	30	0	25	33	257
35	12	61	42	43	0	12	28	0	23	32	253
36	11	60	43	44	0	12	27	0	24	31	252
37	11	57	42	45	0	12	27	0	24	30	248
38	11	56	40	44	0	12	26	0	24	29	242
39	11	54	39	44	0	12	26	0	24	28	238
40	11	53	38	44	0	12	27	0	25	27	237

Source: *Inside the Navy*, December 7, 2009.

Notes: SCs are surface combatants (destroyers and cruisers); **Amph** are amphibious ships; **MIW** are mine warfare ships; **Supt** are support ships.

Table 7. Projected Force Levels Resulting From Table 4 *(i.e., If Navy Receives Offsetting Increase to Shipbuilding Budget To Pay For SSBNs)*

FY	CVNs	SCs	LCSs	SSNs	SSGNs	SSBNs	Amph	MIW	CLF	Supt	Total
11	11	110	2	53	4	14	29	14	30	17	284
12	11	107	4	54	4	14	30	14	32	17	287
13	10	101	7	55	4	14	30	14	32	19	286
14	10	96	9	55	4	14	30	14	34	20	286
15	11	91	11	54	4	14	31	14	34	22	286
16	11	93	14	51	4	14	33	14	34	24	292
17	11	92	18	51	4	14	33	13	34	27	297
18	11	94	22	50	4	14	33	13	34	29	304
19	11	94	25	51	4	14	33	11	34	30	307
20	12	96	28	49	4	14	33	10	34	31	311
21	12	96	30	48	4	14	35	7	34	32	312
22	12	95	32	47	4	14	35	6	33	34	312
23	11	94	34	47	4	14	36	2	33	36	311
24	11	94	36	45	4	14	36	1	33	36	310
25	12	92	39	44	4	14	36	0	33	34	307
26	12	89	40	43	2	14	35	0	33	33	301
27	12	88	42	42	1	13	36	0	31	34	299
28	11	86	44	40	0	13	36	0	31	34	295
29	11	83	46	39	0	13	35	0	30	34	291
30	12	80	49	39	0	12	33	0	30	34	288
31	12	76	50	41	0	12	34	0	29	33	287
32	11	74	52	42	0	12	32	0	30	33	286
33	11	73	51	44	0	12	32	0	31	33	287
34	11	72	51	45	0	12	32	0	31	33	288
35	12	73	51	47	0	12	31	0	30	33	290
36	11	74	51	48	0	12	30	0	31	33	291
37	11	73	51	49	0	12	30	0	32	33	292
38	11	73	50	48	0	12	28	0	32	33	288
39	11	72	50	48	0	12	29	0	33	33	289
40	11	72	50	48	0	12	30	0	34	33	291

Source: *Inside the Navy*, December 7, 2009.
Notes: SCs are surface combatants (destroyers and cruisers); **Amph** are amphibious ships; **MIW** are mine warfare ships; **Supt** are support ships.

Observations that can be made in assessing the figures in **Table 6** and **Table 7** include the following:

- In **Table 6** — where the Navy pays for the SSBNs "out of hide" — Navy ship force levels drop well below figures in the reported 324-ship requirement (or in the current 313-ship requirement). Among other things, the total number of battle force ships declines to 237, or about 27% below the reported 324-ship goal; the cruiser-destroyer force declines to 53 ships, or about 45% below the reported 96-ship goal; the LCS force never rises higher than 43 ships, which is about 22% below the reported 55-ship force-level goal; and the amphibious force

declines to a minimum of 26 ships, or about 21% below the reported 33-ship force-level goal.

- A Navy with the ship force levels shown in the latter years of **Table 6** would have substantial capability and capacity shortfalls relative to Navy requirements for performing a range of missions, including peacetime presence and engagement, humanitarian assistance and disaster response (HADR) operations, regional deterrence, assurance, and stabilization, and conventional warfighting.

- Although overall ship force levels do not begin decline in **Table 6** until the latter years of the 30-year period, knowledge of the projected eventual decline could immediately begin to generate or reinforce perceptions of the United States as a declining power. Such perceptions could embolden potential adversaries, demoralize U.S. allies and partners, encourage states to set aside U.S. policy goals when they judge those goals to be inconvenient, encourage states to align their policies more closely with those of perceived rising powers, such as China, or encourage nations to take self-defense actions that the United States does not want them to take, such as acquiring nuclear weapons. Such developments could make it more difficult for the United States to achieve policy goals in a variety of areas, such as international trade, international finance, climate change, and non-proliferation.

- Perceptions of the United States as a declining power that might be generated or reinforced by figures similar to those in **Table 6** might be particularly likely among observers in the Pacific Basin, where naval forces play a prominent role in military operations, and where China, which is modernizing its navy,[9] is viewed by various observers as a rising power. Perceptions among Pacific Basin observers of the U.S. as a declining power and of China as a rising power could shape the political evolution of that region in ways that might not be conducive to the achievement of various U.S. policy goals. Some observers reportedly have detected a new "sense of triumphalism" among Chinese officials that is complicating U.S.-China relations and the achievement of U.S. policy goals.[10]

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[9]For a discussion of China's naval modernization effort, see CRS Report RL33153, *China Naval Modernization: Implications for U.S. Navy Capabilities—Background and Issues for Congress*, by Ronald O'Rourke.

[10]A January 3, 2010, press article about U.S.-China relations, for example, stated:

> Still, U.S. officials and analysts have noticed a new assertiveness — what one senior U.S. official called a "sense of triumphalism" — on the part of officials and the public in China. This stems from a sense in Beijing that the global economic crisis proves the superiority of China's controlled economy and its authoritarian political system — and that the West, and in particular the United States, is in decline.
>
> This triumphalism was on display during the recently concluded climate talks in Copenhagen. China only sent a deputy foreign minister to meetings set for the level of heads of state; its representatives publicly clashed with their American counterparts. And during the climax of the conference, China's security team tried to block Obama and the rest of his entourage from entering a meeting chaired by China's prime minister, Wen Jiabao.
>
> That type of swagger is new for China and it could make for a stronger reaction from Beijing.

(continued...)

Particularly in light of China's own naval modernization effort, a perception among Chinese officials of declining U.S. naval capabilities could add to such a dynamic.

- Preventing or mitigating perceptions of the United States as a declining power might require near-term actions to assure observers that the SSBN procurement program will not result in significant reductions to other U.S. Navy shipbuilding programs.

- In **Table 7** — where the Navy receives an increase to its shipbuilding budget to offset the cost of the SSBNs — the Navy still falls short of achieving force levels called for in the reported 324-ship requirement (or the current 313-ship requirement). Among other things, the total number of battle force ships never rises higher than 312, and declines to less than 300 starting in FY2027; the cruiser-destroyer force declines to 72 ships, or 25% below the reported 96-ship goal; and the LCS force never rises higher than 51 ships.

- Under either scenario (**Table 6** or **Table 7**), the SSN force drops below the required number of 48 boats in FY2022 and declines to a minimum of 38 or 39 boats in FY2029 or FY2030. In **Table 6**, where the Navy pays for the SSBNs "out of hide," the SSN force remains below the 48-boat goal through the end of the 30-year period. The projected SSN shortfall has been a subject of CRS reporting and testimony since 1995.

As a more general observation, the shipbuilding and force-level situation outlined in **Tables 2 through 7** can be viewed as an acknowledgment by the Navy of the shipbuilding affordability challenge that has been discussed in multiple CRS and CBO reports and testimony in recent years. The projection in **Table 6** of the total number of battle force ships declining to the mid-200s is broadly consistent with CBO projections in recent years of the eventual number of battle force ships if the Navy's shipbuilding budget is not increased and the mix of ships being procured is not substantially changed.

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[10](...continued)

"If they really believe the United States is in decline and that China will soon emerge as a superpower, they may seek to take on the U.S. in ways that will cause real problems," said Bonnie S. Glaser, an expert on China with the Center for Strategic and International Studies.

Complicating this picture is the view of some American analysts that the Obama administration — with its intensive outreach to Beijing — tried too hard in its first year to cultivate ties with China. Playing hard to get might have helped smooth out China's swagger, they suggest.

"Somehow the administration signaled to the Chinese that we need them more than they need us," [David M.] Lampton [director of China studies at the Johns Hopkins School of Advanced International Studies] said. "We're in the role of the supplicant."

(John Pomfret, "After A Year Of U.S. Wooing, Chill Expected In Relations With China," *Washington Post*, January 3, 2010: 3. See also John Pomfret, "U.S. Faces Long Odds In Improved Relations With Asia," *Washington Post*, January 14, 2010: 8.)

Maximizing Shipbuilding Within $13 Billion To $15 Billion Per Year

The situation depicted in **Tables 2 through 7** can raise a question as to how to maximize the number of ships procured each year for a total of $13 billion to $15 billion. Actions frequently mentioned that can contribute to this goal include, among other things:

- using multiyear procurement (MYP) and block-buy contracts where possible,
- otherwise maintaining stability in shipbuilding plans and ship designs,
- increasing commonality across shipbuilding programs in hulls, systems, and components,
- placing more emphasis in new ship designs on design for producibility and production engineering;
- improving shipyard production technologies, processes, and methods, and
- supporting research and development work aimed at developing less expensive materials and at reducing the size, weight, and cost of key ship systems, such as radars and integrated electric drive equipment.

Measures such as these can help maximize the number of ships that could be procured each year for $13 billion to $15 billion, but they can accomplish only so much. They cannot turn a budget sufficient for 6 ships into one sufficient for 10 ships. If actions such as these are not sufficient to increase the number of ships procured each year to desired levels, an additional option would be to alter the mix of ships being procured to include a larger proportion of less-expensive ships. Less-expensive ships could be either smaller ships or larger ships that are built on commercial-like hulls or are less-expensively outfitted. The reported FY2011-FY2015 shipbuilding plan shown in **Table 2** can be viewed as reflecting the use of this option, since relatively inexpensive LCSs and JHSVs account for about half of the ships in the plan, even though they represent less than a quarter of the ships in the 324-ship requirement. A strategy of altering the mix of ships to be procured to include a larger proportion of less-expensive ships, if maintained over the longer run, could result in a Navy that numerically might exceed 300 ships, but which might nevertheless have capability shortfalls for performing various missions.

Increasing Ship Service Lives

If ship-procurement rates are constrained by funding limitations, achieving and maintaining desired force levels may require increasing ship service lives. If, for example, battle force ships are procured over the long run at an average rate of 7.4 ships per year (the average rate that would result from the 222-ship shipbuilding scenario shown in **Table 3**) and the average service life of a Navy ship were 35 years, then the number of battle force ships over the long run would converge toward a figure of about 259 ships (a figure similar to those shown in the final years of **Table 6**). If, however, average ship life is increased from 35 years to 45 years, then this same average shipbuilding rate would over the long run result in a Navy that converges toward a figure of 333 ships, which is fairly close to the reported new goal of 324 ships. Increasing average ship life for the Navy as a whole to 45 years could involve, among other things, increasing cruiser and

destroyer service lives from 35 years to about 45 years, and increasing SSN service lives from 33 years to about 45 years.

Increasing ship service lives would have its costs. In addition to measures taken to ensure that ships can remain in service to the end of their existing service lives,[11] existing ships might need higher levels of maintenance work during their lives, as well as additional rounds of combat system modernization work to permit them to remain in service beyond their original design lives. Additional nuclear refuelings might be needed for SSNs, including Virginia-class boats, which were designed in the expectation that they would not be refueled. The procurement cost of new ships might increase as a result of building them to more rugged standards or with materials that are more expensive but more durable. If the additional funding for extending the lives of existing ships or for increasing the design lives of new ships were to come from within the shipbuilding budget, it would, other things held equal, reduce the shipbuilding rate, which would reduce the long-term force-level gains associated with extending ship service life. Even so, the result might be a Navy with more ships than would be the case if ship service lives were not lengthened.

Building new ships with increased design lives could have other implications. It could increase the importance of building new ships with open-architecture combat systems and physical open architecture features (such as those in the LCS), so as to minimize the cost of modernization work performed over the ships' long lives. It might also require that ships be built with larger growth margins in areas like weight, space, center of gravity, electrical power, and cooling capability, so as to ensure that the ships could support the modernization work that would be needed to maintain their mission effectiveness during the final years of their long lives. A growth margin in a new-construction ship that might be adequate for an anticipated 35-year life might be inadequate for an anticipated 45-year life.

Increasing Percentage of Ship Lives Spent On Station

If measures to spend available shipbuilding funds efficiently and to increase ship service life are not sufficient to achieve and maintain a 324-ship fleet, an additional option would be to increase the percentage of ship lives spent on station in overseas operating areas. This could be accomplished through one or more of the following: forward homeporting additional ships, using extended-duration (e.g., 18- or 24-month) deployments with crew rotation (sometimes called Sea Swap), and operating ships with an average of more than one crew for each ship (multiple crewing). Such measures might permit a Navy with fewer than 324 ships to meet the forward-deployed presence requirements of a 324-ship fleet. Depending, however, on how many ships are required for warfighting as opposed to presence, such a fleet might or might not have enough ships to meet requirements for warfighting.

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[11] For examples of recent articles discussing such measures, see Geoff Fein, "Navy To Expand Effort To Determine Service Life Condition of Surface Ships," *Defense Daily*, January 13, 2010: 7-8; and Otto Kreisher, "Admiral: Fleet Size Hinges On Larger Maintenance Budget," *National Journal's CongressDailyAM*, January 13, 2010.

Demands For BMD-Capable Ships

The Administration's new plan for European BMD has prompted questions about how many BMD-capable cruisers and destroyers will be needed for European BMD operations, and what effect this will have on required numbers of cruisers and destroyers and on the Navy's ability to meet demands for BMD-capable ships in other regions, such as the Western Pacific. As mentioned earlier, the reported increase in the cruiser-destroyer requirement from 88 ships to 96 ships appears related at least in part to demands for BMD-capable cruisers and destroyers.

The number of BMD-capable cruisers and destroyers that will be needed for European BMD operations will depend on the number of BMD-capable ships that are to be kept on station in European waters, the way in which being on station is defined, and the Navy's approach for providing ships for those stations.

General James Cartwright, the Vice Chairman of the Joint Chiefs of Staff, testified last year that for "early-stage" European BMD operations, DOD is considering maintaining two BMD-capable ships at each of three European BMD stations, for a total of six ships on station.[12] Those figures could change; if they do, the discussion below can be adjusted accordingly.

If the Navy relied entirely on East Coast-homeported destroyers operating on seven-month deployments for supporting European BMD operations, then maintaining six ships continuously on station in European waters could require approximately 26 ships.[13] This figure might be taken as a high-end or worst-case analysis. The figure could be reduced by:

- **increasing trans-Atlantic transit speeds**, which would marginally reduce stationkeeping multipliers by reducing transit times (but also increase fuel consumption during transits);

- **using Sea Swap** — that is, extended-length (e.g., 18- or 24-month) deployments with crew rotation — which could substantially reduce stationkeeping multipliers by reducing the number of trans-Atlantic transits;

- **using multiple crewing** – that is, operating the ships with an average of more than one crew for each ship — which could substantially reduce stationkeeping multipliers by increasing the percentage of time that each ship is in deployed status;

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[12]Emelie Rutherford, "Congress To Probe Possible Need For More Ships For Obama Missile-Defense Plan," *Defense Daily*, January 12, 2010: 1-2; Pat Host, "Lawmaker: Pacific Left Vulnerable Under New Missile Defense Plan," *Inside the Navy*, October 19, 2009; Dan Taylor, "O'Reilly: Pentagon To Send BMD Ships To Eastern Mediterranean," *Inside the Navy*, October 5, 2009; Dan Taylor, "Cartwright: Navy May Station Six Aegis BMD Ships Near Europe." *Inside the Navy*, September 28, 2009; Emelie Rutherford, "Navy Ship Role In New Missile-Defense Architecture Questioned," *Defense Daily*, September 25, 2009: 2-3.

[13]This number is based on a stationkeeping multiplier of 4.4 for Norfolk-based DDG-51s deploying to the European Command's area of responsibility on 7-month deployments. The stationkeeping multiplier is the number of ships of a given type and a certain homeporting location that are needed to maintain one ship of such ship continuously on station in a certain overseas operating area. (Source for stationkeeping multiplier: Navy information paper on stationkeeping multipliers dated December 30, 2009, provided by the Navy to CRS on January 8, 2010.)

- **homeporting the ships in Europe**, which could substantially reduce stationkeeping multipliers by eliminating most trans-Atlantic transits (some trans-Atlantic transits might still be needed for maintenance or training reasons);

- **taking advantage of transit presence** — that is, meeting some of the requirement with BMD-capable cruisers and destroyers that are passing through the Mediterranean on their way to or from the Indian Ocean/Persian Gulf region; and

- **using an operational "tether"** — that is, defining "being on station" to mean being in the needed location and ready to conduct BMD operations within a certain number of hours or days of receiving an order. General Cartwright testified last year that DOD is considering using a tether of "a couple of days" for European BMD operations, as it does for BMD operations in the Sea of Japan.[14]

These measures are not mutually exclusive, and pursuing a combination could substantially reduce the number of cruisers and destroyers required to keep six on station. European homeporting, for example, might be combined with multiple crewing and taking advantage of transit presence. Such a strategy, combined with an operational tether, might represent something close to a low-end or best-case analysis.[15]

Reported Plan To Cancel CG(X) In Favor Of Improved DDG-51s

On December 7, 2009, it was reported that the Navy wants to cancel its planned CG(X) cruiser and instead procure an improved version of the DDG-51.[16] Earlier press reporting had suggested that the Navy might be heading toward such a change in plans.[17] In addition to being concerned about the projected high cost and immature technologies of the CG(X),[18] the Navy reportedly has concluded that it does not need a surface combatant with a radar as large and as capable as the one envisaged for the CG(X), because the Navy will be able to augment data collected by surface combatant radars with data collected by space-based radars. The Navy reportedly has concluded that this would permit projected anti-air warfare (AAW) and BMD missions to be performed

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[14]Pat Host, "Lawmaker: Pacific Left Vulnerable Under New Missile Defense Plan," *Inside the Navy*, October 19, 2009; Dan Taylor, "O'Reilly: Pentagon To Send BMD Ships To Eastern Mediterranean," *Inside the Navy*, October 5, 200.

[15]The aircraft carrier that is homeported in Japan is counted as being present as a forward-deployed ship in the Pacific even when it is at pier or in dry dock in Japan. As a result, the Navy treats the homeporting of a carrier in Japan as reducing to 1.0 the stationkeeping multiplier for keeping a carrier forward-deployed in the Pacific. This counting rule might not be suitable for BMD-capable ships homeported in Europe, since their mission would involve not simply being present, but being ready to conduct BMD operations. Consequently, homeporting the ships in Europe might not reduce to 6 the total number of ships required to keep 6 on station. But it could reduce the stationkeeping multiplier by significantly reducing time spent transiting between home port and the operating station, and perhaps also by permitting the ships to adopt an operational cycle that is more like the operational cycle of the Japan-homeported carrier.

[16]Christopher J. Castelli, "Draft Shipbuilding Report Reveals Navy Is Killing CG(X) Cruiser Program," *Inside the Navy*, December 7, 2009.

[17]Christopher P. Cavas, "Next-Generation U.S. Warship Could Be Taking Shape," *Defense News*, November 2, 2009: 18, 20.

[18]Christopher J. Castelli, "Draft Shipbuilding Report Reveals Navy Is Killing CG(X) Cruiser Program," *Inside the Navy*, December 7, 2009.

adequately with a new surface combatant radar that is the same general size as, but more capable than, the DDG-51's current SPY-1 radar.[19] Reports suggest that this new surface combatant radar would be a scaled-down version of the new Air and Missile Defense Radar (AMDR) originally envisioned for the CG(X).[20]

The improved DDG-51 that the Navy reportedly now wants to procure would be considerably less expensive to procure than the CG(X). The improved DDG-51 would have more AAW and BMD capability than the current DDG-51 design, but less AAW and BMD capability than what was envisioned for the CG(X).

The Navy's reported plan to cancel the CG(X) in favor of procuring improved DDG-51s raises a number of potentially significant oversight issues for the subcommittee, including the following:

- Is there an adequate analytical basis for canceling the CG(X) and instead procuring improved DDG-51s? Should an analysis of alternatives (AOA) or the equivalent of an AOA be performed before committing to this course of action?

- Is there adequate stability in Navy planning for acquisition of surface combatants?

- Would an improved DDG-51 be an adequate substitute for the CG(X)?

- What would be the potential operational implications of a Navy equipped with improved DDG-51s instead of CG(X)s?

- What would be the potential industrial-base consequences of canceling the CG(X) and instead procuring improved DDG-51s?

Each of these questions is addressed at length in a CRS report on destroyer procurement.[21] Regarding the third question — Would an improved DDG-51 be an adequate substitute for the CG(X)? — issues to examine include the following, among others:

- the estimated level of performance that an improved DDG-51, in conjunction with off-board radars, would achieve against advanced anti-ship cruise missiles (ASCMs) and ballistic missiles (including anti-ship ballistic missiles [ASBMs]) in certain operational scenarios;

- the vulnerability of the off-board radars and their data-transmission links to enemy attack, and the reduction in performance of the improved DDG-51s against advanced ASCMs and ASBMs that would result if the off-board radars or data-transmission links are degraded by enemy attack; and

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[19]Amy Butler, "STSS Prompts Shift in CG(X) Plans," *Aerospace Daily & Defense Report*, December 11, 2009: 1-2.

[20]Cid Standifer, "NAVSEA Plans To Solicit Contracts For Air And Missile Defense Radar," *Inside the Navy*, December 28, 2009; "Navy Issues RFP For Phase II of Air And Missile Defense Radar Effort," *Defense Daily*, December 24, 2009: 4.

[21]CRS Report RL32109, *Navy DDG-51 and DDG-1000 Destroyer Programs: Background and Issues for Congress*, by Ronald O'Rourke.

- the improved DDG-51's growth margin.

In assessing the first issue above, the subcommittee can consider, among other things, the data presented in the Navy's briefing on its destroyer Hull/Radar Study.

In assessing the second issue above, the subcommittee can consider, among other things, the current and potential future anti-satellite (ASAT), electronic warfare, and cyberwarfare capabilities of countries such as China.

In assessing the third issue above, the subcommittee can consider, among other things:

- the data presented in the Navy's briefing on its destroyer Hull/Radar study;
- the point mentioned earlier in connection with the option of increasing ship service lives – that a growth margin that might be adequate for an anticipated 35-year life might be inadequate for an anticipated 45-year life; and
- a particular aspect of the growth margin issue — the potential for equipping the ship with a future high-power directed-energy weapon (DEW), such as a laser.

Regarding the third point above, the improved DDG-51 that the Navy appears to be contemplating might not be capable of being fitted in the future with a high-power DEW such as a laser, because the ship might lack the electrical power such a weapon would require. If so, this could be significant, because high-power DEWs could be critical to the Navy's long-term ability to affordably counter ASCMs and ASBMs fielded by a wealthy and determined adversary.[22] If improved DDG-51s could not be backfitted with a high-power DEW, then procuring improved DDG-51s could delay the point at which such weapons could be introduced into the cruiser-destroyer force, and reduce for many years the portion of the cruiser-destroyer force that could ultimately be backfitted with lasers. This might result in an approach to AAW and BMD on cruisers and destroyers that might ultimately be unaffordable for the Navy to sustain in a competition against a wealthy and determined adversary.

If policymakers decide that the Navy's reported improved DDG-51 would not be sufficiently capable, then a follow-on question would be: What higher-capability alternatives are there to the improved DDG-51? If policymakers agree with the Navy that the CG(X) or an AAW/BMD version of a DDG-1000 would be unaffordable, then there would appear to be at least two other alternatives:

- a version of the DDG-51 that is more highly modified than what the Navy appears to be contemplating; and

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[22]The cost for an adversary to build and field an additional land-based ASCM or ASBM might be much less than the cost for the Navy to build and field an additional sea-based missile-launch tube and procure an additional interceptor missile to place in that tube. If so, then it might become unaffordable for the Navy at some point in the future to match each additional ASCM and ASBM that a wealthy and determined adversary might field with an additional launch tube and interceptor missile. DEWs, if successfully developed, promise to reverse this unfavorable cost equation by lowering the marginal cost per shot for intercepting ASCMs and ASBMs to a level well below what it costs an enemy to build an additional ASCM or ASBM.

- a new-design destroyer that is more affordable than the CG(X).

A more highly modified DDG-51 might have a lengthened hull, with the additional volume being used to provide the electrical-generating capacity needed to support a future high-power DEW, and to increase the ship's growth margin. The ship might also include additional features (such as those for reducing crew size) for reducing annual operating and support (O&S) costs. The deckhouse might not be changed from the current DDG-51 design, in which case the ship might carry the same radar as the one that the Navy envisions for its modified DDG-51. The idea of lengthening the DDG-51 design by as much as 55 or 56 feet, and of incorporating features for reduced O&S costs, is discussed in July 2008 CRS testimony to this committee,[23] and in the CRS report on destroyer procurement.[24]

A new-design destroyer could be designed to incorporate a version of the AMDR that is larger and more capable than the version that the Navy envisions for its modified DDG-51 (though not as large and capable as the version that was envisioned for the CG[X]), as well as enough electrical power to support a future high-power DEW. It could include features for reducing annual O&S cost, improved producibility features for reducing construction cost per ton, and a greater degree of physical open architecture than previous cruiser and destroyer designs. The ship's design and development cost could be minimized by leveraging, where possible, existing surface combatant hull designs; by using a modified version of the DDG-51's Aegis combat system or a modified version of the DDG-1000's TSCEI[25] combat system; and by incorporating no technologies not already on, or being developed for, the DDG-51, the reported modified DDG-51, or the DDG-1000, with the possible exception of technologies for reducing annual O&S costs and technologies that would enable an integrated electric drive system that is smaller than that on the DDG-1000.

Compared to the Navy's reported modified DDG-51, a more-highly modified DDG-51 or a new-design destroyer would have higher design and development costs and more technical risk, and would take less-full advantage of the DDG-51 production learning curve.

Table 8 compares certain features of the more-highly modified DDG-51 and a potential new-design destroyer to those of the current DDG-51, the Navy's reported modified DDG-51, an AAW/BMD version of the DDG-1000, and the CG(X).

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[23] Statement of Ronald O'Rourke, Specialist in Naval Affairs, Congressional Research Service, Before the House Armed Services Committee Subcommittee on Seapower and Expeditionary Forces Hearing on Surface Combatant Warfighting Requirements and Acquisition Strategy, July 31, 2008, pp. 2-11.

[24] CRS Report RL32109, *Navy DDG-51 and DDG-1000 Destroyer Programs: Background and Issues for Congress*, by Ronald O'Rourke.

[25] TSCEI stands for Total Ship Computing Environment Infrastructure.

Table 8. Some Potential Features of Destroyer and Cruiser Designs

	Current DDG-51	Navy's reported improved DDG-51	More highly modified DDG-51	Potential new-design destroyer	AAW/BMD version of DDG-1000	CG(X)
Full load displacement (tons)	~9,500	~9,500	10,000 to 11,000	11,000 to 12,000?	~15,000	15,000 to 23,000?
Combat system	Aegis	modified Aegis	modified Aegis	modified Aegis or modified TSCEI	modified TSCEI	modified Aegis or modified TSCEI?
Radar capability (** is highest)**	* (SPY-1)	** (SPY-1-sized AMDR)	** (SPY-1-sized AMDR)	*** (AMDR somewhat larger than SPY-1)	*** (AMDR somewhat larger than SPY-1)[a]	**** (full-size AMDR)
Electrical power for high-power DEW	perhaps not	perhaps not	yes	yes	yes	yes
Growth margin	some	some	more	more	more	more
Features for reducing annual O&S cost	some	some	more	more	more	more
Physical open architecture	some	some	some	more	some	more
Design and development cost (*** is highest)**	*	**	***	****	** or ***	*****
Technical risk (*** is highest)**	*	**	***	****	** or ***	*****
Leverages DDG-51 or DDG-1000 production learning curve (** is most)**	****	***	**	*	***	*
Producibility features for reducing construc-tion cost per ton	some	some	some	more	more	more

Source: Table prepared by CRS.

a. May require redesign of deckhouse to 4-face configuration. If deckhouse is not redesigned, the radar might be closer to ** than to ***.

LCS Program

The acquisition strategy for the LCS announced by the Navy last September poses a number of potential oversight issues that are discussed at length in the CRS report on the LCS program.[26] In addition to those issues, the following observations can be made about the LCS program in connection with recent press reports about draft versions of the Navy's FY2011 budget and shipbuilding plan:

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[26]CRS Report RL33741, *Navy Littoral Combat Ship (LCS) Program: Background, Issues, and Options for Congress*, by Ronald O'Rourke.

- The five year (FY2011-FY2015) shipbuilding plan reported in December 2009 shows LCS sea frames being funded in the shipbuilding plan with apparent unit procurement costs that are close to $600 million. Whether this would be consistent with the LCS program unit procurement cost cap as amended by Section 121 of the FY2010 defense authorization act (H.R. 2647/P.L. 111-84 of October 28, 2009) is a question that the subcommittee may wish to explore with the Navy.

- In **Table 4**, the reduction in the LCS procurement rate to two ships per year starting in FY2018 suggests that the Navy, after establishing two yards to build LCSs, may seek to conduct a downselect to choose one builder to build all the LCSs shown in FY2018-FY2029 (i.e., the remaining ships in the 55-ship LCS program).[27]

- The LCS procurement rate shown in **Table 4** stretches out the 55-ship LCS program to a total of 25 years (FY2005-FY2029). This may not be consistent with arguments the Navy has made in the past about the urgency of getting LCSs into the fleet to close identified capability gaps. Although shipbuilding funding limitations may prevent the Navy from procuring the five or more LCSs per year shown in the outyears of past Navy shipbuilding plans, maintaining a production rate of four per year would complete the 55-ship procurement six years earlier, in FY2023.

LPD-17 Program

The reported five year (FY2011-FY2015) shipbuilding plan shown in **Table 2** would apparently stop LPD-17 production after the procurement of the 11th ship in the class in FY2012. Some observers have proposed using the LPD-17 design as the basis for the LSD(X), which is the projected replacement for the 12 existing LSD-41/49 class amphibious ships. Ending LPD-17 procurement in FY2012 would reduce the cost benefits of using the LPD-17 design as the basis for the LSD(X) because the lengthy break in LPD-17 procurement between FY2012 and the planned start of LSD(X) procurement years from now would result in a loss of learning-curve benefits for the LPD-17 design and perhaps additional LPD-17 program shut-down and restart costs. Procuring an additional LPD-17 within the five-year shipbuilding plan, perhaps in FY2014, as the first LSD(X) would result in an earlier-than needed replacement for the first retiring LSD-41/49 class ship, but could reduce the total costs over time of using the LPD-17 design as the basis for the LSD(X) by reducing the loss in LPD-17 learning-curve benefits and perhaps avoiding other LPD-17 program shut-down and restart costs.

Mr. Chairman, distinguished members of the subcommittee, this concludes my testimony. Thank you again for the opportunity to appear before you to discuss these issues. I will be pleased to respond to any questions you might have.

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[27] The 15 LCSs shown in **Table 4** for FY2032-FY2040 appear intended as replacements for 15 of the first 55 LCSs.