

CRS Report for Congress

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Navy Ship Procurement Rate and the Planned Size of the Navy: Background and Issues for Congress

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Summary

The Administration is proposing to procure 5 new Navy ships in FY2003 and a total of 34 new Navy ships, or an average of 6.8 new ships per year, during FY2003-FY2007. An average of 8.9 new Navy ships per year – the steady-state replacement rate – would be needed over the long run to support the Administration's planned 310-ship fleet over the long run.

The ship procurement rate has been below 8.9 ships per year since FY1993. If the Administration's plan were implemented, a total of 86 ships, or an average of about 5.7 new ships per year, would be procured for the 15-year period FY1993-FY2007, creating a cumulative ship-procurement backlog since FY1993 of 47 ships relative to the steady-state replacement rate. This potential 47-ship "deficit" in ship procurement would not be immediately apparent because of the relatively large numbers of ships built in the 1970s and 1980s. After 2010, and particularly after 2020, however, when the 1970s- and 1980s-era ships begin to retire, this 47-ship backlog, if not by then redressed, would become apparent, and the size of the fleet would fall below 310 ships. Eliminating this 47-ship backlog after FY2007 would require increasing the ship-procurement rate to about 11.2 ships per year for the 20-year period FY2008-FY2027. This rate can be referred to as the post-FYDP catch-up or recovery rate. This report will be updated as events warrant.

Background

Size of the Navy.

Current Plan for 310-ship Navy. The Bush Administration reviewed the future size and structure of the Navy as part of the 2001 Quadrennial Defense Review (QDR). The final report of the 2001 QDR, submitted to Congress on September 30, 2001, left unchanged, at least for the time being, the plan for a 310-ship Navy that was approved by

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the Clinton Administration in the 1997 QDR. This plan includes 12 aircraft carriers, 116 surface combatants, 36 amphibious ships organized into 12 amphibious ready groups, and 55 attack submarines. The report noted that the Department of Defense (DoD) “will explore additional opportunities to restructure and reorganize the Armed Forces” as DoD’s transformation efforts mature.¹

Past Goals for the Size and Structure of the Navy. The planned size and structure of the Navy has changed several times over the last 20 years, largely as a result of the end of the Cold War. During the Cold War years of the 1980s, the Reagan Administration planned a Navy of about 600 ships, including 15 aircraft carriers, 242 surface combatants, and 100 nuclear-powered attack submarines. In the initial post-Cold War years of 1991-1992, the former Bush Administration, as part of its “Base Force” plan for future U.S. military forces, planned a Navy of more than 400 ships, including 12 aircraft carriers, about 145 surface combatants, and 80 attack submarines (later adjusted to about 55 attack submarines). The Clinton Administration, as part of its 1993 Bottom-Up Review (BUR) of U.S. military forces, planned a Navy of 346 ships, including 12 carriers (11 operational carriers and 1 operational/reserve training carrier), about 124 surface combatants, and 45 to 55 attack submarines. Following the 1997 Quadrennial Defense Review, the Clinton Administration planned a Navy of about 305 ships, including 12 carriers, 116 surface combatants, and 50 attack submarines. In 2000, the Clinton Administration adjusted the attack-submarine goal to 55 boats, resulting in a revised force-level goal of about 310 ships.²

Past and Current Size of Navy. In line with these changing goals, the number of ships in the Navy has decreased from a peak of 568 ships at the end of FY1987 to 318 ships as of February 25, 2002.

Recent Proposals for Larger Fleets. A June 2000 Defense Department report to Congress on Navy force-structure requirements (and an earlier draft version of this report) suggested that a fleet large enough “to accomplish all likely joint and combined warfighting requirements, overseas presence and support to contingency operations” would include 360 ships, including 15 carriers, 134 surface combatants, 68 or 72 attack

¹ U.S. Department of Defense. *Quadrennial Defense Review Report*. Washington, 2001. (September 30, 2001) p. 22 and 23.

² The Reagan-era 600-ship plan included enough amphibious ships to transport (“lift”) the assault echelons of 1.15 Marine Expeditionary Forces – a figure that was sometimes equated to roughly 4 Marine Expeditionary Brigades (MEBs). (A MEB is a force of roughly 15,000 Marines that includes an infantry regiment, a supporting aircraft group, and a service support group.) In the navies planned by the former Bush and Clinton Administrations, this goal was reduced to having enough amphibious to lift 2.5 MEBs. During the Clinton Administration, the 2.5-MEB amphibious lift goal was also equated to having enough ships for 12 Amphibious Ready Groups (ARGs). An ARG is a formation of amphibious ships with enough capacity to lift a forward-deployed Marine Expeditionary Unit (MEU) – a smaller force of roughly 2,000 Marines that includes an infantry battalion, a composite air squadron, and a smaller service support group. Given the capacities of today’s amphibious ships, the 12-ARG/2.5 MEB amphibious lift goal translates into a requirement for a force of 36 amphibious ships, including 12 “large-deck” amphibious assault ships.

submarines, and 43 amphibious ships (enough for 14 ARGs or to lift the assault echelons of 3.0 MEBs).³

More recently – in February 2002 – Administration officials began to refer to a study conducted by the Office of the Secretary of Defense (OSD), apparently completed sometime in the latter half of 2001, that concludes that the Navy should have 340 ships. At the same time, Navy officials have made reference to a need for a 375-ship Navy. Few details are currently available on the compositions of these 340- and 375-ship fleets.⁴

Rate of Ship Procurement.

Administration's Plan. The Administration's proposed FY2003 defense budget and FY2003-FY2007 Future Years Defense Plan (FYDP) call for the procurement of 5 new Navy ships in FY2003 and a total of 34 new Navy ships in FY2003-FY2007 that count toward the 310-ship goal, or of an average of 6.8 new ships per year.⁵

Past and Proposed Ship Procurement. Table 1 below shows the number of Navy ships procured each year from FY1982 to FY2002, and the number proposed for procurement in FY2003-FY2007. The table excludes ships that do not count toward the 310-ship goal, such as sealift ships operated by the Military Sealift Command and oceanographic ships operated by agencies such as the National Oceanic and Atmospheric Administration (NOAA).

Table 1. New Navy ships procured or proposed, FY1982-FY2007

82	83	84	85	86	87	88	89	90	91	92	93	94
17	14	16	19	20	17	15	19	15	11	11	7	4
95	96	97	98	99	00	01	02	03	04	05	06	07
4	5	4	5	5	6	6	6	5	5	7	7	10

Source: CRS compilation based on examination of defense authorization and appropriation committee and conference reports for each fiscal year.

³ Report on naval vessel force structure requirements, as reprinted in *Inside the Navy*, July 3, 2000: 4-8; and draft DoD report on naval force-structure requirements, as reprinted in *Inside the Navy*, March 6, 2000: 18-25. DoN officials confirmed their desire for increasing the planned size of the Navy to about 360 ships in testimony to the Military Procurement subcommittee of the House Armed Services Committee on February 29, 2000 and to the Seapower subcommittee of the Senate Armed Services Committee on March 2, 2000.

⁴ See Castelli, Christopher J. Aldridge: Future Missions Call For Navy Fleet of 340 to 370 Ships. *Inside the Navy*, February 25, 2002; Gildea, Kerry. Clark Estimates Future Naval Fleet At 375 Ships. *Defense Daily*, February 19, 2002; Selinger, Marc. Navy Would Buy Third DDG-51 If It Had The Money, Secretary Says. *Aerospace Daily*, February 14, 2002.

⁵ The 34-ship total excludes one TAGS-type oceanographic ship to be procured in FY2006 and one sealift ship for the Maritime Prepositioning Force Future (MPF[F]) to be procured in FY2007, since these ships do not count toward the 310-ship fleet.

Table 2 below compares the Bush Administration's proposed FY2003-FY2007 ship-procurement plans with previous plans. This table, like the one above, excludes ships that do not count toward the 310-ship goal.

Table 2. Current and previous ship-procurement plans

Administration plan (month/year)	Fiscal Year										Average per year
	98	99	00	01	02	03	04	05	06	07	
Bush (2/2002)						5	5	7	7	10	6.8
Bush (6/2001)					6	(not available – no FYDP)					
Clinton (2/2000)				8	8	8	8	7			7.8
Clinton (2/1999)			6	8	8	8	8	9			7.8
Clinton (2/1998)		5	5	7	7	7					6.2
Clinton (2/1997)	4	5	5	6	5	6					5.2

Source: Annual Navy budget submissions, particularly as reflected in the annual Highlights of the Department of the Navy Budget book.

Congressional Concern. The rate of Navy ship procurement and its relationship to the planned size of the Navy has been a concern in Congress since the mid-1990s. Some Members of Congress – particularly those on the defense-oversight committees – have repeatedly expressed concern over what they view as a divergence between the required size of the Navy and the planned rate of Navy ship procurement. CRS has previously examined the issue in a 1996 report, in this report since 1997, and in 1997, 1999, and 2000 testimony to Congress.⁶

Issues for Congress

Size and Structure of the Navy. One potential issue for Congress is whether a 310-ship fleet is too large, too small, or about right. During the last few years of the Clinton Administration, Navy officials argued that a 310-ship fleet would be large enough to perform its stated missions. They also acknowledged, however, that such a fleet would have little or no flexibility for responding to unforeseen events that might require additional naval deployments. More recently, as discussed above, some Navy and Administration officials have mentioned plans for increasing the planned size of the Navy to as many as 375 ships. Supporters of a fleet of more than 310 ships argue that a 310-ship fleet will not

⁶ See, for example, Statement of Ronald O'Rourke, Specialist in National Defense, Congressional Research Service, Before the House Armed Services Committee Subcommittee on Military Procurement Hearing on Ship Recapitalization, February 29, 2000 (or before the Senate Armed Services Committee Subcommittee on Seapower Hearing on Ship Procurement and Research and Development Programs, March 2, 2000), p. 1-9.

be not large enough to perform its stated missions, at least not without placing undue strain on the Navy's ships and personnel.

Others observers, in contrast, have proposed reducing requirements for forward-deployed naval forces, particularly in the Mediterranean Sea, to either reduce the strain on a 310-ship fleet or enable a reduction in fleet size to something less than 310 ships.

Although it has expressed an interest in defense transformation, the Administration has given few indications of what transformation might mean for the size and structure of the Navy.⁷

Ship Procurement Rate. A second potential issue for Congress is whether the Administration's proposed ship-procurement plan contains too many, not enough, or about the right number of ships. In assessing ship-procurement plans, one analytical tool that can be used is the concept of the steady-state replacement rate – the average rate at which ships would need to be procured over the long run to replace the fleet's ships as they reach retirement age.⁸ Assuming a fleet-wide average ship service life of about 35 years, a fleet of about 310 ships would have a steady-state ship replacement rate of about 8.9 ships per year. As mentioned above, the Bush Administration's FY2003-FY2007 FYDP includes an average of 6.8 new ships per year. If maintained over a 35-year period, an average procurement rate of 6.8 ships per year would eventually result in a fleet of about 238 ships.

The decline toward such a fleet, however, would not happen immediately: As a result of the significant downsizing of the fleet during the 1990s, the Navy today is composed to a large degree of relatively young ships, and a fleet of about 310 ships consequently could be maintained in the shorter run (i.e., between now and about 2010) with a relatively low ship procurement rate. After 2010, and particularly after 2020, however, the relatively large numbers of ships procured in the 1970s and 1980s will reach retirement age, and total fleet size will drop below 310 ships.

As shown in Table 1, the ship-procurement rate has been below 8.9 ships per year since FY1993. The Administration's proposed shipbuilding plan would keep it below 8.9 ships per year through FY2007. The Administration's ship-procurement plan, if implemented, would thus add to a backlog of deferred ship procurement (relative to the

⁷ For a discussion of defense transformation as applied to U.S. naval forces, see CRS Report RS20851, *Naval Transformation: Background and Issues for Congress*, by Ronald O'Rourke. Washington, 2002. (Updated periodically) 6 p.

⁸ The steady-state replacement rate is an average figure equal to the planned force size divided by the average service life. Ships need not be procured at a steady year-to-year rate; they can also be procured at a varying year-to-year rate that changes over time to more closely match the uneven age distribution of the Navy's existing ships and the consequent uneven rate at which these existing ships reach retirement age. Depending on factors such as available funding, shipyard production conditions, and planned transitions from one ship design to another, each approach can have its advantages and disadvantages. Over the longer run, however, the average rate of ship procurement (whether resulting from steady year-to-year procurement, variable year-to-year procurement, or some combination) would need to approximate the steady-state rate of procurement if the planned fleet is to be replaced at about the time that its constituent ships reach their retirement ages. In this sense, the steady-state procurement rate can serve as an analytical tool for assessing the potential longer-term consequences of proposed ship-procurement rates.

8.9-ship-per-year figure) that has been accumulating since FY1993, and thereby increase the rate of Navy ship procurement that would be needed after FY2007 to keep the fleet from dropping below 310 ships.

As shown in Table 1, during the 10-year period FY1993-FY2002, a total of 52 new ships were procured, or an average of 5.2 ships per year.⁹ If the Bush Administration's FY2003-FY2007 FYDP were implemented, another 34 new ships would be procured through FY2007, bringing the total for the 15-year period FY1993-FY2007 to 86 new ships, or an average of about 5.7 new ships per year. Procuring ships at the steady-state replacement rate of about 8.9 new ships per year for 15 years would result in a total procurement of about 133 ships. Procuring an average of 6.8 new ships per year during the period FY203-FY2007 would thus create a cumulative 15-year ship-procurement backlog since FY1993 of 47 ships relative to the steady-state ship-procurement requirement (133 minus 86). This potential 47-ship "deficit" in ship procurement would not be immediately apparent because of the relatively large numbers of ships built in the 1970s and 1980s, when the ship-procurement rate was well above 8.9 ships per year. After 2010, and particularly after 2020, however, when the 1970s- and 1980s-era ships begin to retire, this 47-ship backlog, if not by then redressed, would become apparent, and the size of the fleet would fall below 310 ships.

Eliminating this 47-ship backlog over the remaining 20 years in a 35-year ship procurement period beginning in FY1993 would require increasing procurement rate after FY2007 to 11.2 ships per year. If an average procurement rate of about 8.9 ships per year were to be achieved for the entire 35-year period FY1993-FY2027 (that is, if a total of 310 ships are to be procured in this period), then for the period FY2008-FY2027 (the remaining 20 years after FY2007) a total of 224 ships (310 less the 86 procured through FY2007) will need to be procured, or an average of 11.2 new ships per year. This post-FY2007 rate of 11.2 new ships per year can be called the post-FYDP catch-up or recovery rate because it would gradually work off the backlog of deferred ship procurement that has accumulated since FY1993 and thereby catch up with the total number of procured ships that would result from maintaining procurement at the steady-state rate.¹⁰

⁹ This total excludes 5 oceanographic (TAGS/TAGOR-type) oceanographic ships procured through the Navy's shipbuilding account (2 in FY1994, 2 in FY1997, and 1 in FY1999), since these ships are not operated by the Navy and do not count toward the 310-ship goal. The 52-ship total does include the final 2 Osprey (MHC-51) class coastal mine hunters, even though 9 of the 12 ships in this class are maintained in reduced operating status in Mobilization Category B, where they do not count toward the 310-ship goal. The 52-ship total also includes LHD-8, an amphibious assault ship, as an FY2002-funded ship. This ship is being funded incrementally and additional funding will be needed beyond FY2002 to complete its procurement cost. Congress has given the Navy the authority to issue a construction contract for this ship, and the Administration in its FY2002 and FY2003 budget submissions records the ship as an FY2002-procured ship.

¹⁰ Some observers consider the 35-year fleet-wide average service life figure optimistic. If the figure turns out to be 30 years, as some observers predict, then required ship procurement rates will be higher. The steady-state replacement rate for a 310-ship fleet would be about 10.3 ships per year, the FY1993-FY2007 backlog would be 69 ships, and the average required rate for the period FY2008-FY2022 -- the final 15 years in a 30-year building period beginning in FY1993 -- would be about 14.9 ships per year, a rate similar to that of the 1970s and 1980s.