

**Report to Congress on  
Annual Long-Range Plan for  
Construction of  
Naval Vessels for FY 2011**

Prepared by:  
Director, Warfare Integration (OPNAV N8F)  
Office of the Chief of Naval Operations  
2000 Navy Pentagon  
Washington, DC 20350-2000

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# **Annual Long-Range Plan for Construction of Naval Vessels for FY 2011**

## **Part I - Executive Summary**

### **I. Reporting Requirement**

This report is submitted in accordance with Chapter 9, Section 231 of Title 10 United States Code, which requires the Secretary of Defense to submit with the Defense Budget, an annual long-range plan for the construction of naval vessels.

### **II. Submission of the Report**

This year's report reflects the naval capabilities projected to meet the challenges the nation faces over the next three decades of the 21<sup>st</sup> century. The structure requirements articulated in this report are based upon the 313-ship force originally set forth in the FY 2005 Naval Force Structure Assessment that was reported to Congress and referred to by the Chief of Naval Operations in his FY 2009 budget testimony, as amended by decisions made by the Secretary of Defense in the FY 2010 President's Budget as well as decisions made during the 2010 Quadrennial Defense Review (QDR). As such, the battle force inventory presented in this plan is designed to provide the global reach; persistent presence; and strategic, operational, and tactical effects expected of naval forces within reasonable levels of funding. Consistent with the 2010 QDR, expanded requirements for irregular warfare support, ballistic missile defense (BMD), and intra-theater lift drive the near-term force structure and will necessitate a new Force Structure Assessment.

### **III. Background**

The Future Years Defense Program (FYDP) and long-term plans submitted by the Department of the Navy (DoN) in this document are shaped by four key strategic priorities outlined in the 2010 QDR:

- Prevailing in today's war;
- Preventing and deterring conflict;
- Preparing to defeat adversaries and succeed in a wide range of contingencies; and
- Preserving and enhancing the All-Volunteer Force.

To accomplish these priorities, the DoN's future battle force must be able to accomplish or contribute to the following six key joint missions:

- Defend the United States and support civil authorities;
- Conduct counterinsurgency, stability and counterterrorist operations;
- Build capacity of partner states;
- Deter and defeat aggression in anti-access environments;

- Prevent proliferation and counter weapons of mass destruction; and
- Operate effectively in cyberspace.

#### **IV. Requirements Determination:**

This 30-year shipbuilding plan uses the 313-ship battle force inventory of the Force Structure Analysis of 2005 as its baseline. This represents the point of departure for implementing several key decisions consistent with the above six missions. Specifically, this plan:

- Shifts the procurement of CVNs to five-year cost centers, which will result in a steady-state aircraft carrier force of 11 CVNs throughout the 30 years but will reduce to 10 CVNs sometime after 2040. In addition, the plan reflects a funding profile of four years of advanced procurement and four years full funding for these strategic assets.
- Solidifies the DoN's long-term plans for Large Surface Combatants by truncating the DDG 1000 program, restarting the DDG 51 production line, and continuing the Advanced Missile Defense Radar (AMDR) development efforts. Over the past year, the Navy has conducted a study that concludes a DDG 51 hull form with an AMDR suite is the most cost-effective solution to fleet air and missile defense requirements over the near to mid-term.
- Solidifies the DoN's long-term plans for Small Surface Combatants by announcing a down-select to a single sea frame for the Littoral Combat Ship (LCS) program, and by splitting its production between two competing yards. This new acquisition strategy is designed to reduce the ship's overall cost.
- Maintains an adaptable amphibious landing force of approximately 33 ships. Amphibious ships are proving to be one of the most flexible battle force platforms, as indicated by the high demand for both traditional Amphibious Ready Group operations and deployments of independent amphibious ships for a variety of presence, irregular warfare, maritime security, humanitarian assistance, disaster relief, and partnership building missions.
- Shifts away from a single MPF(F) (Maritime Prepositioning Force (Future)) Squadron optimized for high-end, forcible entry operations toward three Maritime Prepositioning Squadrons with enhanced sea basing capabilities useful across the full range of military operations. Each squadron will have one Large Medium-Speed Roll-on/Roll-off (LMSR) cargo ship (transferred from the Army), and be supported by a T-AKE and a new Mobile Landing Platform (MLP) based on existing designs for commercial ocean-going tankers.
- Transitions to a Combat Logistics Force (CLF) composed of just two type ships: T-AKEs and new double-hulled fleet oilers (T-AO(X)s).
- Cancels the replacement of Command Ships in the FYDP and instead extends the lives of the two existing command ships through at least 2029.
- Expands the size of the Joint High Speed Vessel (JHSV) fleet. With their modular payload bays, these versatile, self-deployable vessels are capable of supporting a wide range of naval missions.

While these decisions implement the strategic guidance promulgated in the QDR, the changes in the strategic environment that prompted them will require the DoN to conduct a new Force Structure Assessment.

## **V. Assumptions**

Guided and shaped by the foregoing decisions, this plan is based on two key assumptions:

- To be consistent with expected future defense budgets, the Department of the Navy's annual shipbuilding construction (SCN) budget must average no more than \$15.9B per year (FY2010\$) throughout the period of this report.
- Between FY 2019 and FY 2030, the DoN must replace the current 14-boat Fleet Ballistic Missile Submarine (SSBN) force with 12 new strategic ballistic missile submarines (SSBN(X)); funding for the SSBN(X) will be included in the SCN core budget.

## **VI. Long-term Battle Force Inventory Projections**

As a key strategic planning document, the Department of the Navy's 30-year shipbuilding plan strikes a balance between the demands for naval forces from the National Command Authority and Combatant Commanders with expected future resources. Moreover, the plan also takes into account the importance of maintaining an adequate national shipbuilding design and industrial base and strives to be realistic about the costs of ships.

To better explain the future institutional management challenges associated with building a 21<sup>st</sup> century battle force, this 30-year shipbuilding plan focuses on three different periods. The first, which covers the near-term period 2011 through 2020, is based on a very good understanding of requirements, costs and capabilities. The second period, which covers mid-term requirements projected for 2021 to 2030, is based on a projection of the types of ships expected to be built. However, these ships have yet to be informed by either concrete threat analyses or formal analyses of alternatives, and are therefore necessarily more speculative. The final far-term requirements period, from 2031 to 2040, should be considered no more than the natural outcome of plans based on the decisions and assumptions outlined above, which are certain to change over the next two decades. These three periods will be characterized in the plan by an assessment of projected force levels in 2016, 2028 and 2040 respectively (summarized in Table 1) with these years being illustrative of the overall condition of the naval force in that period.

**Table 1. Near, Mid, and Far-Term Naval Battle Force Levels**

	<b>Near-Term 2011-2020</b>	<b>Mid-Term 2021-2030</b>	<b>Far-Term 2031-2040</b>
	<b>FY 2016</b>	<b>FY 2028</b>	<b>FY 2040</b>
<b>CVN</b>	11	11	11
<b>LSC</b>	90	85	76
<b>SSC</b>	32	46	55
<b>SSN</b>	51	41	45
<b>SSGN</b>	4	-	-
<b>SSBN</b>	14	13	12
<b>Amphib</b>	33	36	30
<b>CLF</b>	30	26	28
<b>Support</b>	27	46	44
<b>Total</b>	<b>292</b>	<b>304</b>	<b>301</b>

**Note:** LSC – Large Surface Combatant (CG 47, DDG 1000, DDG 51, DDG(X) classes)  
 SSC – Small Surface Combatant (LCS, MCM, FFG-7 classes)

In the near-term planning period, the Department of the Navy begins to significantly ramp up production of those ships necessary to support persistent presence, maritime security, irregular warfare, joint sealift, humanitarian assistance, disaster relief, and partnership building missions, namely the Littoral Combat Ship and the Joint High Speed Vessel. At the same time, it continues production of large surface combatants and attack submarines, as well as amphibious landing, combat logistics force, and support ships. Yearly shipbuilding spending during this period averages \$14.5B (FY2010\$), or about \$1.5B less than the 30-year average. Nevertheless, because of the relatively low costs for the LCS and JHSV, the overall size of the battle force begins a steady climb, reaching 315 ships by FY 2020.

In the mid-term planning period, the recapitalization plan for the current Fleet Ballistic Missile Submarine inventory begins to fully manifest itself. Current plans call for 12 new SSBN(X)s with life-of-the-hull, nuclear reactor cores to replace the existing 14 OHIO-class SSBNs. Detailed design for the first SSBN(X) begins in FY 2015, and the first boat in the class must be procured no later than FY 2019 to ensure that 12 operational ballistic missile submarines will always be available to perform the vital strategic deterrent mission. Eight more SSBN(X)s will be procured between FY 2021 and FY 2030 (with the final three coming in the next planning period, beyond FY 2031). Because of the high expected costs for these important national assets, yearly shipbuilding expenditures during the mid-term planning period will average about \$17.9B (FY2010\$) per year, or about \$2B more than the steady-state 30-year average. Even at this elevated funding level, however, the total number of ships built per year will inevitably fall because of the percentage of the shipbuilding account which must be allocated for the procurement of the SSBN. In the far-term planning period, average shipbuilding expenditures fall back to a more sustainable level of about \$15.3B (FY2010\$) average per year. Moreover, after the production run of SSBN(X)s comes to an end in FY 2033, the average number of ships built per year begins to rebound. Together with steps taken in earlier planning periods to increase the service lives of Flight IIA DDG 51s, the overall size of the battle force grows to 301 ships in FY 2040.

#### **IV. Summary**

This shipbuilding program described in this report invests where necessary to ensure the DoN's battle force remains equal to the challenges of today as well as those it may face in the future. The program represents a good balance between the expected demands upon the battle force for presence, partnership building, humanitarian assistance, disaster relief, deterrence, and war-fighting as well as expected future resources. It invests a sustainable average of \$15.9B (FY2010\$) a year in new ship construction, and maintains an average yearly battle force inventory of approximately 300 ships. The resulting 21<sup>st</sup> century battle force will help achieve all four strategic priorities set forth in the 2010 QDR, and continue to make vital contributions to all six joint missions outlined above.

# Annual Long-Range Plan for Construction of Naval Vessels for FY 2011

## Part II – FY 2011 Report

### I. Reporting Requirement

This report is submitted in accordance with Chapter 9, Section 231 of Title 10 United States Code, which requires the Secretary of Defense to submit with the Defense Budget, an annual long-range plan for the construction of naval vessels that includes the following:

(a) ANNUAL NAVAL VESSEL CONSTRUCTION PLAN AND CERTIFICATION – The Secretary of Defense shall include with the defense budget materials for a fiscal year:

- (1) A plan for the construction of combatant and support vessels for the Navy developed in accordance with this section; and
- (2) A certification by the Secretary that both the budget for that fiscal year and the future-years defense program provide for funding of the construction of naval vessels at a level that is sufficient for the procurement of the vessels provided for in the plan.

(b) ANNUAL NAVAL VESSEL CONSTRUCTION PLAN – Each such naval vessel construction plan shall contain the following:

- (1) A detailed program for the construction of combatant and support vessels for the Navy over the next 30 fiscal years.
- (2) A description of the necessary naval vessel force structure to meet the requirements of the national security strategy of the United States or the most recent Quadrennial Defense Review (*QDR*).
- (3) The estimated levels of annual funding necessary to carry out the program, together with a discussion of the procurement strategies on which such estimated levels of annual funding are based.

(c) ASSESSMENT WHEN VESSEL CONSTRUCTION BUDGET IS INSUFFICIENT TO MEET APPLICABLE REQUIREMENTS – If the budget for a fiscal year provides for funding of the construction of naval vessels at a level that is not sufficient to sustain the naval vessel force structure specified in the naval vessel construction plan for that fiscal year under subsection (a), the Secretary shall include an assessment that describes and discusses the risks associated with the reduced force structure of naval vessels that will result from funding naval vessel construction at such a level.

In the FY 2008 National Defense Authorization Act the Senate Armed Services Committee requested an addendum to this report that addresses the Navy's plans for decommissioning ships during the Future Years Defense Plan (FYDP). Accordingly, the following information is included with the report:

(a) Hull numbers of the ships that are to be disposed by dismantling or sinking within the FYDP,

- (b) Hull numbers of ships that are to be decommissioned within the FYDP,
- (c) Gaps in capability that will occur upon the decommissioning of each ship, including duration of that capability gap, and
- (d) Disposition proposed for each ship upon decommissioning.

## **II. Submission of the Report**

This year's report reflects the naval capabilities projected to meet the challenges the nation faces over the next three decades of the 21<sup>st</sup> century. The structure requirements articulated in this report are based upon the FY 2005 Naval Force Structure Assessment that was reported to Congress and referred to by the Chief of Naval Operations in his FY 2009 budget testimony, as amended by decisions made by the Secretary of Defense in the FY 2010 President's Budget as well as decisions made during the 2010 Quadrennial Defense Review (QDR). As such, the battle force inventory presented in this plan is designed to provide the global reach; persistent presence; and strategic, operational, and tactical effects expected of naval forces within reasonable levels of funding. Consistent with the 2010 QDR, expanded requirements for irregular warfare support, ballistic missile defense, and intra-theater lift drive the near-term force structure, and form the foundation for the mid to long-term structure.

## **III. Background**

This document derives from and is intended to translate both the National Security and National Defense Strategies; which broadly apply to many service requirements, into executable program support requirements around which the DoN will organize. The plan contained herein also reflects *A Cooperative Strategy for 21<sup>st</sup> Century Seapower*, the maritime component of national strategy signed out by the Chief of Naval Operations and the Commandants of the Marine Corps and Coast Guard in October 2007, as well as the modifications to our national strategies as set forth in the FY 2010 President's Budget and the 2010 Quadrennial Defense Review.

## **IV. Requirements Determination:**

The DoN's 30-year shipbuilding plan is built around three basic precepts. First, the plan projects what platforms the Navy will need to accomplish its assigned missions over the next three decades. These needs will be described in the following sections on force structure. Second, the plan balances needs against expected resources, and assesses the risks associated with the Department's balancing efforts. Finally, the plan aims to maintain the shipbuilding design and industrial base necessary to build and sustain tomorrow's Navy.

Development of an effective shipbuilding plan is challenging given the enormous demands for capital necessary to build and maintain a strong naval force. The Department considers several factors in developing its 30-year shipbuilding plan. Foremost are the force structure requirements to meet our national strategy and Combatant Commander (COCOM) missions. In addition to COCOM requirements, several other factors also play a significant role. The complex configuration and size of naval vessels results in design times that range from two to seven or more years. Similarly, construction time can span up to eight years, and acquisition costs range from hundreds of millions to several billions of dollars. Given the capital investment required, naval vessels are procured in relatively low numbers which can cause high and low

cycles in annual budget requirements. Because of their technological capabilities, size, propulsion plant type, and warfare systems, Navy ships can only be constructed at a limited number of U.S. shipyards. This makes the timing of ship procurement a critical matter to the shipbuilding and combat system industries. Finally, ships' service lives can range from 20 years for smaller ships to 50 years for nuclear-powered aircraft carriers, mandating that ships be designed to accommodate capability upgrades throughout their time in service in order to remain relevant regardless of the complexity represented by an evolving threat capability.

As will be evident in the plan outlined in this report, the Department of the Navy faces a serious planning challenge over the next several decades. The ships brought into service during the 1980s, some procured at a yearly rate of four to five ships of a single class, are projected to retire during the next 15-20 years. With the need for multi-mission platforms vice single mission platforms, and recognizing the significantly increased capabilities of current new construction ships, the Navy cannot recapitalize its legacy ships at the same rate at which they were originally procured and maintain an affordable, balanced procurement plan. The Department therefore intends to utilize spiral upgrades to existing ships to the maximum extent possible, and to extend the service lives of specific classes of ships. Both will help maintain the battle force inventory during the heavy ship retirement period expected in the 2020s and 2030s.

Great care has been taken to describe a plan that is fiscally sustainable over the 30-year planning horizon. As a result, annual procurement and funding levels have been leveled to the greatest extent possible, and annual production rates are often at minimum sustaining rates. While this plan is fiscally prudent, it will likely cause some increases in ship unit costs due to production inefficiencies.

#### **A. Assumptions**

In order to effectively address the DoN's shipbuilding needs, several assumptions must be made that will form the foundation for the future shipbuilding plans. First, we have reviewed the threat-requirements balance and divided the shipbuilding plan into three periods. The first of these is the near-term extending from FY 2011 to 2020 during which we have a very good understanding of requirements, costs and capabilities. The second period runs from FY 2021 to 2030 and represents the mid-term where the requirements and capabilities of ships being built are still evolving and are likely to be determined as the threat technologies and business conditions change the complexion of the Navy we are building. The final period from FY 2031 to 2040 will be the far-term where the industrial capabilities, capacities, business conditions and requirements are projected for planning purposes.

- **Near-Term:** This period runs from FY 2011 to 2020 and includes the current Future Years Defense Plan (FYDP). The requirements underpinning this phase are a balance of ships that are; fiscally achievable and lay the foundation for the 21st Century fighting force while simultaneously sustaining our critical industrial capacity. Given known ship capability and quantity requirements, the cost estimates are judged to be accurate in this period.
- **Mid-Term:** This period is the time frame from just beyond the FYDP extending out ten years, FY 2021 to 2030. This phase addresses the DoN's transformation toward a 21<sup>st</sup> Century fighting force with the introduction of improved capabilities. The requirements underpinning this plan support *A Cooperative Strategy for 21st Century Seapower, October 2007 – The Maritime Strategy* – and are based on the QDR, intelligence assessments of

future threats and operating environments. The objective in this phase is to make adjustments to the plan in order to balance the mix of ships, unit costs, budgeted resources, and industrial base concerns. The accuracy of the cost estimates diminishes for the force structure estimates in this timeframe.

- **Far-Term:** This phase encompasses FY 2031 to 2040. The requirements during this period are not as well defined as those for the near or mid-term. The number, types and capabilities of ships are estimated based on anticipated Joint and Navy war-fighting requirements, and cost estimates are notional due to the uncertainty of business conditions affecting the shipbuilding industry. In this report, the far-term phase largely addresses the recapitalization of today's legacy ships.

Our second set of major assumptions deal with the principal striking asset and conventional deterrent of the naval force – the Nuclear Aircraft Carrier (CVN) program. The Navy assumes a four year advanced procurement and four years of full funding profile, similar to the profile authorized by the FY 2007 NDAA for CVN 78, 79 and 80. In this report, the Navy uses the full authorities granted under this act and funds the CVN program with the four year Advanced Procurement (AP) profile necessary to meet required in-yard dates for long lead material and the new four year split funding profiles granted in FY 2007. In addition, and in keeping with the direction from the Secretary of Defense and President, the Navy has shifted the CVN profile to one that repeats every five years and will support an overall inventory of CVNs of 11 ships through the 30-year period and 10 ships beginning after FY 2040. Finally, the Navy has employed two year split funding for large-deck amphibious assault ships. While beneficial for these ship classes, this approach has limited utility for other high-value ship procurement, such as ballistic missile submarines, since serial production negates the value of split funding options.

Our third major assumption deals with replacement of the Fleet Ballistic Missile Submarine (SSBN) inventory. As indicated in the Navy's FY 2009 shipbuilding report, the OHIO class ballistic missile submarine (SSBN) will begin retiring in FY 2027. Their recapitalization must start no later than FY 2019 to ensure operational submarines will be available to replace these vital assets as they leave operational service. Contrary to previous plans, this FY 2011 shipbuilding plan includes the provision for funding SSBN recapitalization from the Navy's expected shipbuilding funds. There are many factors influencing this new SSBN that will impact the ship's maintenance cycle. Resolution of these factors will determine the number of ships required to maintain twelve operational submarines. As a result, until those decisions are made as part of the acquisition process, the procurement plan in this report supports a minimum inventory of 12 SSBNs, for this force. Should the ongoing Nuclear Posture Review change the SSBN requirements, the number of replacement ships may need to be adjusted to accommodate that outcome.

The final principal assumptions are that the Navy will provide the force structure necessary to support the President's commitment to defend our European allies from Ballistic Missile threats, and that we will support the Combatant Commander demands for intra-theater lift.

## **B. Quadrennial Defense Review**

The most recent Quadrennial Defense Review (QDR) will be submitted to Congress at the same time as this report and its priorities and guidance have been considered in this year's shipbuilding plan. The Future Years Defense Program (FYDP) and long-term plans submitted by the Department of the Navy (DoN) in this document are thus shaped by the following four key strategic priorities outlined in the 2010 QDR:

- Prevailing in today's war;
- Preventing and deterring conflict;
- Preparing to defeat adversaries and succeed in a wide range of contingencies; and
- Preserving and enhancing the All-Volunteer Force.

To accomplish these priorities, as tasked in the QDR, the DoN's future battle force must be able to accomplish or contribute to the following six key joint missions:

- Defend the United States and support civil authorities;
- Conduct counterinsurgency, stability and counterterrorist operations;
- Build capacity of partner states;
- Deter and defeat aggression in anti-access environments;
- Prevent proliferation and counter weapons of mass destruction; and
- Operate effectively in cyberspace.

As these priorities and missions suggest, in addition to the traditional war-fighting demands that have long driven previous naval force structure requirements, this plan elevates the long-standing concepts of global engagement, partnership building, and theater security cooperation to the level of primary missions for tomorrow's naval forces.

## **C. Force Structure**

Within the framework of the maritime strategy, mission-tailored force packages are sized and postured to meet the unique mission and capability demands of each Combatant Commander's geographical region. The Navy's overall battle force structure integrates these force packages to sustain a day-to-day forward presence in each theater and ensure a credible capability to support related theater campaign plans and to deter or respond to major combat operations. The Navy's previous requirement (313-ship battle force summarized in Table 2), represents the baseline for developing the PB11 shipbuilding plan. As mentioned above, the structure requirements articulated in this report reflect the comments made by the Chief of Naval Operations in his FY 2009 budget testimony, as amended by decisions made by the Secretary of Defense in the FY 2010 President's Budget as well as decisions made during the 2010 Quadrennial Defense Review. Table 2 is thus the departure point for resourcing mission/requirements changes that have occurred since the last Force Structure Assessment.

**Table 2. Naval 2020-2024 Baseline Force Level**

Type/Class	FY 2009
Aircraft Carriers	11
Large Surface Combatants	88
Small Surface Combatants	55
Attack Submarines	48
Guided Missile Submarines	4
Ballistic Missile Submarines	14
Amphibious Warfare Ships	31
Combat Logistics Force Ships	30
Maritime Prepositioning Force (Future)	12
Support Ships	20
<b>Total Battleforce Level</b>	<b>313</b>

Specifically, this plan:

- Shifts the procurement of CVNs to five-year cost centers, which will result in a steady-state aircraft carrier force of 11 CVNs throughout the 30-year period. In addition, the plan reflects a funding profile of four years of advance procurement and four years of full funding for these strategic assets.
- Solidifies the DoN’s long-term plans for Large Surface Combatants by truncating the DDG 1000 program, restarting the DDG 51 production line, and continuing the Advanced Missile Defense Radar (AMDR) development efforts. Over the past year, the Navy has conducted a study that concludes a DDG 51 hull form with an AMDR suite is the most cost-effective solution to fleet air and missile defense requirements over the near to mid-term.
- Solidifies the DoN’s long-term plans for Small Surface Combatants by announcing a down-select to a single sea frame for the Littoral Combat Ship (LCS) program, and by splitting its production between two competing yards. This new acquisition strategy is designed to reduce the ship’s overall cost.
- Maintains an adaptable amphibious landing force of approximately 33 ships. Amphibious ships are proving to be one of the most flexible battle force platforms, as indicated by the high demand for both traditional Amphibious Ready Group operations and deployments of independent amphibious ships for a variety of presence, irregular warfare, maritime security, humanitarian assistance, disaster relief, and partnership building missions.
- Shifts away from a single MPF(F) (Maritime Prepositioning Force (Future)) squadron optimized for high-end, forcible entry operations toward three Maritime Prepositioning Squadrons with enhanced sea basing capabilities useful across the full range of military operations. Each squadron will have one Large Medium-Speed Roll-on/Roll-off (LMSR) cargo ship (transferred from the Army), and be supported by a T-AKE and a new Mobile Landing Platform (MLP) based on existing designs for commercial ocean-going tankers.
- Transitions to a Combat Logistics Force (CLF) composed of just two type ships: T-AKEs and new double-hulled fleet oilers (T-AO(X)s).

- Cancels the replacement of Command Ships in the FYDP and instead extends the lives of the two existing command ships through at least 2029.
- Expands the size of the Joint High Speed Vessel (JHSV) fleet. With their modular payload bays, these versatile, self-deployable vessels are capable of supporting a wide range of naval missions.

In summary, then, the QDR has resulted in revised mission priorities to better focus the Department on the war we are in, or those we are more likely to be in, through the foreseeable future. Our commitment to more aggressively support Special Operations Forces, increased demand for irregular warfare capability, dedication to improved theater security cooperation and engagement capability as well as the additional Ballistic Missile Defense missions assigned to the Navy will be factors that must be considered in determining the overall structure of the force best suited to the future envisioned by the QDR. Additionally, the demands for naval forces from the COCOMs have continued to increase and have driven some changes in these baseline force structure requirements. While it is important to understand what the optimal force levels are, it must also be understood that these force levels are transitory and dependent on many variables.

Given these decisions, the following section describes the changes to each component of the battle force in greater detail:

- Aircraft carriers:
  - Provide forward presence to protect U.S. vital interests, assure friends and allies, as well as deter and dissuade potential adversaries. These ships are the centerpiece of the Navy's combat striking power. This plan maintains the required CVN force structure to sustain the Navy's required forward posture and meet surge requirements for war-fighting. To support these operational requirements, a minimum of 10-11 nuclear-powered aircraft carriers are required today. As was the case in the FY 2009 report, the Navy remains committed to supporting this requirement through FY 2040.
- Large surface combatants:
  - This category of ships is comprised of guided missile cruisers and guided missile destroyers which, when viewed as a whole, fulfill broad mission requirements both independently and in conjunction with a strike group. The demands for increased capability and capacity in Integrated Air and Missile Defense (IAMD) and open ocean anti-submarine warfare (ASW) have resulted in a shift of focus on the type and quantity of these ships.
  - The Navy, in consultation with OSD, conducted a Radar/Hull Study for future destroyers. The objective of the study was to provide a recommendation for the total ship system solution required to provide Integrated Air and Missile Defense (IAMD) (simultaneous ballistic missile and anti-air warfare (AAW) defense) capability while balancing affordability with capacity. As a result of the study, the Navy is proceeding with the Air and Missile Defense Radar (AMDR) program.
  - As in the past, cruisers and destroyers will continue to deploy with strike groups to fulfill their traditional roles. Many will be required to assume additional roles within the

complex BMD arena. Ships that provide BMD defense will sometimes be stationed in remote locations, away from strike groups, in a role as theater ballistic missile defense assets. The net result of these changes to meet demands for forward presence, strike group operations and ballistic missile defense places additional pressure on the existing inventory of surface combatants, currently base lined at 88. While the new FSA may require the Navy to procure a greater number of these ships, we will also have to consider redistributing assets currently being employed for missions of lesser priority for these new missions as a result of the 2010 QDR and the President's commitment to supporting the missile defense of our European allies

- Small surface combatants:
  - This category of ships is comprised of Littoral Combat Ships, Frigates and Mine Warfare ships which fulfill broad mission requirements in the littoral. The Littoral Combat Ships will shoulder two primary burdens. First, they must be able to meet war-fighting needs in the areas of mine countermeasures, littoral anti-submarine warfare and anti-swarm small craft defense. These are the primary missions for which these ships were developed. These ships also represent new innovation in the area of modular combat systems. Operating in groups, they will provide greater flexibility in overcoming anti-access strategies by providing combatant commanders with the ability to rapidly mass forces in response to terrorist threats or crisis below the level of Major Combat Operations. Second, beyond the war-fighting demands, and somewhat independent of the mission module being carried at the time, these ships will also be called upon to provide support to U.S. theater security cooperation, maritime intercept operations, security force assistance, and other engagement missions. Owing to their speed, smaller size and relatively shallow draft, these ships offer partner navies compatible ships with which to operate on a more equivalent basis. A force of 55 Littoral Combatant Ships is required to support the Navy's long-term war-fighting and operating needs.
- Attack and guided missile submarines:
  - These ships have a unique capability for stealth and persistent operation in an access-denied environment and to act as a force multiplier by providing high-quality Intelligence, Surveillance, and Reconnaissance (ISR) as well as indication and warning of potential hostile action. In addition, attack submarines are effective in anti-surface ship warfare and anti-submarine warfare in almost every environment, thus eliminating any safe-haven that an adversary might pursue with access-denial systems. As such, they represent a significant conventional deterrent. While our attack submarine fleet provides considerable strike capacity already, our guided missile submarines provide significantly more strike capacity and a robust capability to covertly deploy special operations force (SOF) personnel. Today, the Navy requires 48 attack submarines and four guided missile submarines (SSGN) to sustain our capabilities in these areas. The Navy is studying alternatives to sustain the capability these ships bring to the battle force without requiring the Navy to construct a purpose-built ship for their replacement.

- Ballistic Missile Submarines:
  - These ships are the most survivable leg of the Nation's strategic arsenal and provide the Nation's only day-to-day assured nuclear response capability. They provide survivable nuclear strike capabilities to assure allies, deter potential adversaries, and, if needed, respond in kind. The number of these submarines was delineated by the Nuclear Posture Review 2001 which established the requirement of a force comprised of 12 operational SSBNs (with two additional in overhaul at any time). As highlighted previously, the replacement SSBN program inventory is assumed to be 12 total ships. The Nuclear Posture Review, which is expected to be completed in 2010 will validate the SSBN requirement and will be reflected in future reports.
  
- Amphibious Warfare Ships:
  - These ships provide distributed forward presence to support a wide range of missions from theater security cooperation, and humanitarian assistance to conventional deterrence, and assuring access for the Joint Force. In support of the day-to-day COCOM demands and in major combat operations the number of amphibious ships in the Department's inventory is critically important. As discussed in the FY 2009 Shipbuilding Report to Congress, the Navy is reviewing options to increase the assault echelon to reflect a minimum of 33 amphibious ships to support a forcible entry operation conducted by the assault echelon of 2.0 Marine Expeditionary Brigades (MEBs). The Navy and Marine Corps have determined a minimum force of 33 ships represents the limit of acceptable risk in meeting the 38-ship amphibious force requirement for the Assault Echelon in a 2 Marine Expeditionary Brigade forcible entry operation. A 33-ship force comprised of 11 LHA/D amphibious assault ships and a mix of 11 LPD 17 amphibious transport docks and 11 LSD(X) dock landing ships would be sufficient to support forcible entry operations with acceptable risk in the speed of arrival of combat support elements of the MEB.
  
- Combat Logistics Force Ships:
  - These ships supply critical support for forward deployed forces. The vital role of underway replenishment of fuel, food, repair parts, ammunition, and equipment enables Navy ships to operate for extended periods at sea. To support forward presence, major combat operations and these emergent missions, the Navy requires 30 Combat Logistics Force ships including 4 T-AOE fast combat support ships, 11 T-AKE auxiliary dry cargo, and 15 T-AO fleet oilers. It is anticipated that future T-AO ship designs will permit reduction in Combat Logistics Force to two ship types, T-AO and T-AKE, as the triple-product (fuel/stores/ammo) T-AOEs reach the end of their service lives and are retired. The long term requirement will remain at 30 ships (11 T-AKEs and 19 T-AOs). Additionally, it is the Navy's intention to comply with the double hull requirement extant for petroleum product ships worldwide as part of its T-AO recapitalization plan through modification of existing commercial double-hull designs.
  
- Maritime Prepositioning Force (Future) (MPF(F)):
  - Sea-basing will continue to be a critical enabler for joint forces through the foreseeable future. We are committed to providing a robust capability to demonstrate U.S. resolve

anywhere in the world, and in response to any crisis, that the President deems may warrant our presence regardless of the access that may or may not be granted. The development of this capability is a central organizing principle that we must pursue.

- The MPF(F) concept envisioned a forward-deployed squadron of ships to enable rapid closure to areas of interest, at-sea assembly, and tactical employment of forces to areas of interest in the event of crisis. Although applicable in the lower end of the war-fighting spectrum, this squadron was primarily designed for use in major combat operations. Due to refocusing of priorities and cost, this concept has been restructured and replaced with alternatives which enhance the existing capabilities of the Maritime Prepositioning Squadron (MPS). While the MPF(F) concept originally intended for this purpose has been truncated in this year's program, the creation of a support program has been added to enable development of the Tactics, Techniques and Procedures (TTP) required to fully exploit this mission area in the future. Ships previously discussed in the context of the MPF(F) are moved to the Command and Support section for battle force accounting. In addition, the Navy has determined the LHA 6 class amphibious assault ships previously designated for the MPF(F) would better serve the Navy and Marine Corps in the assault echelon force where they could be employed in Joint forcible-entry operations. As such, the requirement for these ships has been moved to the Amphibious Warfare category.
- Support Vessels:
  - Consistent with the Navy's desire for development of TTPs and in order to enhance our existing commitment to the development of an effective sea-base, we have added ships to the program which will provide the ability of the existing MPS force to transfer and support forces in-stream for ashore operations. The MPS enhancement program will provide a first step in crafting a sea based capability for use in benign or low-threat environments and will enable the Navy and Marine Corps to hone the TTPs that are necessary to execute this capability. In support of this enhanced MPS concept of operations, three T-AKE auxiliary dry cargo ships have been shifted to provide logistic support to Marine Corps units ashore. Further, the Navy recognizes the need to provide for at-sea transfer of vehicles from a cargo ship and to provide an interface with Landing Craft Air-Cushioned (LCAC) vessels (both key capabilities the MPF(F) concept was to provide). The Navy intends to procure mobile landing platforms to fulfill this capability. The planned MLPs, a lower cost variant of the MPF(F) MLP platform, will be based on an ALASKA class crude oil carrier modified to be a float-on/float-off vessel. These ships will provide concept validation, operational testing, and an incremental operational capability. Operationally, the three current MPSRONS will each have an additional MLP and an additional T-AKE to supplement the current maritime prepositioning force in order to better provide in-theater capability to support resupplying a MEB.
  - The JHSV provides a flexible option for moving personnel and material within and between operating areas. The increased number of Navy JHSVs compared to the FY 2009 report reflects the Navy's further commitment to engagement operations around the world. Combatant Commanders have made clear to the Navy their desire for high-speed, shallow draft vessels that can execute unique operations with partner nations throughout each of their areas of responsibility. The JHSV is the largest addition to this category of vessels and is assumed to be operated by civilian mariners and the Military Sealift

Command. These numbers do not include the five JHSVs being procured by the Army. As conditions necessitate, and depending on the mission assigned to an individual ship, various contingents of military personnel will be assigned to these ships to support communications and theater security cooperation mission sets beyond those that could be solely serviced by the organic civilian crew.

- The Navy requires a total four T-ARS salvage ships, five T-AGOS ocean surveillance ships, four T-ATF fleet tugs, two LCC command ships, and two AS submarine tenders.
- Hospital ships (T-AH), other non-combatants such as the existing maritime prepositioning ships, the Ready Reserve Force, strategic sealift vessels, and small craft are not addressed in this report as they are not designated as part of the Navy's battle force.

## V. Near-Term Naval Vessel Construction Plan

Table 3 displays the Department of the Navy's (DoN) new ship construction procurement and funding plans for FY 2011 and the Future Years Defense Plan as reflected in the FY 2011 President's Budget submission. *(In this report new ships planned for future procurement or for replacement of legacy ships are annotated with (X) after their ship type until their class has been named, such as SSBN(X) and T-ATF(X) in the following table.)*

**Table 3. FY 2011-2015 New Construction Shipbuilding Procurement and Funding Plan**

Ship Type	FY 2011		FY 2012		FY 2013		FY 2014		FY 2015		Total	
	(\$M)	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty
CVN 78 <sup>1</sup>	2,640		495		2,418	1	3,387		2,284		11,224	1
DDG 51	2,970	2	2,172	1	3,415	2	2,060	1	3,802	2	14,418	8
LCS <sup>2</sup>	1,509	2	1,808	3	2,334	4	2,417	4	2,748	4	10,816	17
SSN 774 <sup>3</sup>	5,133	2	4,730	2	4,778	2	6,127	2	6,301	2	27,070	10
SSBN(X) <sup>4</sup>									955		955	
LPD 17 <sup>5</sup>			1,857	1							1,857	1
LHA(R) <sup>6</sup>	950	1	2,101								3,051	1
MLP <sup>7</sup>	380	1			500	1			500	1	1,380	3
T-ATF(X)									59	1	59	1
JHSV <sup>8</sup>	181	1	207	1	378	2	390	2	399	2	1,555	8
<b>Total New Construction</b>	<b>13,762</b>	<b>9</b>	<b>13,369</b>	<b>8</b>	<b>13,823</b>	<b>12</b>	<b>14,380</b>	<b>9</b>	<b>17,049</b>	<b>12</b>	<b>72,383</b>	<b>50</b>

Notes:

1. Funding for the CVN 78 program reflects Congressional authorization to incrementally fund nuclear aircraft carrier full procurement funding over a four-year period. Advance procurement and advance construction have been previously appropriated
2. FY 2011 and FY 2012 include Economic Order Quantity (EOQ) funding. Funding does not include LCS mission modules, which are funded in Other Procurement, Navy (OPN).
3. Advanced procurement/Economic Order Quantity funding previously appropriated
4. Advance procurement funding.
5. Advance procurement funding previously appropriated.
6. Advance procurement funding previously appropriated.
7. Funded in National Defense Sealift Fund (NDSF). Advance procurement for FY 2011 ship provided in FY 2010.
8. The JHSV program is a joint Army and Navy program. Quantities shown reflect Navy procurement only.

## VI. Naval Vessel Construction Plan

As articulated in the previous section of this report, in FY 2005, the Navy established a target force level of 313 battle force ships to implement the maritime strategy with an acceptable

degree of risk. The Navy has looked more closely at where it would be willing to assume risk for the future and not procure those ships which are not absolutely necessary in executing the missions for which the Navy is solely responsible. In completing this review, the Navy has balanced the anticipated risk in the period with the uncertainties of the future to achieve the best balance of missions, resources and requirements possible. This report provides a projected shipbuilding plan that balances the level of risk across the fleet; while the long-term risk has increased above past assessments, it is acceptable for the force and does not unnecessarily place Sailors, Marines or Airmen in jeopardy.

The long-range naval vessel construction plan shown in Table 4 displays the projected procurement of 276 ships over the next 30 years. A significant change since the FY 2009 report is that in this report, the Navy funds the ballistic missile submarine recapitalization from within its anticipated Total Obligation Authority. During the years in which the new submarine is being procured, the procurement of other ship types will be reduced resulting in force level and industrial base impacts. This plan will achieve a peak battle force inventory of 320 ships in FY 2024, after which the force level drops as legacy cruisers, destroyers, submarines and amphibious ships retire. Ultimately, the force level averages about 303 ships between FY 2020 and FY 2040. Overall, the construction plan has been adjusted to reduce year-to-year budget fluctuations as much as possible while maintaining the best feasible procurement sequence.

**Table 4. FY 2011-2040 Long-Range Naval Vessel Construction Plan**

Fiscal Year	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	
Aircraft Carrier			1					1					1					1					1						1		
Large Surface Combatant	2	1	2	1	2	1	2	1	2	1	2	1	2	1	1	2	2	1	2	1	2	2	2	2	2	2	2	2	2	2	2
Small Surface Combatant	2	3	4	4	4	3	3	3	3	2	2	2	2	2	1	2	1	2	1	2	1	2	1	2	2	2	2	2	2	2	
Attack Submarines	2	2	2	2	2	2	2	1	2	2	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	2	1	2	1
Ballistic Missile Submarines									1			1		1	1	1	1	1	1	1	1	1	1								
Amphibious Warfare Ships	1	1				1	1		1		2		1		2		1		2		1		2		1		1	1	1		
Combat Logistics Force							1		1		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Support Vessels	2	1	3	2	4	2	3	3	3	4	2	3	3	2	1			1		2	1	1	2	2	2	2	2	2	2	2	
<b>Total New Construction Plan</b>	<b>9</b>	<b>8</b>	<b>12</b>	<b>9</b>	<b>12</b>	<b>9</b>	<b>12</b>	<b>9</b>	<b>13</b>	<b>9</b>	<b>11</b>	<b>10</b>	<b>11</b>	<b>8</b>	<b>8</b>	<b>7</b>	<b>7</b>	<b>8</b>	<b>8</b>	<b>8</b>	<b>8</b>	<b>8</b>	<b>11</b>	<b>8</b>	<b>10</b>	<b>7</b>	<b>10</b>	<b>9</b>	<b>10</b>	<b>7</b>	

**A. Near-Term Naval Vessel Construction Plans**

- The plan reflects a funding profile of four years of advanced procurement and four years full funding for these CVNs. This incremental funding permits more efficient use of resources and facilitates stability in the other shipbuilding programs. Additionally, Table 4 reflects the Navy's decision to delay procurement of CVN 79 from FY 2012 to FY 2013; placing the CVNs on a five-year separation in the building profile.
- Large surface combatants: In the Navy's FY 2009 report, the lead CG(X) guided missile cruiser was planned to start in FY 2011. This ship was to fulfill a critical role in Integrated Air and Missile Defenses (IAMD); but due to the ship's projected high cost and immaturity of its combat systems technology and still evolving joint BMD architecture, the Navy has determined that it is not feasible to continue to pursue a new-design CG(X) procurement program at this time. However, the increased demands for additional capability and capacity in IAMD as indicated in the Future DDG (Radar/Hull Study), make it critical to pursue the technology development and combat system design for application on a smaller combatant such as a DDG 51 variant. Therefore, the Navy has restarted the DDG 51 guided missile destroyer procurement program with eight of these ships being procured between 2011 and

2015. Additionally, the Navy has truncated its procurement plans for the DDG 1000 class at three ships.

- In the small surface combatant category, Table 4 shows the Navy has integrated the changes to the Littoral Combat Ship procurement strategy reported to Congress in September 2009.
- Procurement of VIRGINIA class attack submarines will increase to two per year starting in FY 2011 in an effort to mitigate mid-to-far-term inventory shortfalls.
- The Navy plans to procure an LHA 6 class ship in FY 2011 and its eleventh LPD 17 class amphibious transport dock in FY 2012. LSD(X), replacement for the existing LSD 41 class, will begin in FY 2017.
- Navy will procure three mobile landing platforms as well as the three previously appropriated T-AKEs. MLPs will be designed as float-on/float-off (FLO/FLO) ships to be integrated with existing maritime prepositioning squadrons and provide some of the requirements originally planned for the MPF(F) MLP through enhancement of existing MPS capability.
- There are several changes to the support ship category. As discussed in the QDR, the two command ship replacements (LCC(R)) in FY 2012 and FY 2014 have been cancelled and will not be procured in the FYDP. A service life extension program has been implemented to extend the in-service command ships to FY 2029. Due to affordability, the Navy is exploring alternative means for fulfilling this operational function beyond this date. In response to changes in QDR mission priorities, the Department has increased procurement of the Joint High Speed Vessels (JHSV) to two per year beginning in FY 2013 to meet Combatant Commanders' demands for intra-theater lift and Theater Security Cooperation support. The overall inventory objective for these ships will be developed in a forthcoming Force Structure Assessment (FSA). Additionally, the three T-AKEs procured for MPF(F) and the three MLPs will be included in the ship-count as support ships.

## **B. Mid-Term Naval Vessel Construction Plans**

- As discussed above, the DDG 51 production line has been restarted. While all of these new-start guided missile destroyers will be delivered with some BMD capability, those procured in FY 2016 and beyond will be purpose-built with BMD as a primary mission. While there is work to be done in determining its final design, it is envisioned that this DDG 51 class variant will have upgrades to radar and computing performance with the appropriate power generation capacity and cooling required by these enhancements. These upgraded DDG 51 class ships will be modifications of the current guided missile destroyer design that combine the best emerging technologies aimed at further increasing capabilities in the IAMD arena and providing a more effective bridge between today's capability and that originally planned for the CG(X). The ships reflected in this program have been priced based on continuation of the existing DDG 51 re-start program. Having recently completed the Hull and Radar Study, the Department is embarking on the requirements definition process for these AMDR destroyers and will adjust the pricing for these ships in future reports should that prove necessary.

- The Navy intends to continue procurement of Littoral Combat Ships (LCS) and, allowing for their 25-year service life, plans to build to its inventory total of 55 by FY 2035. A total of 66 of these ships will be procured over the 30-year period; including 17 replacements for those retiring at the end of their planned service life during this period.
- The Navy has assumed, for the purposes of this report, that there will be no changes in the strategic deterrent posture for sea-based forces beyond those associated with the number of missile tubes in each SSBN(X) hull resulting from the Nuclear Posture Review that will complete in FY 2010. The Navy has committed RDT&E,N funding to support SSBN(X) in this FYDP and will continue research and development efforts to support lead ship procurement in FY 2019. The second ship of the class will begin in FY 2022 with follow-on serial production for the balance of the force beginning in FY 2024. It is especially critical that these ships meet their scheduled deliveries as they are one-for-one replacements for ships fulfilling, real-time, Sea-Based Strategic Deterrent missions in support of national strategic objectives. Until a definitive cost estimate is completed, the Navy is assuming a unit cost of about \$6-7 billion per ship consistent with the escalated cost of the OHIO class SSBN. The estimated cost should be refined and reported in a subsequent Report to Congress.
- The Navy plans to continue procurement of the VIRGINIA class attack submarines at two ships per year when possible. Fiscal constraints during the period in which the SSBN is being procured will necessitate reducing procurement to one VIRGINIA class submarine per year.
- The OHIO class ballistic missile submarines that were converted to guided missile submarines (SSGN) deployed in FY 2008. The high-volume strike capability these platforms can deliver and their irregular warfare capability are important to Navy combat operations. Overall, the broad spectrum of combat capabilities these ships deliver to the fleet is impressive and accordingly, demonstrated Combatant Commander operational demand for these platforms is high. While there is little doubt that these ships contribute significantly to the Navy's war-fighting capability, the cost to recapitalize this unique class of ships is beyond the reach of anticipated future budgets. For this reason, this 30-year shipbuilding plan does not include their recapitalization. The Navy is studying alternatives to sustain the capability these ships bring to the battle force without requiring the Navy to construct a purpose-built ship for their replacement.
- The LSD 41 and LSD 49 dock landing ship classes reach the end of their service lives beginning in FY 2025. The amphibious transport dock procurement rate will be one ship every other year to minimize funding requirements and level the demand on the shipbuilding industrial base.
- As a change since the FY 2009 report, the Navy determined the LHA 6 class amphibious assault ships previously designated for the MPF(F) would serve the Navy and Marine Corps more effectively in the assault echelon force where they could be employed in Marine forcible-entry operations. These assault echelon amphibious ships will be procured in FY 2011, FY 2016, and FY 2021.
- The Navy plans to procure the lead ship for the replacement T-AO fleet oiler in FY 2017 with follow-on production at one ship every year between FY 2021 and FY 2035.

Ultimately, this will result in a complete recapitalization of the existing T-AO and T-AOE classes during the 30-year period and will include a total of 19 ships procured in this period. Legacy fleet oilers begin retiring in FY 2022. The new oilers will comply with the environmental protection requirement that these ships include a double-hull design.

Four T-AOE fast combat support ships will begin retiring in FY 2034 and their triple-product (fuel/stores/ammo) support function will be assumed by the follow-on T-AO fleet oilers and current T-AKE dry cargo ships.

- The Navy will recapitalize its submarine tenders (AS) which will retire in FY 2029 and FY 2030 respectively. The Navy will replace its T-ARS salvage ships, T-AGOS ocean surveillance ships, and T-ATF Fleet Ocean tugs at the end of their service lives.
- The Navy plans to procure an adequate inventory of JHSVs to support the COCOM and QDR requirements. Considering their 20-year service life, the Department plans to procure a total of 41 JHSVs over the 30 year period to support these demands. The replacement program for the first block of JHSVs (being procured through FY 2022) will begin in FY 2030.

### **C. Far-Term Naval Vessel Construction Plan**

- During the period FY 2011 to 2040, 256 ships are planned to be retired. The Navy is planning to manage the service lives and modernization of these legacy ships during this period to prevent block obsolescence causing unacceptable gaps in capability and capacity. During this period FY 2031 to 2040, we have assumed a procurement strategy based on sustaining procurement rates. Wherever feasible, the Navy will supply new vessels based on the rate at which legacy ships reach the end of their planned service lives reducing the magnitude of annual funding variations and providing a more stable demand signal to industry. Sustaining rates may not be possible for all classes of ship recapitalization. In some cases, where rapid retirement rates are anticipated, it may be necessary to start procurement of next generation ships earlier than might otherwise be required or accept “bathtubs” in certain ship classes while we wait for procurement rates to catch up with retirement of ships procured during the 1980’s build-up to the 600 ship Navy. While this is not the most efficient method to produce replacement ships, limits to predicting requirements, resources and business conditions projected beyond 2030 preclude a more fine-grain analytic approach.
- Of greatest concern during the far-term period is the rapid rate at which guided missile destroyers are scheduled to retire in the FY 2031-2040 timeframe. The procurement rates in the late 1980s and early 1990s cannot be, nor should it necessarily be, replicated today. The DDG 51s in the restart program represent three decades of technology evolution. The war fighting demands for this ship class will define the inventory requirement and it is undetermined whether this will involve one-for-one replacement. The inventory objective for this ship class will be the subject of further study in the future. In addition, the ships procured between FY 2016 and FY 2031 will be aimed at replacing the existing CG 47 class Cruisers with AMDR capable destroyers. All of these factors impact the overall destroyer inventory and the Department is committed to looking at alternatives to this decline. In an effort to reduce the impact of the DDG 51 retirement schedule on overall force structure, we will extend the service lives of all Flight IIA DDG 51s (DDG 79 and above) to 40 years. We

will continue to monitor the condition of the class and adjust service life estimates based on the material condition of the class. Ultimately, the decrease in surface combatant inventory near the end of the 30-year period will need to be addressed. As requirements, resources and the industrial landscape come into better focus for the post 2020 timeframe; the Department will address these issues working with Combatant Commanders, Congress and industry to fulfill the mission requirements on this distant horizon for these ships.

**VII. 30-Year Naval Force Size**

The 30-year shipbuilding construction plan presented in Table 4 will result in the projected ship inventory shown in Table 5 below. The total inventory of battle force ships and numbers of each type of ship will vary from year to year as a result of the complex relationship between retirements, procurement, design and construction times, as well as funding availability, industrial base capacity, and war-fighting priorities. The projected numbers of ships in active service shown below are counted as of the end of each fiscal year.

**Table 5. FY 2011-2040 Naval Battle Force Inventory**

Fiscal Year	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
Aircraft Carrier	11	11	10	10	11	11	11	11	11	12	12	12	11	11	12	12	12	11	11	12	12	11	11	11	12	11	11	11	11	11
Large Surface Combatant	84	84	85	86	88	90	91	93	94	96	96	95	94	94	92	89	87	85	81	77	73	71	69	67	68	70	72	74	76	76
Small Surface Combatant	42	41	37	32	28	32	33	37	37	39	39	41	39	40	41	43	45	46	48	49	51	52	53	54	55	56	56	56	56	55
Attack Submarines	53	54	55	55	54	51	51	50	51	49	49	48	48	46	45	44	43	41	40	39	41	41	42	43	44	45	46	45	45	45
Cruise Missile Submarines	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	2	1													
Ballistic Missile Submarines	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	13	13	13	12	12	12	12	12	12	12	12	12	12	12
Amphibious Warfare Ships	29	30	30	30	31	33	33	33	33	33	34	34	35	36	36	36	35	36	34	33	33	32	31	33	30	30	29	29	29	30
Combat Logistics Force	29	29	29	30	30	30	30	30	30	30	31	29	29	28	28	26	26	26	25	25	24	25	26	26	25	26	27	27	28	28
Support Vessels	18	20	23	24	25	27	31	33	37	38	39	41	45	47	46	45	46	46	44	44	44	44	44	44	44	44	44	44	44	44
Total Naval Force Inventory	284	287	287	285	285	292	298	305	311	315	318	318	319	320	317	313	308	304	296	291	290	288	288	290	290	294	297	298	301	301

**VIII. Estimated Levels of Annual Funding Required for the Long-Range Shipbuilding Program**

**A. Shipbuilding Funding Estimate**

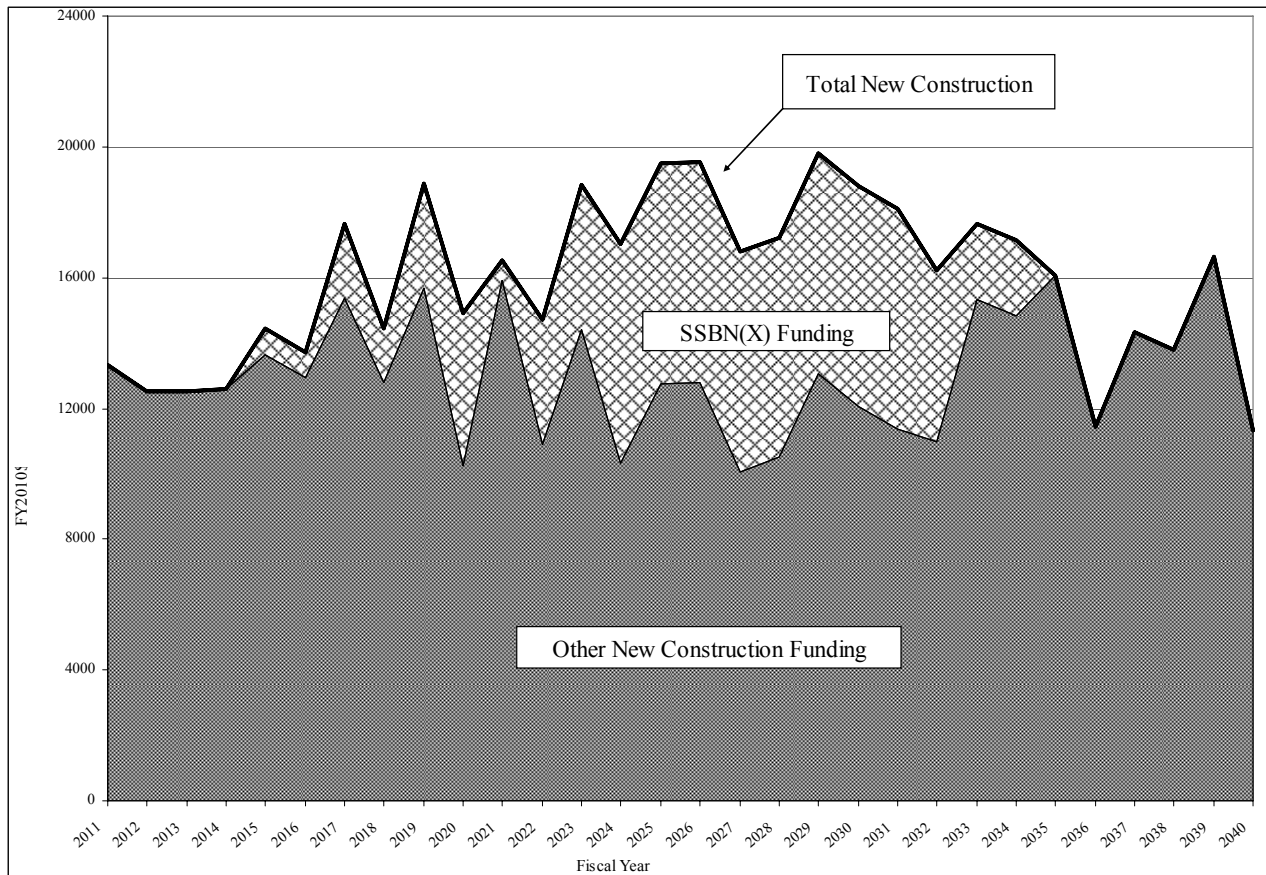
Figure 1 provides the estimated annual new construction funding requirements in constant year FY 2010 dollars. The Navy recognizes that building the required force structure will largely depend on controlling shipbuilding costs (including combat systems) within an affordable range. We are committed to maintaining stability in requirements, funding and profiles in an effort to control costs. This will require the combined efforts of the Navy, the shipbuilding industry and the combat systems industry. Working in conjunction with Congress, the Navy will procure and sustain the force structure necessary to deliver the naval capabilities needed to support our national interests.

New construction will be funded consistent with balanced investment profiles and expected future budgets. In the near-term, this equates to an average of approximately \$14.5B per year (FY2010\$). The Department recognizes that the period between FY 2021 and FY 2030 will exceed this limit, averaging about \$17.9B per year over that period. Executing the procurement of the SSBN program and sustaining minimum levels of acquisition in our remaining critical programs precludes funding this period at a level below that currently projected. In total, the Department of the Navy’s annual SCN and NDSF budgets average approximately \$15.9B per year (FY2010\$) throughout the period of this report.

There are several uncertainties that the Department must resolve regarding the Navy’s missions in the next decade; the relative threat levels that will exist at that time and the extent to which we will adjust the force to meet these challenges. Each of these issues will have a direct bearing on the overall costs required to recapitalize this force. Ultimately, this will require that we set funding priorities properly, adjust capabilities in the platforms being built and readdress risk in those mission areas where it is appropriate. Our challenge will be to find the resources necessary through a thorough review of each facet of our budget to ensure we are providing the nation with the applicable level of capability in all areas.

The estimated cost for the follow-on SSBN will be developed in FY 2010 in conjunction with the Sea Based Strategic Deterrent Milestone A decision. Assuming a unit cost of about \$6-7 billion per ship (consistent with the cost of the OHIO class SSBN), it is critical to understand the impact of these ships on the remaining recapitalization plan. Therefore, the funding required supporting SSBN recapitalization has been highlighted in Figure 1.

**Figure 1. Annual Funding Required for Navy Long-Range Shipbuilding (FY 2011-2040)**



Note: This estimate shows funding required for the Navy’s combat and support force. The cost of funding SSBN recapitalization is shown in the crosshatched area in the above curve.

The proposed plan for this year averages about \$15.9B (FY2010\$) throughout the 30-year period. It should be noted that this average includes those funds necessary to recapitalize the OHIO class ballistic missile submarines. The FY 2009 report, which was the last report submitted to Congress, did not include this funding requirement. Further, the average funding projected for roughly the same 30-year period in the FY 2009 report was about \$20B (FY2010\$)

per year. We believe this year's report makes more reasonable assumptions regarding the likely funding we will be able to allocate to shipbuilding.

## **B. Near-Term Funding Requirements**

- The annual investment shown in Figure 1 includes National Defense Sealift Funds (NDSF) and new construction battle force ships funded with Shipbuilding and Conversion, Navy funds. This estimate does not include funding for hospital ship, and strategic sealift ship recapitalization, CVN Refueling Complex Overhauls, Moored Training Ship (MTS) conversion, other ship conversions, service life extension programs, small craft, or other costs associated with the Navy shipbuilding construction account.
- The Navy was able to field a total of 50 ships in the President's Budget 2011 FYDP. These ships include: a restart of the DDG 51 program; continuation of the SSN 774 program at 2 ships per year through FY 2015; addition of the new MLP program aimed at increasing the capacity and capability of the existing MPS fleet; continuation of the CVN 78 program; procurement of the 11<sup>th</sup> LPD 17 ship, meeting the Marine Corps lift requirements for this class of ship; and a substantive increase in the Navy's ability to meet theater cooperation demands and intra-theater lift requirements through capitalization of a more robust JHSV programs. Overall, the fleet additions represented by the additions to the FY 2011 FYDP will position the Navy to meet its obligations and mission requirements through the next decade.

## **C. Mid-Term and Far-Term Funding Requirements**

- Recapitalizing the SSBN force will impact the Navy in the mid-term as significant resources are allocated to the SSBN(X) recapitalization program. Although this recapitalization requirement was highlighted in the 2009 Long-Range Shipbuilding Plan, the direct impact to the shipbuilding program was not specifically addressed. The OHIO Replacement is unique from other shipbuilding programs in that the Navy recapitalizes this relatively small force once every 40 years. This program is unlike steady-state programs, such as SSNs, where ships are built at a near steady rate to maintain pace with the decommissioning of older platforms. The SSBN recapitalization occurs over a finite fifteen-year period and, owing to the unique demands of strategic relevance, must be fitted with the most up-to-date capabilities and stealth to ensure they are survivable throughout their full 40-year life span. As a result, these ships require significant resource commitment and they will impact the Navy's ability to procure other shipbuilding requirements during the period when they are being procured. The timing of the replacements for these important strategic assets is inextricably linked to legacy SSBN retirements. The latest start for the lead SSBN(X) is FY 2019 and the replacements must start reaching the operational force by FY 2029. There is no leeway in this plan to allow a later start or any delay in the procurement plan.
- The SSBN(X) procurements will be concurrent with wholesale end-of-service-life retirements of SSN 688 submarines, CG 47 class guided missile cruisers, DDG 51 class guided missile destroyers, and LSD 41/49 class dock landing ships. While the SSBN(X) is being procured, the Navy will be limited in its ability to procure other ship classes. This slowdown in procurement will occur when the Navy needs to be procuring at least 10 ships

per year to maintain its force level against the anticipated ship retirements from the 1980s and 1990s. In the mid-term, the impact will be reduced by the significant construction times required to build capital ships. Since only a small portion of the ships begun in the 2020-2030 timeframe actually commission in that window, the Navy is reasonably well positioned to support the foreseeable demands on the force through 2028 and into the end of the mid-term timeframe. In fact, the 2028 Navy will consist of 304 ships with 11 CVNs, 85 Large Surface Combatants, 46 Small Surface Combatants, 41 Attack Submarines, 13 Ballistic Missile Submarines, 36 Amphibious ships, 26 Combat Logistics Force ships and 46 Command and Support vessels.

- The lower build rates in the FY 2021 to 2030 timeframe will result in reduced force structure in the FY 2031 to 2040 timeframe. Specifically, the large surface combatant force drops to 76 ships by FY 2040 - about 14 percent below the 88-ship target force level established in the 2005 FSA. The attack submarine inventory rebound from a low of 39 boats in FY 2030 to 45 boats in FY 2040, but will remain three below the current inventory target of 48 boats. The amphibious force will remain below the minimum of 33 ships required to support joint forcible entry operations from FY 2035 to 2040, with 29 to 30 ships in commission. Finally, the Combat Logistics Force falls to 28 ships in FY 2040, two below the current inventory target. Overall, the battle force inventory ends this period at 301 ships. While the threats, demands, and mission requirements for this far-term planning period are not well understood, the DoN will continue to consider mitigation strategies for these anticipated shortfalls in future plans.

## **IX. Naval Vessel Construction Risk**

The FY 2011 President's Budget and the Future Years Defense Plan through FY 2015 fully fund the construction of naval vessels in the plan presented in Section V. Beyond the FYDP, however, the need to fund SSBN recapitalization will result in some risk to the Navy's shipbuilding plan. Given the expected challenges of the mid and far-term periods, significant consideration must be given to ascertain the way ahead for the Navy. DoN will have to consider operational demands that could change force structure requirements as well as inherent technology requirements of future platforms and the effect they have on platform cost. Additionally, we will need to complete an analysis of force structure requirements over the next decade as we get a better understanding of what threats and obstacles lie in front of us to determine what the complexion of the 2040 force ought to look like and the efficacy of the planned force in meeting those challenges.

## **X. Summary**

Mission-tailored force packages that are sized and postured to meet the unique forward presence demands of each geographical region are necessary to implement the maritime strategy. While there are likely to be changes to the current baseline in the next FSA, the Navy's overall 313-ship battle force target integrates these force packages to sustain a day-to-day forward presence in each theater and ensure a continued capability to support required major combat operations, consistent with QDR force-sizing guidance. This force will contribute significantly and substantively to preventing conflict and, prevailing in war while also providing the capability and flexibility for meeting the myriad of other missions that the Navy is called upon to execute throughout the world every day.



# **Addendum Report Navy Plans for Decommissioning Ships during Future-Years Defense Plan (FYDP)**

## **I. Introduction**

This addendum report is in compliance with the Senate Armed Services Committee request for additional information regarding decommissioning and disposal of naval vessels:

*The Committee directs the Secretary of Defense to include, as an addendum to the annual report on the construction of naval vessels, commencing with submission of the report for fiscal year 2009, Navy's plans for decommissioning ships during the Future Years Defense Plan (FYDP). The addendum shall address: (i) hull numbers of ships that are to be disposed by dismantling or sinking within the future-years defense plan; (ii) hull numbers of ships that are to be decommissioned within the future-years defense plan; (iii) gaps in capability that will occur upon the decommissioning of each ship, including duration of that capability gap; and (iv) disposition proposed for each ship upon decommissioning.*

The Secretary of the Navy is responsible for approving the change in status of all ships, active or inactive, of the United States Navy (including Military Sealift Command) upon recommendations made by the Chief of Naval Operations (CNO). Annually, the CNO reviews the proposed ship decommissioning and deactivation plans, and the composition of the inactive ship inventory and its material condition, to reassess the number of ships to be held in the various categories of readiness and their disposition if not required for retention.

When determining which vessels will be decommissioned or deactivated, several factors are taken into consideration. Maintaining a ship in inventory involves operational cost, manning requirements, maintenance, and system upgrades to ensure the continued interoperability and operational effectiveness. The ship's operational history, including particularly demanding operations in harsh environmental conditions, often impacts its viable service life. Other factors such as the design changes or modifications made to the ship, or a design that is not amenable to a subsequent operational system upgrade, may make it infeasible to continue its service. Since ships operate over periods of decades, sometimes the operational mission of the ship becomes obsolete and there is no continued operational purpose for the ship. Under these conditions, it may sometimes be advantageous to retire a ship despite the Navy's desire to maintain its numbers and avoid recapitalization costs.

The Navy's methods to reduce the inventory of deactivated or decommissioned ships, in priority order, include interagency transfers to the Maritime Administration, United States Coast Guard (USCG) or other government agencies; donations for memorial/museum use by the public; foreign military sales (FMS) transfers; dismantling or scrapping; experimental use; or by sinking in conjunction with critical fleet training exercises, weapons effectiveness and live-fire testing, or to form artificial reefs. Nuclear-powered ships are dismantled by a special recycling process only. Select ships that have completed their useful service lives may be retained in the inactive ship inventory for a period of time to be available for future mobilization, logistic support or while awaiting disposal. The longer a ship remains in the inactive ship inventory, the less likely

it will be operationally useful in the future and the more costly its reactivation or disposal becomes.

Two decision steps are associated with the retirement of Navy ships. First is the decision to decommission or deactivate the ship from active service. The second decision is to determine its disposition following its retirement, including future mobilization requirements or striking it from the Naval Vessel Register. This report outlines the Navy's plans for ship decommissioning and deactivation within the Future Years Defense Plan (FYDP), and further identifies those ships that will be either sunk or dismantled in the same period.

## **II. Ships planned for decommissioning or deactivation during the Future Years Defense Plan**

Table 1 lists, by year, the Navy ships that are to be decommissioned or deactivated within the FYDP. The table identifies the planned disposition for each ship. The description of any potential gap in war-fighting capability that might occur when the ship is removed from service is included in the discussion below the table.

**Table 1. Ships Planned for Decommissioning or Deactivation<sup>1</sup> during the FYDP**

Inactivation Year (FY)	Ship Name	Disposition
2011	USS JARRETT (FFG 33)	Foreign Military Sales
	USS DOYLE (FFG 39)	Foreign Military Sales
	USS KLAKRING (FFG 42)	Foreign Military Sales
	USS NASSAU (LHA 4)	Inactive Fleet
<b>10 Ships</b>	USS CLEVELAND (LPD 7)	Inactive Fleet
	USS DUBUQUE (LPD 8)	Inactive Fleet
	USS MEMPHIS SSN 691)	Dismantle
	USNS FLINT (T-AE 32)	Dismantle
	USNS SHASTA (T-AE 33)	Dismantle
	USNS KISKA (T-AE 35)	Dismantle
2012	USS PONCE (LPD 15)	Inactive Fleet
	USS BOONE (FFG 28)	Foreign Military Sales
<b>4 Ships</b>	USS STEPHEN W GROVES (FFG 29)	Foreign Military Sales
	USS JOHN L HALL (FFG 32)	Foreign Military Sales
2013	USS ENTERPRISE (CVN 65)	Dismantle
	USS UNDERWOOD (FFG 36)	Foreign Military Sales
	USS CROMMELIN (FFG 37)	Foreign Military Sales
	USS CURTS (FFG 38)	Foreign Military Sales
<b>9 Ships</b>	USS VANDEGRIFT (FFG 48)	Foreign Military Sales
	USS CARR (FFG 52)	Foreign Military Sales
	USS HAWES (FFG 53)	Foreign Military Sales
	USS PELELIU (LHA 5)	Inactive Fleet
	USS DENVER (LPD 9)	Inactive Fleet
2014	USS HALYBURTON (FFG 40)	Foreign Military Sales
	USS MCCLUSKY (FFG 41)	Foreign Military Sales
	USS THACH (FFG 43)	Foreign Military Sales
	USS DE WERTZ (FFG 45)	Foreign Military Sales
<b>8 Ships</b>	USS RENTZ (FFG 46)	Foreign Military Sales
	USS NICHOLAS (FFG 47)	Foreign Military Sales
	USS ROBERT G BRADLEY (FFG 49)	Foreign Military Sales
	USS DALLAS (SSN 700)	Dismantle
2015	USS TAYLOR (FFG 50)	Foreign Military Sales
	USS GARY (FFG 51)	Foreign Military Sales
	USS FORD (FFG 54)	Foreign Military Sales
	USS ELROD (FFG 55)	Foreign Military Sales
<b>9 Ships</b>	USS SIMPSON (FFG 56)	Foreign Military Sales
	USS REUBEN JAMES (FFG 57)	Foreign Military Sales
	USS SAMUEL B ROBERTS (FFG 58)	Foreign Military Sales
	USS LA JOLLA (SSN 701)	MTS Conversion
	USS HOUSTON (SSN 713)	Dismantle

Note:

1. For the purposes of the report, US Navy vessels are commissioned ships that are decommissioned and removed from active status. USNS vessels are non-commissioned vessels that are deactivated and removed from active status.

## **A. Aircraft Carriers (CV/CVN)**

To maintain as constant a force structure as possible, the deliveries of new aircraft carriers are planned to coincide with the scheduled decommissioning of carriers that reach the end of their service lives. USS KITTY HAWK (CV 63) was decommissioned in the spring of 2009 and placed in the inactive fleet in Out of Commission/In Reserve (OCIR) status. During FY 2009, USS GEORGE H W BUSH (CVN 77) was delivered and will maintain the carrier fleet at 11 operational ships through early FY 2013. However, the delivery of USS GERALD R FORD (CVN 78) in September 2015 does not align with the inactivation of USS ENTERPRISE (CVN 65) after 51 years of service in November 2012. FY 2010 congressional legislation allows the carrier force structure to temporarily decline to 10 ships during this 33-month period.

Recognizing this short-term carrier gap will result in increased stress on the remaining carrier force; the Navy has developed a mitigation strategy using deployment cycle lengths, Fleet Response Plan variations, and rescheduled ship maintenance availabilities to minimize operational impacts during the period in which the force drops to 10 carriers.

## **B. Surface Combatants**

The OLIVER HAZARD PERRY class guided missile frigates reach their 30-year expected service life prior to FY 2020. During the FYDP, 26 guided missile frigates will reach the end of their planned service and will be retired. As these ships are retired, the Littoral Combat Ships (LCS) will be joining the fleet and will offset any potential capability gap.

## **C. Submarines**

The Navy plans to inactivate three LOS ANGELES class attack submarines at the end of their 33-year useful service lives. A fourth LOS ANGELES class attack submarine, USS LA JOLLA (SSN 701), will be converted to a moored training ship. These submarines are being replaced by the new construction VIRGINIA class attack submarines. There are sufficient numbers of attack submarines in the Navy inventory throughout the FYDP. No capability gap will result due to the retirement of these ships.

## **D. Amphibious Ships**

The Navy and Marine Corps have determined a minimum force of 33 ships represents the limit of acceptable risk in meeting the 38-ship amphibious force requirement for the Assault Echelon in a 2 Marine Expeditionary Brigade forcible entry operation. Four AUSTIN class amphibious transport docks (LPD) and two TARAWA class amphibious assault ships will be retired. These ships will be maintained in the inactive inventory in an OCIR status to support potential future mobilization requirements. There will be a potential lift capability gap until the eleventh LPD 17 class landing transport dock is delivered in FY 2015 and an aviation lift gap until the amphibious assault ship is delivered in FY 2021, but the risk is in operational availability since ten ships will be in inventory but not all may be available.

## **E. Combat Logistics Force (CLF) Ships (T-AE)**

Navy has evolved its combat logistics support operational concept to reduce CLF ship requirements to three types, including the Fast Combat Support Ship (T-AOE), Fleet Oiler (T-AO), and Dry Cargo/Ammunition Ship (T-AKE). The Navy plans to retire aging combat

ammunition ships (T-AE) as the new construction T-AKE class ships join active service. No capability gap will exist within the Combat Logistics Force.

### III. Ships planned for disposal during the Future Years Defense Plan

The Navy recognizes that environmental and safety risks increase as inactive ships deteriorate and their disposal is delayed. The longer retired ships sit in the inactive ship inventory, the higher the environmental risks and disposal costs. The Navy's inventory of inactive ships has been reduced from a high of 195 ships in 1997 to 60 ships today.

As indicated earlier, ships not identified for disposal are retained for possible future mobilization requirements. When it is determined that there is little likelihood of disposal by transfer to other government organizations, foreign military sales, donation use as a museum/memorial in a public display and maintenance in the inactive fleet does not make sense fiscally, the ship will be made available for fleet training use, or disposed of by dismantling. The process for dismantling nuclear-powered ships is considerably more complex than conventionally-powered ships and requires special disposal of the propulsion plant components. For nuclear ships, dismantling through a special recycling process is the only viable option. The removal of conventionally-powered ships by sinking are conducted as part of an approved training exercise or to support weapons testing requirements. Inactive ships contribute significantly to the Navy in this role, as these exercises often result in cost savings for developmental programs requiring live-fire testing, provide key learning necessary to improve fleet tactics and weapons design, and provide on-going statistical data to assess weapons performance. Another option for sinking may be to provide an ocean bottom artifact to support fish and marine growth as an artificial reef. In both cases the Navy complies strictly with the Environmental Protection Agency directives of 1996 and 1999.

Specific ship disposition plans are made at the annual Ship Disposition Review conference held each year. The Ship Disposition Review Conference provides a forum for evaluating operational risk, inventory requirements and other issues to ensure the best possible recommendations for ship disposition are provided to Navy leadership. The Navy establishes its ship disposition plans based on the methods available that are most advantageous to the government.

**Table 2. Ships Planned for Disposal by Dismantling**

Ex-SIMON LAKE (AS 33)	USNS KISKA (T-AE 35)
Ex-MCKEE (AS 41)	USNS SAN JOSE (T-AFS 7)
USNS FLINT (T-AE 32)	Ex-HAYES (T-AG 195)
USNS SHASTA (T-AE 33)	
USNS MOUNT BAKER (T-AE 34)	

The Navy will dismantle the ships listed in Table 2 within the FYDP. Specific dates have not been determined as several factors dictate when the ships will be put under contract for their scrapping or recycling in the case of nuclear-powered ships. The actual date of dismantlement depends on such factors as the timing of decommissioning or deactivation, the location of the ship and attendant requirements for hull cleaning and transfer to the dismantlement facility, time

available to strip the ship of any salvageable Navy components, any special holds placed on ships while reconsidering dismantlement, and availability of disposal funds.

**Table 3. Ships Planned for Disposal by Sinking**

Ex-ARTHUR W. RADFORD (DD 968)
Ex-NIAGARA FALLS (T-AFS 3)
Ex-CONCORD (T-AFS 5)
Ex-KILAUEA(T-AE 26)

Table 3 lists the ships that the Navy plans for disposal by sinking as part of fleet training exercises during FY 2011 – 2015. Only Ex-ARTHUR W. RADFORD (DD 968) will be disposed of as an artificial reef. All of these ships will be at or beyond their expected service lives when disposal is completed.

#### **IV. Summary**

This addendum outlines the Navy’s plans for retired or retiring ships developed as a result of an annual Ship Disposition Review conducted in December 2009. In developing this plan, the Navy’s focus has been on maintaining its minimum force structure, cost avoidance by ensuring each ship operates for its full service life, and ensuring ships that might be required for future mobilization purposes remain in reserve. During the FYDP, the Navy will retire 40 ships with dispositions for retention in the inactive fleet, foreign military sales, interagency transfers, donations for public displays, or dismantling. The Navy plans to dismantle eight ships and sink four ships for which the Navy has no further use.