

**DEPARTMENT OF DEFENSE AUTHORIZATION FOR
APPROPRIATIONS FOR FISCAL YEAR 2010**

HEARING

BEFORE THE

COMMITTEE ON ARMED SERVICES

UNITED STATES SENATE

ONE HUNDRED ELEVENTH CONGRESS

FIRST SESSION

ON

S. 1390

TO AUTHORIZE APPROPRIATIONS FOR FISCAL YEAR 2010 FOR MILITARY
ACTIVITIES OF THE DEPARTMENT OF DEFENSE, FOR MILITARY CON-
STRUCTION, AND FOR DEFENSE ACTIVITIES OF THE DEPARTMENT OF
ENERGY, TO PRESCRIBE PERSONNEL STRENGTHS FOR SUCH FISCAL
YEAR, AND FOR OTHER PURPOSES

**PART 2
SEAPOWER**

JUNE 16, 2009



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CONTENTS

CHRONOLOGICAL LIST OF WITNESSES

NAVY SHIPBUILDING PROGRAMS

JUNE 16, 2009

	Page
Stackley, Hon. Sean J., Assistant Secretary Of The Navy (Research, Development, and Acquisition)	4
McCullough, VADM Bernard J., III, USN, Deputy Chief of Naval Operations for Integration of Capabilities and Resources	15

**DEPARTMENT OF DEFENSE AUTHORIZATION
FOR APPROPRIATIONS FOR FISCAL YEAR
2010**

TUESDAY, JUNE 16, 2009

U.S. SENATE,
SUBCOMMITTEE ON SEAPOWER,
COMMITTEE ON ARMED SERVICES,
Washington, DC.

NAVY SHIPBUILDING PROGRAMS

The subcommittee met, pursuant to notice, at 2:33 p.m. in room SR-232A, Russell Senate Office Building, Senator Carl Levin, presiding.

Committee members present: Senators Levin, Reed, Sessions, Martinez, Wicker, and Collins.

Committee staff member present: Richard D. DeBobes, staff director.

Majority staff member present: Creighton Greene, professional staff member.

Minority staff members present: Pablo E. Carrillo, minority investigative counsel; Richard H. Fontaine, Jr., deputy Republican staff director; and Christopher J. Paul, professional staff member.

Staff assistants present: Kevin A. Cronin and Christine G. Lang.

Committee members' assistants present: Jay Maroney, assistant to Senator Kennedy; Carolyn A. Chuhta, assistant to Senator Reed; Gordon I. Peterson, assistant to Senator Webb; Brian W. Walsh, assistant to Senator Martinez; Erskine W. Wells III, assistant to Senator Wicker; and Rob Epplin, assistant to Senator Collins.

OPENING STATEMENT OF SENATOR CARL LEVIN, CHAIRMAN

Senator LEVIN. Good afternoon, everybody.

I want to welcome Secretary Stackley and Admiral McCullough to the subcommittee this afternoon. We're grateful to you for your service to the Nation, for the truly professional men and women in the whole Navy and Marine Corps team, for their valorous service.

Mr. Secretary, I think this may be your first appearance before the committee since your confirmation hearing, so a special welcome to you.

Mr. STACKLEY. Thank you, sir.

Senator LEVIN. I'm in a somewhat unusual situation here today, trying to substitute for Senator Kennedy at a Seapower Subcommittee hearing. We keep Senator Kennedy very much in our thoughts and in our prayers. We wish him a complete recovery and

his prepared statement follows. We miss him and wish him a speedy return to the Senate. I know I speak for all the members of the committee, much less the subcommittee, in saying that.

You are faced, in the Navy, with a number of critical issues in balancing your modernization needs against the cost of supporting ongoing operations. We have a number of specific concerns. One of those is in the prospects for meeting future force-structure requirements. We're facing the prospect that the current Department of the Navy program will lead to potentially large gaps between the forces that the Chief of Naval Operations (CNO) and the Commandant of the Marine Corps have said that they need, and the forces that will be available to their successors.

In overall terms, the Navy leadership has consistently said that the Navy needs 313 ships in the fleet. The fleet today stands at roughly 287 ships, well below the stated requirement, and with little or no prospect in sight to achieve that goal.

The story is potentially even worse when it comes to naval aviation. The CNO has said that the Navy and Marine Corps could be facing a shortfall of tactical aircraft forces as high as 250 tactical fighters in the middle of the next decade, compared to the number needed to outfit our active air wings; 10 aircraft carrier air wings and 3 Marine Corps air wings. With shortfalls that large, we would be faced or, could be faced with drastically reducing the number of aircraft available on short notice to the combatant commanders, either because we have deployed understrength air wings or because we did not deploy the carrier at all because of these aircraft shortages.

I mentioned the aviation situation, not because we will deal with it in detail at this subcommittee, but to point out that there is no magic billpayer in that area of the Navy budget.

Other challenges face the Navy, centering on acquisition programs. We've had special concerns about the Littoral Combat Ship (LCS) program. This was intended to be a ship that the Navy could acquire relatively inexpensively and relatively quickly. It started out supposedly costing \$220 million per ship, and now there are serious questions about whether the Navy and contractor team will be able to buy the fiscal year 2010 ships that are priced at the cost-cap level, \$460 million per copy. We'd be interested in hearing from Secretary Stackley about what actions the Department is taking to strengthen acquisition oversight and to restore confidence in the Navy's ability to manage major acquisition programs.

We've also witnessed some other major changes in shipbuilding—after 15 years of support for the fire-support requirement that the DDG-1000 is intended to meet—the gunfire support for Marine Corps or Army forces ashore—and the Navy, in the middle of last year, decided to stop the DDG-1000 program and buy DDG-51 destroyers, which don't have as much fire-support capability.

This change of heart on the DDG-1000 program is at odds with the Navy's own consistent testimony that stability in these shipbuilding programs is fundamental to controlling costs and protecting the industrial base.

The military services should always have the ability to change course as long-term solutions require. However, since we're talking about the long term and hundreds of billions of dollars of develop-

ment and production costs for major defense acquisition programs, the Department of Defense needs to exercise great care in ensuring that such course corrections are made with full understanding of the implications of such decisions.

Another area where the Department of the Navy has had trouble defining the requirements has been a problem in the Maritime Prepositioning Force (Future) (MPF(F)) program. While, the subcommittee has heard for several years about the contribution that such a force could make to Marine Corps and Navy operations, we have seen the procurement of certain ships within that objective being delayed each year as the resolution of questions about the requirements and capabilities keep being deferred.

Those are some of the concerns that we have. We look forward to hearing from our witnesses this afternoon on other issues facing the Department of the Navy.

Now let me call on Senator Martinez.

STATEMENT OF SENATOR MEL MARTINEZ

Senator MARTINEZ. Mr. Chairman, thank you very, very much.

I, too, want to welcome Secretary Stackley to our first hearing together, and commend you for your service in the past and going forward, as well. Admiral McCullough, it's also a pleasure to have you here, sir.

Admiral MCCULLOUGH. Thank you, sir.

Senator MARTINEZ. I also want to acknowledge the absence of Senator Kennedy. It doesn't seem quite right not to have him here, but I do appreciate, Mr. Chairman, your being here today, and certainly our prayers continue to be with him and his family as he recovers.

Our witnesses are here today to discuss the Navy's shipbuilding programs and the President's budget request for fiscal year 2010.

First, let me say that I'm pleased by the budget, in one important respect; it is clear emphasis on stabilizing this shipbuilding portfolio. Over the past decade, the Navy has introduced 11 new ship designs and significantly modified several ship classes. By requesting ships that are already in serial production, this budget focuses on getting those platforms on track. In light of longstanding concerns about the Navy's shipbuilding plan, this is a move in the right direction.

On the other hand, I continue to be concerned about the lack of a 30-year shipbuilding plan. Without a 30-year plan, it is difficult for Congress to judge the sufficiency of the Navy's shipbuilding proposal or afford the proper level of oversight. Failing to include the plan in this budget is a missed opportunity.

I'm also concerned about how the Navy's budget addresses its standing requirement for a 313-ship fleet. In January of last year, CNO Admiral Gary Roughead told this committee, "The Navy must build more ships this year and deliver a balanced fleet of at least 313 ships. At some point, quantity becomes capability."

My concern with President Obama's request to fund only eight new ships and you can see this budget moves us in the wrong direction. To meet the Navy's requirement for a 313-ship it will require more than simply buying and building more ships, it will re-

quire, as Admiral Roughead recently pointed out, retaining existing assets.

For too long, the Navy has been decommissioning ships faster than it can replace them, retiring ships early to avoid costly upgrades and repairs. That practice puts us in a bad position, and it needs to stop. We need a more robust service-life extension and maintenance program for our ships. We need programs to ensure we extract the maximum life from our existing ships and reduce the number of ships decommissioned each year.

I also support the Navy's efforts to design new weapon systems in a way that will help manage operations and support costs more effectively downstream. These efforts include the reduction of total ownership cost programs the Navy is using on all of its Navy Sea Systems Command and Program Executive Office (PEO) submarine initiatives.

Other questions I have about the budget address shipbuilding programs, including the Navy's power projection role commissioned by its legislative proposals to lower the number of aircraft carriers to 10 from the Navy's current posture of 11, which would be the lowest number since 1942. Will the Navy be able to buy 55 LCSs within the cost cap and on a schedule to meet evolving threats? Are we seeing a systemic problem with the readiness of the Navy's ships? Readiness accounts are not fully funded, and the Navy has requested \$400 million for depot maintenance.

Serious engineering problems on Landing Platform Dock (LPD)-17 class ships and electrical malfunctions on the USS *Ronald Reagan* give rise to concerns about broader readiness problems.

Finally, are we seeing a systemic decline in seamanship in the Navy, as evidenced by a recent Navy Inspector General report completed this past March? Some of this decline is an outcome of recent ship casualties, including the grounding of a Pearl Harbor-based cruiser in February and a recent collision between a submarine and an amphibious ship in the Straits of Hormuz.

I look forward to our witnesses' testimony today on these and other shipbuilding challenges that our Navy faces today.

Mr. Chairman, I thank you.

Senator LEVIN. Thank you so much, Senator Martinez, and I apologize for that telephone. It was supposed to be turned off.

Senator MARTINEZ. That's okay. I'm glad it wasn't me.

Senator LEVIN. Mr. Secretary, welcome.

STATEMENT OF HON. SEAN J. STACKLEY, ASSISTANT SECRETARY OF THE NAVY (RESEARCH, DEVELOPMENT, AND ACQUISITION)

Mr. STACKLEY. Thank you, sir.

Mr. Chairman, Senator Martinez, and distinguished members of the subcommittee, thank you for this opportunity, and indeed this honor, to appear before you today to address Navy shipbuilding.

If it's acceptable to the subcommittee, I would propose to keep my opening remarks brief and submit a formal statement for the record.

Senator LEVIN. That would be fine. It will be part of the record.

Mr. STACKLEY. Yes, sir.

Today's Navy is, as you say, a fleet of 287 battle force ships. As many as half of these may be underway on any given day, supporting combat operations, building global partnerships, providing international security, performing humanitarian assistance, prosecuting piracy, testing future capabilities, and training for future operations. Beyond numbers, the quality of the force, our ships, aircraft, and weapon systems, and, most importantly, our sailors and marines, are unmatched at sea. So, it would be easy to take comfort in knowing that, for the next decade, and certainly beyond, the Navy and Marine Corps stand ready to respond to major conflict with the most capable naval warfare systems in the world today.

The events of this century point towards a future that must increasingly contend with irregular and asymmetric threats. We must pace the capability of rogue states and emerging naval powers that would intend to challenge our influence and the regional security of friends and allies.

In the face of these growing challenges, the CNO has outlined requirements for the future force, better known today as the 313-ship Navy. The fiscal year 2010 budget requests funds for eight ships, a modest step towards, but short of, the rate required to meet that requirement. Beyond numbers, the Navy is seeking to close gaps in our capabilities.

To this end, the shipbuilding program requests funds to restart DDG-51 construction in fiscal year 2010 to meet the demand signal from combatant commanders for increased air and missile defense. The success of the Aegis system against ballistic missiles demonstrated through at-sea testing and, through performance against an earthbound satellite, provides a solid foundation for this mission.

As well, and as part of the fiscal year 2009 *Virginia*-class multi-year procurement, we're requesting funding for the 12th *Virginia* fast-attack submarine with advance procurement to increase production to two submarines per year, starting in fiscal year 2011.

At the other end of the warfare spectrum, we're seeking your support to increase production of the LCS to deliver this needed capability to the fleet. We know there are many challenges ahead as we ramp up construction, tackle affordability, and learn how to best operate and support this new class. The Navy is confident that the utility and flexibility of this ship will prove its worth in future naval operations.

This year's request also includes two T-AKE dry cargo and ammunition ships, a program that has performed strongly since reaching steady production. Then, the eighth ship in our request is one Joint High Speed Vessel. In fact, two of these vessels will be procured this year, one each for the Navy and the Army.

Further, the budget request includes advance procurement for seven future ships and funds the balance of LPD-26 and DDG-1002.

Regarding the DDG-1000 and DDG-51 programs, as noted by the Secretary of Defense, the Department has worked with the Nation's two major shipbuilders to arrive at a plan which provides critical stability to the industrial base in order to most affordably build the three DDG-1000s in the program while restarting the DDG-51 production.

Inarguably, the underlying challenge, indeed the pressing requirement, before us today in shipbuilding is affordability. It's not a new challenge, but it's taken on new dimensions. The fact is that ship costs are rising faster than our top line. Per-ship costs have risen, due to such factors as low-rate production, reduced competition, increased system complexity, build-rate volatility, instability in ship class size, and challenges with introducing new technologies in new platforms.

Perhaps most significantly over the past decade, we have introduced 11 new designs. That's 11 lead ships, each a highly complex prototype bringing its own unique challenges.

Compounding these issues, particularly in the case of lead ships, where there is greater risk and uncertainty, we have fallen short on our ship cost estimates or, in certain cases, on our willingness and ability to fully fund to the estimate. All of these factors lead to inefficient ship production and cost growth.

We have learned, or, in certain cases, relearned, the lessons of this experience. Accordingly, the Navy understands and agrees with the objectives of the Weapon Systems Acquisition Reform Act, and we strive to meet its spirit and intent in our ongoing initiatives to raise the standards, to improve the processes, to instill necessary discipline, and to strengthen the professional core that manages our major defense programs.

To this end, the fiscal year 2010 Navy shipbuilding plan strives to provide stability, building on ship programs which are currently in serial production. There is renewed emphasis on ensuring design is mature prior to starting production, on minimizing changes to requirements and minimizing change to design, and improving our estimates for follow-ship costs, all of which should lead to improving industry performance, reducing risk, and expanding the use of fixed-price-type contracts.

We're working to increase competition from the prime down through the subcontractors. We're implementing affordability initiatives, including relaxing excessive requirements, pursuing producibility, commonality, and reuse in designs, while providing incentives for special selected capital improvements to improve shipyard performances.

We are pursuing open architecture, which promises to arm us with a powerful cost-avoidance tool, as well as a process for improving warfighting capability. The challenge before us is great, but so is the need. In meeting the need, the subcommittee has been steadfast and unwavering in support for a strong Navy and Marine Corps, and, of course, we thank you for that.

Again, I thank you for your time today and look forward to answering your questions.

[The joint prepared statement of Mr. Stackley and Vice Admiral McCullough follows:]

JOINT PREPARED STATEMENT BY HON. SEAN J. STACKLEY AND VICE ADMIRAL
MCCULLOUGH

Mr. Chairman, Senator Martinez, and distinguished members of the subcommittee, thank you for the opportunity to appear before you today to address Navy shipbuilding. The Department is committed to the effort to build an affordable fleet tailored to support the National Defense Strategy, the Maritime Strategy, and the 2006 Quadrennial Defense Review. The Department's fiscal year 2010 budget

will provide platforms that are multi-capable, agile, and able to respond to the dynamic nature of current and future threats. The fiscal year 2010 shipbuilding budget funds eight ships, including the 12th *Virginia*-class fast attack submarine, three Littoral Combat Ships (LCS), two T-AKE Dry Cargo and Ammunition Ships, and the second Joint High Speed Vessel (JHSV) for the Navy. The eighth ship, a DDG-51 class, restarts the DDG-51 program. The budget also funds the balance of LPD-26 and DDG-1002.

Since the 1800s, the United States Navy has been permanently deployed far from American shores, and our Nation's first responder to crisis and upheaval throughout the world. The Navy's continuous presence assures our friends and allies that the United States remains ready to help deter aggression, maintain access to the seas, and assist in the event of humanitarian crisis or natural disaster. Forward presence uniquely provides our country's leadership the ability to act with understanding, speed, and flexibility to contain issues or conflicts before they escalate. The Navy's forward presence has been called upon for more than 75-percent of our Nation's combat operations and shows of force, and 90-percent of long-duration humanitarian assistance or disaster response missions since 1970. The cost of perpetual presence requires us to continually maintain, upgrade and recapitalize our ships and submarines.

Inherent to the Navy's ability to perform these critical national security missions are our ships and our ship force structure. Ships define the Navy and underpin virtually all of our naval warfighting capabilities. Today, we have a balanced fleet capable of meeting most combatant commander critical demands, from presence to counter-piracy to ballistic missile defense. However, as we look ahead, in the balance of capability and capacity, we see emerging warfighting requirements not only in the littorals, but in open ocean anti-submarine warfare, anti-ship cruise missile, and theater ballistic missile defense. Gaps in these warfare areas pose increased risk to our forces. These factors drive our future force structure requirements for 313 ships.

Beyond addressing capability requirements, the Navy needs to have the right capacity to meet combatant commander warfighting requirements and remain a global deterrent. Combatant Commanders continue to request more surface ships and increased naval presence to expand cooperation with new partners in Africa, the Black Sea, the Baltic Region, and the Indian Ocean. This is in addition to the presence required to maintain our relationships with current allies and partners. Therefore, the Navy must increase surface combatant capacity to meet combatant commander demands today for ballistic missile defense, theater security cooperation, and steady state security posture; simultaneously developing our fleet to meet future demands.

Your Navy remains committed to building the fleet of the future and modernizing our current fleet to meet increasingly complex threats. The continual challenge the Navy faces is the availability of resources to fully populate the necessary force structure. As a result, the Navy will assume risk in some capability areas in order to achieve a balance across all of its mission sets. While there will be some areas that have risks, the aggregate force will retain its basic warfighting capability to ensure the Nation does not lose its ability to deter, dissuade and win in armed conflict, while at the same time provide security and stability through Theater Security Cooperation. In the past decade, the average age of the Navy's ships has risen from about 15 to over 20 years old as platforms built in the 1980s approach the end of their service lives. Replacement ships have been delayed, are more expensive, and are fewer in number than planned, shrinking the Fleet from 344 total active ships in 1998 to 284 today. The shipbuilding industrial base has followed suit, downsizing aggressively in response to the Navy's reductions in ship procurement, leaving just two major shipbuilding companies operating across six locations. These individual shipyards are substantially smaller than they were just a decade ago. We are at a minimum sustaining rate for affordable shipbuilding; further reductions in ship procurements will exacerbate existing shortages, and we risk losing the core talent and industrial tools necessary to build future naval platforms. Mindful of this, Navy force structure planners are increasingly constrained by, and consequently focused on, the ability of the private shipbuilding industry to respond to our production requirements. With the advent of the LCS and the JHSV, the Navy is also dealing with second tier shipyards (in the case of the LCS program these yards are sub-contractors.) The advantages of dealing with second tier shipyards are typically reduced labor rates and their reliance on commercial shipbuilding. The concerns with second tier shipyards are their ability to construct complex warships and the concern of dependency on Navy contracts in future workload projections.

The Navy has examined the rising cost of ship acquisition. Per-ship costs are rising due to such factors as reduced competition, increased system complexity, build rate volatility, low rate production, instability in ship class size, and challenges with

introducing new technologies into new platforms. All of these factors lead to inefficient ship production. The Department is working aggressively to control costs. We are ensuring that new ship designs are mature enough to commence production. We are working to fully leverage competition at every level of our shipbuilding programs, at the first and second tier vendors if not with prime contractors. Lack of competition adds costs throughout the shipbuilding supply chain. In addition, within our shipbuilding contracts, we are continuing to implement proven cost-reduction tools and methods like multi-year procurements, cost reduction incentives, affordability programs, re-use of existing designs, and incentives for selected industrial capital improvement projects. Open architecture, both for hardware and software, promises to be a powerful cost avoidance tool as well as a process for improving warfighting capability.

In 2008, the Navy instituted a more stringent acquisition governance process which improves reporting, reviewing, and oversight processes that provide specific criteria for areas such as requirements, funding, and technical performance. This process ensures that stakeholders from the resources, requirements, acquisition, and operational communities are apprised of, address, and revisit at defined intervals, issues associated with technical maturity, affordability and program health. In addition to the review process, every major defense acquisition program conducts an annual Configuration Steering Board, which provides a means to identify further opportunities to reduce costs. In response to issues regarding shortcomings in cost estimating, the Navy has a new, highly-focused cost estimating tiger team as a result of insights accumulated through our initial experience with the acquisition governance process. The team is investigating the factors that contribute to improved cost estimates and developing plans of action which will then be implemented by the Navy cost estimating organizations.

Working with the Office of the Secretary of Defense (Acquisition, Technology, and Logistics), the Department of the Navy (DoN) is taking specific measures to grow its acquisition workforce, which will ensure our ability to properly staff and manage programs. These measures include assigning a Principal Civilian Deputy (Senior Executive) to the Assistant Secretary of the Navy (Research, Development and Acquisition) with responsibilities for all DoN acquisition workforce; rebalancing the workforce by reversing the over-reliance on contractor-support executing core Navy acquisition functions (e.g., systems engineering, cost estimating, and earned value); more deliberate management of the program manager pipeline (experience and training); and leveraging the recent National Defense Authorization Act Sections 219 and 852 to restore capability and capacity in the DoN acquisition workforce. Specific to shipbuilding, the Navy focused on strengthening our Supervisor of Shipbuilding workforce to provide onsite presence in the private shipyards executing shipbuilding contracts.

Further, we are working regularly with our international allies to exchange best practices and lessons learned on shipbuilding efforts. A Shipbuilding Quadrilateral forum, comprised of government officials from the United States, United Kingdom, Canada and Australia, meets quarterly to discuss systematic trends that are emerging in shipbuilding programs. In May, the United States hosted the forum, which focused on cross-country system commonality and cost estimating challenges and opportunities.

The fiscal year 2010 Navy shipbuilding plan provides stability for our industry partners. Over the past decade we have introduced eleven new designs or significantly modified ship classes. The President's budget for fiscal year 2010 shipbuilding plan does not introduce any new design ships. Instead, the President's budget for fiscal year 2010 requests ships which are currently in serial production. Stability in the Navy's plan is reflected in controlling requirements, minimizing changes in design, and providing predictable cost for a follow-on ship. Risk of the shipyards' ability to execute follow-on vessels is reduced, and the Navy can enter into fixed-price type contracts, or exercise existing fixed-price type contract options.

Serial production should benefit the shipyards and suppliers. Continuation of ship classes allows the shipbuilders to optimize their shipyard(s) for that particular product line. In the case of the *Virginia*-class Block in multi-year procurement, the shipbuilder can enter into long-term relationships with suppliers for the next eight submarines. The Navy will continue to explore use block buys and multi-year procurements for other ship classes as programs mature.

The Navy has learned a great deal from a protracted period of lead ships. These lessons will be applied as we move forward on any future new designs:

- Ship designs must be appreciably complete before start of fabrication to avoid concurrency and rework. Through the acquisition governance process, the Navy reviews a program's ability to enter into construction based on design completion. These results are documented in reports to Congress.

- Adequate staffing is key to lead ship design and production success. Staffing includes government (including onsite) and industry. Skill sets required must be carefully considered.
- Competitive prototyping of high risk components is valuable in the identification of technical challenges and helps to retire this risk.
- The private sector shipbuilding design base must be carefully managed. Too many new designs/significant modifications can stress the industry.
- The flow down of requirements can drive unintended costs. Technical authority must be carefully weighed against overarching requirements (key performance parameters). Development and review of system design specifications is now required as part of the acquisition governance process.
- Capital investment in shipyards needs to be considered during a ship's design phase so investments for efficient production can be made in advance of construction. This only applies in sole source arrangements, but once a competitive downselect is made, opportunity for facilities investments can be considered.
- Life cycle costs must be understood early in a ship's development. Reduced manning may transfer maintenance to shoreside, so end-to-end costs must be understood. Use of common parts should be considered for life cycle savings.

The Navy is procuring capability and modernizing current ships to create our future fleet. A discussion regarding the requirement for each element of our force structure and the status of construction and modernization for the platforms that comprise the Navy's Fleet follows.

AIRCRAFT CARRIERS

Aircraft carriers are the foundation of our Carrier Strike Groups and continue to ensure dominance of and presence from the sea. The Navy remains committed to an 11-carrier force for the next several decades, which is necessary to ensure that we can respond to national crises within the current prescribed timeframe. Our carrier force provides the Nation the unique ability to overcome political and geographic barriers to access critical areas and project power ashore without the need for host nation ports and airfields.

The 11-carrier requirement is based on a combination of world-wide presence requirements, surge availability, training and exercises, and maintenance. During the 33-month period between the planned 2012 decommissioning of USS *Enterprise* (CVN-65) and the 2015 delivery of *Gerald R. Ford* (CVN-78), however, legislative relief is requested to temporarily reduce the carrier force to 10. Extending USS *Enterprise* to 2015 involves significant technical risk, challenges manpower and industrial bases, and requires expenditures in excess of \$2 billion. Extending USS *Enterprise* would result in only a minor gain in carrier operational availability and adversely impact carrier maintenance periods and operational availability in future years. The temporary reduction to 10 carriers is possible during a limited time period, mitigated by careful preplanning of personnel rotations and capacity and maintenance availabilities prior to and following the window.

CVN-21 PROGRAM

Gerald R. Ford (CVN-78), the lead ship of the CVN-78 Class is the designated numerical replacement for CVN-65. CVN-78 warfighting capability improvements include: 25 percent increase in sortie generation rate; a significant reduction in ship's force, as well as the air wing and embarked staff manning level; nearly three-fold increase in electrical generating capacity; restoration of service life allowances; and enhanced Integrated Warfare System to pace future threats. These improvements will ensure that CVNs remain the centerpiece of our Carrier Strike Groups, and will continue to lead the Navy throughout their 50-year expected service lives. The detail design and construction contract between the Navy and Northrop Grumman Shipbuilding-Newport News (NGSB-NN) was signed in September 2008. Keel laying is planned for this fall. The CVN-79 Construction Preparation (CP) contract covering fiscal year 2009 and fiscal year 2010 was awarded in January 2009. The President's budget request for fiscal year 2010 includes \$740 million in full funding for the CVN-78 and \$484 million in Advance Procurement for CVN-79.

CVN-68 CLASS

USS *George H.W. Bush* (CVN-77), the 10th and final *Nimitz*-class carrier, is the numerical replacement for USS *Kitty Hawk* (CV-63). CVN-77 was commissioned in January 2009 and delivered in May; she will soon enter a post-shakedown avail-

ability. delivery of CVN-77 maintains the force structure at the required 11-carrier level.

CVN-68 CLASS REFUELING COMPLEX OVERHAUL

For each CVN-68 Refueling Complex Overhaul (RCOH), 35-percent of a carrier's total service life maintenance plan is performed, as well as depot level mid-life recapitalization which extends the service life of the ship to approximately 50 years. Nuclear reactor refueling, warfighting modernization, and ship systems and infrastructure repair will help meet future missions. These combined upgrades support a reduction in operating costs, achieve expected service life, and allow the *Nimitz* class to retain combat relevance to deter projected threats well into the 21st century. This program is critical for the class to achieve its service life and retain combat relevance. USS *Carl Vinson* (CVN-70) is currently in the final months of her RCOH and will complete this summer. USS *Theodore Roosevelt* (CVN-71) is scheduled to begin her RCOH in September 2009. The President's budget request for fiscal year 2010 includes \$1.8 billion for the CVN-68 class RCOH program.

THE SUBMARINE FLEET

It is our intent that the Navy's submarine force remains the world's preeminent submarine force. We are aggressively incorporating new and innovative technologies to maintain dominance throughout the maritime battle space. We are promoting the multiple capabilities of submarines and developing tactics to support national objectives through battlespace preparation, sea control, supporting the land battle and strategic deterrence. To these goals, the Department has continued a pattern of timely delivery of *Virginia*-class submarines while ensuring the overhaul of the *Ohio*-class submarines supports their continued ability throughout their full anticipated lifetime. The Department has also begun looking at alternatives to replace the *Ohio*-class submarines when they reach the end of their service life in 2027.

VIRGINIA-CLASS

The *Virginia*-class submarine is a multi-mission platform that fully supports the Maritime Strategy. *Virginia* was designed and constructed to dominate the undersea domain in the littorals as well as open ocean in today's challenging international environment and is replacing our aging *Los Angeles*-class submarines as they reach over 30 year service lives. Now in its 10th year of construction, the *Virginia* program is demonstrating that this critical undersea capability can be delivered affordably and on time.

Five *Virginia*-class submarines have delivered and six more are under construction. In 2008, the Navy commissioned USS *North Carolina* (SSN-777) in May and USS *New Hampshire* (SSN-778) in October. The sixth ship, *New Mexico* (SSN-779), will be commissioned in November 2009.

General Dynamics Electric Boat and NGSB-NN continue to jointly produce *Virginia*-class submarines and are working with the program office to reduce the construction time and cost of these ships. An eight-ship, multi-year procurement contract for the fiscal years 2009-2013 ships was signed in December 2008. The contract achieves the cost reduction goal of \$2 billion (fiscal year 2005 dollars) with the fiscal year 2012 ships as well as the two per year build rate starting in fiscal year 2011. The fiscal year 2010 President's budget request includes \$3,970 billion for construction of the fiscal year 2010 ship as well as advance procurement and economic order quantity funds for materials for the fiscal year 2011-2013 ships contained in the multi-year contract.

SSBN ENGINEERED REFUELING OVERHAULS

The *Ohio*-class SSBN Engineered Refueling Overhaul (ERO) Program continues. USS *Alaska* (SSBN-732) completed her overhaul in March 2009; USS *Nevada* (SSBN-733) will complete her overhaul in 2010; and USS *Tennessee* (SSBN-734) will complete her overhaul in 2011. These EROs are a one-time depot maintenance period, near the mid-point of the SSBN service life, during which the nuclear reactor is refueled, major equipment is refurbished, class alterations are installed, and SUBSAFE unrestricted operations maintenance is accomplished. In the fiscal year 2010 President's budget, the Department has budgeted for SSBN EROs in O&MN and OPN appropriations vice SCN. ERO work is repair and maintenance work needed to fulfill the ship's design service life. Funding the overhaul with O&MN and OPN better aligns work and budget responsibilities to the fleet, the primary Navy Shipyard customer. The fiscal year 2010 President's budget requests \$201 million for ERO of USS *Pennsylvania* (SSBN-735).

SEA BASED STRATEGIC DETERRENT

The *Ohio*-class ballistic missile submarine, originally designed for a 30-year service life, will start retiring in 2027 after over 40 years of service life. The Department of Defense initiated an analysis of alternatives in fiscal year 2008 for a replacement SSBN. Early research and development will set the stage for the first ship authorized in fiscal year 2019. As long as our potential adversaries possess nuclear weapons, the United States will need a reliable and survivable sea-based strategic deterrent. To ensure there is no gap in our Nation's sea-based strategic nuclear forces, the fiscal year 2010 President's budget request includes \$495 million. These funds will ensure that design and technology development can begin to support technology readiness levels, prototyping and design maturity when the lead ship is authorized. The United States will achieve significant program benefits by aligning our efforts with those of the United Kingdom (U.K.) as they move forward with their *Vanguard* SSBN replacement program. The U.S. and U.K. are working towards finalizing a cost-sharing agreement.

SURFACE COMBATANTS

Today's Navy is operating in an increasingly complex and challenging environment. Demand from combatant commanders for traditional Navy core capabilities, forward presence, deterrence, sea control, and power projection by surface combatants operating both independently and with strike groups is increasing. The new Maritime Strategy also calls for expanding capabilities in integrated air and missile defense to include ballistic missile defense, maritime security, disaster relief and humanitarian assistance.

The Navy, after extensive discussions with General Dynamics Corporation Bath Iron Works (BIW) and Northrop Grumman Shipbuilding, Inc. (NGSB) arrived at a plan that most affordably meets the requirements for Navy surface combatants, commences the transition to improved missile defense capability in new construction DDG-51, and provides significant stability for the industrial base. Under a memorandum of agreement (MOA) signed in April 2009, BIW will be responsible for design, construction, integration, testing and delivery of DDG-1000, DDG-1001, and DDG-1002. NGSB will retain responsibility for design, engineering and fabrication of the composite superstructure and composite hangar, and fabrication of aft peripheral vertical launch system for DDG-1000 ships. In addition, the Navy will award contracts for construction of the first two ships of the DDG-51 restart program (DDG-113 and DDG-114) to NGSB, and will award a contract for construction of the third ship of the DDG-51 restart program (DDG-115) to BIW.

CG-47 MODERNIZATION

Twenty-two Aegis cruisers remain in service and are planned to receive modernization upgrades. A comprehensive Mission Life Extension is critical to achieving the ship's expected service life and includes the all-electric modification; SMARTSHIP; hull, mechanical, and electrical (HM&E) system upgrades; and a series of alterations designed to restore displacement and stability margins, correct hull and deck house cracking, and improve quality of life and service onboard. Cruiser Modernization bridges the gap to future surface combatants and facilitates a more rapid and affordable combat capability insertion process. The first full modernization availability was completed on USS *Bunkerhill* (CG-52) in February 2009 and included Advanced Capability Build 2008 (ACB08). ACB08 brings upgraded warfighting capability to CG-52-CG-58 including cooperative engagement capability (CEC) and upgraded weapon systems. The President's budget request for fiscal year 2010 includes \$495 million which will modernize two cruisers.

DDG-51 MODERNIZATION

The DDG-51 modernization program is a comprehensive effort to modernize the *Arleigh Burke*-class ships' combat and HM&E systems. As ships are modernized halfway through their 35-year estimated service life, each ship will be enabled to achieve an additional 10-15 years of life that historically has been reduced by early decommission due to both the inability to pace the threat and to high operating costs. This program is modeled on the successful CG Modernization program and will occur in two phases. The first phase is the HM&E phase. These upgrades support workload reduction, operating costs minimization, expected service life achievement and projected threat pacing well into the 21st century. The second phase, expected to commence in fiscal year 2010, will consist of a full combat systems computing plant and Combat Information Center replacement, known as Advanced Capability Build-12 (ACB-12). ACB-12 will allow the class to field substantial capa-

bility against ballistic missiles, new generation advanced anti-ship cruise missiles and new, quieter submarines now in the hands of potential adversaries.

The first DDG to be modernized will be USS *Arleigh Burke* (DDG-51), planned for fiscal year 2010. The President's budget request for fiscal year 2010 includes \$329 million which supports two ship modernizations in fiscal year 2010.

DDG-1000 AND DDG-51 DESTROYERS

DDG-1000, with its dual band radar and sonar suite design, is optimized for the littoral environment. DDG-1000's advanced gun system provides enhanced naval fires support capability in the littorals with increased survivability.

The Navy began construction of DDG-1000 in February 2009. A rigorous systems engineering approach has been employed to mitigate the risk involved with building a complex lead ship surface combatant. This approach included successful building and testing of the 10 critical technologies via engineering development models. Naval Vessel Rules were fully accommodated in detail design. Mission systems design is nearly complete. Detail design was also near completion prior to the start of fabrication—more complete than any other previous surface warship.

However, in the current program of record, the DDG-1000 is incapable of conducting ballistic missile defense, and less capable than the DDG-51 class for providing Air Defense. As well, although superior in littoral ASW, the DDG-1000's lower power active sonar design is less effective in the blue water than DDG-51 capability. In view of increasing demand by combatant commanders for air and missile defense capability, the budget request truncates the DDG-1000 program at three ships and restarts construction of DDG-51 class ships.

The fiscal year 2010 President's budget request of \$1.084 billion provides the balance of split funding for the third ship of the class authorized in 2009. In addition, \$2.241 billion is requested to restart the DDG-51 program.

The research, development, test, and evaluation efforts for the DDG-1000 program (\$539 million in fiscal year 2010), which include software development and other critical efforts, must continue in order to deliver the necessary technology to complete DDG-1000 class ships and support the CVN-78 class.

The April 2009 MOA will align construction responsibilities for fiscal year 2009 and prior DDG-1000 class ships and selected DDG-51 class ships between BIW and NGSB through the order of the next three planned DDG-51s in order to ensure shipyard workload stability at both yards, leverage learning, stabilize and minimize cost risk for the DDG-1000 program, efficiently restart DDG-51 construction, facilitate performance improvement opportunities at both shipyards, and maintain two sources of supply for future surface combatants.

NEXT GENERATION CRUISER CG(X)

CG(X) is envisioned to be a joint air and missile defense and joint air control operations battlespace dominance ship. CG(X) will provide air and missile defense to Joint Forces ashore and afloat. The Maritime Air and Missile Defense of Joint Forces Initial Capabilities Document was validated by the Joint Requirements Oversight Council in May 2006.

The results of the Navy's analysis of alternatives for the maritime air and missile defense of Joint Forces capability are currently within the Navy staffing process. Resulting requirements definition and acquisition plans, including schedule options and associated risks, are being evaluated in preparation for CG(X) Milestone A. This process includes recognition of the requirement of the National Defense Authorization Act for Fiscal Year 2008, that all major combatant vessels of the United States Navy strike forces be constructed with an integrated nuclear power plant, unless the Secretary of Defense determines this not to be in the best interest of the United States.

Vital research and development efforts are in progress for the air and missile defense radar which paces the ship platform development. Engineering development and integration efforts include systems engineering, analysis, computer program development, interface design, engineering development models, technical documentation, and system testing are in process to ensure a fully functional CG(X) system design. The fiscal year 2010 President's budget requests \$190 million for the air and missile defense radar development and \$150 million to continue maturation of the CG(X) design based on the preferred alternative selected.

LITTORAL COMBAT SHIP

The Navy remains committed to procuring 55 LCSs. LCS expands the battle space by complementing our inherent blue water capability. LCS fills warfighting gaps in support of maintaining dominance in the littorals and strategic choke points around

the world. The LCS program capabilities address specific and validated capability gaps in mine countermeasures, surface warfare, and anti-submarine warfare. The concept of operations and design specifications for LCS were developed to meet these gaps with focused mission packages that deploy manned and unmanned vehicles to execute a variety of missions. LCS' design characteristics (speed, agility, shallow draft, payload capacity, reconfigurable mission spaces, air/watercraft capabilities) combined with its core command, control, communications, computers and intelligence, sensors, and weapons systems, make it an ideal platform for engaging in irregular warfare and maritime security operations.

The Navy is aggressively pursuing cost reduction measures to ensure delivery of future ships on a schedule that affordably paces evolving threats. This will be accomplished by matching required capabilities, to a recurring review of warfighting requirements through applying lessons learned from the construction and test and evaluation periods of sea frames and mission packages. USS *Freedom* (LCS-1) was delivered to the fleet in September 2008 and was commissioned in November 2008. *Independence* (LCS-2) was christened in Mobile, AL, on October 4, 2008. In 2009, the Navy will accept delivery of the second ship, which is a completely different design.

In October 2008, the Under Secretary of Defense for Acquisition, Technology, and Logistics approved a revised acquisition strategy for procurement of the fiscal year 2009 and fiscal year 2010 LCS. The updated strategy combines the fiscal year 2009 procurement and fiscal year 2010 options to maximize competitive pressure on pricing as a key element of cost control. Increasing the quantity solicited by adding the fiscal year 2010 ships to the fiscal year 2009 solicitation as options enables industry to better establish longer term supplier relationships and offer the potential for discounting to the prime contractors and subcontractors. The fiscal year 2009 ships and fiscal year 2010 ship options are fixed-price type contracts.

The fiscal year 2010 President's budget request includes \$1.38 billion for three additional LCS seaframes.

Acquisition strategies for fiscal year 2011 and outyear ships are under development. OSD will conduct a Milestone B prior to fiscal year 2011 procurement. The Navy's strategy will be guided by cost and performance of the respective designs, as well as options for sustaining competition throughout the life of the program. Combat systems and HM&E Design will be evaluated throughout the test and trial periods and we are already looking for opportunities to reduce total ownership costs.

AMPHIBIOUS SHIPS

These ships provide distributed forward presence to support a wide range of missions from forcible entry to conventional deterrence, Theater Security Cooperation, and humanitarian assistance. In major combat operation, DON requires sufficient amphibious ships to support two Marine Expeditionary Brigades (MEB). As an organization principle, this requires the Navy to maintain a minimum of 38 amphibious ships. Understanding this requirement and in light of the fiscal challenges with which the Navy is faced, the DoN plans to sustain a minimum of 33 amphibious ships in the assault echelon.

WASP (LHD-1)-CLASS AMPHIBIOUS ASSAULT SHIP

The *Wasp* (LHD-1)-class comprises multi-purpose amphibious assault ships whose primary mission is to provide embarked commanders with command and control capabilities for sea-based maneuver and assault operations as well as employing elements of a landing force through a combination of helicopters and amphibious vehicles. *Makin Island* (LHD-8), the last of the *Wasp*-class, completed successful Acceptance Trials in March 2009 and was delivered in April 2009. Although a modified repeat of the previous seven ships, this ship introduced a gas turbine propulsion system with all electric auxiliary systems and eliminated the steam plant and steam systems.

LHA(R) GENERAL PURPOSE AMPHIBIOUS ASSAULT SHIP (REPLACEMENT)

The LHA(R) assault echelon (AE) ships will provide flexible, multi-mission platforms with capabilities that span the range of military operations-from forward deployed crisis response to forcible entry operations. LHA(R) is a modified LHD-8 design with increased aviation capacity in lieu of a well deck to better accommodate aircraft in the future USMC Aviation Combat Element (ACE) including JSF/MV-22. LHA(R) is the functional replacement for the aging *Tarawa* (LHA-1)-class ships that will reach the end of their extended service life in 2011-2015. The Navy's study to assess the impact of Maritime Prepositioning Force (Future) (MPF(F)) without LHA(R) ships has determined that this change is feasible but may result in slightly

longer time to complete mission and may require modifications to remaining MPF(F) ships.

LPD-17-CLASS AMPHIBIOUS WARFARE SHIP

The LPD-17 class of amphibious warfare ships represents the Navy's commitment to a modern expeditionary power projection fleet that will enable our naval force to operate across the spectrum of warfare. *San Antonio*-class ships will play a key role in supporting the ongoing Overseas Contingency Operations by forward deploying marines and their equipment to respond to crises abroad. USS *Greenbay* (LPD-20) was commissioned in January 2009 and USS *New Orleans* (LPD-18) deployed the same month. *New York* (LPD-21) is planned to deliver this summer. LPDs-21-25 are in various stages of construction phase. The fiscal year 2010 President's budget requests \$872 million for the balance of the funding for LPD-26 which was authorized in 2009. Further, \$185 million of advance procurement is requested for LPD-27, in accordance with the April 2009 MOA, to leverage production efficiencies of the existing LPD-17 class production line.

AUXILIARY AND INTRA-THEATER LIFT PLATFORMS

Combat logistics force ships are critical for forward deployed forces. The vital role of underway replenishment of such items as fuel, food, repair parts, and ammunition enable Navy ships to operate for extended periods at sea. The extended operating demands for vessels such as JHSVs and LCS for intra-theater lift, Theater Security Cooperation, or engagement missions will place a high demand for support on existing logistics shipping and increase the operating tempo of the Combat Logistics Force ships. Intra-theater lift is key to enabling the United States to rapidly project, maneuver, and sustain military forces in distant, anti-access or area-denial environments.

MARITIME PREPOSITIONING FORCE (FUTURE)

MPF(F) provides a scalable joint sea-based capability for the closure, arrival, assembly and employment, sustainment and reconstitution of up to a baseline MEB-sized force in support of the assault echelon of the amphibious assault force. MPF(F) will provide the Nation a rapid reinforcing capability and significant utility in response to humanitarian assistance/disaster relief (HA/DR), noncombatant evacuation operations (NEO), and Theater Security Cooperation Program. The MPF(F) squadron composition will be acquired in three increments, with the first increment consisting of the *Lewis and Clark*-class Dry Cargo/Ammunition Ship (T-AKE) and the mobile landing platform (MLP).

MOBILE LANDING PLATFORM (MLP)

The Navy awarded a preliminary design contract to General Dynamics NASSCO for the mobile landing platform—one of the MPF(F) vessels in February 2009. The fiscal year 2010 President's budget request includes \$120 million of advance procurement funding for the MLP and \$52 million of research, development, testing, and evaluation for the MPF(F) program, including MLP risk reduction and technology development.

LEWIS AND CLARK-CLASS DRY CARGO/AMMUNITION SHIP (T-AKE)

T-AKE replaced the Navy's combat stores (T-AFS) and ammunition (T-AE) shuttle ships. Working with an oiler (T-AO), the team can perform a "substitute" station ship mission which will provide necessary depth in combat logistics. Fourteen T-AKE ships are covered under a fixed-price incentive contract with NASSCO. Three of the T-AKEs are to support MPF(F) program requirements. Major accomplishments for 2008 include delivery of USNS *Robert E. Peary* (T-AKE-5) in June 2008 and USNS *Amelia Earhart* (T-AKE-6) in October 2008. USNS *Carl Brashear* (T-AKE-7) delivered in March 2009 and *Wally Schirra* (T-AKE-8) will deliver later this year. The construction contract option for the T-AKE-11 and -12 and long lead time material for the T-AKE-13 and -14 were exercised in December 2008. The fiscal year 2010 President's budget requests \$940 million for construction of two T-AKEs (T-AKE-13 and -14) in the National Defense Sealift Fund in support of MPF(F) requirements.

JOINT HIGH SPEED VESSEL

The JHSV program is for the acquisition of high-speed vessels for the Army and the Navy. JHSV will be a high-speed, shallow draft surface vessel able to rapidly

transport medium payloads of cargo and personnel over intra-theater distances to austere ports, and load/offload without reliance on port infrastructure. The detail design and lead ship construction contract was awarded to Austal, USA in November 2008, and includes contract options for nine additional ships for the Army and Navy. Delivery of the first vessel will be to the Army and is expected in 2011. The fiscal year 2010 President's budget request includes \$178 million for the construction of the Navy's second JHSV and \$178 million for the second Army funded vessel.

SUMMARY

The Navy has come through many difficulties associated with lead ships and sustained production is proceeding. The fiscal year 2010 budget request, which focuses on improving performance in the production of follow ships of each class, reflects the Navy's emphasis on stabilizing the shipbuilding plan. We understand the impact long term attrition and downsizing has had on the acquisition workforce, and are taking necessary steps to restore our core competencies. We have instituted the acquisition governance process to improve requirements/acquisition decision making. We are committed to meeting the force structure required to meet the Maritime Strategy.

Senator LEVIN. Thank you, Mr. Secretary.
Admiral McCullough?

**STATEMENT OF VADM BERNARD J. McCULLOUGH III, USN,
DEPUTY CHIEF OF NAVAL OPERATIONS FOR INTEGRATION
OF CAPABILITIES AND RESOURCES**

Admiral McCULLOUGH. Yes, sir.

Mr. Chairman, Senator Martinez, distinguished members of the subcommittee, I'm honored to appear before you with Mr. Stackley today to discuss Navy shipbuilding.

Before I begin, I'd like to mention, in addition to our role in seapower, the Navy currently has over 14,000 sailors serving on the ground in Iraq and Afghanistan. They serve in traditional roles with the Marine Corps, but also in land-service combat support and combat service support, missions to support the joint commander in the Army. We provide these sailors, in addition to fulfilling our commitments to our country and our allies, to provide persistent forward presence, incredible combat power, and support of the maritime strategy.

Today, we have a balanced fleet capable of meeting most combatant commander demands, from persistent presence to counter-piracy to ballistic missile defense (BMD). However, as we look ahead in the balance of capability and capacity, we see emerging warfighting requirements in open-ocean anti-submarine warfare, antiship cruise-missile, and theater BMD. Gaps in these warfare areas pose increased risk to our forces.

State and non-state actors who, in the past, have only posed limited threats in the littoral are expanding their reach beyond their shores with improved warfighting capabilities. A number of countries, who historically have only possessed regional military capabilities, are investing in their navy to extend their reach and influence as they compete in global markets. Our Navy will need to outpace other navies' capabilities as they extend their reach. The Navy must be able to assure access in undeveloped theaters. We have routinely had access to forward staging bases in the past; this may not always be the case in the future. In order to align our surface combatant investment strategy to meet evolving warfighting gaps, the Navy plans to truncate the DDG-1000 program and reopen the DDG-51 production line, as I testified to Congress last summer.

This plan best aligns our surface combatant investment strategy to meet Navy and combatant commander demands and warfighting needs.

The reason for the change to the Navy's DDG plan is to prioritize relevant combat capability. Modernizing the fleet's cruisers and destroyers, and executing an affordable shipbuilding plan, are crucial to constructing and maintaining a 313-ship Navy with the capacity and capability to meet our country's global maritime needs.

The Navy must have the right capacity to meet combatant commander warfighting requirements and remain a global deterrent. Combatant commanders continue to request more ships and increased presence to expand cooperation with new partners in Africa, the Black Sea, the Baltic region, and the Indian Ocean. This is in addition to the presence required to maintain our relationships with current allies and partners. Therefore, the Navy must increase capacity to meet combatant commander demands today for BMD, theater security cooperation, and steady-state security posture, simultaneously developing our fleet to meet future demands.

While the Navy can always be present persistently in areas of our choosing, we lack the capacity to be persistently present globally. This creates a presence deficit, if you will, where we are unable to meet combatant commander demands. Africa Command capacity demands will not mitigate the growing European Command requirement. Southern Command's (SOUTHCOM) capacity has consistently required more presence that largely goes unfilled.

The Navy remains committed to 55 LCSs. The LCS program will deliver capabilities to close validated warfighting gaps. LCS's inherent speed, agility, shallow draft, payload capacity, and reconfigurable mission spaces provides an ideal platform for conducting additional missions in support of the maritime strategy, to include irregular warfare and maritime security operations, such as counterpiracy operations.

The Navy remains committed to an 11-carrier force for the next several decades, which is necessary to ensure that we can respond to national crises within the currently prescribed timelines. Our carrier force provides the Nation the unique ability to overcome political and geographical barriers to access for all missions and project power ashore without the need for host-nation ports and airfields.

The *Ohio*-class ballistic missile submarine, originally designed for 30-year service life, will start retiring in 2027, after nearly 40 years of life. The Navy commenced an analysis of alternatives (AOA) in fiscal year 2008 for a replacement ballistic missile submarine. Early research and development (R&D) will set the stage for this first ship to begin construction in fiscal year 2019.

The *Virginia*-class submarine is a multi-mission platform that fulfills full-spectrum requirements. *Virginia* was designed to dominate the undersea domain in the littorals, as well as in the open ocean, in today's challenging international environment, and is replacing our aging 688 class submarines. Now in its 10th year of construction, the *Virginia* program is demonstrating that this critical capability can be delivered affordably and on time.

The Commandant of the Marine Corps has determined that a minimum 33 assault echelon amphibious-ship capacity is necessary

to support their lift requirements, and has specifically requested a force of 11 aviation-capable ships, 11 LPD-17s, and 11 dock landing ships (LSDs). The CNO supports this determination.

The Navy must maintain its carrier, submarine, and amphibious forces. In addition, we need to increase our surface combatant capacity through additional destroyers and LCS to meet combatant commander demands today for BMD, theater security cooperation, and the steady-state security posture.

I thank you for this opportunity to discuss the Navy's shipbuilding program and for this subcommittee's support of our Navy. I look forward to answering your questions.

Thank you very much.

Senator LEVIN. Thank you, Admiral.

Let's try an 8-minute first round.

Mr. Secretary, proceeding with the LCS program, we ignored many lessons on how to buy, and how not to buy, major weapon systems. For example, we picked the ship platform without having conducted adequate analysis to see whether there were other more capable or less expensive solutions to the problem we face. We changed requirements after we signed the contract. We didn't have an adequate number of people with the right acquisition experience in the program office or at the shipyards to oversee that work.

Mr. Secretary, give us some more specifics. You made reference to this in your opening statement, but give us some specifics on what steps you have taken, or you're planning to take, to improve the Navy's ability to acquire major systems on time and on cost.

Mr. STACKLEY. Yes, sir. Let me start with requirements. As simple as it seems, the first step was to freeze the requirements. There's always a push and pull to bring a new capability, particularly to a new class of ships. So, step one, working with the Office of the CNO, the Navy has frozen requirements on that ship so we don't suffer growth and instability that it will bring.

Step two was, now that we've frozen requirements, let's take a look at requirements and specifications and see if we have over-spec'd the ship, and see if there are some requirements that we could back off that would lead to reducing the cost for the platform, going forward.

But, perhaps most importantly was cleaning up design. So, as you described, the program got off to a very rapid start. Shortly after signing contracts, there was a significant change to the specifications associated with naval vessel rules, and the shipyards were playing catchup from that day forward. With any lead ship, there is a lot of design activity associated with going from paper to steel, and a lot of drawing deficiencies and things of that nature that need to be cleaned up. So, we have put a very concerted effort to ensuring that, as we go into follow-ship production, that we're getting the drawings cleaned up to support stable production, going forward. As simple as it seems, those are perhaps the two most fundamental tools that we can do across shipbuilding to ensure stable performance.

The third and fourth tools, frankly, are items that, in shipbuilding, we grab as soon as we can get our hands on. One is competition. A number of our shipbuilding programs, as you're aware, have very limited competition. So, in this very unique program, in

terms of two different versions, we are still able to provide competition between the two prime contractors. That's, frankly, critical to driving cost control into the program and keeping them focused. In terms of the 2009 and 2010 ships, we've done something rather unique, which is combine the 2009 and 2010 ships into a single competition for quantity between the contractors. On top of that, we've overlaid fixed-price-type contracts.

So, earlier on in the program, the first six ships were steering towards cost-plus. As you're aware, ships three and four were terminated. Ships five and six were never put under contract. Now, the 2009 ships, which now represent ships three and four, are, in fact, fixed-price competed; and 10 and out will continue down that pattern.

You also mentioned, correctly, that the Navy was undersized, in terms of program office and onsite oversight. We've tackled both of those, going into the program office and basically beefing up the organization, as well as putting stronger onsite presence both on the Gulf Coast and at Marinette, up on the Great Lakes, to provide a supervisory function, if you will.

When we look longer term, we look beyond buying ships 1 year at a time. We're going to start looking towards, working with Congress, trying to couple longer procurements so we can start to get the benefits that you like to see in a production run associated with, not just stability, but volume, so that the prime contractors have greater ability to work with their vendors to get economic breaks, in ordering material. We're also pushing them to drive competition down at that lower level, which is going to be key for moving towards the cost cap.

These are some of the fundamental things I touched on, the producibility aspect regarding design, separate from what the government is doing. Namely, working with the contractor is his own investment, both contractors' shipyards are pursuing facility investments which will help their performance on this contract. Both at Austal and Marinette, they have plans laid out for significant increase, not just in capacity, but also in tooling, layout, and production planning, that will lead to a more efficient construction for LCS, going forward.

Senator LEVIN. Okay, thank you, Mr. Secretary.

Admiral, we don't have a Future Years Defense Program (FYDP) before us, but the Navy is going to be buying some ships after 2011 that are referred to as future surface combatants. Now, can you describe the process which the uniformed Navy is going to be following to define the requirements for this program?

Admiral MCCULLOUGH. Yes, sir, I can. Future surface combatant was an agreement the Navy reached with the Office of the Secretary of Defense (OSD) as we restarted the DDG-51 program, and it was to look at ships, fiscal year 2012 and out, to look at the applicability of improved combat systems and which hull forms they best fit in, whether that be a DDG-51 hull form or a DDG-1000 hull form, and what size radar capacity that we could put in those ships. Along with the Secretary and OSD, we've embarked on a study that's being led by Johns Hopkins University that's addressing that right now. From that study, we will see what capability is achievable to get us at the heart of the threat with limited tech-

nical risk, and where that best fits with respect to hull form, and then what the best path for the replacement cruiser is to come out of that study, sir.

Senator LEVIN. Admiral, relative to the LCS, Admiral Clark, who was then the CNO, said it was supposed to be a relatively inexpensive ship, in a hurry, to meet the projected threat in the littorals. Now, we find that we're not going to get these ships in a hurry, and they're not going to be as inexpensive as we had expected. What is the Navy doing to meet the urgent need or the urgent threat that the LCS was intended to address since the program has been delayed?

Admiral MCCULLOUGH. Yes, sir. There are three mission modules that go with the LCS program; an anti-submarine warfare module, an anti-surface module, and a mine countermeasures mission module. We currently have dedicated mine ships that provide mine warfare capability in the mine countermeasures arena. The LCS is to come on to replace those ships as they phase out, as well as the airborne mine countermeasures that are provided by the MH-53 helicopters. So, we have capability in that arena now.

In the area of anti-submarine warfare in the littoral, we have capability, not to the degree that we'd like to have with the LCS, but we do have some systems, both compartmented and U.S. Government General Security Policy, that the Navy's working on to address that threat, to include sonobuoys, non-acoustic prosecutions, and other such assets.

In the area of swarming small boats or anti-surface warfare, the Navy's taken great strides to upgrade the capability of its current surface combatant fleet with the addition of Mark 38 Mod 2 stabilized 25 millimeter chain guns that are resident on most of our surface combatants. I think we make the 100th install next month. We've also modified the ammunition that our 5-inch guns shoot to have more of a disperse-type ammunition that can take out swarming small boats, and we can mitigate the risk that is posed by those threats. We'd like to have those ships to pursue other activities. That's what we need the LCS for. But, we can mitigate the threat for the near term, sir.

Senator LEVIN. Admiral, thank you.

Senator MARTINEZ.

Senator MARTINEZ. Admiral, if I might follow up on that very line, I am equally concerned, as the Chairman is, about not having the LCS able to meet our mission and the current threat situation, which continues to be more diverse, particularly in the littoral area. What would be the role of the frigates as a replacement to the LCS until they could come into service? In other words, extending the life of the frigates. We have seen a pattern where we've been decommissioning ships before their full service life, we're decommissioning faster than we are commissioning.

Admiral MCCULLOUGH. Sure.

Senator MARTINEZ. So, the 313-ship goal becomes more elusive every year. It seems to me that one way that we could overcome this problem, and also fill the gap of the LCS would be by extending the life of the frigates. What's the view from your perspective?

Admiral MCCULLOUGH. Thanks for the question, sir.

Currently, the decommissioning plan for the frigates takes those ships out at the end of their estimated service lives, at about 30 years. We have modernized those ships, with the addition of reverse osmosis water distillation units, single-arm boat davits, and improvements or replacements of the diesel-electric generators. So, we did mid-life those ships to fit them with capability to the end of their service lives.

They currently perform missions in SOUTHCOM's area of responsibility in counternarcoterrorism, and they're doing a good job.

As we look at the older ships as we get ready to take them out of service, those ships are experiencing hull thinning that we haven't anticipated. Additionally, all but three of the ships we currently have are critically weight limited, so we'd be unable to add any additional capability to those ships, from a displacement standpoint. The very few that are not critically weight limited are high-addition weight limited, so they're center-of-gravity limited. Our ability to put other things high in the ship is very limited.

We took the missile systems off of the ship, because they were unique with the Standard Missile-1 MR missile, and didn't adequately address the threat, so we removed that.

Also, the SH-60 Bravo helicopters are sundowning in 2016 or 2017, and the ships are not currently planned to be upgraded to take the MH-60 Romeo helicopters.

I've looked at what the Australians have tried to do with modernization of their frigates, and it's to get them to their estimated service lives, which is about 30 years. The last of their ships was commissioned in 1983. The last of ours was commissioned in 1989. The Australian program is currently estimated at about \$300 million U.S. per unit, and that depends on the conversion of the Australian dollar at a given time. Their program is currently 4 years behind schedule.

So, in summation, sir, I'd tell you those ships have been great ships; they've served a useful purpose, but they are at the end of their service lives when we take them out. To upgrade them, I believe, would be very little return on investment to extend them until we get the LCSs onboard.

Senator MARTINEZ. Mr. Secretary, would you care to comment on that?

Mr. STACKLEY. Admiral McCullough mentioned some of the maintenance challenges that we have right now with keeping that platform going forward, approaching their 30-year life. In fact, earlier in the FFG-7 class life, they did go through a major upgrade to take care of cracking issues that were identified earlier on in the life of the class. As we get towards the 30-year point, beyond the hull strengthening, you do start to run into some corrosion issues, tankage, we identified hull-thinning, where you start to get into some pretty heavy depot maintenance in order to extend that service life. So, the return on investment is the issue that starts to come into view when you take a 30-year-old platform and look to extend it for an additional 10 years.

I don't believe the Navy has taken a hard look at the details associated with that type of service-life extension, but we'd be leveraging off of experience from other ship classes of a similar age.

We'd have to go into a far more extensive look to give you refined numbers.

Senator MARTINEZ. Mr. Secretary, do you still subscribe to the goal of a 313-ship Navy? Assuming so, how are we going to get there, budgetwise?

Mr. STACKLEY. Yes, sir, CNO Mullen, back in 2006, identified a 313-ship Navy and laid out what the mix of ships are that comprise that. CNO Roughead has further endorsed it. In fact, he's come out and stated, flat out, that that's the floor. When he makes that statement, he's looking at the range of missions, not today, but looking ahead at 2020 and beyond.

The challenges that that brings, that the committee is well aware of, are the funding and affordability to support the 313-ship Navy. While we did not submit a 30-year plan this year, you can go back to the 2009 30-year plan and take a look at the funding requirements, and you can see it becomes pretty significant, in terms of percent of total obligational authority that goes to shipbuilding. While we wrestle with affordability, and we have to do everything we can to get the per-ship costs down, we still have a significant budgeting challenge to hit the 313-ship goal.

The decision to not submit a 30-year plan this year reflects the Secretary of Defense's determination that we're going to come to grips through the Quadrennial Defense Review (QDR) process over the full range of requirements. When we get back with the completion of the QDR, which should be timed with the 2011 budget coming forward, we'll have had the opportunity to really wrestle with the trades between budget requirements, affordability, and the mix of ships.

I think you're well familiar with the pressure that that requirement is under when you take a look at the funding requirements and match that against the budget.

Senator MARTINEZ. On a more parochial note, I suppose, the House Armed Services Committee, in their markup this week, proposed removing from the budget funding for the dredging of Mayport's channel, as requested in the President's budget, and I was just wondering, Admiral and Mr. Secretary, if you could comment on the importance of that dredging operation as it relates to our east coast carrier fleet being able to find alternate homeporting or if not permanent homeporting, certainly, in an emergency, to be able to go into an east coast port.

Admiral MCCULLOUGH. Yes, sir. As we looked at this, if you look to the west coast, there are several ports where you can put a nuclear-powered aircraft carrier—San Diego, Bremerton, Everett—you can put a carrier into Pearl Harbor. The USS *George Washington* homeports at Bremerton and Everett. When you come to the east coast, currently our only carrier homeport or facility to put a nuclear-powered carrier is Norfolk, VA. We believe it's in the Navy's and the Nation's best interests to have an alternate carrier facility on the east coast. We looked at several alternatives, and Mayport is clearly the best alternative.

Having been homeported in Mayport as a group commander for *Kennedy* Carrier Strike Group, to be able to adequately put a *Nimitz*-class carrier into Mayport for any length of time requires dredging, and not only the channel, but the entire turning basin, and

that's to provide adequate bottom clearance for the intakes for various components in the propulsion plant. So, the mark on the dredging will impact our ability to put a *Nimitz*-class carrier in that basin, and constrain our ability to maneuver that ship inside of the basin. That was the piece that was in the fiscal year 2010 request.

There's also some money in the fiscal year 2010 request for pier work in Mayport, but that was not associated with the carrier homeport. If you choose, and we believe it's in the Nation's interest to choose, to have Mayport as an alternate carrier facility, you also need to upgrade the pier facilities and provide some maintenance infrastructure for both the ship, as a whole, and the nuclear power plant, in particular. That's significantly more money than the money for the dredging, which is about \$46.3 million.

Now, people have asked us why we think we need to do this. If anything would happen to preclude a returning carrier from returning to Norfolk—natural disaster, manmade disaster, what have you—and having been homeported in Norfolk for a majority of my career, the channel going from the ocean into the base, Thimble Shoals, is about 30,000 yards long, so it's about 15 miles long, and it's barely wide enough for a large container ship and an aircraft carrier to pass each other in the channel. The carrier has to cross over the Chesapeake Bay Bridge-Tunnel and then over to Hampton Roads Bridge-Tunnel. We have had a carrier go aground in the turn that goes from Thimble Shoals into Norfolk Spit, and we've also had a minor collision.

If Norfolk was closed, you'd have to send a carrier to the west coast for any maintenance that was required to be performed on that carrier when she came home. Carriers are not Panama Canal-capable, and they'd have to go around South America to get to a facility on the west coast. We just think it's wise, from our perspective, to have that alternative capability on the east coast.

Senator MARTINEZ. Thank you, Admiral.

Admiral MCCULLOUGH. Yes, sir.

Senator LEVIN. Thank you, Senator Martinez.

Senator Reed.

Senator REED. Thank you very much, Mr. Chairman.

Thank you, gentlemen.

Admiral, I understand that the Joint Requirements Oversight Council (JROC) validated a requirement for the *Ohio* ballistic missile submarine going forward. Could you give us an update on where it is? I know there's some R&D money. Also, I understand it's coordinated with the British efforts, also.

Admiral MCCULLOUGH. Yes, sir. I believe it's \$495 million in the fiscal year 2010 budget request for R&D for *Ohio*-class replacement. The JROC did validate the initial capabilities document for a replacement sea-based strategic deterrent. We are currently going through the AOA process to look at what type of submarine is necessary for a strategic deterrent for the Nation. It revolves on what size hull, how many missile tubes, et cetera. So, that process is ongoing, and we just received and updated on it last week.

We are in a bilateral agreement with the British for development of a common missile compartment, and they have a significant monetary outlay to help us develop the submarine.

We're in a different environment. Usually, the United States is the lead in this type of arrangement, all the way back to the signing of the initial Polaris agreement with the U.K. In this particular instance, the British's *Vanguard*-class is going to go out of service before the *Ohios*. So, in designing a common missile compartment with the British at this time, we're taking advantage of their investment, where, in other cases, they usually take advantage of our investment. So, this design effort is on a very similar timeline for what we did when we designed the *Ohio* as the replacement of the "41 for Freedom." So, we think we're on the right path, and we appreciate Congress' support for the research, development, testing, and evaluation for that submarine that's in the President's budget request.

Senator REED. Thank you very much, Admiral.

Mr. Secretary or Admiral or both, the DDG-1000 has been terminated, three ships, but there was a great deal of research and effort, in terms of systems software, and indeed, this was suggested to Congress that this would be a transition to the next surface combatant, the cruiser class principally.

So, Mr. Secretary, can you comment on how we're going to retain some of the investment we've already made in DDG-1000, even though we are going to terminate the hulls at three?

Mr. STACKLEY. Yes, sir. Admiral McCullough mentioned a study that we have kicked off. The study starts with the threat, the requirement to meet the threat in terms of missile defense, and it moves from there to the capabilities and the systems that are required to meet the threat. That study will include the work that's been done on DDG-1000, as well as the S-band radar capabilities from the Aegis program. It is in the foundation of that study, as we look at pulling those capabilities forward, and how they would potentially apply for that future capability.

Beyond that, we are scrubbing the requirements, in terms of software development for DDG-1000, open system requirements, and so, we do look to leverage some of that development where the opportunity arises in the future.

You're probably quite familiar, there are 10 different engineering development models that were launched for the program. Some of those are very specific and unique to the DDG-1000, and some of them will have other applicability. If you were to go to Wallops Island today, for instance, the dual-band radar is up and operating, both X and S bands, and that radar system will, in fact, first be installed on the CVN-78 before it gets to the DDG-1000. That's, again, another example of technology reuse.

I think we're looking at every opportunity to reuse these types of developments applied to the threat and applied to the requirements.

The study that Admiral McCullough referred to is not simply the topside capability. We would include the platform as well, because we have to look at how much radar needs to go onto a platform to support the mission. After you determine how much radar, then you have to figure out what the best platform is to support that capability.

Then, of course, on top of all of that, we have to put affordability, because we have to temper our appetite when it comes to the

amount of capability that we design upfront, if we can't afford it downstream.

Senator REED. Any comments, Admiral?

Admiral MCCULLOUGH. As the Secretary said, we're looking at every way we can to take advantage of the R&D effort that was put into the DDG-1000. There's a multitude of things that we not only need to figure out how to take forward but how to backfit. When you look at fire suppression systems specifically, the fire suppression system inside the ship, as well as the flight-deck fire suppression system, I think can be put in other ship classes we have.

As you go forward, how do we leverage the volume search radar, the S-band radar that the Secretary referred to, and where do we put that in future ships, and what capability do we gather to put there? So, I think there's ample opportunity to take advantage of the R&D money and effort that we put into DDG-1000, both in backfit and as we go forward.

Senator REED. Thank you.

There is a growing recognition of the value of unmanned aerial vehicles (UAVs), unmanned undersea vehicles. I wonder if there's a concerted effort to see how the UAVs can be launched and deployed by submarines which have the advantage of stealth approaching the coast and operating in places other ships can't go. I don't know if there is anything on tap, Mr. Secretary or Admiral?

Mr. STACKLEY. I'm going to probably end up passing to the Admiral, but let me just talk about unmanned vehicles.

First, Secretary Mabus has come onboard, and he's set a few top priorities, if you will. One of them is to take the lead in unmanned vehicles. By that, I mean there are a lot of initiatives, but the Navy needs to focus initiatives and good ideas into a concerted program to make some progress in an area where that's just ripe.

Inside of acquisition, I have three different PEOs that are developing and implementing in some form or fashion of unmanned vehicle under, on, or over the sea. From a procurement side and, as well the CNO from his side, we're looking to bring together these initiatives, leverage technologies, but focus them so that we're not simply developing capability, but we're actually delivering capability to the force.

Thus far, I can honestly say I haven't been approached with an initiative to launch a UAV from a submarine, but I'd welcome that to join the fold, if you will.

Senator REED. Admiral, any comments?

Admiral MCCULLOUGH. I'll second the Secretary's statement, I've heard of no initiative or program to launch a UAV from a submarine. We have, as you all well know, the vertical takeoff UAV, Fire Scout, that's being operationally-tested on the USS *McInerney*. We have money in broad-area maritime surveillance unmanned aircraft. We have money in Navy unmanned combat aerial system. That's a development effort to both fly and recover that vehicle from an aircraft carrier, as well as demonstrate in-flight refueling capability.

We have several variants of unmanned surface craft and several variants of unmanned undersea vehicles that we're looking at in a roadmap that the CNO calls his "unmanned vehicle roadmap," and that's managed by a one-star that works in my organization.

But, I'll take for the record launching a UAV from a submarine, sir.

[The information referred to follows:]

The Navy has been experimenting with three variants of submarine-launched unmanned aerial vehicles (UAVs) over the past few years.

The first variant of UAV is hand-launched from the bridge (top of the sail). The launch procedure requires the submarine to surface and send personnel to the bridge. After launch, the UAV is controlled from the submarine submerged at periscope depth (only the periscope and/or other antennas are out of the water).

Another variant of UAV is encapsulated and launched from inside of the submarine's hull while the submarine is submerged. Earlier this year, one of these UAVs successfully launched, transitioned to flight, and established communications with a range craft. The Navy plans to continue development of this technology over the next year.

A third variant of UAV could be stored and launched from an SSGN missile tube, external to the submarine's hull. Although still requiring the submarine to surface, this method permits the storage and launch of a larger, higher endurance, and more capable UAV. This year's budget request provides money to integrate external stow, launch, and recovery of one of those types of UAVs, Scan Eagle, onboard an SSGN.

In the future, we plan to leverage our UAV operating experience to develop a UAV that can be launched and/or recovered from a submerged submarine.

Senator REED. Yes, I guess I'll take credit for imagination.
[Laughter.]

Senator LEVIN. Can't wait to see that record either as a matter of fact. [Laughter.]

Senator Wicker is nice enough to yield to Senator Collins.

Senator Collins.

Senator COLLINS. Thank you. Thank you so much, Mr. Chairman.

I want to thank my colleague from Mississippi for his thoughtfulness, given my schedule.

Secretary Stackley, speaking of Maine-Mississippi cooperation, my first question to you has to do with an agreement that you were instrumental in helping to bring about that involved an April agreement with the Navy, with Northrop Grumman, and with Bath Iron Works. Essentially you arrived at a plan that is intended to help ensure stability in the workload of the shipyards to minimize the cost risk for the DDG-1000 program, efficiently restart the DDG-51 construction, and maintain two sources of supply for future surface combatants. Now, this plan, which I think was very well thought out, is obviously dependent on congressional support for the funding elements. Could you comment on the importance of both the authorizing and appropriations committees fulfilling the funding parts of this plan in order for its promise to be realized?

Mr. STACKLEY. Yes, ma'am. Let me start with the three DDG-1000s. With the decision that the Navy would stop at three DDG-1000s and restart the DDG-51, the first thing that emerges is that you cannot efficiently build two lead ships and one follow ship at two different yards, if you will, and that if we're going to build three, that the only way to affordably build them would be at one shipyard.

Similarly, you don't want to restart construction of the DDG-51, where you're introducing a new combat system baseline, at the same yard that you are building those three DDG-1000s.

The Navy, working with OSD and with industry, took a look at alternatives and proposed, and reached an agreement, where Bath Iron Works would build the three DDG-1000s and Northrop Grum-

man would take the lead on the DDG-51 restart. That way, you can leverage learning for those three ships. Frankly, Bath Iron Works had been focused on the lead ship, and had done significant investment to retire risk and to improve their facilities to support the DDG-1000 construction. We look today at a program where they have done a very, very good job at ensuring the design is complete and of high quality before starting construction, and they have prepared themselves for an efficient start. Thus far, in fact, we're off to a good start.

We're looking to continue to ride that for the three DDG-1000s, and then, separately, have Northrop Grumman focus on the DDG-51 restart, while Northrop Grumman also continues to play a role with the composite deckhouse on the DDG-1000 program. We'll have both yards building surface combatants, both yards have a hand in both programs, but you get single production line, if you will, at both yards, one for each of the programs.

Senator COLLINS. The funding's essential, correct, to bring this about?

Mr. STACKLEY. Yes, ma'am, to get to the punch line, yes, ma'am. [Laughter.]

Secretary Gates was point blank on this.

Senator COLLINS. Right.

Mr. STACKLEY. Absent this agreement, we cannot afford to build three DDG-1000s at two yards, and then we cannot afford to build two DDG-1000s at two yards, and we will go down to a one-ship demonstrator and suffer a gap, in terms of surface combatant shipbuilding, and we'd suffer a gap in the industrial base, and we'd lose that capability and capacity in our surface force.

Senator COLLINS. Thank you.

Admiral, speaking of affordability, I'm concerned about the congressional mandate that large future combatants be nuclear powered. That obviously has an impact on affordability; the upfront cost is considerably more, the hull has to be larger, as I understand it. Shouldn't we be leaving the decision on the appropriate power source for a future surface combatant, or for anything that is being built, any ship or sub—shouldn't we be leaving that up to the Navy, rather than having Congress establish it?

Admiral McCULLOUGH. Thank you for the question, Senator.

As you indicate, upfront acquisition cost for a nuclear power plant in any type vessel has a significant upfront cost, \$600 to \$800 million, depending on the power plant and what you try to do with it. There are currently no designed nuclear power plants that would adequately fit in any surface combatant ship hulls that we have.

Now, that said, when you look at whether a ship should or should not be nuclear powered, absent what was written in the National Defense Authorization Act for Fiscal Year 2008, I would tell you it comes down to power density. So, what power demand do you need to both propel the ship and essentially run the combat system? When you get to very large radars or very high-powered electric weapons—lasers, rail guns, et cetera, and you want to run the ship at relatively high speed, then there may be an adequate tradeoff between a nuclear power plant and a conventional power plant. But, I believe, absent what's written in the law, that it

should be left up to the shipbuilder and the Navy to decide what type power plant to put in a ship to best suit our needs. Now, I understand what the law says, and we'll comply with the law.

Senator COLLINS. Thank you.

Admiral MCCULLOUGH. Yes, ma'am.

Senator COLLINS. I think that's a real affordability issue that we should take another look at.

Finally, Mr. Chairman, I just want to point out, since there's been so much discussion of the cost growth in the LCS program, and that cost growth has been disturbing to all of us, that it's instructive to read the Defense Science Board's report on the causes of the cost growth. It's astonishing to know that, after the design had been completed for the LCS and building had been initiated, that the number of technical requirements nearly doubled from 15,261 to 29,435. It goes back to Secretary Stackley's point about the importance of freezing the requirements. There's certainly fault by the contractors as well, but this is a case where the Navy had a very hard time deciding what it wanted, and when the changes were added, that upped the cost. I think we have to remember that in the discussions. The Navy, the contractors, and Congress have all learned from that experience. But, that is just extraordinary, when you look at the number of technical requirements that changed after the design was supposedly completed.

Thank you, Mr. Chairman.

Senator LEVIN. It's a good example of why we attempted in the reform bill to try to freeze those requirements.

Senator COLLINS. Exactly.

Senator LEVIN. Senator Wicker.

Senator WICKER. Thank you.

I appreciate the testimony. Let's talk about Landing Helicopter Docks (LHDs) and Landing Helicopter Assaults (LHAs), Mr. Secretary. I recently visited a shipyard in Pascagoula, Northrop Grumman, and the last LHD-8, the USS *Macon Island*, looked pretty good to me. I think they're very proud of it down there. We're impressed with the capabilities and with the flexibility. Now, the replacement for that will be the LHA, and Northrop Grumman is in the early stages of the LHA-6.

Let me ask you first, the fiscal year 2009 defense authorization and appropriation bills provided \$178 million for advance procurement of LHA-7. That money is not under contract, and word is that it will not be until December of this year at the earliest. Can you tell us what's going on there? Why are we not going ahead with the advance procurement which had been provided by Congress and by the appropriations process?

Mr. STACKLEY. Yes, sir. Let me start with LHA-6, if I could.

Senator WICKER. Okay.

Mr. STACKLEY. LHA-6, basically, has just started construction, and, prior to starting construction, we held a production readiness review to ensure everything met the standard for design completion, material on hand, production planning products complete, so they can go into production and continue uninterrupted. I'll call this part of the lessons learned from the LCS program, was that we don't rush into production; we ensure everything's ready to go. In fact, the production readiness review reported out to me in De-

ember, and I put them on hold. I basically sent the team back and said, "We need to complete these following planning products to ensure that we're ready to proceed uninterrupted." Those were lessons learned from the LHA and the LHD-8 that was just completing. That go-round on the production readiness review has wrapped up, and we're putting together a report to come to Congress to describe those results.

The LHA-7 advance procurement, in an ideal world, in a steady run of production, you'd be able to couple procurement so that you leverage some economic order quantity, if you will, from a steady production run. The big-deck amphibs are spread too far apart to be able to do that. When you look at trying to leverage savings from quantity, et cetera, we don't have that opportunity on the big decks. So, then we look towards commonality, where we can buy material that's common to other programs. For Northrop Grumman, they're pretty good at doing this, particularly when it comes to commodities. We also look at long-lead-time material, ensuring that the long-lead material supports the start of construction. Then lastly, we'll use advance procurement for planning products.

We work with Northrop Grumman, first looking for material that provides some savings, looking at long-lead-time material, and then planning products. Based on their proposal to us, after we've had an opportunity to review the proposal, we'd be putting that under contract.

I can tell you that I've worked directly with Northrop Grumman in terms of submitting proposals for the advanced procurement (AP), and when they're ready, we're ready.

I should add on to that for long-lead material, when the AP was authorized in 2009, there was a big deck in 2010 associated with the MPF(F), and Admiral McCullough will probably take over at some point here. But, in terms of reviewing the requirements and going back to the discussion with the Commandant and his requirement for 11-11-11 big decks, LPDs and LSDs, in order to meet the 11 big-deck requirements the big deck in the MPF(F) is being redesignated to be a part of the assault echelon, which does involve some requirement changes, warship versus prepositioning ship, but with that move, the big deck was moved to 2011, so, in fact, all of the AP provided in 2009 is early to need, in terms of long-lead-time material.

Senator WICKER. Does the debate about well decks have anything to do with this timing, Mr. Secretary?

Mr. STACKLEY. I will give you my position, and—understand that this is a requirements issue. But, for LHA-6, it was a significant shift from well deck to no well deck to provide increased aviation capability for the LHA replacement program. When the discussion and debate opened back up, in terms of LHA-7, whether it would have a well deck or whether it would be aviation-centric, the reality is that we cannot make that shift onto LHA-7 in any reasonable fashion. From a procurement/aquisition standpoint, I'm driving the argument towards stability.

Senator WICKER. Pardon me for interrupting—the reality is that you cannot make the shift back to a well deck on number 7?

Mr. STACKLEY. In the timeframe that she's scheduled, we'd basically have to go in and do significant redesign of the LHA replace-

ment, and we don't have time to do that to support the procurement schedule. It would also bring increased cost for construction at this point in the big-deck program.

Senator WICKER. Would you like to weigh in, Admiral?

Admiral MCCULLOUGH. Yes, sir. As the Secretary said, when we went from LHD-8 to LHA-6, and LHA-6 was envisioned to be part of the MPF(F), the Marine Corps wanted to concentrate on aviation capability and capacity in that ship, both associated specifically with the V-22 Osprey.

To put that additional aviation capability in that ship resulted in a compromise in removal of the well deck, and that was understood as we went forward.

Now, as the Marine Corps looks at their surface transport capability, I would tell you that the Commandant would like to get back to a well-deck capability in the big-deck amphibs. But, as the Secretary said, to do it in LHA-7, I think, if you had a Marine Corps general sitting here with me, he'd tell you that he believes in consideration of cost, schedule, and design disruption that that's nearly impossible to do for LHA-7.

Senator WICKER. Would you agree with that?

Admiral MCCULLOUGH. Yes, sir, I would.

Senator WICKER. So, is there any debate?

Admiral MCCULLOUGH. Yes, sir. They would like, as we go forward with the next LHA-D, that we review putting the well deck back in that ship. In the discussions I've had with Lieutenant General Flynn, who's commanding general of Marine Corps Concept Development Command, he'd like to do that as soon as possible, and we believe it's in the next LH, if you will—

Senator WICKER. Perhaps an LHA-8.

Admiral MCCULLOUGH. Yes, sir.

Senator WICKER. So, Mr. Chairman, what I think I'm hearing is that the decision is past us, in the opinion of these two witnesses, as to adding back in a well deck on LHA-7.

Admiral MCCULLOUGH. Yes, sir.

Senator WICKER. That decision, in your opinion, is over with, and we're beyond that.

Mr. STACKLEY. Yes, sir.

Admiral MCCULLOUGH. Yes, sir.

Senator WICKER. Do you know of any discussions ongoing there, regardless of your opinion? Even though your opinion is very emphatic, are there still discussions about that issue, or is it settled? Would the Marine Corps agree that this is settled?

Admiral MCCULLOUGH. I believe yes, they would. I'm sure they'd tell you they'd like to get a well deck back in a large-deck aviation-capable ship as soon as they could. But, I believe the discussion on the LHA-7 is concluded, yes, sir.

Senator WICKER. Okay. That's very interesting.

Thank you, Mr. Chairman.

Senator LEVIN. I just have a couple of additional questions, just on the well deck. If you have one, then you don't have one, and now you're looking at it again, what does that say about stable requirements?

Mr. STACKLEY. Sir, this is why I go back to the position on LHA-7, that we shifted the requirement towards greater aviation

capability for the big decks, and we have to be careful in going back to increasing the well decks that we don't change so quickly that we disrupt the procurement of the big deck amphibs.

Senator LEVIN. Secretary Gates has announced that the long-term carrier force structure is going to be 10 carriers. Have the combatant commanders' requirements changed? Have they gone down? Is that the reason for the long-term drop from 11 to 10, Admiral?

Admiral MCCULLOUGH. Currently, the combatant commanders' desire for carriers is filled by the 11-carrier force. We have made mitigations in the near term, with respect to *Enterprise* going out of commission and when *Ford* comes in commission, to be able to live within a 10-carrier force constraint and meet the operational commitments we have to the combatant commanders.

The Secretary of Defense recommended that we put the carriers on 5-year centers, and that's what he said we were going to do, and that's what we do. I would tell you that we go to a 10-carrier force in about 2040. So, based on that, sir, I think we have adequate capability and capacity in the Navy to meet the combatant commanders' demands in the next 3 decades.

Senator LEVIN. Okay, thank you.

Senator Martinez.

Senator MARTINEZ. Quickly, moving to the area of modernizing the fleet and fleet readiness.

Admiral MCCULLOUGH. Yes, sir.

Senator MARTINEZ. Admiral, in order to get out to our 313-ship Navy, it looks like maintaining and preserving what we have is a big priority. So, does the 2010 budget request fully fund the ship depot and other maintenance accounts? What percentage of the total requirements are you seeking funding for and are we taking on any risk there?

Admiral MCCULLOUGH. Yes, sir. In the submittal for fiscal year 2010, which includes the Overseas Contingency Operation fund, formerly known as the supplemental, we requested in the President's budget about 96 percent of our surface ship maintenance requirement. Given the fiscal constraints that the country and the Department are under, we thought that was adequate risk in the surface ship maintenance account when we looked at balance and procurement, personnel, and operations and maintenance. So, when the Department submitted its unfunded requirements list, the CNO said if he had another dollar to spend, he'd spend it in ship and aircraft maintenance. So, we have about \$200 million in the unfunded requirements for ship depot maintenance, and about \$185 million in the unfunded requests for aviation depot maintenance. But, we believe, given that—our top line and the balance between the competing accounts, that that was acceptable risk in surface ship maintenance.

Senator MARTINEZ. Mr. Secretary, any comment on that?

Mr. STACKLEY. Yes, sir. We looked at the number of availabilities that are going to be potentially impacted and there would be a need during execution in 2010 to manage that impact in terms of either rescheduling work that's in 2010 or reprioritizing funding in 2010 to either accomplish the availabilities or the work intended for those availabilities.

Senator MARTINEZ. Thank you, Mr. Chairman. That's all I have.

Senator LEVIN. Thank you, Senator Martinez.

Senator Wicker.

Senator WICKER. Yes. Gentlemen, on the 313-ship fleet, we're really just giving lipservice to that, aren't we? There's been no proposal to achieve a rate that would get us there. As a matter of fact, it seems that we're actually falling away from that, based on the rate of ships being decommissioned outpacing the rate of production. I believe your testimony was that the 313-ship Navy is a minimum. How do we have any credibility in actually continuing to say that, in light of the proposed rate of production and rate of decommissioning?

Mr. STACKLEY. Yes, sir. The term "the floor" is the description that the CNO uses for the 313. In deriving the requirement, dating back, again, to CNO Mullen, but endorsed by CNO Roughead, the requirement was derived without budget constraints. We factually laid out what capability, in terms of numbers and mix of ships, are required to meet both presence and major combat operations.

Senator WICKER. Required?

Mr. STACKLEY. Yes, sir. The full range of missions that the Navy is called upon to meet. When you go to the years since, and you just generically say that a 313-ship Navy, you would be needing to procure at least 10 ships per year, and you can see that we've fallen short on a pretty consistent basis. When you look ahead, and you look at the challenges, in terms of the budget required to hit the numbers, then, in fact, we have some difficult decisions to make in the QDR regarding the mix of the force, what we can afford and where the trades may need to be made. But, going into that discussion, you start with what your requirements are. So, CNO Roughead has been consistent in identifying the requirements entering that discussion. On the procurement side, figure out, how do we support that, in terms of buying ships more affordably? Within the mix of ships, how do we, again, temper the requirements so that we don't allow cost per ship to escape us? Then understand what's the delta between what that 313-ship Navy would cost and budget available to drive prioritized trades.

Senator WICKER. It would be interesting to see a plan unfold as to how we're going—not so much when we're going to actually get to 313, but when the rate is going to change that might get us there.

Let me just say one last thing, Mr. Chairman. I do want to congratulate the Navy on the decision to stick with the electromagnetic aircraft launch systems (EMALS) on the new *Gerald R. Ford*. My State of Mississippi will have a great deal to do with the manufacture of this technology and we're excited about it. I know there are three advanced technologies involved in this new *Gerald R. Ford* and one of the things that might have caused us cost and schedule problems, the EMALS were only one of them. It seems to me, as someone who's not an expert, but understands that we need to move away from the old technology there and into the electromagnets. It seems to me that, long range, that is the correct decision and I want to congratulate you on that.

Do you have any comment, Mr. Secretary, on the considerations as far as the cost?

Mr. STACKLEY. Yes, sir.

Senator WICKER. Sticker shock with regard to the EMALS.

Mr. STACKLEY. Let me start with the steam catapults. Steam catapults are the number one maintenance issues for carriers on deployment today. So, that's a known issue. One of the benefits that EMALS tries to improve upon is improving reliability of the system. We're going through testing to demonstrate that. Second is manpower. EMALS is designed to reduce manpower on the carriers. We look at reducing 39 sailors from a CVN-78, and you look out over the CVN-78 class and the life cycle, and, in fact, it's estimated that there's a \$250 million opportunity there to avoid cost, going from steam to EMALS.

That's the benefit side. You get improved performance of the system, you get some improved reliability, and you get lifecycle cost savings.

On the upfront side, what we've run into is cost growth in development and cost growth in procurement. So, we took a hard look. Basically, it's not its own program, but we treated it as though it were its own program and ran it through a Nunn-McCurdy-like type of an assessment, where we took a hard look at the requirement, we took a look at the costs, made sure that we had them properly estimated, and then took a look at the management structure that we had in place to make sure it is adequate to ensure that we don't see further cost growth, and that the system is delivered to the ship on schedule.

In reality, EMALS, even though it's late in its development, there is sufficient margin between development and production that today it is not driving delays to the CVN-78 program. Our challenge is to ensure that that does not occur.

We, in fact, have a very robust test program going on up at Lakehurst, where this summer sometime, if you have the time, I'd like to take you up there and walk you through; you'll see one entire catapult system being laid into the ground where this time next year we hope to be launching aircraft.

A lot of technical challenges. We're putting a team together to attack the technical challenges.

Through all this discussion, we have moved from a cost-plus contract with a contractor to a fixed-price contract that is under negotiation today. Part of the decision to go forward, in terms of tackling the management issues, was, we're not going to go forward on a cost-plus contract, where we, the government, own the cost risk, but we're going to a fixed-price contract, where the contractor is effectively warranting his development efforts in the production of the shipboard sets.

I think we've taken a pretty thorough look at this. There have been difficulties and issues associated with cost growth. We will be coming back to request funding for that cost growth at the right point in time, but, when we look at the net, and when we look at the capability that EMALS brings to the table, and we look at its importance to future naval aviation, we've decided to press on with the system.

Senator WICKER. Thank you.

Senator LEVIN. Thank you very much, Senator Wicker and Senator Martinez.

We're all set. Thank you both. Terrific hearing, great testimony. We appreciate it.

We'll stand adjourned.

[Questions for the record with answers supplied follow:]

QUESTIONS SUBMITTED BY SENATOR CARL LEVIN

ACQUISITION REFORMS

1. Senator LEVIN. Admiral McCullough, what steps are you taking to ensure that the uniformed side of the Department of the Navy in charge of the requirements process is doing its part to reform itself to improve the acquisition system?

Admiral MCCULLOUGH. The Secretary of the Navy established the two-pass/six-gate process in January 2008 and incorporated the process in Secretary of the Navy Instruction 5000.2D in October 2008.

The purpose of the two-pass/six-gate review process is to improve governance and insight into the development, establishment, and execution of acquisition programs within the Department. The goal of the review process is to ensure alignment between Service-generated capability requirements and acquisition, as well as improving senior leadership decisionmaking through a better understanding of risks and costs throughout a program's entire development cycle.

The review process ensures programs are ready to proceed to the next phase of acquisition and to rebaseline or restructure those which breach the program's cost, schedule, technical or performance requirements. The process is designed to improve insight into and governance of the Navy's acquisition programs by ensuring regular, periodic reviews at each gate to meet the above-stated goals.

The Gate 1 (Initial Capabilities Document), Gate 2 (Alternatives Selection), and Gate 3 (Capabilities Development Document (CDD) and Concept of Operations) reviews are chaired by Chief of Naval Operations (CNO) and Commandant of the Marine Corps as the requirements and sponsor advocates. The Assistant Secretary of the Navy for Research, Development, and Acquisition (ASN(RDA)) has responsibility for chairing reviews for Gate 4 (System Design Specifications Approval), Gate 5 (Request For Proposal Approval) and Gate 6 (Sufficiency Reviews). Annual Gate 6 reviews assess overall program health including readiness for production, cost, schedule, performance risks, the earned value management system (EVMS), program management baseline, and the integrated baseline review. They serve as the Navy forum for a Configuration Steering Board which specifically manages any requirements changes or tradeoffs. In addition, the CNO chairs the Gate 6 Capabilities Production Document review prior to Milestone C.

COST CONTROL

2. Senator LEVIN. Secretary Stackley, we all know that the Navy will have difficulty affording the shipbuilding procurement programs that will meet our requirements and maintain the 313-ship fleet that Admiral Mullen and Admiral Roughead have identified as the requirement. Given this cost concern, why has the Navy chosen again this year to not provide any funding for the National Shipbuilding Research Program (NSRP), the one program where the Navy was providing matching funding for industry to help make itself more efficient?

Mr. STACKLEY. The NSRP was put in place with the goal of reducing the cost of shipbuilding and repair, with a focus on cross-shipyard collaboration to implement initiatives that were applicable industry wide. The program has proven effective in providing return on investment to the extent that industry and Navy program officials have vested interests in targeted results.

To this end, the Navy and industry collaboratively have decided to transform NSRP from its previous structure to a mechanism that will address ship-specific initiatives. Accordingly, Navy has transferred funding responsibility for NSRP from a 'corporate' line item to a broader base supported by funding from respective shipbuilding programs. The Navy remains committed to this important program.

QUESTIONS SUBMITTED BY SENATOR EDWARD M. KENNEDY

COST CONTROL

3. Senator KENNEDY. Secretary Stackley, it is important for this committee to understand the costs of the proposed surface combatant production. Can you please de-

scribe the current performance of the DDG-1000 program regarding cost and schedule?

Mr. STACKLEY. At this early stage of the construction program, contractor cost and schedule performance for the DDG-1000 program, as measured by the EVMS, demonstrate very good performance, low variances, and stable trends on all contracts. Contracts are currently executing near target for both cost and schedule. Of greater significance, design quality and completion to support production significantly exceed performance levels of prior first-of-class ship programs.

4. Senator KENNEDY. Secretary Stackley, what confidence do you have that the program will deliver these ships on cost and on schedule?

Mr. STACKLEY. The long history of cost and schedule growth on first-of-class ships attests to the risk and uncertainty associated with the design, construction, and testing of complex weapon systems. The DDG-1000 program has taken prudent steps to mitigate these inherent risks and, as described below, has measures in place to ensure costs are properly measured and controlled. Ultimately, however, success in delivering these ships on cost and on schedule will require aggressive management by Navy and industry to resolve the numerous issues which will emerge through the course of building and testing these ships and their associated systems. The DDG-1000 management team and tools in place today instill confidence in successful program execution. As always, we will keep Congress informed of our progress and any actions necessary to ensure success.

Regarding the basis for our current cost estimates, the Navy uses vendor quotes, return cost data, historical learning curves, shipyard labor and overhead rates based on existing union agreements, and sector workload projections. Labor man-hour estimates are based on historical DDG-51 cost estimating relationships and learning curves. Much of the material pricing is based on vendor quotes or fixed-price type contracts.

The Navy receives monthly cost performance reports from industry and provides a comprehensive metrics package to the Office of the Secretary of Defense (OSD) each quarter. These are monitored closely and used to update cost estimates as needed.

The Navy also held a successful Production Readiness Review in October 2008 prior to the start of construction to ensure the design is mature and the build plan is executable. These findings are documented in the Navy's Assessment Required Prior to start of construction on First Ship of a Shipbuilding Program Report to Congress submitted in February 2009.

Further, in view of the program's cost risk, a concerted cost reduction effort has been initiated to create margin for the program manager to offset unknown, yet anticipated, cost excursions in execution.

5. Senator KENNEDY. Secretary Stackley, as we consider restarting the DDG-51 line, a lot of numbers have been put out regarding the costs of these ships. Can you please state for the record what configuration of DDG-51 the Navy would plan to procure and how much it will cost?

Mr. STACKLEY. The fiscal year 2010 President's budget requests \$2,240.3 million for DDG-113, the first ship of the DDG-51 program restart. This budget request includes nonrecurring costs associated with updating the current production DDG-112 to the Advanced Capability Baseline-12 configuration, which includes the open ocean anti-submarine warfare (ASW) processing suite and the integrated air and missile defense (IAMD) capability currently planned for backfit installation class-wide. Otherwise, the configuration of DDG-113-115 will adhere to DDG-112 design as closely as possible, with exception of fact of life changes associated with vendor obsolescence, safety, or reduced cost initiatives approved for the program. The fiscal year 2010 budget request also includes anticipated costs associated with restarting production by key manufacturers supporting the DDG-51 program.

DDG-114 and DDG-115 will be built to the DDG-113 baseline, which will leverage significant benefit from the nonrecurring design and production learning from DDG-113, as well as cost benefit from multiple ship-set buys of government- and contractor-furnished material and equipment. DDG-113 and DDG-114 will have an identical configuration.

6. Senator KENNEDY. Secretary Stackley, what confidence do you have in the cost?

Mr. STACKLEY. The fiscal year 2010 budget request of \$2,240.3 million is sufficient to procure DDG-113. The estimate to restart this program was based on historical DDG-51 return cost data, adjusted for quantity, a 4-year production gap, restart and escalation costs. The Navy continues to review all costs associated with DDG-113 design, production, and testing—shipbuilder, vendor, and government—to

identify opportunities to improve efficiencies in the restart effort and ultimately provide best value to the taxpayer.

7. Senator KENNEDY. Secretary Stackley, are your estimates based on quotations from contractors?

Mr. STACKLEY. The DDG-113 budget estimate was derived from shipbuilder and government-furnished equipment (GFE) manufacturers' actual return costs from fiscal year 2005 and prior year ships adjusted for quantity, a 4-year production gap, restart costs and escalation. In addition, the program has received proposed contractor-furnished equipment prices for major components from the lead shipbuilder as well as contract options from several GFE suppliers. These were utilized in preparing the fiscal year 2010 budget request.

8. Senator KENNEDY. Secretary Stackley, will the Navy be employing a fixed-price contract?

Mr. STACKLEY. If authorized by law and appropriated by Congress, subject to the negotiation of a fair and reasonable price, the Navy intends to award fixed-price incentive contracts for DDGs-113-115.

PROCESS

9. Senator KENNEDY. Admiral McCullough, the CNO has stated that the Navy has implemented a more comprehensive acquisition governance process to better link requirements and costs throughout the procurement process. I fail to see the application of this rigor in your 2010 shipbuilding request, and certainly not during the fiscal year 2009 budget deliberations. In the midst of the budget process last year, you disclaimed several previous 30-year shipbuilding plans and advocated a new plan, but have as yet failed to provide to this committee the rigor of any fact-based analysis in support of this plan. Where are the documented requirements and cost tradeoffs for continuing the LCS, for restarting the DDG-51, for truncating the DDG-1000, and for delaying the CG(X)?

Admiral MCCULLOUGH. The President's budget submission for fiscal year 2010 represents the best overall balance between procurement for future ship capability with the resources necessary to meet operational requirements and affordability.

The current requirements document for the Littoral Combat Ship (LCS) CDD was validated by the Joint Requirement Oversight Council (JROC) of the Joint Staff on June 17, 2008. LCS remains a program of critical importance to Navy, and continues to be monitored closely. LCS fills compelling and consistent warfighting capability gaps that exist today in littoral mine countermeasures, surface warfare, and ASW. The requirement to gain, sustain, and exploit littoral maritime superiority to ensure access and enhance the success of future joint operations remains unchanged. LCS will replace and improve upon the capabilities provided by the MCM-1 and FFG-7 classes. The Navy is accepting greater risk by addressing littoral threats with current force structure of mine countermeasures ships and multi-mission ships. However, there will be capability gaps until LCS delivers in quantity. The Navy continues to view LCS as a vital element of the long-range shipbuilding program. The 55-ship LCS program is an essential component of the Navy force structure objective of at least 313 ships.

Navy is actively engaged with industry to implement cost reductions with the intent to procure the fiscal year 2010 ships within the \$460 million cost cap. Legislative relief may be required regarding the LCS cost-cap until manufacturing efficiencies can be achieved.

Navy has formalized a LCS program affordability and cost reduction process. This process primarily targets cost drivers in shipbuilder design, Navy specifications, and program management costs. Cost reduction opportunities that have potential to impact warfighting requirements are evaluated by operational Navy.

The Navy's decision last summer to restart the DDG-51 program in lieu of continuing the DDG-1000 program was not reached lightly or without due consideration of the ramifications of such a dramatic change in our shipbuilding program. The Vice Chairman of the Joint Chiefs of Staff reviewed and validated surface combatant requirements in September 2008. Navy is fully committed to Ballistic Missile Defense (BMD) as a core mission both now and in the future. Navy's challenge was to find a solution that reduced risk and cost, while providing more ships with better capability to address evolving threats. After extensive discussions with General Dynamics Corporation Bath Iron Works and Northrop Grumman Shipbuilding, the Navy will build three DDG-1000 class ships and one DDG-51 restart at Bath Iron Works and the first two DDG-51 class ships under the restarted program at

Northrop Grumman Shipbuilding. This agreement will ensure workload stability at both shipyards, leverage learning, stabilize and minimize cost risk for the DDG-1000 program, efficiently restart DDG-51 construction, facilitate performance improvement opportunities at both shipyards, and maintain two sources of supply for future Navy surface combatant shipbuilding programs. This plan most affordably meets the requirements for surface combatants, commences the transition to improved missile defense capability in new construction, and provides significant stability for the industrial base. A CNO letter to Senator Edward Kennedy dated May 8, 2009, addressed cost trade-offs for DDG-51 and DDG-1000.

The Navy is currently working on a study for air and missile defense radar capabilities, cost and technical feasibility of a range of radar systems installed on DDG-51 and DDG-1000 hulls. This study, being conducted with technical experts across radar, combat systems, and ship design experts led by Johns Hopkins University Applied Physics Laboratory as the integrator, will inform the path for the Future Surface Combatant (FSC) design and the development of the capabilities document for FSCs. Secretary Gates announced on April 6, 2009, that, "we will delay the Navy CG(X) Next Generation Cruiser program to revisit both the requirements and acquisition strategy." The Navy's Analysis of Alternatives (AoA) for the Maritime Air and Missile Defense of Joint Forces (MAMDJF) capability is currently within the Navy staffing process.

The National Security Strategy and Quadrennial Defense Reviews (QDRs), currently in progress, will drive the Future Years Defense Program and the Annual Long-Range Plan for Construction of Naval Vessels.

10. Senator KENNEDY. Admiral McCullough, the Navy in previous budget cycles laid out a comprehensive 30-year shipbuilding plan to achieve a 313-ship Navy. Why is the 2010 short-term plan any better than the 30-year plan you submitted in 2009?

Admiral MCCULLOUGH. Due to the ongoing development of the Nuclear Posture Review and QDR, DOD considered it prudent to defer its Fiscal Year 2010 Annual Long-Range Plan for the Construction of Naval Vessels and submit its next report concurrent with the President's fiscal year 2011 budget. The aforementioned efforts are presumed to have an impact on Navy's force structure requirements and the fiscal year 2011 report will integrate their guidance and provide a more useful and comprehensive shipbuilding plan. Navy's short-term fiscal year 2010 President's budget submission is in step with the administration's guidance and Secretary of Defense's direction to ensure the Navy is meeting emergent requirements, providing stability in shipbuilding, and the capacity to easily flex to the shape of final force requirements based on pending reviews and studies.

In keeping with the Secretary of Defense's April 2009 budget recommendation, the Navy is reviewing many of its recapitalization programs and force structure requirements to ensure that the 313-ship force still meets the expectations for future force capability. As a result of the ongoing QDR and changes in defense priorities, there is the distinct possibility that either the total number of ships or the mix of ships within that total will change.

ANTI-SUBMARINE WARFARE

11. Senator KENNEDY. Admiral McCullough, I'm sure you can't comment on the specifics of the recent incident between the USS *John S. McCain* and a Chinese submarine. However, I'd like to understand how the Navy would describe the location of this incident, whether it was in the littorals, or whether it was in the open ocean. CNO Roughead and you have stated since last summer that the Navy needs to increase its blue water ASW capability.

Admiral MCCULLOUGH. This is considered an open ocean encounter, occurring approximately 120 nautical miles from Subic Bay, Philippines.

12. Senator KENNEDY. Admiral McCullough, if this was an open ocean engagement, and the USS *John S. McCain*, an *Arleigh Burke*-class destroyer, demonstrates the type of ASW capability the Navy seeks more of, why were our ship operators unable to avoid the incident with the Chinese submarine?

Admiral MCCULLOUGH. An investigation charged with getting to the root cause is being conducted by our experts in this type of operation. Comment on any specifics is premature pending completion of the investigation and until the findings have been reviewed.

BALLISTIC MISSILE DEFENSE

13. Senator KENNEDY. Admiral McCullough, the Navy stated last year that the decision to truncate the DDG-1000 and restart DDG-51 production due to capabilities was not a decision based on cost. I understand that the Navy views BMD as a capability that is in high demand. I also understand that integrated BMD is a spiral for DDG-51s that is expected to be mature in the 2012-2013 timeframe, and that the Navy and Missile Defense Agency (MDA) are spending billions on the development of this capability, along with the Aegis modernization (AMOD) effort called advanced capability build (ACB)-12/AMOD.

What is unclear to me is whether BMD can be added to the DDG-1000s, so we don't underutilize the capability developed in the DDG-1000 at a cost to the taxpayer of \$11 billion in research and development alone. I understand that the Navy received estimates from the contractors for adding BMD capability to *Zumwalt*, and that the estimate was relatively affordable. Can you please explain why we are not pursuing the possibility of adding BMD capability to DDG-1000?

Admiral McCULLOUGH. The addition of BMD capability to the DDG-1000 would be a dramatic change in the requirements for the ship. Such a change necessitates a revision to the existing DDG-1000 combat system computer program in order to employ the Standard Missile-3 for BMD. This development would impose cost and schedule risk to engineer BMD capability into the overall system. Based on an independent review of government technical experts, the contractor's estimate for adding BMD capability to DDG-1000 did not include additional costs associated with, in part, research, development, test, and evaluation, combat systems integration, GFE, training, and maintenance. The restarted DDG-51's commencing with DDG-113 will be built with the ACB-12 combat system, leveraging the AMOD program and minimizing cost and schedule risks, while providing the needed capability. Navy's investment to add BMD capability and capacity resides within the AMOD program. All (62 plus) DDG-51 destroyers are currently planned to receive BMD capability.

14. Senator KENNEDY. Admiral McCullough, is this solely a resource consideration?

Admiral McCULLOUGH. No, the decision is not completely a resource consideration. The addition of BMD necessitates a revision to the existing DDG-1000 combat system computer program in order to employ the Standard Missile-3 for BMD. This development would impose cost and schedule risk to engineer BMD capability into the overall system. At this stage of production, adding additional design changes increases the cost and risk of building and testing the ship on schedule to an unacceptable level. The Aegis fleet provides the most cost effective and least technical risk path to add BMD capability and capacity to our fleet.

15. Senator KENNEDY. Admiral McCullough, if BMD is in such high demand, why has the Navy not chosen to leverage both platforms to meet this compelling 21st century need? In short, when it comes to BMD, has the Navy decided to invest exclusively in a platform designed in the 1980s when another one exists, capable of performing the same mission that was built from the keel up for the 21st century?

Admiral McCULLOUGH. The demand signal from the combatant commanders for BMD ships is already beyond Navy's current capacity and continues to increase. To mitigate the near-term increase in demand, the President's budget request added funding through MDA for six additional Aegis ships with BMD capability. Working closely with MDA, the Navy has purchased three additional ship sets that will be available by the end of calendar year 2010. Navy's long-term strategy to add BMD capability and capacity resides within the AMOD. All destroyers are currently planned to receive BMD in conjunction with their AMOD availabilities beginning in 2012. Six of 22 cruisers are programmed for BMD as part of AMOD, and Navy is reviewing a strategy to add 9 more for a total of 15 cruisers with BMD capability.

The seven oldest Aegis cruisers, hull numbers 52 through 58, have an early version of the SPY radar as the centerpiece of their combat system. Providing BMD in those seven cruisers does not offer sufficient return on investment, and Navy does not plan to add BMD engagement capability in those ships.

AMOD will provide the ACB-12 combat system, which will be the most capable and technologically advanced and open combat system that the Navy has deployed to date. Navy has chosen to leverage off of an existing development effort to meet its BMD capability and capacity requirements, whereas DDG-1000 would require a new engineering and development effort adding technical, schedule, and cost risk.

If these plans are realized, Navy will have 15 Aegis cruisers and all Aegis destroyers (62 plus) with IAMD capability to negate both air breathing (cruise missile and

aircraft) and ballistic missile threats. Navy and MDA are currently collaborating to develop a strategy to achieve this end state in the most effective manner possible.

16. Senator KENNEDY. Admiral McCullough, what opportunities and synergies might we be losing in shutting out consideration of the *Zumwalt*-class from the BMD mission?

Admiral McCULLOUGH. The Navy is considering every option to achieve success with the BMD mission. DDG-1000 may offer future opportunities, but at this stage of DDG-1000 production, adding additional warfighting requirements to the design will be expensive and delay construction of the ships. The addition of BMD capability to the DDG-1000 would be a dramatic change in the requirements for the ship. Such a change necessitates a revision to the existing DDG-1000 combat system computer program in order to employ the Standard Missile-3 for BMD. This development would impose cost and schedule risk to engineer BMD capability into the overall system. The Aegis fleet provides the most cost effective and least technical risk path to greater BMD capability and capacity in our fleet.

ANTI-AIR WARFARE

17. Senator KENNEDY. Admiral McCullough, in a hearing before the House Armed Services Committee's Seapower Subcommittee on July 31, 2008, you stated that the DDG-1000 does not provide area air defense. Navy program documentation, starting with the ship's requirements document, has always listed firing the Standard Missile (SM), specifically SM-2 an air defense weapon, as one of its primary capabilities. In addition, for the third consecutive year, the Navy requested, and Congress appropriated, funds in fiscal year 2009 to modify the SM to allow the combat system on the *Zumwalt* to fire that missile. In a hearing last month, you stated before the Defense Subcommittee of the House Appropriations Committee that "we're doing some work to modify the missiles so they can communicate with the ship and some modifications to the ship so it can communicate with the missiles to give it a limited area anti-warfare capability."

Which missile is this and how does this missile/combatsystem combination's area air defense capability compare to the capability currently provided by DDG-51 destroyers?

Admiral McCULLOUGH. The missiles planned for DDG-1000 are the Evolved Sea Sparrow Missile (ESSM) and the Standard Missile-2 Block IIIB (SM-2 Blk IIIB). The capability of the missiles is unchanged from fleet rounds, but changes are necessary for DDG-1000 to communicate with the missiles through the Multi-Function Radar (MFR), X-Band radar as opposed to the SPY-1, S-Band radar. Changes are also necessary for the missile to be able to communicate with DDG-1000 X-Band MFR. Even with these modifications, the air-defense capability of DDG-1000 will be significantly less than a modernized DDG-51 because it will lack SM-6 and Navy Integrated Fire Control-Counter Air capability. These changes will result in a "DDG-1000 use only" pool of missiles in the fleet.

Both ships' performance and capabilities are dependent on the threat characteristics, threat density, threat axis, and operating environment.

18. Senator KENNEDY. Admiral McCullough, if this is not the same missile, with comparable or superior capability, please explain how such a basic and critical capability was deleted from the DDG-1000 without Congress being officially notified of the change. If this is the case, please offer an accounting for the funds described above.

Admiral McCULLOUGH. The requirements document, which remains unchanged, specifies the Standard Missile family of surface-to-air missiles, and the area defense missile program of record, specifically the ESSM. Both the ESSM and Standard Missile planned for DDG-1000 are modified from existing variants. The funds appropriated have been expended, to date, on missile modifications and the DDG-1000 Combat System. Testing will begin in 2013.

NAVAL SURFACE FIRE SUPPORT

19. Senator KENNEDY. Admiral McCullough, in the July 31, 2008, hearing before the House Armed Services Committee's Seapower Subcommittee, you stated that the Navy had an "excess capacity in naval surface fires" and that tactical Tomahawk would help to overcome the loss of the *Zumwalt's* advanced gun system. However, in a March 2006 Report to Congress on naval surface fire support (NSFS), then-Secretary of the Navy Winters stated that the Navy had a shortfall in this im-

portant capability even prior to the Navy cancelling another fire support program and truncating the *Zumwalt*. That same report further stated that “the use of tactical Tomahawk is not feasible.” How is it then that the Navy could go from a capability shortfall in surface fire support to a surplus while truncating its two key surface fire support programs, including the *Zumwalt*-class destroyer?

Admiral MCCULLOUGH. The Navy provides fire support to forces operating ashore through the ‘joint triad of fires’ which is composed of NSFS weapons, aircraft-launched weapons, and organic ground fires. The two DDG-1000s under contract and third in the President’s budget request will enhance our capability in surface fires. Navy has sufficient capacity to support NSFS out to 13 nautical miles and was developing the Extended Range Guided Munition (ERGM), which was terminated in 2008, to satisfy the requirement to support marines ashore out to a range of at least 41 nautical miles from the ship. We are currently working with OSD developing a Joint Expeditionary Fires AoAs that evaluates alternatives that will meet the 41 nautical miles requirement. Tactical Tomahawk can be used to support certain types of NSFS missions, although not all missions. As such, it can be used to mitigate the loss of the *Zumwalt*’s gun system.

20. Senator KENNEDY. Admiral McCullough, I also understand that the Navy and Marine Corps are studying this shortfall to identify possible future solutions. Where do we stand with regard to providing fire support to our marines ashore, and how would the impending fighter gap, a subject in numerous hearings recently, affect these ongoing joint fires considerations?

Admiral MCCULLOUGH. The Navy has sufficient capability to support NSFS ashore with the 5-inch gun onboard DDGs and CGs, effective to 13 nautical miles. We are currently working with OSD developing a Joint Expeditionary Fires AoAs that evaluates alternatives that will provide NSFS out to a range of 41 nautical miles. Our joint fires capability is augmented through the use of tactical aviation (TACAIR), organic ground fire capabilities, and the two DDG-1000s under contract and third in the President’s budget. Advancements in the capability and capacity of individual aircraft to service multiple targets with precision weapons in an amphibious campaign has reduced the numbers of TACAIR required to fulfill demand for surface fires and mitigated the potential impact of a fighter gap.

FUTURE SURFACE COMBATANT

21. Senator KENNEDY. Secretary Stackley, the fiscal year 2010 budget envisions the first FSC to be procured after fiscal year 2011. At this point, an FSC program seems to contradict the basic tenets of major program acquisition principles. We do not have a validated requirement and we do not have any idea about the technological maturity of systems to meet the requirement. In fact, we appear to have little more information on FSC than it would some kind of surface combatant. How does the Navy plan to procure the FSC on budget and on time?

Mr. STACKLEY. Navy intends to procure future guided missile destroyers with improved IAMD capability by limiting technical risk and using an evolutionary approach. This will enable Navy to build guided missile destroyers on budget and on time with the best available IAMD capability to incrementally fill the JROC approved IAMD capability gaps identified in the MAMDJF Initial Capability Document (ICD).

Navy, along with OSD, has embarked on a study to analyze the capabilities required for future guided missile destroyers to close IAMD gaps. The study will assess both the DDG-51 and DDG-1000 hulls, and identify the best solution for increasing IAMD based on capability, cost, and schedule for destroyers procured after fiscal year 2011.

The study will complete in time to inform the President’s budget for 2011.

22. Senator KENNEDY. Secretary Stackley, when can we expect to receive data from the Navy on projected cost and schedule for the FSC?

Mr. STACKLEY. The FSC will be a modified repeat of an existing guided missile destroyer production design. The Navy is currently working on a study for air and missile defense capabilities, cost, and technical feasibility of a range of radar systems installed on DDG-51 and DDG-1000 hulls. This study is a key enabler to determine the path for the FSC design and will inform the requirements for the FSC. This study will complete in time to develop the President’s budget for 2011. Until this study has completed, it would be premature to project a detailed cost and schedule for the FSC, however, cost will be a critical factor in the Navy’s strategy for fielding the FSC.

23. Senator KENNEDY. Admiral McCullough, can you assure us that the generalities which currently surround the FSC will be replaced with a disciplined regimen of validated requirements?

Admiral McCULLOUGH. Navy is following a disciplined process to address combatant commander demands for the FSC with a particular emphasis on IAMD requirements to incrementally fill JROC validated IAMD capability gaps as well as meet other warfare area requirements.

When the Navy submitted a plan to the Office of the Secretary of Defense to truncate DDG-1000 at three ships and restart the DDG-51 line, Navy labeled all the ships in the restart profile DDG-51s. The plan is to restart the DDG-51 line in fiscal year 2010 and continue to study what future capability and technologies are required for fiscal year 2012 and beyond. The results of the analysis will influence the decision to determine the design and capabilities of those out year ships.

The restart of the DDG-51 line will help fill increasing combatant commander demand for IAMD capability and capacity. Navy plans to continue to modernize and build guided missile destroyers with the best available IAMD capability to incrementally fill the JROC approved IAMD capability gaps identified in the MAMDJF ICD. The plan includes the introduction of advanced radar which will have increased capability over the current SPY-1 radar. This will enable Navy to better address IAMD capability gaps well into the 21st century.

Navy has embarked on a study to analyze the capabilities required for future guided missile destroyers to close IAMD gaps. The study will assess both the DDG-51 and DDG-1000 hulls, and identify the best solution for increasing IAMD based on capability, cost, and schedule for destroyers procured after fiscal year 2011.

The study will complete in time to inform the President's budget for 2011.

24. Senator KENNEDY. Secretary Stackley, can you assure us that the Navy will develop detailed design specifics, and will have a firm commitment to leverage existing and promising technologies all procured through the use of full and open competition? If so, when?

Mr. STACKLEY. The FSC will be a modification of an existing guided missile destroyer, DDG-51, or DDG-1000 production design. As documented in the DDG-51/DDG-1000 Swap Memorandum of Agreement signed by the Navy, "It is in the Government's best interest to competitively award shipbuilding contracts for all Navy surface combatant ships in fiscal year 2012 and beyond, including, but not limited to, DDG-1000s, CG(X), DDG-51s, or any variations thereof that the Navy may select as its FSC design."

The Navy, in the interim, has allocated construction responsibilities for fiscal year 2009 and prior DDG-1000 class ships and all three fiscal year 2010 and fiscal year 2011 DDG-51 class ships between Bath Iron Works and Northrop Grumman Shipbuilding to ensure shipyard workload stability at both yards in the near term.

The Navy is examining existing and promising technologies for backfit into existing ships and integration into future combatant designs. The Navy plans to leverage an open architecture approach in order to create further opportunities for competition in all ship and combat systems.

DDG-51 RESTART

25. Senator KENNEDY. Secretary Stackley, what is the most current estimate for the cost of the DDG-51s planned for fiscal year 2010 and fiscal year 2011?

Secretary STACKLEY. The fiscal year 2010 President's budget requests \$2,240.3 million for DDG-113, the first ship of the DDG-51 program continuation. The DDG-113 is planned to be awarded to Northrop Grumman Shipbuilding in early calendar year 2010.

The DDG-51 program intends to award two additional ships (DDG-114 and DDG-115) in fiscal year 2011 in accordance with the memorandum of agreement signed by the Navy and the shipbuilders. The DDG-114 will be awarded to Northrop Grumman Shipbuilding and DDG-115 will be awarded to Bath Iron Works. The price for DDG-114 and DDG-115 will benefit from reduced nonrecurring costs and the potential for multiple ship-set buys of GFE and material. The DDG-114 will further benefit from production learning as it will be the second ship awarded to Northrop Grumman Shipbuilding as part of the DDG-51 program continuation efforts. In addition, DDG-114 and DDG-115 will benefit from design stability by maintaining the same configuration baseline as DDG-113.

26. Senator KENNEDY. Admiral McCullough, is there a validated requirement for the DDG-51s to be bought in fiscal year 2010 and fiscal year 2011?

Admiral McCULLOUGH. The requirement for DDG-51 is delineated in the DDG-51 Operational Requirements Document dated April 26, 1994. That requirement was reviewed by the JROC in September 2008 and no changes were made.

QUESTIONS SUBMITTED BY SENATOR JIM WEBB

NUCLEAR-POWERED AIRCRAFT CARRIER

27. Senator WEBB. Secretary Stackley, according to the Secretary of Defense, the proposal to extend the time to build nuclear-powered aircraft carriers from 4 to 5 years will lead to a force of 10 operational aircraft carriers by 2040. This proposal violates section 126 of the National Defense Authorization Act for Fiscal Year 2006, as amended by section 1011 of the National Defense Authorization Act for Fiscal Year 2007, which established a requirement in title 10 U.S.C. (section 5062) for the Navy to maintain a force of 11 operational aircraft carriers. The title 10 statutory requirement for the Navy to maintain a carrier force of this size is open ended—it does not specify a time limit. In light of the provisions of title 10 U.S.C., section 5062, by what authority does the Navy assert a prerogative to revise its construction plan for nuclear-powered aircraft carriers in a way that will lead to a force level less than 11?

Mr. STACKLEY. The Navy is currently committed to an 11-carrier force structure for the next several decades, and this commitment was supported by Secretary Gates during his April budget announcement. However, Secretary Gates stated “We will shift the Navy aircraft carrier program to a 5-year build cycle placing it on a more fiscally sustainable path. This will result in 10 carriers after 2040.”

The carrier force structure, along with the entire battleforce, is being considered in the QDR. Until the results of these carrier analyses and deliberations are finalized, it is premature to identify what legislative relief may be necessary regarding 10 U.S.C. 5062 for the post-2040 period. The Navy will require legislative relief if, at any time, its planning drops below the 11-carrier requirement.

Until then, in the near term, the Navy requires temporary legislation to operate with 10 carriers during the period between inactivation of USS *Enterprise* (CVN-65) and the delivery of *Gerald R. Ford* (CVN-78). Navy assesses it can meet operational commitments during this gap by adjusting both carrier and air wing maintenance and operational schedules. The Navy has been working with Congress for temporary legislative relief during this relatively short period and looks forward to working with this Congress on this important legislative proposal.

AIRCRAFT CARRIER CONSTRUCTION

28. Senator WEBB. Admiral McCullough, regarding the Navy’s proposal to put nuclear-powered aircraft carriers on a 5-year construction cycle, you stated in your testimony that the Secretary said to put carrier construction on 5-year centers, “so that’s what we did.” Was this direction provided by the Secretary of the Navy or the Secretary of Defense?

Admiral McCULLOUGH. The direction was provided by the Secretary of Defense in his April 6, 2009, Defense budget recommendation statement. Secretary Gates stated “We will shift the Navy aircraft carrier program to a 5-year build cycle placing it on a more fiscally sustainable path. This will result in 10 carriers after 2040.”

29. Senator WEBB. Admiral McCullough, Secretary of Defense Gates has testified that a 5-year build cycle will place the carrier program on a more fiscally sustainable path. Why is this?

Admiral McCULLOUGH. There are two principal concerns that we must address in determining the build-rate for our carriers. The primary issue is the balance of build-rate and inventory. The nuclear-powered carriers in the Navy’s inventory have service lives of about 50 years. Building the ships on a 4-year build cycle would be cheaper individually for each ship procured, it would also result in a higher than needed inventory. For instance, building on 4-year centers would ultimately lead to an end-inventory of slightly more than 12 CVNs. In order to sustain the desired inventory, we would have to either retire these national assets earlier in their service lives (approximately 40 years, to maintain current capability) or put a gap in the production line of a little over a decade after we completed the final ship in a production run and before we would need to start building their replacements. Retiring these ships 10 years ahead of schedule or financing the shutdown and restart costs after a decade or longer gap in production present significantly greater costs than are the case for individual ship cost increases. The second issue of concern in the

shipbuilding account is the impact a carrier has on the funding remaining for procurement of the ships, submarines, support, and amphibious ship recapitalization plans that must compete for these scarce funds. Given the relatively high cost of these capital assets, reducing the overall inventory and the related building rate reduces the year-to-year demand for recapitalization funds in the carrier program and enables a better overall balance of resources between the carrier programs and those competing programs that are necessary to support and defend our carrier force.

30. Senator WEBB. Admiral McCullough, industry representatives have claimed that a 5-year carrier build cycle will increase the cost of both CVN-79 and *Virginia*-class submarines under construction by \$7 million and \$28 million, respectively. Did the Navy assess the effects the new build cycle will have on the cost of ship construction and other factors (e.g., industry labor base, training, et cetera)? If not, why not? If so, what is the Navy's assessment?

Admiral McCULLOUGH. Navy supports the Secretary of Defense's plan to change the CVN build rate to one every 5 years. Since the delivery of USS *Harry S. Truman* (CVN-75) in 1998, the interval between new construction starts has averaged slightly over 5 years. Most recently, the *Gerald R. Ford* (CVN-78), the first of the new class aircraft carrier, was started approximately 7 years after USS *George H.W. Bush* (CVN-77). The 5-year build cycle announced by the Secretary of Defense is consistent with recent carrier procurement practices. The Navy has assessed the impact of adding a year to the carrier's build cycle on the future carrier program, the refueling complex overhaul for carriers and the *Virginia*-class ship construction program. In general, the cost per ship for each individual program would increase due to inflation, inefficiencies, and overhead allocation. The actual increase of each ship varies based on the award and delivery schedule of the ship. The increased cost per ship includes impacts to the shipbuilder's cost (labor and material) as well as the cost impact on GFE.

31. Senator WEBB. Admiral McCullough, industry representatives have said that adding a year to the carrier's build cycle would have a large impact on the shipbuilder's supplier base resulting in a loss of jobs and driving cost increases of 5 percent to 10 percent, or higher in some cases, above normal escalation. This would likely lead to supplier cost growth in other Navy programs and increase the risk that some equipment suppliers will exit the market. Did the Navy assess the impact of the 5-year build cycle on the shipbuilder's supplier base of approximately 4,000 companies? If not, why not? If so, what is the Navy assessment of this impact?

Admiral McCULLOUGH. Navy supports the Secretary of Defense's plan to change the CVN build rate to one every 5 years. Since the delivery of USS *Harry S. Truman* (CVN-75) in 1998, the interval between new construction starts has averaged slightly over 5 years. Most recently, the *Gerald R. Ford* (CVN-78), the first of the new class aircraft carrier, was started approximately 7 years after USS *George H.W. Bush* (CVN-77). The 5-year build cycle announced by the Secretary of Defense is consistent with recent carrier procurement practices. While the Navy has not individually consulted with each of the suppliers to the shipbuilder, the Navy has assessed the overall cost impact to programs due to the 5-year carrier build cycle. The major contributors to the cost impact are inflation, yard inefficiencies, and overhead allocation. This assessment includes the shipbuilder's cost as well as the cost impact on GFE.

MILITARY CONSTRUCTION AND DREDGING AT NAVAL STATION MAYPORT

32. Senator WEBB. Admiral McCullough, you justified dredging the channel leading to Naval Station Mayport and its turning basin to a depth sufficient to accommodate a nuclear-powered aircraft carrier in terms of the Navy's intention to provide an alternative homeport or available site for a port visit on the east coast. You described a number of scenarios to justify this proposal, including the possibility of a ship collision in the channel leading to Naval Station Norfolk. The Navy's public record is clear, however, in stating that the risk of a catastrophic event closing Hampton Roads is small. The Navy also has stated that a comparison of Naval Station Norfolk with Naval Station Mayport reveals, "No clear, credible threat distinguishes one homeport from the other." Are you aware of any new information that would lead you to differ with the Navy's previously stated assessment that the risk of Hampton Roads being closed is small?

Admiral McCULLOUGH. There are new documents concerning the Hampton Roads area:

- (1) CNO Integrated Vulnerability Assessment for Norfolk, VA, dated May 11, 2009, classified; and
- (2) Southeast Virginia threat assessment produced by Naval Criminal Investigative Service dated June 17, 2009, concerning the terrorist threat in the Southeast Virginia area, classified.

The information in these reports does not significantly differ from previous reports, nor does it change the strategic impact to naval forces if the Hampton Roads area were closed by a catastrophic event.

33. Senator WEBB. Admiral McCullough, the Navy's military construction request for Wharf Charlie at Naval Station Mayport goes well beyond basic repairs to the pier with its inclusion of the construction of a \$7.1 million elevated second deck. How many other two-level, general-purpose piers (i.e., one not specifically designed to support a nuclear-powered aircraft carrier) exist in the Navy's shore infrastructure?

Admiral McCULLOUGH. The Navy currently has general-purpose double deck piers at the following locations:

- Piers 2, 6, and 7, Norfolk, VA
- Ammunition Pier, Earle, NJ

The Navy had double deck piers closed by the Defense Base Realignment and Closure Commission at the following locations:

- Zulu Pier, Charleston, SC
- Berthing Pier, Pascagoula, MS
- Berthing Pier, Mobile, AL
- Berthing Pier, Ingleside, TX

34. Senator WEBB. Admiral McCullough, the DD Form 1391 documenting this construction project speaks to a ship-freeboard concern noting that the current single-deck wharf places the deck of a modern combatant ship and the elevator height of an aircraft carrier more than 12 feet above the wharf deck. Does a similar condition exist with other single-deck wharves in the Navy's shore infrastructure? If so, is the Navy planning additional military construction projects to build an additional level on these piers?

Admiral McCULLOUGH. Similar conditions exist with other single-deck wharves in the Navy's shore infrastructure. Utility supplies and connections at single deck wharves hamper ship-to-shore operations and pose safety concerns that second deck construction helps mitigate and/or eliminate. These issues are compounded with single deck wharves during high tide and in cases where services must be provided to nested ships (for example, cross-decking missile loads). The Navy continues to evaluate second deck construction options for new and replacement wharves and piers wherever feasible (i.e., depending on use and tidal area).

35. Senator WEBB. Admiral McCullough, when was the requirement for a second level on Wharf Charlie at Naval Station Mayport first identified, and what was its justification?

Admiral McCULLOUGH. Wharf Charlie is a general berthing wharf and Mayport's primary weapons loading wharf. In the start of project development in 2005, a second deck was determined to be the optimal deck configuration to meet required wharf's functions, operational and safety efficiencies, and to enable proper support to nested ships.

36. Senator WEBB. Admiral McCullough, during your testimony before the House Armed Services Committee on shipbuilding in May, you said that the pier work in Mayport is not particularly associated with an alternate carrier facility. You stated that the money in the fiscal year 2010 budget for pier work in Mayport is to support the ships that are currently assigned there. The DD Form 1391 documenting the Wharf Charlie project states, however, that: "Construction of a second deck would place the wharf deck . . . and carrier elevators level, which would allow for the elimination of towers and full access to supply elevators and cranes." How do you account for this discrepancy in your prior testimony?

Admiral McCULLOUGH. Charlie Wharf is Mayport's primary weapons loading wharf. It is also the primary wharf for berthing visiting big decks (including amphibians and ammo ships). The DD Form 1391 was developed when a conventional CV was homeported at Mayport. Due to the frequent big deck visits and associated support requirements, the DD Form 1391 was not revised. Mayport has 21 homeported ships and regularly supports 10 or more visiting ships, which requires all the berthing areas available. Charlie Wharf has an old and deteriorating bulk-

head, which in places has lost 75 percent of its thickness and makes repairs critical. Load limits are in place on certain areas which impact the ability to perform missions.

[Whereupon, at 3:57 p.m., the subcommittee adjourned.]

