DEPARTMENT OF DEFENSE AUTHORIZATION FOR APPROPRIATIONS FOR FISCAL YEAR 2014 AND THE FUTURE YEARS DEFENSE PROGRAM

WEDNESDAY, MAY 8, 2013

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

NAVY SHIPBUILDING PROGRAMS

The subcommittee met, pursuant to notice, at 9:30 a.m. in room SR–232A, Russell Senate Office Building, Senator Jack Reed (chairman of the subcommittee) presiding.

Committee members present: Senators Reed, Shaheen, Blumenthal, Kaine, King, McCain, Sessions, Wicker, and Ayotte.

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

Minority staff members present: Daniel A. Lerner, professional staff member; and Lucian L. Niemeyer, professional staff member.

Staff assistants present: Jennifer R. Knowles and John L. Principato.

Committee members' assistants present: Carolyn Chuhta, assistant to Senator Reed; Patrick Day, assistant to Senator Shaheen; Ethan Saxon, assistant to Senator Blumenthal; Karen Courington, assistant to Senator Kaine; Steve Smith, assistant to Senator King; T. Finch Fulton and Lenwood Landrum, assistants to Senator Sessions; Joseph Lai, assistant to Senator Wicker; and Brad Bowman, assistant to Senator Ayotte.

OPENING STATEMENT OF SENATOR JACK REED, CHAIRMAN

Senator REED. Let me call the hearing to order.

Senator McCain has indicated that he might be delayed and asked us to go forward. When he arrives, I will interrupt the proceedings and ask him if there are any comments that he would make.

Let me make an opening statement. Then if any of my colleagues want to make a brief comment, it would be appropriate. But we will get right to the testimony.

Let me welcome our witnesses: the Honorable Sean J. Stackley, Assistant Secretary of Defense for Research, Development and Acquisition; Vice Admiral Kevin M. McCoy, USN, Commander, Naval Sea Systems Command (NAVSEA); and Vice Admiral Allen G.

Myers, USN, Deputy Chief of Naval Operations, Integration of Capabilities and Resources. Thank you, gentlemen, very much.

We are certainly grateful for your service and also for the incredibly professional and courageous service of the men and women of the U.S. Navy and the U.S. Marine Corps.

I especially want to thank Admiral McCoy this morning because I believe, sir, this will be your last opportunity—and "opportunity" is used wisely or diplomatically—to appear before the subcommittee. Thank you for your service, sir. Thank you very much.

Admiral MCCOY. Thank you, sir.

Senator REED. I also want to welcome Senator McCain when he joins us. He is the new ranking member. There are few people with the expertise, the experience, and the insight of Senator McCain when it comes to anything to do with the U.S. Navy. So he is an extraordinary addition to this subcommittee as the ranking member.

Now, again, I would ask my colleagues to bear in mind that the President of South Korea will be attending a joint session. So we will want to move forward as expeditiously as possible. If someone would like to make a very brief statement, I will recognize them at the appropriate time.

The Navy continues to be faced with a number of critical issues as it tries to balance its modernization and procurement needs against the costs of current operations. A number of ongoing critical issues confront the Department of the Navy, but principally complicating the Navy's efforts this year to support current operations in U.S. Central Command and elsewhere is the specter of sequestration. The shipbuilding budget remains at a level where it will be difficult, if not impossible, to field the Navy we believe we need. Sequestration will only exacerbate that shortfall. We need to understand how sequestration may complicate the Navy's job of maintaining current readiness while building for the fleet of the future.

Another topic of concern is the change in fleet size goals since last year. The Navy has now defined a new requirement for the size of the fleet, changing the goal from 313 ships to 306 ships. We hope to understand more about this change during the hearing this morning.

With that in mind, a continuing focus of the subcommittee has been to see that we improve our acquisition stewardship and thereby ensuring that we are getting good value for every shipbuilding dollar that we spend.

We were very pleased to see that the Navy Department has been able to use the jump start in advance procurement funds Congress provided in fiscal year 2013 to maintain *Virginia*-class attack submarine production at a level of two per year. We have seen that stability helps drive down costs and improve productivity.

We also support the Navy's continuing efforts to drive costs out of the *Ohio* replacement ballistic missile submarines (SSBN) program. SSBNs will remain a vital leg of the nuclear triad for the foreseeable future. Establishing and achieving cost reduction goals in these *Virginia*-class and *Ohio* replacement programs will yield significant stability to our Nation's submarine industrial base, which provides good paying jobs all through the country but par-

ticularly in my region and will ensure the Navy has a modern, capable submarine fleet for many years to come.

The subcommittee has met the last 2 years and focused primarily on other programs that were experiencing quality control issues or other production issues. It is never a pleasant situation when major programs are having such problems. During these hearings, testimony from the Navy made it seem to me that the Navy Department and the contractor teams were making good faith efforts to improve the situation through changes in staffing, training, and organization. We are eager to hear an update from Secretary Stackley and Vice Admiral McCoy this morning on the progress that they have made on these initiatives since last year.

In our country's current fiscal environment, it is very unlikely that we will have as much money to spend as the 30-year shipbuilding plan assumes. Fundamentally, that is why these continuing hearings on efficiency and productivity are so important. We need to focus on managing these important programs in ways that are efficient and effective in delivering the capability the country needs from its Navy. We need to improve quality and efficiency in all of our shipbuilding programs not only because of the direct savings, but also because we need to demonstrate to the taxpayer that we are using defense dollars wisely.

Gentlemen, we look forward to your testimony this morning.

Senator King, do you have any opening comments, brief comments?

Senator KING. No, thank you.

Senator REED. Thank you very much.

Senator Ayotte, if you have a brief comment.

Senator AYOTTE. I do not, Mr. Chairman. Thank you.

Senator REED. Thank you.

This is an extremely cooperative subcommittee. [Laughter.]

I appreciate your contributions very much.

Let me now recognize Secretary Stackley. I understand, Mr. Secretary, that you will have a statement, as well as Admiral McCoy and Admiral Myers.

Mr. STACKLEY. That is correct, sir.

Senator REED. Please proceed.

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

Mr. STACKLEY. Thank you. Chairman Reed, distinguished members of the subcommittee, thank you for your leadership on the many issues that fall under Congress' broad responsibility to provide and maintain a Navy and for your steadfast commitment to our sailors and marines around the world today.

I appreciate the opportunity to appear before you alongside Vice Admiral Myers, the Deputy Chief of Naval Operations, and Vice Admiral McCoy, the Commander of NAVSEA to address Navy shipbuilding. With the permission of the subcommittee, I propose to provide a brief statement and submit a separate formal statement.

Senator REED. All statements will be made part of the record in whole, and you may summarize if you wish, Mr. Secretary.

Mr. STACKLEY. Thank you, sir.

Today's Navy is 283 ships in number, about half of which on any given day are underway performing missions around the globe, supporting operations in Afghanistan, providing maritime security along the world's vital sea lanes, missile defense in the Mediterranean and Sea of Japan, intelligence, surveillance, and reconnaissance where needed, as needed, global presence at sea and with an embarked marine force ready to move ashore. They are conducting anti-piracy patrols, global partnership stations, and humanitarian assistance. They are quietly, reliably providing strategic deterrence and all the while they are training and repairing for the next deployment, the next operation.

Whether measured by the breadth and pace of these operations or by the defense strategy's call for increased naval presence from the Middle East to the Pacific or by the Chief of Naval Operation's (CNO) force structure assessment reported to Congress earlier this year, the Navy's objective to reach the 300 ship level by the end of this decade is more an imperative than a goal if we are to sustain this operational tempo (OPTEMPO) that we have all grown to expect of our ships and sailors.

This requires that we build a balanced mix of ships per the CNO's requirements at a rate of about 10 ships per year, that we not merely control cost but drive down cost in new construction, and that we modernize our in-service ships to ensure their mission relevance for their full service life.

With this basic approach since the first quarter of fiscal year 2011, we have awarded contracts to procure 43 ships, including options, most competitively awarded, all fixed-price contracts, and we are on track to increase that number this spring with the anticipated award of the DDG–51 multiyear procurement.

Stable production and mature designs represented in these fixed-price contracts provide an important degree of affordability to our program and certainty to our industrial base in an otherwise uncertain period in defense spending. In total, today we have 49 ships under construction, under contract, where appropriated, and pending the support of Congress, with an additional eight ships included in the fiscal year 2014 budget request, the Navy is on track to reach the 300 ship mark later this decade.

Further capitalizing and support provided by this subcommittee in 2013, we are proposing to increase our ship procurement this year with the addition of a second *Virginia* submarine in 2014 for a 10-boat multiyear, and similarly, we are working to procure the additional 10th DDG–51 authorized by Congress in 2013 as part of that program's multiyear.

Clearly, sequestration puts this plan at risk. Consider 2013 alone: the Navy proposed and Congress authorized nearly $5 billion savings associated with the submarine destroyer and MV–22 aircraft multiyear procurements. Plus, Congress increased the Navy's request by nearly $4 billion provided for additional ships and for modernization and operations of ships slated for early retirement. These gains, however, were more than offset at the top line by the $11 billion reduction to the Navy's budget resulting from sequestration earlier this year.

Across the board, we are weighing alternatives to mitigate quantity reductions, schedule delays, and cost impacts to each of our

ship, aircraft, and weapons systems programs that we rely upon to meet our future readiness requirements. A case in point with specific regard to the DDG–51 multiyear, we will need to work with the defense committees to repair the funding that was lost to sequestration in order to award the 10th destroyer authorized and appropriated in 2013 towards that multiyear.

These singular efforts to repair the impacts of sequestration in 2013, however, will be insufficient to stay the potentially deeper and longer-term impacts of sequestration. The Department of Defense (DOD) leadership is separately reviewing alternatives to meet the defense strategy under these circumstances at significantly reduced top lines.

I would like to briefly address specific programs within our shipbuilding plan. The eight ships included in this year's budget request include two *Virginia*-class submarines, an Aegis destroyer, four littoral combat ships (LCS), and one mobile landing platform (MLP). In each case, submarine, destroyer, LCS, and MLP, construction performance is strong, and these programs' savings have been reinvested to uphold our shipbuilding rates despite downward pressure on the budget.

The request also includes funding for continued construction of the *Ford* class aircraft carriers. In 2010, we reported cost growth on the lead ship, CVN–78, stemming from development of new systems and delays in design and material, all impacting production. Our efforts to improve on this performance have stayed cost growth on the lead ship but not reversed it. Accordingly, we are requesting an adjustment to the cost cap and additional funding to complete CVN–78 in accordance with our previously reported estimate.

We are attacking these issues on the next carrier, CVN–79, and are working with the shipbuilder and vendors to improve the quality and producibility of this new design, to replan the work flow and material ordering in order to drive higher completion levels at the earlier, more efficient stages of production and to invest in needed facility improvements in order to reduce cost for future carriers. We have provided these details in a separate report to Congress and look forward to working with your staffs on the implementation of these critical initiatives.

Regarding amphibious ship construction, performance is much improved. LHA–6 rolling into LHA–7 construction and the recently delivered LPD–23 and LPD–24 are entering the fleet at high levels of quality and completion, and we look for this trend to continue as we complete the remaining ships in this class.

Regarding the *Ohio* replacement program, requirements are stable and development and early design are on schedule to support procurement in 2021. Affordability of the Navy's shipbuilding program during the period of SSBN construction remains a priority, and while design for affordability is a central tenet of our *Ohio* replacement strategy, meeting our cost objectives will not alone bring our shipbuilding top line within our reach during that period.

Looking ahead, we are conducting design studies and analysis of alternatives (AOA) for future ships, DDG–51 Flight III, LHA–8, the future LXR to replace the LSD–41 and –49 class, and the future oiler T–AO(X). It is critical that we press forward with these ships' design schedules, place a premium on affordability, and look for op-

portunities to pull this work forward in keeping with the constraints of the budget and the demands of the defense strategy.

Ultimately, we recognize that as we balance requirements, affordability, and industrial base considerations, it is ever more important that our shipbuilding plan closely align with the priorities outlined in the new defense strategy. In view of increasing pressure on our top line, it is equally paramount that we, the Navy and industry, continue to improve the affordability within our programs in order to build the Navy needed by the future force.

Mr. Chairman, thank you for the opportunity to appear before you today. I look forward to answering your questions.

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

Admiral Myers, please.

STATEMENT OF VADM ALLEN G. MYERS, USN, DEPUTY CHIEF OF NAVAL OPERATIONS, INTEGRATION OF CAPABILITIES AND RESOURCES, N8

Admiral MYERS. Mr. Chairman, distinguished members of the committee, it is an honor to appear before you today with Mr. Stackley and Vice Admiral McCoy to discuss the Navy's fiscal year 2014 national defense authorization budget request.

Our fiscal year 2014 budget request supports the Defense Strategic Guidance and accomplishes our ability to sustain our support to the partners in the Middle East, rebalance our efforts in the Asia-Pacific, and focus our presence at key strategic maritime crossroads, and meet the highest priority capability demands of the geographic combatant commanders.

As the CNO testified before this full committee a couple of weeks ago, our final approach to meet our responsibility of operating forward where it matters and being ready when it matters has not changed. Regardless of the size of our budget or our fleet, our CNO's three tenets of warfighting first, operate forward, and be ready, guide our decisionmaking in the development of our budget request. We made tough, strategy-based choices to ensure a coherent budget that delivers the overseas presence directed by the Secretary of Defense per the Global Force Management Allocation Plan (GFMAP) and continues essential, near-term investments started in fiscal year 2012 and 2013 to address challenges in the Middle East and the Asia-Pacific with improvements in mounting an anti-submarine warfare and develops capabilities over the long term to address warfighting challenges in these same regions with integrated systems such as the Navy integrated fire control, counter-air, and platforms like the P–8A Poseidon.

We also recently completed an update to our force structure assessment based on the Defense Strategic Guidance and a reexamination of our operational plans and other changes in shipbuilding programs, ship employment cycles, and our global operating posture. The new requirement was for a battle force of 306 ships. This requirement is different from our previous requirement of 313 ships because of reduced presence requirements resulting from the Defense Strategic Guidance priorities, increased forward-basing of ships, and the introduction of new payload capacity for attack submarines replacing our SSGNs, an increased use of ships manned

with rotating civilian and military crews which provide greater presence for our ships.

Our shipbuilding investments continue to build towards a balanced 306-ship force as outlined by our force structure assessment and delivers a fleet of 300 ships by 2019 with increased capability and flexibility compared to the fleet today.

Along with our primary joint partner, the U.S. Marine Corps, the Navy is uniquely qualified to immediately respond to a crisis to assure our allies, build partnerships, and deter aggression and to contain conflict. Our fiscal year 2014 budget request supports our ability to continue to perform this important national security role.

I want to thank Congress for the National Defense Authorization Act (NDAA) for Fiscal Year 2013 and the fiscal year 2013 defense appropriations bill. We applied these funds in accordance with our strategy and priorities to pay civilian personnel and meet must-pay bills to reconcile the fiscal year 2013 readiness and sustained operation and maintenance (O&M) priorities for our forces deploying to meet the current approved fiscal year 2013 GFMAP and prepare to meet the fiscal year 2014 GFMAP.

It also restores critical base operations and renovation. We are still working through the impacts of sequestration for fiscal year 2013, but we know that sequestration will result in a fleet and bases that are less ready than planned for and our fiscal year 2013 funding for each investment program has been reduced by about 8 percent. This will likely result in reductions to the number of weapons and aircraft we intend to procure, as well as the restructuring of ship construction programs very likely resulting in increased cost in future years.

In closing, I ask for the support of the Navy's fiscal year 2014 budget request, and I thank you for the opportunity to testify on behalf of the approximately 613 sailors and civilians in our Navy serving worldwide.

Senator REED. Thank you very much, Admiral.

Before I recognize Admiral McCoy, let me call on the ranking member, Senator McCain. Senator?

STATEMENT OF SENATOR JOHN MCCAIN

Senator MCCAIN. Thank you, Mr. Chairman, and thank you for holding this first Seapower Subcommittee hearing on the Navy's shipbuilding programs in view of the President's 2014 request. I look forward to working with you this year to ensure the committee and our Nation have a clear understanding of the trends for future capabilities of our naval forces.

I want to thank our witnesses for their public service during a time of growing maritime demands on our armed forces.

I would just mention a couple of things, Mr. Chairman.

One, the President's budget for fiscal year 2014 on shipbuilding is a fantasy. It will continue the Department's budget uncertainty, paralyzing any ability to conduct deliberate planning or sound management of Navy shipbuilding accounts or any other investment program.

The Department's long-range shipbuilding program, which we have yet to receive, will depend on proposed investment levels over

the next 10 years that will be very difficult to achieve as long as sequestration continues.

Even in the event sequestration is solved, if we accept the Department's proposed shipbuilding and retirement plan, by 2015 we will have the fewest number of naval vessels operating in the fleet since 1917.

The Department's current plan for shipbuilding does not achieve the Navy's combatant vessel force structure requirement of 306 ships until 2037. The 306-ship requirement was itself reduced from 313 ships this past January. For another 23 years, we will assume significant risk in the ability of our Navy to protect U.S. interests around the world.

To compound that risk, the Navy plans for the LCS to comprise over one-third of the Nation's total surface combatant fleet by 2028 and yet the LCS has not yet demonstrated adequate performance of assigned missions. We need to fix it or find something else rather rapidly

Finally, the Navy must come up with an affordable way to build the *Ohio* replacement SSBN–X program, which threatens to crowd out other investments, and find ways to incentivize the lone builder of aircraft carriers to reduce cost. Neither will be easy.

I thank you, Mr. Chairman.

Senator REED. Thank you very much, Senator McCain.

Admiral McCoy?

STATEMENT OF VADM KEVIN M. MCCOY, USN, COMMANDER, NAVAL SEA SYSTEMS COMMAND

Admiral MCCOY. Chairman Reed, Ranking Member McCain, distinguished subcommittee members, thank you very much for the opportunity to testify on shipbuilding initiatives and the material readiness of our Navy.

As the Commander of NAVSEA for the past 5 years, I have been actively engaged with senior Navy leadership, the shipbuilders, and NAVSEA organization to improve the quality of ships delivered to the fleet and ensure that our ships retain their warfighting effectiveness and achieve their full service lives.

Let me speak upfront specifically about the quality trends in our shipbuilding programs. Since the fall of 2008 when the problems with initially delivered LPD–17 class ships started to materialize in service, NAVSEA and the program executive offices have been keenly focused on improving the reliability, the in-service performance, and overall quality of delivered ships. We have had three particular focus areas.

First, properly staffing the supervisor of shipbuilding offices and training personnel in oversight of industrial processes and compliance. Since 2007, we have added approximately 200 additional personnel to the Supervisor of Shipbuilding, Conversion & Repair (SUPSHIP) staff, an increase of over 20 percent.

Second, we have increased shipyard surveillance inspections and metrics-based assessment of the core shipbuilding processes by the supervisor of shipbuilding. This includes joint collaboration with the shipbuilders on ensuring compliance with specifications and spotting negative trends and implementing corrective actions. NAVSEA headquarters also performs independent assessments of

shipbuilder quality performance and the performance of SUPSHIP oversight of the shipbuilders.

Then third, we strengthened the Government's oversight of the delivery process to include additional testing prior to delivery to ensure reliability during fleet service and to drive down the number of significant in-serve trial deficiencies prior to delivery.

An example of additional testing imposed prior to delivery includes more robust, at-sea endurance trials for recent LPD–17 class ships to ensure the reliability of propulsion plant diesel engines.

Our trends, as measured by the Navy's Board of Inspection and Survey, have been very positive. Of note, the last three LPD–17 class ships delivered, USS *San Diego*, USS *Anchorage*, and USS *Arlington*, were all delivered with zero in-service priority one start guards. This was a marked improvement from their predecessors. All three ships also underwent significant additional propulsion trials to ensure reliability before the Navy accepted the ships.

I will also point out that just prior to delivery of USS *Anchorage*, a deficiency with propulsion plant bolts was discovered by the shipbuilder. Rather than accept delivery, the Navy decided to delay delivery for about 6 weeks until the bolts were replaced and additional sea trials performed to verify proper operation and to make absolutely sure the ship would be reliable in service.

The last seven T–AKE class ships, for example, were delivered with zero shipbuilder responsible in-serve cards. USS *Fort Worth*, LCS–3, was delivered with two shipbuilder start cards compared to nine for USS *Freedom*, the first ship of that class. Our trends are all in the right direction across the board for remaining ship classes, including *Virginia*-class submarines, *Arleigh Burke*-class destroyers, and auxiliary ships.

While the examples I gave above are for in-serve priority one start cards, our trends are also in the improving direction for remaining lower priority deficiencies found prior to delivery. While our ultimate goal is zero deficiencies of any kind at delivery, we must also balance the cost of keeping the ship at the shipyard with a fully manned crew vice completing remaining issues during a post-shakedown availability, which is normally conducted within a year of delivery. In any case, we ensure completion of all shipbuilder deficiencies by the end of the post-shakedown availability.

The NAVSEA and program executive office team fully understand our responsibility to work with the shipbuilders to ensure that our ships meet the demanding standards required for entry into naval service. We will continue to stay focused here in order to keep America's Navy number one in the world.

I will be happy to take any of your questions, sir.

[The joint prepared statement of Mr. Stackley, Admiral Myers, and Admiral McCoy follows:]

JOINT PREPARED STATEMENT BY HON. SEAN J. STACKLEY, VADM ALLEN G. MYERS, USN, AND VADM KEVIN M. MCCOY, USN

Chairman Reed, Senator McCain, and distinguished members of the subcommittee, thank you for the opportunity to appear before you today to address Department of the Navy shipbuilding programs. The fiscal year 2014 President's budget submission implements the Defense Strategic Guidance and continues our efforts to build and maintain platforms that will evolve and adapt, allowing our war fighters to fight and win the Nation's wars, operate forward and sustain readiness. As we confront the challenges of budget constraints and the uncertainty inherent in our

fiscal outlook, we are evaluating priorities in our shipbuilding, aviation, and combat vehicle plans to make the hard choices necessary to maintain the right measure of balance in capability, capacity, affordability, and the industrial base.

As 2012 began, USS *Carl Vinson* and Carrier Air Wing 17 provide air support over Helmand Province while the USS *Abraham Lincoln* Carrier Strike Group sails west through 7th Fleet toward 5th Fleet.

USS *Makin Island*, along with USS *Pearl Harbor* and USS *New Orleans* and the embarked Marines of the 11th Marine Expeditionary Unit, are on point in the Persian Gulf . . . having relieved the BATAAN Ready Group and marines of the 22nd MEU, who would, in February, return home after nearly 11 months of overseas operations—the longest U.S. Navy deployment in 40 years.

In March, *John C. Stennis* Carrier Strike Group returned to homeport after a 7-month deployment to 5th and 7th Fleets, and 7 days later, USS *Enterprise* departs Norfolk for its final deployment, just 8 months after returning from its last cruise. Accompanying are destroyers USS *Porter*, USS *Nitze*, USS *James E. Williams* and cruiser USS *Vicksburg*, all headed, as well, to the Middle East.

Later that same month, *Iwo Jima* Ready Group and 24th Marine Expeditionary Unit deployed . . . the regular drumbeat of rotational forces to support maritime security operations, provide crisis response capability, and increase theater security cooperation and forward naval presence in the 5th and 6th Fleets.

Already in 7th Fleet, Carrier Strike Group 1 and USS *Carl Vinson* anchor off Chennai, India, in preparation for Exercise *Malabar* with the Indian Navy to foster interoperability.

In May, the second littoral combat ship, USS *Independence*, completes its maiden voyage to homeport San Diego . . . in time to see the hospital ship USNS *Mercy* depart the following day on a humanitarian and civic assistance mission to Indonesia, the Philippines, Vietnam, and Cambodia.

The cycle continues with USS *Carl Vinson* home again in May with cruiser USS *Bunker Hill* and destroyer USS *Halsey*, having flown more than a thousand Operation Enduring Freedom (OEF) missions . . . 6,600 flight hours . . . 7,283 pounds of ordnance on target, 1,717 rounds of 20mm ammunition expended . . . in support of coalition ground forces.

Days later, USS *George Washington*, forward-deployed to Japan, departs on patrol, its fourth since arrival in the U.S. 7th Fleet Area Operations.

The next month, guided missile destroyer USS *Benfold* sails west from San Diego on an 8-month Ballistic Missile Defense deployment while USS *Vandegrift*, USS *Sampson*, and national security cutter USCGC Waesche arrive in 7th Fleet to begin cooperation afloat readiness and training (CARAT), a series of bilateral exercises with Southeast Asian countries. The 23rd RIMPAC is underway—the world's largest international maritime exercise involves 22 nations this year and more than 40 ships and submarines and 200 aircraft, around the Hawaiian Islands.

In the North Arabian Sea, USS *Dwight D. Eisenhower* begins to fly combat sorties over Afghanistan . . . and back at the largest Fleet homeport in the world; USS *Abraham Lincoln* arrives in Norfolk to prepare for Refueling and Complex Overhaul. Having left Everett, WA 245 days before, the ship sailed 72,000 miles, around the world, including 105 days in the Arabian Sea supporting OEF.

USS *Bonhomme Richard*, with elements of the 31st MEU embarked, begins its first patrol as the Navy's permanently forward-deployed amphibious assault ship from Sasebo, Japan.

The operational tempo of the Fleet remained high throughout 2012 and 2013. Guided missile cruiser USS *Cape St George* returns to San Diego after circumnavigating the globe in a 9-month deployment supporting 5th, 6th, and 7th Fleets.

In Bremerton, WA, Defense Secretary Leon Panetta thanks the crew of USS *John C. Stennis* for extraordinary effort to prepare for an 8-month deployment: 4 months ahead of schedule; 6 months after returning from a 7-month deployment.

Rotations continue . . . *Peleliu* Ready Group and the 15th MEU depart San Diego in September; Guided missile destroyer USS *Milius* returns to San Diego after 8-months while USS *Paul Hamilton* leaves Pearl Harbor for a planned 10-month deployment.

The third LCS, USS *Fort Worth*, arrives in homeport San Diego following a September commissioning.

Enterprise Carrier Strike Group returns to Norfolk . . . it is the 25th and final homecoming in 51 years of distinguished service. The inactivation ceremony follows on December 1.

In mid-December the *Dwight D. Eisenhower* Strike Group returns to Norfolk, early, it seems, after only 6 months gone, but back for a brief time to depart again and arrive on station in 5th Fleet barely a month ago.

USS *Freedom*, the first littoral combat ship, arrives in the U.S. 7th Fleet area of responsibility on its 8-month deployment to Southeast Asia.

Meanwhile, all the year long, marines keep lit the torch of freedom in Afghanistan and the Navy conducts anti-piracy patrols, international exercises, global partnership stations, under-ice operations, maritime surveillance, strategic deterrence, and missile defense missions.

No other military, no other nation on earth has the reach, the presence, the capability, the training and the resolve to maintain this pace and breadth of operations. Global reach, persistent presence, and operational flexibility, the inherent characteristics of U.S. seapower articulated in the Cooperative Strategy for 21st Century Seapower, are demonstrated in all we have done in 2012 and continue to do in 2013. These tenets, along with the Defense Strategic Guidance, guide the priorities and direction of the Department of the Navy's fiscal year 2014 President's budget request.

The Navy and Marine Corps' first responsibility is to ensure the ability to deliver the overseas presence and capabilities required by the Defense Strategic Guidance (DSG), Sustaining U.S. Global Leadership: Priorities for 21st Century Defense. The DSG mandates the need to be present overseas where it matters and to be ready when it matters, with a smaller, more ready force, with the right capabilities postured in each region. The DSG concludes that a prompt, credible response by forward U.S. forces can demonstrate *America*n resolve and can blunt the initial actions of an aggressor. The Navy and Marine Corps are well suited and uniquely positioned to meet this mandate, and the Department of the Navy's budget submission for fiscal year 2014 reflects the capabilities needed to meet the DSG.

In implementing the DSG, the Navy's fiscal year 2014 budget submission sustains our support to partners in the Middle East, rebalances our effort toward the Asia-Pacific region, focuses our presence at key maritime crossroads, and meets the highest-priority capability demands of the geographic Combatant Commanders. We made tough strategy-based choices to ensure a coherent budget that delivers the overseas presence directed by the Secretary of Defense in support of the Global Force Management Allocation Plan (GFMAP); continues our essential, near term investments in the Middle East and Asia-Pacific; and develops capabilities over the long term to address warfighting challenges in these same regions.

Final passage of the National Defense Authorization Act for Fiscal Year 2013 and the fiscal year 2013 Defense Appropriations Bill was critical to avert the damaging impacts to our operations, maintenance, and investment accounts associated with the potential year-long Continuing Resolution. These funds are being applied in accordance with our strategy and priorities to pay civilian personnel and "must pay bills," reconcile fiscal year 2013 readiness, sustain operation and maintenance for priority forces deploying to meet the current approved fiscal year 2013 GFMAP, prepare to meet the fiscal year 2014 GFMAP, and restore critical base operations and renovation. As well, the Department is exercising new start authorities provided by Congress to develop and deliver future capabilities required by the force, and leveraging multiyear procurement activities for *Virginia* class submarines, *Arleigh Burke* class destroyers, and *Osprey* MV–22 aircraft; all critical to meeting the force structure requirements in the most affordable manner possible.

Sequestration, however, reduced the fiscal year 2013 funding across all accounts by roughly 8 percent, or about $10.7 billion total, thus directly impacting current and future readiness. The Navy is still reconciling the impact of this reduction; however, due to the mechanics of its implementation and the limits on Department-wide transfer authority authorized by the fiscal year 2013 Defense Appropriations Act, it is likely that the Department will be compelled to reduce our near term forward presence, our planned depot maintenance and training to support future operational rotations, our procurement of ships, aircraft and weapons systems to meet our force structure and inventory requirements, and our investment in future capabilities and readiness; thus impacting our future readiness. Every major weapon system is impacted by sequestration in 2013 with impacts ranging from reducing quantities procured, delaying schedules (delivery and initial operational capability), deferring costs to future years (particularly in the case of executing programs, such as shipbuilding), and absorbing cost growth due to all of these impacts.

THE FISCAL YEAR 2014 SHIPBUILDING PROGRAM

As the Department moves into fiscal year 2014 and beyond, the budget submission balances Force structure, Readiness and Capability to meet national security commitments; and as the national debate focuses increasingly on economic security, it is ever more imperative that the Department of the Navy redouble our efforts to

being responsible stewards of public funds. A brief overview of Shipbuilding programs follows.

SHIPBUILDING

The Navy reported to Congress in January 2013 results of the Force Structure Assessment (FSA) which determined the capabilities of the future force to meet the full range of missions requirements by the Department of the Navy in support of the DSG. The FSA analysis resulted in a battle force requirement of 306 ships. This requirement is different from our previous 313-ship requirement because of: (1) reduced presence requirements resulting from the DSG's priorities; (2) increased forward basing of ships; (3) introduction of new payload capacity for SSNs (replacing the SSGNs) and; (4) the increased use of ships manned with rotating civilian and military crews which provide more presence per ship. Our shipbuilding investments are not programmed to reach the precise number and mix of ships within this Future Years Defense Program (FYDP), but do deliver a fleet of 300 ships by 2019 with increased capability and flexibility compared to the fleet of today.

The Department's Shipbuilding Plan continues to build toward the balanced 306-ship force outlined by the FSA. In support of this, the fiscal year 2014 President's budget request funds eight ships: two *Virginia*-class attack submarines, one DDG–51 *Arleigh Burke* class destroyer, four Littoral Combat Ships (LCS), and one Mobile Landing Platform/Afloat Forward Staging Base (MLP/AFSB) variant. Over the next 5 years, the Navy will deliver 47 ships. These investments are part of our long-term plan designed to deliver the fleet, by ship type, required per the FSA over the long term.

Key to accomplishing the objectives of the shipbuilding plan is stability and affordability. Over the past several years, the Navy has placed a priority on increasing shipbuilding rates and providing stability for the shipbuilding industrial base. Stability translates into retention of skilled labor, improved material purchasing and workforce planning, strong learning curve performance, and the ability for industry to invest in facility improvements; all resulting in more efficient ship construction and a more affordable shipbuilding program. The past *Virginia*-class and DDG–51-class MYPs, the DDG–1000 Swap/DDG–51 Restart Agreement, the LCS dual block buy, the MLP procurement, the continuation of CVN–78-class procurements on constant 5-year centers, and the heel-to-toe CVN RCOH induction-to-delivery cycle have provided critical stable workload for our shipyards and their respective vendor base. The approved upcoming *Virginia*-class and DDG–51-class MYPs will help to further stabilize the surface combatant and submarine industrial base through this decade. Likewise, the funding requested to procure a fourth MLP, and to configure MLP–3 and MLP–4 as AFSBs will also provide for much-needed workload within the auxiliary shipbuilding sector.

The strategy going forward must also continue to center upon improving affordability. To this end, in addition to the emphasis on stability discussed above, the Navy has established affordability requirements and invested in Design for Affordability for future ship programs; mandating use of open systems design; leveraging competition at every opportunity in shipbuilding and weapons systems production; employing fixed-price contracts to control cost for ships and weapon systems in production; imposing strict criteria limiting disruptive change to contracts; investing in industry-wide manufacturing process improvements through the National Shipbuilding Research Program; and incentivizing capital investment in facilities where warranted.

The Navy will continue to aggressively pursue the mutual objectives of improving the affordability of our shipbuilding program and increasing the strength of our shipbuilding industrial base, and is committed to working closely with Congress on these efforts.

AIRCRAFT CARRIERS

Our aircraft carriers are central to our Nation's Defense Strategy, which calls for forward presence, ability to simultaneously deter potential adversaries and assure our allies, and capacity to project power at sea and ashore. These national assets; however, are equally capable of providing our other core capabilities of sea control, maritime security, and humanitarian assistance and disaster relief. Our carriers provide our Nation the ability to rapidly and decisively respond globally to crises with a small footprint that does not impose unnecessary political or logistic burdens upon our allies or potential partners.

Gerald R. Ford (CVN–78) is the lead ship of our first new class of aircraft carrier in nearly 40 years. *Ford*-class carriers will replace, on a one-for-one basis, *Nimitz*-class carriers as they reach the end of their projected 50-year service lives. *Ford*-

class carriers are expected to be the premier forward deployed asset for crisis response and early decisive striking power in major combat operations through the remainder of this century. While the *Gerald R. Ford* aircraft carrier design uses the *Nimitz*-class hull form, it is essentially a brand new ship, encompassing new technologies and interior arrangements to improve warfighting capability, operational availability, and quality of life for its sailors, while reducing crew and aviation wing size by as many as 1200 personnel and total ownership costs by approximately $5 billion over the life of each ship. In 2011, the Navy identified spiraling cost growth associated with first of class non-recurring design, contractor and government furnished equipment, and ship production issues on the lead ship. The Navy completed an end-to-end review of CVN–78 construction in December 2011 and, with the shipbuilder, implemented a series of corrective actions to stem, and to the extent possible, reverse these trends. While cost performance has stabilized, incurred cost growth is irreversible. Accordingly, the fiscal year 2014 President's budget includes funding for the cost growth identified in 2011 and requests that the cost cap be correspondingly increased to $12.887 billion.

The President's budget also requests the second year of construction funding for *John F. Kennedy* (CVN–79), the second ship of the *Ford*-class. The planned delivery of CVN–79 aligns with the end of service life for USS *Nimitz*, the ship it will functionally replace to maintain a force structure of 11 carriers. As a result of lessons learned on CVN–78, the approach to carrier construction has undergone an extensive affordability review; and the Navy and the shipbuilder have made significant changes on CVN–79 that will reduce the cost to build the ship. CVN–79 construction will start with a complete design, firm requirements, and material economically procured and on hand in support of production need. The ship's build schedule also provides for increased completion levels at each stage of construction with resulting improved production efficiencies. The associated cost cap for CVN–79 is also being updated with this budget request to account for economic inflation and non-recurring engineering for incorporation of lead ship lessons learned and design changes to improve affordability.

Inarguably, this new class of aircraft carrier brings forward tremendous capability and life-cycle cost advantages compared to the *Nimitz*-class it will replace. However, the design, development and construction efforts required to overcome the technical challenges inherent to these advanced capabilities have significantly impacted cost performance on the lead ship. The Navy continues implementing actions from the 2012 detailed review of the FORD–Class build plan to control cost and improve performance across lead and follow ship contracts. This effort, taken in conjunction with a series of corrective actions with the shipbuilder on the lead ship, will not recover costs to original targets for *Gerald R. Ford*, but should improve performance on the lead ship while fully benefitting CVN–79 and following ships of the class.

With more than half of the service life of the *Nimitz*-class still remaining, the Refueling and Complex Overhaul (RCOH) continues as a key enabler for the enduring presence of the aircraft carrier Fleet. This year's budget request includes $1.75 billion for the last year of funding for the RCOH of USS *Abraham Lincoln* and $246 million for advance procurement for the RCOH of USS *George Washington*.

SUBMARINES

Submarines have a unique capability for stealth and persistent operation in an access-denied environment and to act as a force multiplier by providing high-quality Intelligence, Surveillance, and Reconnaissance (ISR) as well as indication and warning of potential hostile action. In addition, attack submarines are effective in anti-surface ship warfare and anti-submarine warfare in almost every environment, thus eliminating any safe-haven that an adversary might pursue with access-denial systems. As such, they represent a significant conventional deterrent. While our attack submarine Fleet provides considerable strike capacity already, our guided missile submarines provide significantly more strike capacity and a robust capability to covertly deploy special operations force (SOF) personnel. The Navy is mitigating an impending attack submarine force structure shortfall in the 2020s through three parallel efforts: reducing the construction span of *Virginia*-class submarines, extending the service lives of selected attack submarines, and extending the length of selected attack submarine deployments.

With the support of Congress in fiscal year 2013, the fiscal year 2014 President's budget requests funding for two *Virginia*-class submarines ($5.3 billion), with one of these two submarines funded between fiscal year 2014 and fiscal year 2015 using advance appropriations. The request also includes advance procurement and economic order quantity funding for the fiscal year 2015 through 2018 boats. The fiscal

year 2014 boats are the first two submarines under the Block IV fiscal years 2014 through 2018 multiyear procurement (MYP) contract.

Ballistic missile submarines are the most survivable leg of the Nation's strategic arsenal and provide the Nation's only day-to-day assured nuclear response capability. They provide survivable nuclear strike capabilities to assure allies, deter potential adversaries, and, if needed, respond in kind. The Nuclear Posture Review completed in April 2010 determined that the United States would retain a nuclear triad under New START and that, for the near-term, the Navy would retain all 14 *Ohio*-class SSBNs in the current inventory. To maintain an at-sea presence for the long term, the United States must continue development of the follow-on to the *Ohio*-class submarine, the 12-ship *Ohio* Replacement. On December 21, 2012, the Navy awarded the research and development contract for *Ohio* Replacement. This contract focuses on meeting the program's stressing performance requirements while reducing costs, in not only design and production, but also operation and sustainment. To date, the Navy has reduced cost by implementing modular construction build practices into the design and re-using previous classes' designs and components where feasible.

The fiscal year 2014 budget requests funding to continue development of the *Ohio* Replacement SSBN and ensures Common Missile Compartment (CMC) efforts remain on track to support the United Kingdom's Successor Program's schedule. All aspects of the *Ohio* Replacement Program will continue to be thoroughly reviewed and aggressively challenged to responsibly drive down engineering, construction, and operations and support costs. However, Navy will need the means to resource, in particular, construction of the next generation nuclear ballistic missile submarine.

Today the Navy has four guided missile submarines (SSGN). To mitigate the loss of strike capacity when SSGNs retire in the next decade, the Navy requests fiscal year 2014 Research and Development funding to continue the design for a modification to the *Virginia*-class SSN, the *Virginia* Payload Module. Modified *Virginia*-class SSNs could be procured starting no earlier than fiscal year 2019. Our challenge will be executing this option affordably alongside competing priorities within the overall shipbuilding program.

As threats evolve, it is also vital to continue to modernize existing submarines with updated capabilities. The submarine modernization program includes advances in weapons, integrated combat control systems, sensors, open architecture, and necessary hull, mechanical and electrical upgrades. These upgrades are necessary to retain credible capabilities for the future conflicts and current peacetime ISR and Indication and Warning missions and to continue them on the path of reaching their full service life.

LARGE SURFACE COMBATANTS

Guided missile cruisers (CGs) and guided missile destroyers (DDGs) comprise our large surface combatant Fleet. When viewed as a whole, these ships fulfill broad mission requirements both independently and in conjunction with a strike group. The demands for increased capability and capacity in ballistic missile defense (BMD), integrated air and missile defense (IAMD) and open ocean anti-submarine warfare (ASW) have resulted in a shift of focus on the type and quantity of these ships.

The fiscal year 2014 President's budget requests funding for one Flight IIA DDG–51 *Arleigh Burke*-class destroyer as well as additional advance procurement and economic order quantity funds in support of the ongoing fiscal year 2013 through fiscal year 2017 MYP for nine ships with the option for a 10th ship. The Flight IIA ships will incorporate IAMD, providing critical additional BMD capability and capacity to the Fleet. The Navy projected in excess of $1.5 billion in savings for the ships across the MYP contract and has leveraged these savings in the procurement of the ships. The Department's objective is to procure the 10th DDG–51 in the MYP; however, we will first need to resolve funding shortfalls resulting from the fiscal year 2013 sequestration reductions.

The Navy is proceeding with the Air and Missile Defense Radar (AMDR) program to meet the growing ballistic missile threat by greatly improving radar sensitivity and longer range detection for engagement of increasingly complex threats. This scalable radar is on track for installation on DDG–51 Flight III ships to support joint battle space threat awareness and defense, including BMD, area air defense, and ship self defense. The AMDR radar suite will be capable of providing simultaneous surveillance and engagement support for long range BMD and area air defense. The Navy intends to introduce AMDR on DDG–51 Flight III in fiscal year 2016.

The fiscal year 2014 President's budget request includes funding for the modernization of two cruisers and three destroyers. To counter emerging threats, this investment is critical to sustain combat effectiveness and to achieve the full expected service lives of the Aegis Fleet. Destroyer and cruiser modernization programs include Hull, Mechanical, and Electrical (HM&E) upgrades, as well as advances in warfighting capability and open architecture combat systems to reduce total ownership costs and expand mission capability for current and future combat capabilities. The current plan combines the HM&E and combat system modernization into a single availability which increases the operational availability of our most demanded assets.

The DDG–1000-class guided missile destroyer will be a multi-mission surface combatant capable of providing long-range, precision naval surface fire support to marines ashore. To accomplish this mission, the ship features two 155mm Advanced Gun Systems capable of engaging targets with the Long-Range Land Attack Projectiles (LRLAP) at a range of over 63 nautical miles. In addition to this critical capability, this optimally-crewed ship will provide valuable lessons in advanced technology such as signature reduction, active and passive self-defense systems, and enhanced survivability features. The fiscal year 2014 President's budget requests $232 million to continue construction on DDG–1000, –1001, and –1002. DDG–1000 is 82 percent complete. The deckhouse and hangar have been integrated into the ship, which is progressing towards launch and christening later this year. DDG–1001 is 58 percent complete; and DDG–1002 has started fabrication.

SMALL SURFACE COMBATANTS

The Navy's fiscal year 2014 President's budget requests $1.8 billion to procure four Littoral Combat Ships (LCS) with a total of fourteen to be procured across the FYDP. These ships expand the battle space by complementing our inherent blue water capability and filling warfighting gaps in the littorals and strategic choke points around the world. LCS design characteristics (speed, agility, shallow draft, payload capacity, reconfigurable mission spaces, air/water craft capabilities) combined with its core C4I, sensors, and weapons systems, make it an ideal platform for engaging in maritime security operations. Each ship brings unique strengths and capabilities to the mission and each has been designed in accordance with overarching objectives for reducing total ownership cost.

Affordability remains a key factor in acquiring the needed future capacity of these highly flexible and capable ships. The Navy remains on course to deliver these ships in the quantities needed through the execution of the two competitive block buy contracts (for 10 ships of each version) awarded in fiscal year 2010. The average cost of both LCS variants—including basic construction, Government Furnished Equipment (GFE), and change orders—across the 10-ship procurement over the 5 year period falls under the congressionally-mandated cost cap of $480 million per ship (fiscal year 2009 dollars). The dual block buy award strategy afforded the Navy an opportunity to award up to 20 ships between fiscal year 2010 and 2015 under fixed-price type contracts resulting in a savings of $2.9 billion.

The dual award strategy also stabilized the LCS program and its associated industrial base, increased the ship procurement rate to support operational requirements, promoted efficiency in the industrial base from the vendors to system providers to the shipyards, while sustaining competition, and provided potential Foreign Military Sales opportunities. The Navy is also aggressively pursuing commonality between the two variants, with particular focus on weapon systems, sensors, and C4I equipment. There are several on-going studies that will identify non-recurring integration costs, insertion points, and total ownership costs in order to assess the optimal insertion points.

LCS capabilities address specific and validated capability gaps in Surface Warfare, Mine Countermeasures, 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. Two mine-countermeasure mission modules (MM), four Surface Warfare (SUW) MMs; and one anti-submarine warfare MM have been delivered. The surface warfare and anti-submarine warfare mission modules remain on schedule to reach initial operational capability (IOC) in fiscal year 2014 and fiscal year 2016, respectively. Sequestration, combined with recent congressional marks and rescissions, will impact the operational test schedule for the mine countermeasures MM. The Navy is working to minimize this impact and will advise the defense committees of any changes to meeting the IOC date for this essential capability. The fiscal year 2014 President's budget requests approximately $347 million in research and development and other procurement funding for continued development of mis-

sion modules, procurement of common mission module equipment and procurement of four mission packages. The Navy will continue to incrementally field additional mission package capabilities to the Fleet as they mature. Mission package production will remain in phase with ship deliveries to ensure that each LCS is able to execute its required missions.

EXPEDITIONARY WARFARE

Ensuring the Nation retains its critical amphibious capability remains a top Department of the Navy priority. The Marine Corps remains first and foremost a naval service, operating in close partnership with the U.S. Navy. Together, the two naval services leverage the seas, not only to protect the vast global commons, but also to project our national power and influence ashore where that is required.

The future security environment dictates that the Department maintains a robust capability to operate from the sea, placing special demands on our equipment. A core capability of expeditionary forces is the ability to project forces ashore from amphibious platforms and to maneuver once ashore.

AMPHIBIOUS SHIPS

Amphibious ships operate forward to support allies, respond to crises, deter potential adversaries, and provide the Nation's best means of projecting sustainable power ashore; they also provide ideal capabilities for providing humanitarian assistance and disaster relief. Amphibious forces comprised of sailors, marines, ships, aircraft, and surface connectors provide the ability to rapidly and decisively respond to global crises without a permanent footprint ashore that would place unnecessary political or logistic burdens upon our allies or potential partners. There are two main drivers of the amphibious ship requirement: maintaining the persistent forward presence, which enables both engagement and crisis response, and delivering the assault echelons of up to two Marine Expeditionary Brigades (MEB) for joint forcible entry operations.

Based on the footprint of a 2.0 MEB assault echelon force, a minimum of 30 operationally available ships are necessary to provide a force made up of 10 Amphibious Assault Ships (LHD/LHA), 10 Amphibious Transport Docks (LPD) and 10 Dock Landing Ships (LSD). The Chief of Naval Operations and Commandant of the Marine Corps have determined that an overall force structure of 38 amphibious ships is required to ensure this mix of 30 ships is operationally available. Balancing the total naval force structure requirements against fiscal projections, the Department has concluded that it can accept a measured degree of risk by employing planning factors that call for a force of 33 ships to achieve this availability.

Today, the Amphibious Force Structure stands at 30 ships, which includes 9 LHD/LHAs, 9 LPDs, and 12 LSDs.

The Navy is commencing recapitalization of the large deck amphibious assault ships with the construction of *America* (LHA–6). *America* is now more than 80 percent complete and is scheduled for delivery in fiscal year 2014. The fiscal year 2014 President's budget request includes a funding request to complete construction of *America*. Beginning with LHA–8, which is planned for procurement in fiscal year 2017, the Navy will reintegrate the well deck into the large deck amphibious assault ships to provide necessary surface lift capacity. Funding to design this reintegration of the well deck is included in the President's Budget.

The *San Antonio*-class LPD (LPD–17) provides the Navy and Marine Corps team with modern, capable amphibious lift, and has transitioned into a mature production program. Eight of the 11 authorized and approved ships of this class have been delivered to the Navy. Lessons learned from the effort to resolve material reliability concerns identified in the early ships of the class are being applied to ships currently under construction. Quality continues to improve with each ship delivered as the Navy continues to work closely with the shipbuilder to address cost, schedule, and performance issues. The utility of this class was well demonstrated most recently by USS *Mesa Verde* as she completed 19 months of deployed operation over a 20 5-month period.

LX (R) will replace the aging LSD–41/49 *Whidbey Island/Harpers Ferry*-class vessels and will perform an array of amphibious missions. An analysis of alternatives (AoA) is being conducted in fiscal year 2013. The fiscal year 2014 President's budget requests research and development funds required for technology development and initial design efforts resulting from the AoA. Affordability will be a key factor in acquiring the needed future capacity and operational capabilities of this highly flexible multifaceted ship.

A fully funded LSD mid-life program, to include repairs, is essential for ensuring the LSD–41/49 ships are able to meet their readiness for tasking requirements and

their expected service life. Seven of the 12 ships in the class have completed their mid-life upgrade. Funding for LSD mid-life is included in the fiscal year 2014 President's budget request, with a total of four mid-life upgrades scheduled to be completed or begin in fiscal year 2014.

AUXILIARY SHIPS

Combat Logistics Support ships fulfill the vital role of providing underway replenishment of fuel, food, repair parts, ammunition and equipment to forward deployed ships and their embarked aircraft, to enable them to operate for extended periods of time at sea. Combat Logistic Support Ships consist of T–AOE fast support ships, T–AKE auxiliary dry cargo ships, and T–AO Fleet oilers. The T–AO and T–AKE ships tend to serve as shuttle ships between resupply ports and their customer ships, while the T–AOE tends to serve as a station ship, accompanying and staying on-station with a Carrier Strike Group (CSG) to provide fuel as required to customer ships. Two T–AKE auxiliary dry cargo ships have been allocated to the Maritime Prepositioning Squadrons (MPS) to provide sea-based logistic support to Marine Corps units afloat and ashore.

The fiscal year 2014 President's budget requests research and development funds to mature the Navy's concept for the replacement T–AO Fleet oiler in fiscal year 2016. The analysis of alternatives (AoA) was completed in fiscal year 2012. The Navy has recently awarded multiple contracts to perform industry studies related to design alternatives for the ship. The new oilers will have a double-hull design to ensure compliance with the modern commercial environmental protection requirement.

Support vessels provide additional flexibility to the combatant commander within the operating area. The Mobile Landing Platform (MLP) enables at-sea transfer of vehicles from cargo ships and facilitates the delivery of those vehicles, as well as equipment, personnel and supplies, between the sea and restricted access locations ashore. The Navy has three MLPs under construction and has requested a fourth MLP in fiscal year 2014. The Joint High Speed Vessel (JHSV) provides a high-speed, shallow-draft alternative for moving personnel and materiel within and between the operating areas and in support of security cooperation and engagement missions. The final JHSV contract option for construction of the 10th ship was exercised in December 2012.

There remains a valid and enduring requirement for an Afloat Forward Staging Base (AFSB) capability with capacity for mine warfare and special operations support. Historically, Fleet assets have been called upon to address the AFSB demand. The Department converted the USS *Ponce* to alleviate the increased demand on the Fleet and provide an interim AFSB capability until fiscal year 2017. To establish a long-term solution for providing the capabilities specified by the Joint Staff, the Navy will sign a detail design and construction contract modification for MLP–3 (fiscal year 2012 ship) to become a dedicated AFSB asset. Delivery of MLP–3 is planned for fiscal year 2015 to meet the projected retirement of USS *Ponce*. The fiscal year 2014 budget includes a similar request for MLP–4, which will result in a class of four MLPs—two dedicated to the MPSRONs and two dedicated to the AFSB mission.

AFFORDABILITY AND THE INDUSTRIAL BASE

Continually improving the affordability of our shipbuilding programs is critical to our ability to meet our new construction requirements. Stability in our plans is fundamental to any weapon system procurement because it allows industry to effectively plan the work, train and retain their unique workforce, invest in facility and process improvements, and sustain the critical subvendor base. For stable programs, the Department has leveraged fixed-price multiyear procurements and block buys. These two methods alone are resulting in over $11.5 billion of savings in current procurements of major Navy weapons systems. Competition is a key element of our programs, and we have achieved significant savings from competition which we have reinvested in our programs to buy at more economic rates. We have put in place the rigor and discipline necessary early in a program's life to get the requirements right; we are holding firm to these requirements; we're implementing design for affordability as a tenet across all of our programs, we are ensuring high levels of completion of design before start of production, and mandating use of open system designs. As a result of these actions, the Department's procurement rates have increased, competition and stable procurements are the norm, affordability has improved, and the industrial base on the whole is sustainable. We are pointed in the right direction, yet much remains to be done. It is critical to sustain this progress

particularly as we confront the otherwise destabilizing impacts associated with sequestration.

SUMMARY

The Department's Shipbuilding Plan continues to build toward the 306-ship force which is outlined by the updated Force Structure Assessment. This force possesses the requisite capability and capacity to deliver credible deterrence, sea control, and power projection to deter or contain conflict and, if called upon, to fight and win our Nation's wars. The request for fiscal year 2014 includes two *Virginia*-class attack submarines, one DDG–51 *Arleigh Burke*-class destroyer, four LCSs, and one MLP/AFSB variant. These investments are a critical part of our long-range plan designed to deliver the fleet necessary to meet the Department of the Navy's missions under the Defense Strategic Guidance. The Department continues to instill affordability, stability, and capacity into the shipbuilding plans and to advance capabilities to become a more agile, lethal and flexible force to address the challenges and opportunities facing the Nation. Forty seven ships will be delivered over the next 5 years.

Budget uncertainties may slow progress toward our goals, but the tenets which guide our decisions remain firm. The Navy and Marine Corps, on the high seas and closing foreign shores, stand ready to answer the call of the Nation. We thank you for your continued support of the Navy and Marine Corps and request your approval of the fiscal year 2014 President's budget request.

Senator REED. Thank you very much, Admiral McCoy.

We will have 8-minute rounds. When I conclude, I will recognize the ranking member. Then we will go by the early bird rule side to side. So thank you very much.

Again, gentlemen, thank you for your testimony.

Secretary Stackley, one recurring theme obviously is sequestration. You commented upon it in your statement. Could you highlight for us again what you believe the critical issues are going forward in this budget cycle with respect to sequestration and, because of the obvious concern about the status of the attack submarine program, any effect it might have on that program?

Mr. STACKLEY. Yes, sir. Let me start by just describing 2013 since we are dealing with sequestration in the current budget year.

As I described at the outset, each of the program lines was impacted by sequestration. So in 2013, we are working line by line to mitigate the impact by either paying for the sequestration impact through prior year assets, which we had accumulated through the last 4 to 5 years of shipbuilding, or trying to defer certain costs that we can defer to a later point in the cycle in order to keep the planned procurement on track. There are certain cases where we are looking at whether we need to descope certain items from the shipbuilding plan, but trying to keep the overall force structure number healthy.

In that approach, in fact the DDG–51 that was added by Congress in 2013 is, in fact, held up. Otherwise, the balance of the shipbuilding program is going forward admittedly at some increased risk in terms of, call it, budget executability.

So we are trying to do this very mindfully. If we allow sequestration to stop us in our tracks, that will simply cause our costs and disruption to go through the roof.

We are going to continue to work that destroyer with Congress so that you all understand its specific impact. We are going to continue to execute the balance of the shipbuilding program in 2013. We have brought forward the budget request in 2014 which, as you are well aware, does not account for sequestration in 2014. In fact in 2014 and out in the more strategic review that is being accom-

plished under the direction and guidance of the Secretary of Defense, we are looking at shipbuilding amidst all of the capabilities that the Department is pursuing in terms of what are the impacts associated with a reduction in the top line and then what are the priorities that we need to bring forward in terms of funding those capabilities. Central to all of that is driving down the cost of what we are procuring and driving out the cost of our doing business so that more of the dollars available can go towards capability.

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

One of the programs that we have been concerned about for many years is LPD–17, but we have seen, I think, some progress in terms of bringing down costs and increasing quality. You or Admiral McCoy might comment upon that but also in the context of not just the trials at the end of completion but how we are trying to build quality and accountability and budget controls in the whole process. So any comments would be appreciated.

Admiral MCCOY. Yes. I will comment, Senator, that the early LPDs got away from us and we have had to fix them in-service. I will point out that *Mesa Verde* recently completed 19 of 25 months on two essentially back to back deployments. So I think we have a handle on that.

We are also taking many actions to drive down the cost and improve the competitiveness of maintenance performed on all our ships, LPD–17s as well as all of our surface ships.

So I think we are moving in the right direction, Senator, and from all the feedback we have from the Marine Corps, as well as the Navy sailors, on board the LPD–17-class ships, they love those ships and they are performing well in service.

Senator REED. Let me ask you another related question. You are responsible for SUPSHIPs which is one of the major organizations that are responsible for contract execution, negotiation, supervision, et cetera. One of the issues that came to the attention of the committee, going back several years, is just the lack of qualified personnel on SUPSHIPs. We essentially sort of let go our trained workforce. You have been trying to reconstitute that capacity, which is critical I think, in my view maybe the most critical aspect of maintaining cost and control of the contractors. Can you comment upon the progress there?

Admiral MCCOY. Yes, sir. We took a hard look around the 2006–2007 timeframe when we first started having issues with the LCS program and realized we were about 20 percent understaffed. We had really stopped training the staff we had. So for the last 4 or 5 years, we have gotten the staffing up to where it needs to be. We have been very rigorous on the training. In terms of defining what we expect out of every supervisor quality assurance inspector, for example, every day in terms of the number of looks we want them doing both independent of the shipyard, as well as with the shipyard, and collaborating the data, we have been very prescriptive there, and it seems to be the right approach, Senator.

Senator REED. Thank you very much.

I know you probably do not have a dollar for dollar sort of measure of how much savings or how much better you are, but do you have anything like that? I will just ask.

Admiral MCCOY. I can tell you they are probably one of the lowest density/highest leveraged workforce that we have in the NAVSEA, sir.

Senator REED. So they more than make up for their overall cost in terms of the benefits and the productivity.

Admiral MCCOY. Yes, sir. We have about 1,200 people in our supervisor shipbuilding that do everything from on the ships inspections to contract processing and negotiations with the shipbuilders, and to do the entire shipbuilding program, it could be $30 billion in play at any one time.

Senator REED. Senator McCain pointed out, I think, very appropriately that we have many challenges. One is to have an affordable SSBN replacement for the *Ohio*-class, and the other is to maintain carrier production but at a level that we can afford. With respect to the *Ohio*-class specifically replacement, since it is a strategic asset because it is part of the triad, are there any attempts to provide supplementary funding to the Navy shipbuilding budget because of this strategic dimension? Have those talks progressed or have they even been undertaken in DOD?

Mr. STACKLEY. Sir, all I can answer straightly is those talks have not progressed. I should probably leave it at that.

Senator REED. Okay. That is an interesting comment. Thank you very much.

Mr. STACKLEY. Let me go ahead and expand then. [Laughter.]

The Navy's plan in the Future Years Defense Program (FYDP)—we think that the budget that we have assigned to the numbers that we plan on procuring in the FYDP is within our reach if you park sequestration momentarily. But when you get outside of the FYDP, now you are quickly entering into the period where the *Ohio* replacement dominates our shipbuilding plan. We have spent a lot of effort over the last couple years to go after the requirements, to drive affordability through the requirements process and also through the design process. So it is something that started at about a $7 billion a unit cost for the *Ohio* replacement. The current estimate is $5.6 billion. We are working through the design process to get it down with an objective of about $5 billion, $4.9 billion. That by itself does not bring the shipbuilding plan within the reach of affordability.

So if you look at that period of time and you look at the budget forecast for that period of time, you have to go back to the period of the 1980s, when we were building up the 600-ship Navy, to see those type of shipbuilding budget levels that are projected for the force that is laid out in the shipbuilding plan. That is beyond our shipbuilding total obligation authority by any method of extrapolation.

Senator REED. That is assuming that we can stabilize the course in the other shipbuilding programs.

Mr. STACKLEY. Yes, sir.

Senator REED. Thank you very much.

We will have a second round if time allows.

Senator McCain, please.

Senator MCCAIN. Thank you, Mr. Chairman.

Secretary Stackley, when will the Department deliver the final shipbuilding plan to Congress?

Mr. STACKLEY. Sir, the shipbuilding plan has been signed out of the Navy, gone through review with DOD. I would like to hand-carry a copy of that report back over here this week. I think it is all complete. It is going through its last routing.

Senator MCCAIN. According to the draft shipbuilding plan, when will the Navy have 306 ships in its fleet?

Mr. STACKLEY. The date, year that you identified in your opening statement is correct. The draft plan reaches 306 in 2037.

Senator MCCAIN. If the Navy builds the *Ohio* replacement submarine within existing funds, will it be able to afford 300 ships?

Mr. STACKLEY. The answer squarely is we will not be able to hit the numbers that we outlined in the plan if our top line for shipbuilding is brought down to the range in the FYDP. During the period of the *Ohio* replacement, working with the Office of the Secretary of Defense, we have allowed for about a $2 billion per year increase above current FYDP range. But if we have to suppress those numbers down to the FYDP numbers, we are going to fall short in terms of total ship count.

Senator MCCAIN. The numbers I have show that we should be about $16.8 billion each year for the next 10 years to meet your shipbuilding goals. Is that ball park estimate correct?

Mr. STACKLEY. It is ball park correct. We break the shipbuilding plan down to three periods, near term, midterm, long term. In the near term, about $15.4 billion. Midterm, it jumps up to $19.8 billion. Long term, it comes back down again.

Senator MCCAIN. But the budget request, Admiral Myers, is $10.9 billion. Is that correct?

Admiral MYERS. Yes, sir. That is correct, and that is for fiscal year 2014. It increases through the FYDP. It reaches $17 billion at the end of the FYDP and it averages about $15 billion in our shipbuilding and conversion account for each year of the FYDP.

Senator MCCAIN. So you are counting on a dramatic increase in shipbuilding request funding in the coming years?

Admiral MYERS. Yes, sir. The plan that we delivered in prospect 2014 reflects that increase in each year of the FYDP.

Senator MCCAIN. Let us talk for a minute, if we could, about the CVN–78. I have here from the Congressional Research Service (CRS) some of the estimates for –79 and –80 for CVNs. The fiscal year 2008 budget estimated the cost of the *Gerald R. Ford* to be roughly $10.5 billion. That is correct, is it not, Admiral? Well, we now know that the estimate is $12.8 billion. In rough figures, that is a $2.5 billion cost overrun.

How do I explain to my constituents in Arizona that wte have a $2.5 billion cost overrun on an aircraft carrier? Maybe you can help me out, Mr. Secretary.

Mr. STACKLEY. Sir, I can go to the details in terms of building up how we went from $10.5 billion to $12.8 billion, but I do not think that is what you are looking for with your question.

Senator MCCAIN. I apologize for asking you a question that I do not expect you to answer, rather that I have to try to answer.

Maybe you can respond to this. The CRS states: costs for the CVN–78 will likely exceed the budget for several reasons. This is the CRS. First, the Navy's cost estimate, which underpins the budget, is optimistic. For example, the Navy assumes that the

CVN–78 will be built with fewer labor hours than were needed for the previous two carriers.

Second, the Navy's target cost for ship construction may not be achievable. The shipbuilder's initial cost estimate for construction was 22 percent higher than the Navy's cost target, which was based on the budget. The Navy and the shipbuilder are working on ways to reduce costs. Actual costs to build the ship will likely increase above the Navy's target.

Third, the Navy's ability to manage issues that affect cost suffers from insufficient cost surveillance. Without effective cost surveillance, the Navy will not be able to identify early signs of cost growth and take necessary action.

So Newport News is the only game in town. Right? Nobody else builds aircraft carriers. What can we do to prevent this kind of cost overrun, which I can tell you in my constituents' minds is unacceptable when we have a terribly damaged economy in my home State of Arizona. I cannot justify it.

Now, tell me, assure me of the steps we are taking to prevent a $2.5 billion cost overrun on one ship, so I can go back and tell my constituents.

Mr. STACKLEY. Yes, sir. First, the cost growth on the CVN–78 is unacceptable. The cost growth dates back in time to the very basic concepts that went into taking the *Nimitz*-class and doing a total redesign of the *Nimitz*-class to get to a level of capability and to reduce operating support costs for the future carrier. Far too much risk was carried into the design of the first of the *Ford*-class.

Cost growth stems to the design was moving at the time production started. The vendor base that was responsible for delivering new components and material to support the ship production was saddled with new developments in the vendor base and production plan did not account for the material ordering difficulties, the material delivery difficulties and some of the challenges associated with building a whole new design compared to the *Nimitz*.

Senator MCCAIN. I understand all of that. What are we going to do to Newport News to ensure they get a ship built according to the cost since there is no competition?

Mr. STACKLEY. So for CVN–79, we have held up the expenditures on CVN–79 as we go through the details of, one, ensuring that the design of the 78 is complete and repeated for the 79—so we start with a clean design.

Two, we are going through the material procurement, and we brought a third party in to assess material buying practices at Newport News to bring down the cost of material. We are metering out the dollars for buying material until it hits the objectives that we are setting for CVN–79.

We are rewriting the build plan on CVN–79. If you take a look at how the –78 is being constructed, far too much work is being accomplished late in the build cycle. So we are rewriting the build plan for CVN–79, do more work in the shops where it is more efficient, more work in the buildings where it is more efficient, less work in the dry dock, less work on the water. Then we are going after the rates, the labor rates, and the investments needed by the shipbuilder to achieve these efficiencies.

Senator MCCAIN. Keep us posted.

Admiral Myers, are you confident about the progress of the LCS? I am hearing that there are significant problems.

Admiral MYERS. We are confident at this point in the development and implementation of bringing the LCS into the fleet. What you are seeing, Senator, is a new platform that we are having a proof of concept deployment so that we can understand the concept of operations of how we are going to rotate the crew, how we are going to sustain it, how we are going to maintain it. So these kinds of issues that we see on a new platform—and this is a transformational approach to our ships. Just like transformational approaches to any platform, we are going to find issues and we are going to have discovery before it enters the fleet and full operational capability.

Senator MCCAIN. The only problem here is that under intense questioning in past years, I asked whether these problems were envisioned, particularly in a new platform, moving in and out different modules. I was always told, "No problem. There is no problem. We have that all planned out." Obviously, at least according to what I am told, "the Navy's own analysts have only about 10 percent confidence in the current estimate of the cost to operate and support." So I hope that those problems that you just outlined, which some of us were concerned about at the time, will be resolved without much additional cost to the taxpayer.

I thank you, Mr. Chairman.

Senator REED. Thank you, Senator McCain.

Senator Shaheen?

Senator SHAHEEN. Thank you, Mr. Chairman.

Thank you all for being here, gentlemen, and for your service to the country.

Secretary Stackley, I would like to pursue some of the questions that have been presented about how sequestration is affecting your ability to operate. One of the things you talked about is your efforts to drive down costs. How does sequestration affect that ability to drive down costs?

Mr. STACKLEY. Senator, across the board, sequestration affects everything that we do. First, it has created a great deal of uncertainty in terms of our planning and allowing us to prioritize within a top line where our investments will go. So the uncertainty creates an impact.

That uncertainty then trickles down into planning and procurement in the vendor base, first tier shipyards and then down in the vendor base below that. So we are having to keep an eye on ensuring the vendor base that we are relying on in the longer term to support our shipbuilding requirements does not break as a result of delays or uncertainty from sequestration.

Then the most poignant impact is the dollar impact directly. Everything that we have been doing to try to reduce the cost of our shipbuilding program, whether it is stabilizing requirements, whether it is trying to get stable production rates that allow investment by the shipbuilders, trying to wrap in a multiyear where we harvest a significant savings, putting that inside of a fixed-price contract where we have confidence in the savings, sequestration unravels that to an extent.

So now what we have to do when we look prospectively at sequestration in the out-year budgets, we have to fight for the priority that shipbuilding demands in order to hit the CNO's requirement within the budget so that our efforts to reduce cost do not, in fact, go in the reverse direction as a result of sequestration and we end up with potential disruption, taking low shipbuilding rates that we have today and driving them lower and then ultimately driving those costs up. So we have to avoid that spiral that could occur if we unravel what we have been attempting to do with regard to stabilizing the shipbuilding plan over the last several years.

Senator SHAHEEN. You indicated that the 2014 budget is based on an assumption that sequestration ends at the end of this fiscal year. Did I understand that correctly?

Mr. STACKLEY. The 2014 budget, as submitted, does not account for sequestration in 2014 and beyond.

Senator SHAHEEN. I am sure that everyone here would like to see us address sequestration before we get into the next fiscal year, but given the lack of movement within Congress, I think there are real questions about whether that is going to happen. So given that, can you talk about what the impact will be if you are looking at another $55 billion in cuts over the next fiscal year on top of what you have already had?

Mr. STACKLEY. Yes, ma'am. Let me first say that Secretary Hagel has, in fact, chartered a Strategic Choices Management Review to go directly at that question. The Armed Services Committee has sent out a letter to the Secretary asking for a more discrete response to the potentially $52 billion impact in 2014, and that response is being addressed in real time.

Now, let me just talk about shipbuilding and make some assumptions. If it is a $52 billion impact, about 10 percent, and if that was prorated across all of our lines, then in shipbuilding we would be looking at greater than a billion dollar reduction to the 2014 request. That is assuming no ability to prioritize our investments. That would be applying sequestration in 2014 just like it was in 2013 line by line.

In 2013, shipbuilding took about a $1.7 billion reduction. We were able to manage that to a great extent through prior year. We had assets that we were building up in the prior year. So we were able to pay off about a third to 40 percent of sequestration by liquidating those assets. Of the balance, the $1 billion to $1.2 billion, some of that we are able to reduce our requirements. Some of that we are going to have to work within 2013 and some of it effectively bow waves into the out-years.

If you then do that again in 2014, effectively we have pulled all the margin out of the system in shipbuilding. Where we had margin, we have pulled it out. So now if we double down sequestration in 2014, the margin is gone and now we are looking at direct impacts to our ship procurement rates.

Senator SHAHEEN. Thank you.

Senator King has gone temporarily, I think, but he will be back, and I am sure he would be interested, as I am sure Senator Ayotte is, in what is happening at the public shipyards. We all represent the Portsmouth Naval Shipyard, and obviously, our four public shipyards are critical as we look at maintenance and what we need

to do to keep the fleet operating. I wonder if you could talk about the current role that our public shipyards are playing and the importance of continuing to modernize them so that they can address the needs that we have with shipbuilding.

Admiral MCCOY. Yes, Senator. I will go ahead and take that one.

The public shipyards do 95 percent of the submarine and aircraft carrier day-to-day maintenance work, as well as overhauls. The only big exception would be the refueling overhauls of *Nimitz*-class carriers in the private sector.

The public shipyards are fully loaded particularly with the OPTEMPO that we have had around the world. In fact, I had an earlier discussion with Senator King that one of my concerns is that we are too loaded. We will have a healthy workload certainly through the FYDP, but we are seeing the effects of sequestration. We are seeing reduced overtime particularly on our aircraft carrier availabilities where we work the critical paths 6 days a week, and if we do go into furloughs, we are worried about the aircraft carrier schedules, the SSBN schedules, and the SNN schedules in the naval shipyards.

We are also in a hiring freeze which with 30,000 employees in the four naval shipyards, we will lose effectively 1,800 workers or about 150 workers every month that we are in a hiring freeze. So we are concerned about that.

So I would say we have plenty of work in a time of fiscal uncertainty, at a time where the workforce is also very anxious.

Jumping to the infrastructure, we have released a report. I have been in the naval shipyard business for 30 years. That is the most comprehensive, thorough look at the infrastructure of our naval shipyards. We have also had probably the most significant discussions at the very senior level. I have briefed that report at the four-star level several occasions personally myself.

I think the report reflects the Navy's sentiment that we would like to close the investment gap we think we need in about a 10-year period. We see that the financial uncertainty and the budget pressures that we have will only allow us to do it about in a 17-year period. We would like to be closer to 10. We are committed to looking for opportunities to pull work forward. In fact, the plan that we presented starts in 2015, but we have already pulled ahead investments into 2013 and 2014 to get a jump start on that and we will look for ways to continue to do that.

The naval shipyards are a jewel. Our Navy cannot sail without them and we understand our stewardship role to keep them fully facilitized, ma'am.

Senator SHAHEEN. Thank you very much and thank you for the report.

Senator REED. Thank you, Senator.

Senator Ayotte.

Senator AYOTTE. Thank you, Mr. Chairman.

I wanted to follow up, Admiral McCoy, just on what you were just talking about with regard to the shipyards. I certainly share the concerns that my colleague from New Hampshire does, in particular for the Portsmouth Naval Shipyard.

But you said they are fully loaded in terms of maintenance and what is happening. What happens if we implement the furloughs

in terms of the maintenance schedule? Can you help me understand—as I understand it, the Navy has submitted a plan to Secretary Hagel that would allow us to avoid the furloughs. Can you help me understand if we do implement the furloughs and the Secretary decides not to implement the plan that the Navy has proposed, what are the additional costs that we incur because we have to delay all the maintenance schedules?

Mr. STACKLEY. I will start and then allow Admiral McCoy to join.

First, the evaluation of furloughing. It is being done in DOD applying to all the Services where everyone is looking at how to mitigate the degree to which we would have to furlough, and within that larger discussion, we are continuing to look at if we do furlough, are there exceptions that we need to apply because they are directly impacting readiness or the remedy is creating more problems than it is solving. Shipyards are in that mix. The potential to furlough public shipyard workers is in that mix, and that is all I can offer you right now because we are looking at this real hard real-time.

They are in that mix because of the direct impact on readiness that would be caused by a furlough at our shipyards. It would be more than a 1-for-1 impact when you impose the degree of disruption that occurs to a ship's maintenance or modernization schedule at the shipyard if people have to put down their tools and then return after a gap to pick them back up. So I think everyone understands that shipyards are a special case in terms of direct impact on readiness. The math states that there is going to be a more than 1-for-1 impact if you furlough, and overall DOD is trying to mitigate any furlough actions because we recognize the impact on not just productivity, not just the impact on readiness, but also the impact on the workforce that is trying to execute within the sequestration environment.

Admiral MYERS. Senator, just to add before Admiral McCoy takes the mike, I think the Navy has been very consistent in articulating the readiness impacts of furloughing at our depots, both on the shipyards and aviation, the impacts to our carriers, the impacts to our submarines, and the impacts to our aircraft and engines and engine modules.

Senator AYOTTE. Thank you all. I wanted to follow up on what was raised by the chairman as well as Senator McCain, which is the *Ohio*-class replacement, the SSBN. One of the things that was recently said I think by Vice Admiral Burke was that, yes, if we buy the SSBN within existing funds, we will not reach 300 ships. In fact, we will find ourselves closer to 250. Our global presence will be reduced such that we will only be able to visit some areas of the world episodically.

So I think the issue is this: how to ensure that we build the 12 *Ohio*-class replacement boats, which are such a critical part of our triad in the protection of our country, while also continuing the shipbuilding plan. What is that going to take? I know that Senator McCain touched upon this. What will that take because we cannot have one and not the other? Do we need something new? I mean, setting aside sequestration, as I understand it, if we go forward with sequestration, the fleet is going to go down to 235 according to Admiral Greenert. If we set aside sequestration for a moment,

do we need a new national capital ships account in addition to the shipbuilding and conversion Navy account? How do we get there?

Also, could you comment on the collaboration between the United Kingdom on the common missile compartment for the *Ohio* replacement? Is that saving money? Are we receiving any economies of scale there? What can we do to also bring down costs on the *Ohio* replacement so that we can do both?

Mr. STACKLEY. Yes, ma'am. Let me start with the first question dealing with the *Ohio* replacement and the period of its production. As discussed earlier, during the period of the *Ohio* replacement ship construction, the average top line for shipbuilding that will be required to achieve the shipbuilding plan, which as Senator McCain described, does not get to 306 ships until after the *Ohio* replacement is complete, is about $20 billion. Inside of the FYDP, our average shipbuilding is closer to $14 billion to $15 billion with the current budget year $11 billion. So you can see the steep rise that would have to occur.

So the first question is could the Navy do this within the current budget, call it, rules or allocation. No matter how much priority we place on shipbuilding within the Navy's allocation, in order to hit $20 billion a year for a 12- to 15-year period, that would cause breakage to other parts of the Navy's budget that we are responsible for.

So this is a funding requirement that is larger than the Navy.

Senator AYOTTE. So how do we get to a realistic—I think it is important for all of us to be working toward a realistic budget allocation that makes sure that we have a robust Navy. As far as I can tell, we have China investing more in their navy. The needs right now for a naval presence are very rigorous.

Mr. STACKLEY. We start with the requirement and the CNO has done the force structure assessment to outline the requirement. Then we lay in how do we get there from here. So the shipbuilding plan lays out a path to get there, recognizing that it has a saw tooth effect to it. Then we do everything that we can to drive cost out of the equation. We will continue to work on that, but we will not be able to drive, say, 25 percent cost out of the equation.

So the problem is staring at us. You could argue that the problem is inside the FYDP, but it gets pretty extreme right outside of the FYDP. So to try to engage in a level of discussion and debate that is required to address that beyond the FYDP budget issue today while we are just wrestling with the uncertainty associated with sequestration by itself, that has proven to be too difficult for the system today to clearly address that issue that is 5, 10, 15 years beyond today.

But we have to keep the debate open. We have to keep the issues clear in front of us. As it gets inside of the FYDP, I think the discussion between Congress and the Department on how we are going to be able to afford that shipbuilding plan needs to be more heated.

Senator AYOTTE. I worry that we are on a completely unrealistic path right now given what the real needs are for the Navy on the shipbuilding budget. So I hope that this is an issue we will also have more rigorous discussion about.

So thank you all for being here.

Senator REED. Thank you, Senator.

Senator Kaine, please.

Senator KAINE. Thank you, Mr. Chair.

To the witnesses, I am going to start with a comment and a couple of questions. The comment is really for both the witnesses and my colleagues, and it is kind of a "new guy" comment.

Every hearing we have been having of the full committee or of the subcommittees has focused on sequester effects. I think it was Senator McCain's questioning at a hearing where we had both the Secretary and the Chairman of the Joint Chiefs, General Dempsey, that inspired the letter from Senators Levin and Inhofe to say show us what it would look like if sequester is permanent. I really encourage diligence in showing us what it will look like if sequester is permanent.

My observation of my colleagues is that we all think across-the-board, non-strategic sequester cuts to defense is a really bad idea. Most of us think that across-the-board, non-strategic cuts to non-defense accounts is also a bad idea. But I think we all think that with respect to defense.

But in February we did have a vote to turn off the sequester that got a majority in the Senate, but the invoking of the filibuster, the paper filibuster, blocked that.

In March, we voted on a budget that would have replaced sequester. It still would require cuts, but they would have been strategic. They would have been smaller and they would have been differently arrayed over the 10-year budget cycle rather than so much upfront. Unanimous consent rules are being utilized in the Senate now to even block that budget from going to conference.

My sense is since we all agree that non-strategic, across-the-board cuts to defense are a bad idea, if the Senate does not fix that, it is not going to get fixed. I think if the Armed Services Committee does not reach some accord about it, I do not think the Senate is going to fix it. I think this committee is the committee that is most willing and most likely to try to promote action that would eliminate what we all think are stupid across-the-board, non-strategic cuts to defense.

But I think that July 1 letter inspired by Senator McCain's question and the request from the committee chair and ranking member is going to be very key to seeing what the next 10 years would look like if we do not turn away from the foolish path that we are on.

So I just hope that that is a very specific, detailed accounting of what would need to be done because something has to convince this body, and this body then has to convince the Senate I think to take action. Then the question of whether we could convince the House is another matter entirely, but the House is not going to do it unless we do it.

I want to follow up on the questions about the carrier, the *Ford*-class carrier. Secretary Stackley, you talked about reasons for the overrun, that the overrun was unacceptable, and steps being taken to address it. Educate me a little bit about—I imagine there is some analogous history here. The building of a first in class creates some issues that hopefully the building of the second, third, and fourth in class are easier. Is there a history of some challenging

cost overruns on a first in class and then learning from it and then the per-unit cost coming down as you get deeper into whether it is subs, carriers, surface ships, whatever it is? Just talk to me a little bit about that.

Mr. STACKLEY. Yes, sir. Absolutely. The history in shipbuilding is—since you do not have a prototype for a new ship, the first of class, referred to as the lead ship, is your prototype. So you carry a lot of risk into the construction of that first of class.

Also, there is a lengthy design, development, and build span associated with ships. So there is a certain amount of overlap or concurrency that occurs between the development of new systems that need to be delivered with the first ship, the incorporation of the design of those new systems, and the actual construction.

So to the extent that there is change in a new ship class, then that risk goes up accordingly. In the case of the CVN–78, the degree of change compared to the *Nimitz* was fairly extraordinary, all for good reasons, good intentions, increased capability, increased survivability, significant reduction in operating and support costs. So there was a determination that we would take not this risk in order to get those benefits. In the case of the CVN–78, those risks are driving a lot of the cost growth on the lead ship.

When you think about the follow ships, now you have a stable design. Now your vendor base has a production line going to support the production. Now you have a build plan and a workforce that has climbed up on the learning curve to drive costs down. So you can look at virtually every shipbuilding program, and you will see a significant drop-off in costs from that first of class to the follow ships. Then you look for a stable learning curve to take over in the longer-term production of a ship class.

Carriers are unique for a number of reasons, one of which we do not have an annual procurement of carriers. They are spread out over a 5—and in fact in the case of the 78, as much as a 7-year period. So in order to achieve that learning, there are additional challenges associated with achieving that learning. So we are going at it very deliberately on the CVN–79 through the build plan with the shipbuilder to hit the line that we have to have, the cost reductions that we have to have on the follow ships of the class.

Senator KAINE. You answered a question of Senator McCain's about some of the lessons learned from CVN–78 to –79, but I think I would like to submit a written question on the record as well to try to get a more extended answer that is really probably beyond the scope of a hearing like this so that we could then just have that and then utilize it as we talk down the road about what we are seeing on CVN–79 and CVN–80.

Mr. STACKLEY. If I can offer, we have, in fact, submitted a fairly detailed report to Congress on the CVN–79 build plan to address these issues, and I would start by offering to sit with your staff and brief you on those details.

Senator KAINE. That would be helpful.

You and I were together recently in Newport News for the commissioning of the USS *John Warner* or I guess the keel laying. I am going to be having lunch with him today. So I know he is going to be asking me about *Virginia*-class submarines.

This is preliminary because we are not at July 1 yet, but what would a full sequester likely do to the *Virginia*-class program? This is of deep interest, obviously, not just to *Virginia* but others as well.

Mr. STACKLEY. Yes. I am glad you asked that question because I wanted to double back to Senator Reed. That was one of his opening questions, and I did not get to it in my response.

First, the *Virginia*-class submarine is a very high priority for DOD in terms of procurement. It is a high priority for all of the right reasons, extraordinary capability. It plays a significant role in every major operation. So regardless of sequestration, it will be a priority in our budget. In fact, the fact that we came back this year and added *Virginia* in 2014 reflects that priority.

Second, even with that level of priority, within our shipbuilding plan and all the assumptions that we have laid in that, we still fall below the long-term requirement for attack submarines. So the force structure assessment describes we need a minimum of 48 attack submarines, and within the shipbuilding plan, keeping *Virginia* as a priority, we still drop down into the low 40s and that is without overlaying the risk of sequestration or anything beyond that.

So it is a priority. The budget is at risk in terms of sequestration. Not just the Department of the Navy, DOD will keep that as a priority as we march forward regardless of sequestration.

Where there is risk are some of the modernization and upgrade efforts associated with that class of submarine. We will take a hard look, for example, at the *Virginia* payload modules which is under design and development today for the 2019 boats and beyond. We will have to take a hard look at whether or not we can, in fact, afford those upgrades when we have better clarity in terms of the long term.

Senator KAINE. Thank you.

Thank you, Mr. Chairman.

Senator MCCAIN. Mr. Chairman, could I ask for unanimous consent to submit for the record the cost of CVN–79 has increased by—first, CVN–78 cost increase over the original estimate is 22.3 percent. CVN–79 is a 23.4 percent increase over the estimated original procurement cost, and the CVN–80, 29.5 percent. So any allegation that somehow costs are under control or being reduced are contradicted by the CRS report.

Senator REED. Without objection, it will be submitted for the record.

[The information referred to follows:]

Navy Ford (CVN-78) Class Aircraft Carrier Program: Background and Issues for Congress

Ronald O'Rourke
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CRS Report for Congress
Prepared for Members and Committees of Congress

Summary

CVN-78, CVN-79, and CVN-80 are the first three ships in the Navy's new Gerald R. Ford (CVN-78) class of nuclear-powered aircraft carriers (CVNs).

CVN-78 was procured in FY2008. The Navy's proposed FY2014 budget estimates the ship's procurement cost at $12,829.3 million (i.e., about $12.8 billion) in then-year dollars. The ship received advance procurement funding in FY2001-FY2007 and was fully funded in FY2008-FY2011 using congressionally authorized four-year incremental funding. The Navy did not request any procurement funding for the ship in FY2012 and FY2013. The Navy is requesting $588.1 million in procurement funding in FY2014, and plans to request another $729.0 million in procurement funding in FY2015, to cover cost growth on the ship.

CVN-79 is scheduled to be procured in FY2013. The ship received advance procurement funding in FY2007-FY2012, and the Navy plans to fully fund the ship in FY2013-FY2018 using congressionally authorized six-year incremental funding. The Navy's proposed FY2014 budget estimates CVN-79's procurement cost at $11,338.4 million (i.e., about $11.3 billion) in then-year dollars, and requests $944.9 million in procurement funding for the ship.

CVN-80 is scheduled to be procured in FY2018. The Navy's proposed FY2014 budget estimates the ship's procurement cost at $13,874.2 million (i.e., about $13.9 billion) in then-year dollars. Under the Navy's proposed FY2014 budget, the ship is to receive advance procurement funding in FY2016-FY2017 and be fully funded in FY2018-FY2023 using congressionally authorized six-year incremental funding.

Oversight issues for Congress for the CVN-78 program include the following:

- the potential impact of the March 1, 2013, sequester on the CVN-78 program;
- cost growth in the CVN-78 program;
- where the estimated procurement costs of CVNs 78, 79, and 80 now stand in relation to the legislated procurement cost caps for the ships, and whether the cost caps should be amended;
- the potential for a two-ship block buy on CVN-79 and CVN-80; and
- CVN-78 program issues that were raised in a December 2012 report from the Department of Defense's (DOD's) Director of Operational Test and Evaluation (DOT&E).

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Introduction

This report provides background information and potential oversight issues for Congress on the Gerald R. Ford (CVN-78) class aircraft carrier program. Congress's decisions on the CVN-78 program could substantially affect Navy capabilities and funding requirements and the shipbuilding industrial base.

Background

The Navy's Aircraft Carrier Force

The Navy's current aircraft carrier force consists of 10 nuclear-powered Nimitz-class ships (CVNs 68 through 77) that entered service between 1975 and 2009. Until recently, the Navy's aircraft carrier force included an 11th aircraft carrier—the one-of-a-kind nuclear-powered *Enterprise* (CVN-65), which entered service in 1961. CVN-65 was inactivated on December 1, 2012, reducing the Navy's carrier force from 11 ships to 10. The most recently commissioned carrier, *George H. W. Bush* (CVN-77), the final Nimitz-class ship, was procured in FY2001 and commissioned into service on January 10, 2009. CVN-77 replaced *Kitty Hawk* (CV-63), which was the Navy's last remaining conventionally powered carrier.[1]

Statutory Requirement to Maintain Not Less Than 11 Carriers

Origin of Requirement

10 U.S.C. 5062(b) requires the Navy to maintain a force of not less than 11 operational aircraft carriers. The requirement for the Navy to maintain not less than a certain number of operational aircraft carriers was established by Section 126 of the FY2006 National Defense Authorization Act (H.R. 1815/P.L. 109-163 of January 6, 2006), which set the number at 12 carriers. The requirement was changed from 12 carriers to 11 carriers by Section 1011(a) of the FY2007 John Warner National Defense Authorization Act (H.R. 5122/P.L. 109-364 of October 17, 2006).

Waiver for Period Between CVN-65 and CVN-78

As mentioned above, the carrier force dropped from 11 ships to 10 ships when *Enterprise* (CVN-65) was inactivated on December 1, 2012. The carrier force is to return to 11 ships when its replacement, *Gerald R. Ford* (CVN-78), is commissioned into service. CVN-78 is scheduled to be delivered in September 2015, but its construction is now running behind schedule. Anticipating the gap between the inactivation of CVN-65 and the commissioning of CVN-78, the Navy asked Congress for a temporary waiver of 10 U.S.C. 5062(b) to accommodate the period between the two events. Section 1023 of the FY2010 National Defense Authorization Act (H.R. 2647/P.L. 111-84 of October 28, 2009) authorized the waiver, permitting the Navy to have 10 operational carriers between the inactivation of CVN-65 and the commissioning of CVN-78.

[1] The *Kitty Hawk* was decommissioned on January 31, 2009.

Funding and Procuring Aircraft Carriers

Some Key Terms

The Navy *procures* a ship (i.e., orders the ship) by awarding a full-ship construction contract to the firm building the ship.

Part of a ship's procurement cost might be provided through *advance procurement (AP) funding*. AP funding is funding provided in one or more years prior to (i.e., in advance of) a ship's year of procurement. AP funding is used to pay for long-leadtime components that must be ordered ahead of time to ensure that they will be ready in time for their scheduled installation into the ship. AP funding is also used to pay for the design costs for a new class of ship. These design costs, known more formally as *detailed design/non-recurring engineering (DD/NRE) costs*, are traditionally incorporated into the procurement cost of the lead ship in a new class of ships.

Fully funding a ship means funding the entire procurement cost of the ship. If a ship has received AP funding, then fully funding the ship means paying for the remaining portion of the ship's procurement cost.

The *full funding policy* is a Department of Defense (DOD) policy that normally requires items acquired through the procurement title of the annual DOD appropriations act to be fully funded in the year they are procured. In recent years, Congress has authorized DOD to use *incremental funding* for procuring certain Navy ships, most notably aircraft carriers. Under incremental funding, some of the funding needed to fully fund a ship is provided in one or more years after the year in which the ship is procured.[2]

Incremental Funding Authority for Aircraft Carriers

Section 121 of the FY2007 John Warner National Defense Authorization Act (H.R. 5122/P.L. 109-364 of October 17, 2006) granted the Navy the authority to use four-year incremental funding for CVNs 78, 79, and 80. Under this authority, the Navy could fully fund each of these ships over a four-year period that includes the ship's year of procurement and three subsequent years.

Section 124 of the FY2012 National Defense Authorization Act (H.R. 1540/P.L. 112-81 of December 31, 2011) amended Section 121 of P.L. 109-364 to grant the Navy the authority to use five-year incremental funding for CVNs 78, 79, and 80. Since CVN-78 was fully funded in FY2008-FY2011, the provision in practice applied to CVNs 79 and 80.

Section 121 of the FY2013 National Defense Authorization Act (H.R. 4310/P.L. 112-239 of January 2, 2013) amended Section 121 of P.L. 109-364 to grant the Navy the authority to use six-year incremental funding for CVNs 78, 79, and 80. Since CVN-78 was fully funded in FY2008-FY2011, the provision in practice applies to CVNs 79 and 80.

[2] For more on full funding, incremental funding, and AP funding, see CRS Report RL31404, *Defense Procurement: Full Funding Policy—Background, Issues, and Options for Congress*, by Ronald O'Rourke and Stephen Daggett, and CRS Report RL32776, *Navy Ship Procurement: Alternative Funding Approaches—Background and Options for Congress*, by Ronald O'Rourke.

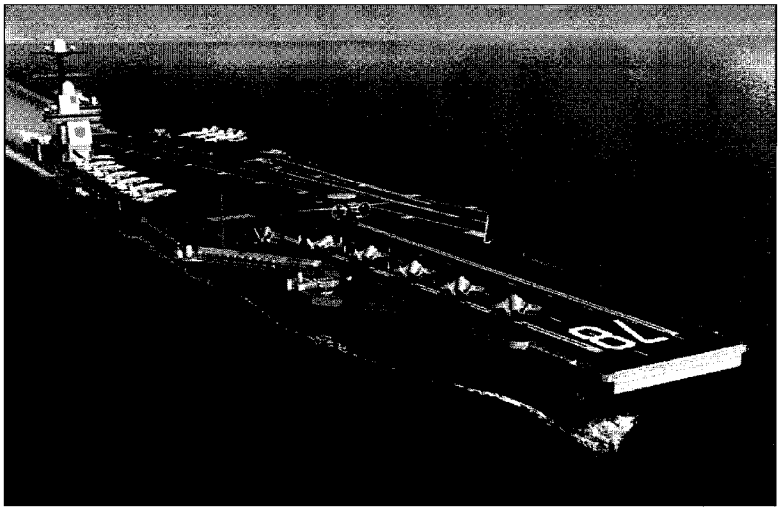
Aircraft Carrier Construction Industrial Base

All U.S. aircraft carriers procured since FY1958 have been built by Newport News Shipbuilding (NNS), of Newport News, VA, a shipyard that is part of Huntington Ingalls Industries (HII). NNS is the only U.S. shipyard that can build large-deck, nuclear-powered aircraft carriers. The aircraft carrier construction industrial base also includes hundreds of subcontractors and suppliers in various states.

Gerald R. Ford (CVN-78) Class Program

The Gerald R. Ford (CVN-78) class carrier design (**Figure 1**) is the successor to the Nimitz-class carrier design.[3]

Figure 1. Navy Illustration of CVN-78



Source: Navy image accessed at http://www.navy.mil/management/photodb/photos/060630-N-0000X-001.jpg on April 20, 2011.

The Ford-class design uses the basic Nimitz-class hull form but incorporates several improvements, including features permitting the ship to generate about 25% more aircraft sorties per day, more electrical power for supporting ship systems, and features permitting the ship to be operated by several hundred fewer sailors than a Nimitz-class ship, significantly reducing life-cycle operating and support (O&S) costs.

[3] The CVN-78 class was earlier known as the CVN-21 class, which meant nuclear-powered aircraft carrier for the 21st century.

Navy plans call for procuring at least three Ford-class carriers—CVN-78, CVN-79, and CVN-80.

CVN-78

CVN-78, which was named for President Gerald R. Ford in 2007,[4] was procured in FY2008. The Navy's proposed FY2013 budget estimates the ship's procurement cost at $12,829.3 million (i.e., about $12.8 billion) in then-year dollars. Of the ship's total procurement cost, about $3.3 billion is for detailed design/non-recurring engineering (DD/NRE) costs for the class, and about $9.5 billion is for construction of the ship itself.

CVN-78 received advance procurement funding in FY2001-FY2007 and was fully funded in FY2008-FY2011 using congressionally authorized four-year incremental funding. The Navy did not request any procurement funding for the ship in FY2012 and FY2013. The Navy is requesting $588.1 million in procurement funding in FY2014, and plans to request another $729.0 million in procurement funding in FY2015, to cover cost growth on the ship.

CVN-79

CVN-79, which was named for President John F. Kennedy on May 29, 2011,[5] is scheduled to be procured in FY2013. The ship received advance procurement funding in FY2007-FY2012, and the Navy plans to fully fund the ship in FY2013-FY2018 using congressionally authorized six-year incremental funding. The Navy's proposed FY2014 budget estimates CVN-79's procurement cost at $11,338.4 million (i.e., about $11.3 billion) in then-year dollars, and requests $944.9 million in procurement funding for the ship.

CVN-80

CVN-80, which was named *Enterprise* on December 1, 2012,[6] is scheduled to be procured in FY2018. The Navy's proposed FY2014 budget estimates the ship's procurement cost at $13,874.2 million (i.e., about $13.9 billion) in then-year dollars. Under the Navy's proposed FY2014 budget, the ship is to receive advance procurement funding in FY2016-FY2017 and be fully funded in FY2018-FY2023 using congressionally authorized six-year incremental funding.

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[4] §1012 of the FY2007 defense authorization act (H.R. 5122/P.L. 109-364 of October 17, 2006) expressed the sense of the Congress that CVN-78 should be named for President Gerald R. Ford. On January 16, 2007, the Navy announced that CVN-78 would be so named. CVN-78 and other carriers built to the same design will consequently be referred to as Ford (CVN-78) class carriers. For more on Navy ship names, see CRS Report RS22478, *Navy Ship Names: Background for Congress*, by Ronald O'Rourke.

[5] See "Navy Names Next Aircraft Carrier USS John F. Kennedy," *Navy News Service*, May 29, 2011, accessed online on June 1, 2011 at http://www.navy.mil/search/display.asp?story_id=60686. See also Peter Frost, "U.S. Navy's Next Aircraft Carrier Will Be Named After The Late John F. Kennedy," *Newport News Daily Press*, May 30, 2011. CVN-79 is the second ship to be named for President John F. Kennedy. The first, CV-67, was the last conventionally powered carrier procured for the Navy. CV-67 was procured in FY1963, entered service in 1968, and was decommissioned in 2007.

[6] The Navy made the announcement of CVN-80's name on the same day that it deactivated the 51-year-old aircraft carrier CVN-65, also named Enterprise. ("Enterprise, Navy's First Nuclear-Powered Aircraft Carrier, Inactivated," *Navy News Service*, December 1, 2012; Hugh Lessig, "Navy Retires One Enterprise, Will Welcome Another," *Newport News Daily Press*, December 2, 2012.) CVN-65 was the eighth Navy ship named Enterprise; CVN-80 is to be the ninth.

Program Procurement Funding

Table 1 shows procurement funding for CVNs 78, 79, and 80 through FY2018.

Table 1. Procurement Funding for CVNs 78, 79, and 80 Through FY2018

(Millions of then-year dollars, rounded to nearest tenth)

FY	CVN-78	CVN-79	CVN-80	Total
FY01	21.7 (AP)	0	0	21.7
FY02	135.3 (AP)	0	0	135.3
FY03	395.5 (AP)	0	0	395.5
FY04	1,162.9 (AP)	0	0	1,162.9
FY05	623.1 (AP)	0	0	623.1
FY06	618.9 (AP)	0	0	618.9
FY07	735.8 (AP)	52.8 (AP)	0	788.6
FY08	2,685.0 (FF)	123.5 (AP)	0	2,808.6
FY09	2,684.6 (FF)	1,210.6 (AP)	0	3,895.1
FY10	737.0 (FF)	482.9 (AP)	0	1,219.9
FY11	1,712.5 (FF)	903.3 (AP)	0	2,615.8
FY12	0	554.8 (AP)	0	554.8
FY13 (requested)[a]	*0*	*608.2 (FF)*	*0*	*608.2*
FY14 (requested)	*588.1*[b]	*944.9 (FF)*	*0*	*1,533.0*
FY15 (projected)	*729.0*[b]	*1,834.1 (FF)*	*0*	*2,563.1*
FY16 (projected)	*0*	*1,235.6 (FF)*	*682.8 (AP)*	*1,918.4*
FY17 (projected)	*0*	*1,496.0 (FF)*	*1,043.8 (AP)*	*2,539.8*
FY18 (projected)	*0*	*1,891.8 (FF)*	*1,062.6 (FF)*	*2,954.4*

Source: FY2009-FY2014 Navy budget submissions.

Notes: Figures may not add due to rounding. "AP" is advance procurement funding; "FF" is full funding.

a. The FY2013 column in the Navy's FY2014 budget submission simply shows the figure that was requested for FY2013, not the final appropriated figure for FY2013. The figures shown in the table do not reflect the March 1, 2013, sequester on FY2013 funding and on FY2012 and prior-year funding that was unobligated on March 1, 2013.

b. Additional "cost to complete" funding to cover cost growth on CVN-78.

Increases in Estimated Unit Procurement Costs Since FY2008 Budget

Table 2 shows changes in the estimated procurement costs of CVNs 78, 79, and 80 since the FY2008 budget submission.[7]

[7] CBO in 2008 and the Government Accountability Office (GAO) in 2007 questioned the accuracy of the Navy's cost estimate for CVN-78. CBO reported in June 2008 that it estimated that CVN-78 would cost $11.2 billion in constant FY2009 dollars, or about $900 million more than the Navy's estimate of $10.3 billion in constant FY2009 dollars, and that if "CVN-78 experienced cost growth similar to that of other lead ships that the Navy has purchased in the past 10 years, costs could be much higher still." CBO also reported that, although the Navy publicly expressed confidence in its cost estimate for CVN-78, the Navy had assigned a confidence level of less than 50% to its estimate, meaning that the Navy believed there was more than a 50% chance that the estimate would be exceeded. (Congressional Budget Office, *Resource Implications of the Navy's Fiscal Year 2009 Shipbuilding Plan*, June 9, 2008, p. 20.) GAO reported in August (continued...)

Table 2. Changes in Estimated Procurement Costs of CVNs 78, 79, and 80

(As shown in FY2008-FY2014 budgets, in millions of then-year dollars)

Budget	CVN-78		CVN-79		CVN-80	
	Estimated procurement cost	Scheduled fiscal year of procurement	Estimated procurement cost	Scheduled fiscal year of procurement	Estimated procurement cost	Scheduled fiscal year of procurement
FY08 budget	10,488.9	FY08	9,192.0	FY12	10,716.8	FY16
FY09 budget	10,457.9	FY08	9,191.6	FY12	10,716.8	FY16
FY10 budget	10,845.8	FY08	n/a[a]	FY13[b]	n/a[a]	FY18[b]
FY11 budget	11,531.0	FY08	10,413.1	FY13	13,577.0	FY18
FY12 budget	11,531.0	FY08	10,253.0	FY13	13,494.9	FY18
FY13 budget	12,323.2	FY08	11,411.0	FY13[c]	13,874.2	FY18[c]
FY14 budget	12,829.3	FY08	11,338.4	FY13	13,874.2	FY18
% change:						
FY08 budget to FY09 budget	-0.3		Almost no change		No change	
FY09 budget to FY10 budget	+3.7		n/a		n/a	
FY10 budget to FY11 budget	+6.3		n/a		n/a	
FY11 budget to FY12 budget	No change		- 1.5		- 0.1	
FY12 budget to FY13 budget	+6.9%		+11.3%		+2.8%	
FY13 budget to FY14 budget	+4.1%		- 0.6%		No change	
FY08 budget to FY14 budget	+22.3%		+23.4%		+29.5%	

Source: FY2008-FY2014 Navy budget submissions.

(...continued)

2007 that:

> Costs for CVN 78 will likely exceed the budget for several reasons. First, the Navy's cost estimate, which underpins the budget, is optimistic. For example, the Navy assumes that CVN 78 will be built with fewer labor hours than were needed for the previous two carriers. Second, the Navy's target cost for ship construction may not be achievable. The shipbuilder's initial cost estimate for construction was 22 percent higher than the Navy's cost target, which was based on the budget. Although the Navy and the shipbuilder are working on ways to reduce costs, the actual costs to build the ship will likely increase above the Navy's target. Third, the Navy's ability to manage issues that affect cost suffers from insufficient cost surveillance. Without effective cost surveillance, the Navy will not be able to identify early signs of cost growth and take necessary corrective action.
>
> (Government Accountability Office, Defense Acquisitions[:] Navy Faces Challenges Constructing the Aircraft Carrier Gerald R. Ford within Budget, GAO-07-866, August 2007, summary page. See also Government Accountability Office, Defense Acquisitions[:] Realistic Business Cases Needed to Execute Navy Shipbuilding Programs, Statement of Paul L. Francis, Director, Acquisition and Sourcing Management Team, Testimony Before the Subcommittee on Seapower and Expeditionary Forces, Committee on Armed Services, House of Representatives, July 24, 2007 (GAO-07-943T), p. 15.)

a. n/a means not available; the FY2010 budget submission did not show estimated procurement costs for CVNs 79 and 80.

b. The FY2010 budget submission did not show scheduled years of procurement for CVNs 79 and 80; the dates shown here for the FY2010 budget submission are inferred from the shift to five-year intervals for procuring carriers that was announced by Secretary of Defense Gates in his April 6, 2009, news conference regarding recommendations for the FY2010 defense budget.

c. Although the FY2013 budget did not change the scheduled years of procurement for CVN-79 and CVN-80 compared to what they were under the FY2012 budget, it lengthened the construction period for each ship by two years (i.e., each ship is scheduled to be delivered two years later than under the FY2012 budget).

Program Procurement Cost Cap

Section 122 of the FY2007 John Warner National Defense Authorization Act (H.R. 5122/P.L. 109-364 of October 17, 2006) established a procurement cost cap for CVN-78 of $10.5 billion, plus adjustments for inflation and other factors, and a procurement cost cap for subsequent Ford-class carriers of $8.1 billion each, plus adjustments for inflation and other factors. The conference report (H.Rept. 109-702 of September 29, 2006) on P.L. 109-364 discusses Section 122 on pages 551-552.

Issues for Congress

Impact of March 1, 2013, Sequester

One issue for Congress concerns the impact on the CVN-78 program of the March 1, 2013, sequester on FY2013 DOD funding and on FY2012 and prior-year DOD funding that was unobligated on March 1, 2013. Specific issues include

- the impact on CVN-78 construction activities and scheduled completion date, and
- the impact on the Navy's ability to procure (i.e., award a full-ship construction contract for) CVN-79 in FY2013.

Cost Growth

Another issue for Congress concerns the cost growth on CVNs 78, 79, and 80 shown in **Table 2**, and the potential for further cost growth on the ships. As can be seen in the table, the estimated cost of CVN-78 has grown 22.3% since the submission of the FY2008 budget, and 4.1% since the submission of the FY2013 budget. As shown in **Table 1**, cost growth on CVN-78 has prompted the Navy to program $1,317.1 million in additional procurement funding for the ship in FY2014 and FY2015.

Most of the cost growth on CVN-78 since the submission of the FY2013 budget was expected: The Navy stated in March 2012 that future budget submissions would show an additional $417 million in cost growth on CVN-78 that was not captured in the FY2013 budget because this cost growth emerged late in the process for preparing the FY2013 budget, and because the Navy hoped that actions being taken to restrain cost growth in the CVN-78 program would reduce the figure to something less than $417 million before the FY2014 budget was submitted to

Congress.[8] The $417 million in anticipated cost growth equates to about 82% of the $506.1 million in cost growth that has occurred on CVN-78 since the FY2013 budget.

A February 17, 2012, press report states that Senators Carl Levin and John McCain, the chairman and ranking Member, respectively, of the Senate Armed Services Committee, have asked the Government Accountability Office (GAO) to review the CVN-78 program in light of the program's cost growth.[9]

March 2013 GAO Report

A March 2013 GAO report assessing major DOD weapon acquisition programs stated the following regarding the status of the CVN-78 program, including the potential for cost growth:

> **Technology Maturity**
>
> According to the Navy, 6 of CVN 78's 13 critical technologies are mature, and the remaining 7 are approaching maturity. Delays developing and producing the dual band radar (DBR) and advanced arresting gear (AAG) have driven inefficient, out of sequence construction work and caused the Navy to defer some key tests until after installation. The Navy's decision to remove DBR's volume search radar (VSR) component from the DDG 1000 destroyer shifted responsibility for maturing DBR to CVN 78, and the resulting restart of testing has been slow. Further, because a fully configured, production unit VSR is unavailable, the Navy is using a less robust, lower powered prototype to complete testing. At present, the first test of a fully configured, integrated DBR will be aboard CVN 78 after ship delivery—a strategy that introduces risks. Malfunctions in the water twisters, components used to absorb energy created when arresting aircraft, have slowed the development of AAG. To support construction, the Navy plans to produce and install AAG aboard CVN 78 prior to completing system development, which may risk retrofits late in construction. The electromagnetic aircraft launch system (EMALS) has successfully launched a wide range of aircraft during land based testing using a single launcher and four motor generators. The shipboard system will employ a more complex configuration of four launchers and 12 generators sharing a power interface. Both EMALS and AAG face reliability challenges, and neither system is expected to attain minimum required reliability until more than 10 years after CVN 78 delivery.
>
> **Design Maturity**
>
> CVN 78 completed its 3D product model in November 2009—over a year after the construction contract award. At contract award, 76 percent of the model was complete and the shipbuilder had already begun construction of at least 25 percent of structural units under a previous construction preparation contract. While the model is now considered functionally complete, maintaining design stability depends on technologies fitting within the space, weight, cooling, and power reservations allotted them. Shipboard testing may reveal a need for design changes. In addition, as construction progresses, the shipbuilder is discovering "first-of-class" type design changes, which it will use to update the model prior to CVN 79 construction.
>
> **Production Maturity**

[8] Source: Navy meeting with CRS and CBO on the CVN-78 program, March 6, 2012.

[9] Tony Capaccio, "Aircraft Carrier's Rising Cost Prompts Lawmakers To Seek Audit," *Bloomberg Government (bgov.com)*, February 17, 2012.

According to program officials, CVN 78 is approximately 51 percent complete. Procurement costs for the lead ship have grown by over 17 percent since authorization of construction in fiscal year 2008, largely due to problems encountered in construction. Specifically, the new steel plating used for ship decks excessively warped and flexed during construction, which contributed to lower than desired levels of preoutfitting. In addition, the shipbuilder has experienced a shortage of the new valves critical for installing and testing different piping systems within the ship, and lagging government-furnished equipment deliveries have required deviation from the planned build sequence.

Other Program Issues

As requested, we reviewed whether individual subcontracting reports from the prime contractor for the program were accepted on eSRS [Electronic Subcontracting Reporting System]. The government uses subcontracting reports on eSRS as one method of monitoring small business participation. As of December 2012, eSRS indicated that none of the associated subcontracting reports for CVN 78's two contracts have been accepted.

Program Office Comments

In commenting on a draft of this assessment, the program office stated that the shipbuilder is applying lessons learned from CVN 78 construction to improve production strategies and reduce labor hours needed to construct follow-on ships (CVN 79 and CVN 80). Further, the program office does not expect to repeat CVN 78's "first of class" design and production challenges on CVN 79 and CVN 80. Program officials also stated that using a nonproduction-representative VSR prototype for DBR land-based testing has mitigated much of the impact of the DDG 1000 descope of VSR and will be beneficial in exhibiting dual band functionality prior to ship delivery. In addition, program officials stated that the 12 current critical technologies in the program have met their system maturity goals, noting that an oversight team led by the Office of the Secretary of Defense disbanded in 2012 once each of these technologies was determined to be approaching maturity or mature. The program office also provided technical comments, which were incorporated where deemed appropriate.[10]

November 2012 Press Report

A November 29, 2012, press report stated:

> Huntington Ingalls Industries Inc. will miss its 2012 target for reducing costs on the USS Gerald R. Ford, the aircraft carrier that will be the most expensive U.S. warship.
>
> The shipbuilder will fall short of getting 86 cents of planned work accomplished for every dollar spent, in part because of late component deliveries from subcontractors, according to the Navy admiral responsible for carrier development and construction....
>
> "They have continued to improve in the right direction, but they did not make it to 86" percent, Rear Admiral Thomas Moore, the Navy's program executive officer for aircraft carriers, said in a phone interview. The Navy hopes the company will eventually get $1 of value from every $1 spent, he said....

[10] Government Accountability Office, *Defense Acquisitions[:] Assessments of Selected Weapon Programs*, GAO-13-294SP, March 2013, p. 70.

> "There are many challenges" in building a prototype that's also the first production vessel of a three-ship class, Beci Brenton, a spokeswoman for the Newport News, Virginia-based company, said in an e-mailed statement.
>
> The company "has developed and implemented a host of improvement actions" this year, she said. "We have continued to advance the shipbuilding industry in tooling, material controls and craft performance through the use of innovation in technology, process changes and teaming."...
>
> Huntington Ingalls' cost efficiency goals have been "challenging but attainable, and they met them and did well in 2011," Moore said. "They did not meet all those goals in 2012, and we will sit down and figure out where we are going with them in 2013."
>
> Reaching the 86 percent mark would have helped reduce what's now an estimated $884 million overrun on the design and construction contract. The Navy's share is $690 million. Huntington's share is $194 million, which would be forfeited if the overrun isn't reduced.
>
> Moore said Huntington Ingalls' failure to hit its efficiency goal this year won't increase the cost estimate for the next carrier in the class, the USS John F. Kennedy.
>
> "My expectation is that we are starting with a clean sheet of paper," he said. "I fully expect" the second carrier's costs "to be significantly below where we end up on," the Ford, he said.[11]

July 2012 CBO Report

A July 2012 CBO report on the potential cost of the Navy's FY2012 30-year shipbuilding plan states (with costs expressed in constant FY2012 dollars):

> The Navy's projected cost of the lead ship of the CVN-78 class grew by 18 percent between the President's budget requests for 2008 and 2013. The Navy's budget now projects the lead ship's cost to be $13.1 billion (about what CBO estimated in its analysis of the Navy's 2011 plan), but further increases are likely. According to information provided by the Navy, in fiscal year 2014 the service will request an extra $497 million ($564 million in 2014 dollars) to cover additional cost growth and additional tooling and vendor services. Including that money in the Navy's estimate boosts the expected cost of the lead ship to $13.6 billion. (That amount does not include $4.7 billion in research and development costs that apply to the entire class.)
>
> To estimate the cost of the lead ship of the CVN-78 class, CBO used the actual costs of the previous carrier—the CVN-77—and then adjusted them for higher costs for government-furnished equipment and for more than $3 billion in costs for nonrecurring engineering and detail design (the plans, drawings, and other one-time items associated with the first ship of a new class). CBO estimates that completing the lead CVN-78 will cost $14.2 billion. Subsequent ships of that class will not require as much funding for one-time items, although they will incur the higher costs for government-furnished equipment. Altogether, CBO estimates the average cost of the 6 carriers in the 2013 plan at $13.0 billion, compared with the Navy's estimate of $10.9 billion....

[11] Tony Capaccio, "Huntington Ingalls Aircraft Carrier To Miss Cost-Reduction Goal," *Bloomberg Government (bgov.com)*, November 29, 2012.

> The final cost of the CVN-78 could be even higher than CBO's estimate, for several reasons. First, many lead ships built in the past 20 years have experienced cost growth of more than 30 percent. CBO's estimate for the lead ship already falls within the range of cost growth in lead ships, but construction is only about 40 percent complete. Historically, more cost growth has occurred in the latter stages of ship construction, when systems are being installed and integrated. Second, with the increase in the Navy's estimate, the Navy, in a written response to CBO and the Congressional Research Service, stated that the service has budgeted the CVN-78 to a "greater than 50th" percentile of possible cost outcomes. Because the Navy has not reported a precise probability, the service's view of the probability that the final cost will exceed its estimate is unclear. Third, a number of critical technologies that are supposed to be incorporated into the ship, such as a new electromagnetic catapult system for launching aircraft, remain under development and will require integration as the ship nears the final stages of construction. Difficulties in completing that integration could arise and increase costs, and those increases would also probably affect the costs for subsequent ships of the class. However, the Navy and the shipbuilder recognize those issues and are actively managing the CVN-78 program to reduce costs and prevent further growth. If they succeed, then the cost of the lead ship could be less than CBO's estimate.[12]

March 2012 Navy Letter to Senator McCain

Secretary of the Navy Ray Mabus, in a letter with attachment sent in late March 2012 to Senator John McCain on controlling cost growth in the CVN-78, stated:

> Dear Senator McCain:
>
> Thank you for your letter of March 21, 2012, regarding the first-of-class aircraft carrier, GERALD R. FORD (CVN 78). Few major programs carry greater importance or greater impact on national security, and no other major program comprises greater scale and complexity than the Navy's nuclear aircraft carrier program. Accordingly, successful execution of this program carries the highest priority within the Department of the Navy.
>
> I have shared in the past my concern when I took office and learned the full magnitude of new technologies and design change being brought to the FORD. Requirements drawn up more than a decade prior for this capital ship drove development of a new reactor plant, propulsion system, electric plant and power distribution system, first of kind electromagnetic aircraft launching system, advanced arresting gear, integrated warfare system including a new radar and communications suite, air conditioning plant, weapons elevators, topside design, survivability improvements, and all new interior arrangements. CVN 78 is a near-total redesign of the NIMITZ Class she replaces. Further, these major developments, which were to be incrementally introduced in the program, were directed in 2002 to be integrated into CVN 78 in a single step. Today we are confronting the cost impacts of these decisions made more than a decade ago.
>
> In my August 29, 2011 letter, I provided details regarding these cost impacts. At that time, I reported the current estimate for the Navy's share of the shipbuilder's construction overrun, $690 million, and described that I had directed an end-to-end review to identify the changes necessary to improve cost for carrier design, material procurement, planning, build and test. The attached white paper provides the findings of that review and the steps we are taking to drive affordability into the remaining CVN 78 construction effort. Pending the results of these efforts, the Navy has included the 'fact of life' portion of the stated overrun in the

[12] Congressional Budget Office, *An Analysis of the Navy's Fiscal Year 2013 Shipbuilding Plan*, July 2012, p. 16.

Fiscal Year 2013 President's Budget request. The review also highlighted the compounding effects of applying traditional carrier build planning to a radically new design; the challenges inherent to low-rate, sole-source carrier procurement; and the impact of external economic factors accrued over 15 years of CVN 78 procurement—all within the framework of cost-plus contracts. The outlined approach for ensuring CVN 79 and follow ship affordability focuses equally upon tackling these issues while applying the many lessons learned in the course of CVN 78 procurement.

As always, if I may be of further assistance, please let me know.

Sincerely, [signed] Ray Mabus

Attachment: As stated

Copy to: The Honorable Carl Levin, Chairman

[Attachment]

Improving Cost Performance on CVN 78

CVN 78 is nearing 40 percent completion. Cost growth to-date is attributable to increases in design, contractor furnished material, government furnished material (notably, the Electromagnetic Aircraft Launching System (EMALS), Advanced Arresting Gear (AAG), and the Dual Band Radar (DBR)), and production labor performance. To achieve the best case outcome, the program must execute with zero additional cost growth in design and material procurement, and must improve production performance. The Navy and the shipbuilder have implemented a series of actions and initiatives in the management and oversight of CVN 78 that cross the full span of contracting, design, material procurement, government furnished equipment, production planning, production, management and oversight.

CVN 78 is being procured within a framework of cost-plus contracts. Within this framework, however, the recent series of action taken by the Navy to improve contract effectiveness are achieving the desired effect of incentivizing improved cost performance and reducing government exposure to further cost growth.

- CVN 78 design has been converted from a 'level of effort, fixed fee' contract to a completion contract with a firm target and incentive fee. Shipbuilder cost performance has been on-target or better since this contract was changed.
- CVN 78 construction fee has been retracted, consistent with contract performance. However, the shipbuilder is incentivized by the contract shareline to improve upon current performance to meet agreed-to cost goals.
- Contract design changes are under strict control; authorized only for safety, damage control, mission-degrading deficiencies, or similar. Adjudicated changes have been contained to less than 1 percent of contract target price.
- The Navy converted the EMALS and AAG production contract to a firm, fixed price contract, capping cost growth to that system and imposing negative incentives for late delivery.

- Naval Sea Systems Command is performing a review of carrier specifications with the shipbuilder, removing or improving upon overly burdensome or unneeded specifications that impose unnecessary cost on the program.

The single largest impact to cost performance to-date has been contractor and government material cost overruns. These issues trace to lead ship complexity and CVN 78 concurrency, but they also point to inadequate accountability for carrier material procurement, primarily during the ship's advance procurement period (2002-2008).

These effects cannot be reversed on CVN 78, but it is essential to improve upon material delivery to the shipyard to mitigate the significant impact of material delays on production performance. Equally important, the systemic material procurement deficiencies must be corrected for CVN 79. To this end, the Navy and shipbuilder have taken the following actions.

- The Navy has employed outside supply chain management experts to develop optimal material procurement strategies. The Navy and the shipbuilder are reviewing remaining material requirements to employ these best practices (structuring procurements to achieve quantity discounts, dual-sourcing to improve schedule performance and leverage competitive opportunities, etc.).

- The shipbuilder has assigned engineering and material sourcing personnel to each of their key vendors to expedite component qualifications and delivery to the shipyard.

- The shipbuilder is inventorying all excess material procured on CVN 78 for transfer to CVN 79 (cost reduction to CVN 78), as applicable.

- The Program Executive Officer (Carriers) is conducting quarterly flag-level government furnished equipment summits to drive cost reduction opportunities and ensure on-time delivery of required equipment and design information to the shipbuilder.

The most important finding regarding CVN 78 remaining cost is that the CVN 78 build plan, consistent with the NIMITZ class, focuses foremost on completion of structural and critical path work to support launching the ship on-schedule. This emphasis on structure comes at the expense of completing ship systems, outfitting, and furnishing early in the build process and results in costly, labor-intensive system completion activity during later; more costly stages of production. Achieving the program's cost improvement targets will require that CVN 78 increase its level of completion at launch, from current estimate of 60 percent to no less than 65 percent. To achieve this goal and drive greater focus on system completion:

- the Navy fostered a collaborative build process review by the shipbuilder with other Tier 1 private shipyards in order to benchmark its performance arid identify fundamental changes that would yield marked improvement;

- the shipbuilder has established specific launch metrics by system (foundations, machinery, piping, power panels, vent duct, lighting, etc.) and increased staffing for waterfront engineering and material expediters to support meeting these metrics;

- the shipbuilder has linked all of these processes within a detailed integrated master schedule, providing greater visibility to current performance and greater ability to control future cost and schedule performance across the shipbuilding disciplines;

- the Navy and shipbuilder are conducting Unit Readiness Reviews of CVN 78 erection units to ensure that the outfitted condition of each hull unit being lifted into the dry-dock contains the proper level of outfitting.

These initiatives, which summarize a more detailed list of actions being implemented and tracked as result of the end-to-end review, are accompanied by important management changes.

- The shipbuilder has assigned a new Vice President in charge of CVN 78, a new Vice President in charge of material management and purchasing, and a number of new general shop foreman to strengthen CVN 78 performance.

- The Navy has assigned a second tour Flag Officer with considerable carrier operations, construction, and program management experience as the new Program-Executive Officer (PEO).

- The PEO and shipyard president conduct bi-weekly launch readiness reviews focusing on cost performance, critical path issues and accomplishment of the target for launch completion.

- The Assistant Secretary of the Navy (Research, Development, and Acquisition) conducts a monthly review of program progress and performance with the PEO and shipbuilder, bringing to bear the full weight of the Department, as needed, to ensure that all that can be done to improve on cost performance is being done.

Early production performance improvements can be traced directly to these actions, however, significant further improvement is required. To this end, the Navy is conducting a line-by-line review of all 'cost to-go' on CVN 78 to identify further opportunity to reduce cost and to mitigate risk.

Improving Cost Performance on CVN 79

CVN 79 Advance Procurement commenced in 2007 with early construction activities following in 2011. Authorization for CVN 79 procurement is requested in Fiscal Year 2013 President's Budget request with the first year of incremental funding. Two years have been added to the CVN 79 production schedule in this budget request, afforded by the fact that CVN 79 will replace CVN 68 when she inactivates. To improve affordability for CVN 79, the Navy plans to leverage this added time by introducing a fundamental change to the carrier procurement approach and a corresponding shift to the carrier build plan, while incorporating CVN 78 lessons learned.

The two principal 'documents' which the Navy and shipbuilder must ensure are correct and complete at the outset of CVN 79 procurement are the design and the build plan.

Design is governed by rules in place that no changes will be considered for the follow ship except changes necessary to correct design deficiencies on the lead ship, fact of life changes to correct obsolescence issues, or changes that will result in reduced cost for the follow ship. Exceptions to these rules must be approved by the JROC, or designee. Accordingly, the Navy is requesting procurement authority for CVN 79 with the Design Product Model complete and construction drawings approximately 95 percent complete (compared to approximately 30 percent complete at time of lead ship authorization).

As well, first article testing and certification will be complete for virtually all major new equipments introduced in the FORD Class. At this point in time, the shipbuilder has

developed a complete bill of material for CVN 79. The Navy is working with the shipbuilder to ensure that the contractor's material estimates are in-line with Navy 'should cost' estimates; eliminating non-recurring costs embedded in lead ship material, validating quantities, validating escalation indices, incorporating lead ship lessons learned. The Navy has increased its oversight of contractor furnished material procurement, ensuring that material procurement is competed (where competition is available); that it is fixed priced; that commodities are bundled to leverage economic order quantity opportunities; and that the vendor base capacity and schedule for receipt supports the optimal build plan being developed for production.

In total, the high level of design maturity and material certification provides a stable technical baseline for material procurement cost and schedule performance, which are critical to developing and executing an improved, reliable build plan.

In order to significantly improve production labor performance, based on timely receipt of design and material, the Navy and shipbuilder are reviewing and implementing changes to the CVN 79 build plan and affected facilities. The guiding principles are:

- maximize planned work in the shops and early stages of construction;
- revise sequence of structural unit construction to maximize learning curve performance through 'families of units' and work cells;
- incorporate design changes to improve FORD Class producibility;
- increase the size of erection units to eliminate disruptive unit breaks and improve unit alignment and fairness;
- increase outfitting levels for assembled units prior to erection in the dry-dock;
- increase overall ship completion levels at each key event.

The shipbuilder is working on detailed plans for facility improvements that will improve productivity, and the Navy will consider incentives for capital improvements that would provide targeted return on investment, such as:

- increasing the amount of temporary and permanent covered work areas;
- adding ramps and service towers for improved access to work sites and the dry-dock;
- increasing lift capacity to enable construction of larger, more fully outfitted super-lifts:

An incremental improvement to carrier construction cost will fall short of the improvement necessary to ensure affordability for CVN 79 and follow ships. Accordingly, the shipbuilder has established aggressive targets for CVN 79 to drive the game-changing improvements needed for carrier construction. These targets include:

- 75 percent Complete at Launch (15 percent> [i.e., 15 percent greater than] FORD);
- 85-90 percent of cable pulled prior to Launch (25-30 percent> FORD);
- 30 percent increase in front-end shop work (piping details, foundations, etc);

- All structural unit hot work complete prior to blast and paint;
- 25 percent increase to work package throughput;
- 100 percent of material available for all work packages in accordance with the integrated master schedule;
- zero delinquent engineering and planning products;
- resolution of engineering problems in < 8 [i.e., less than 8] hours.

In parallel with efforts to improve shipbuilder costs, the PEO is establishing equally aggressive targets to reduce the cost of government furnished equipment for CVN 79; working equipment item by equipment item with an objective to reduce overall GFE costs by ~$500 million. Likewise, the Naval Sea Systems Command is committed to continuing its ongoing effort to identify specification changes that could significantly reduce cost without compromising safety and technical rigor.

The output of these efforts comprises the optimal build plan for CVN 79 and follow, and will be incorporated in the detail design and construction baseline for CVN 79. CVN 79 will be procured using a fixed price incentive contract.[13]

December 31, 2011, SAR (Released March 2012)

Regarding a contract that NNS has with the Navy for detailed design and construction (DD&C) work on CVN-78—a contract that accounts for a portion of the ship's total cost—the December 31, 2011, Selected Acquisition Report (SAR) for the CVN-78 program, which was released in late March 2012, states that the value of the contract has grown from an initial price of $4,910.5 million to a current price of $5,899.5 million, and that NNS and the Navy estimate that the price will grow further, to $6,370.9 million (NNS's estimate) or $6,595.6 million (the Navy's estimate) by the time the contract is completed (i.e., estimated price at completion).[14] In discussing these figures, the SAR states:

Cost And Schedule Variance Explanations

The unfavorable net change in the cost variance is due to material cost growth (66%), labor inefficiencies (28%) and increases in non-recurring engineering (6%). The material variances are due to market forces, unanticipated impacts of a "first of class" specification on contractor furnished material costs (e.g. valves, electrical components, steel and other commodities), and refined understanding of material requirements as the ship design matured. Labor inefficiencies are the result of "first of class" challenges including producibility issues (e.g. thin plate steel, weld distortion, and the increase use of temporary structure and rigging) and the availability of new developmental components (e.g. valves, actuators). Additionally, increased supervision has been required to manage the above challenges and a developing workforce.

[13] Letter and attachment from Secretary of the Navy Ray Mabus to Senator John McCain, undated but posted at InsideDefnse.com (subscription required) on March 27, 2012. InsideDefense.com's description of the letter states that it is dated March 26, 2012.

[14] Department of Defense, *Selected Acquisition Report (SAR), CVN 78 Class*, December 31, 2011, p. 32.

> The unfavorable net change in the schedule variance is due to to inefficiencies associated the material availability and "first of class" producibility issues described above, and delays in the release of engineering products required to develop construction work packages.
>
> **Contract Comments**
>
> The difference between the initial contract price target and the current contract price target is due to the award of a new contract structure for Non-Recurring Engineering (NRE) and adjudicated change orders, procurement of special tooling and test equipment, and NRE associated with design and integration of developmental systems. The Program Manger's (PM) Estimated Price at Completion of $6,595.6M less the current contract Target Price of $5,899.5M is $696.1M. This price variance at completion of $696.1M includes $6.4M of authorized work that has not been adjudicated resulting in government liability of $689.7M. The PM's Estimated Price At Completion increased from $5,723.5M (December 31, 2010 SAR) to $6,595.6M consisting of $738.2M due to contract actions, $127.5M of construction inefficiencies, and $6.4M of authorized work that has not been adjudicated. The Government Liability has increased from $562.2M (December 31, 2010 SAR) to $689.7M, reflecting the $127.5M of construction inefficiencies. The PM's Variance at Completion (VAC) increased from $650M (December 31, 2010 SAR) to $884.7M. The government liability of the $884.7M VAC is $689.7M based on the contract shareline ratios which reduces the contractors target fee as cost growth increases.[15]

The SAR states the following it is executive summary:

> The CVN 78 Detail Design and Construction (DD&C) contract was awarded on September 10, 2008. The shipbuilder reports negative cumulative cost and schedule variances [i.e., cost growth and schedule delay] on DD&C efforts. Cost growth on the DD&C contract is due to material and labor factors. The material variances are due to market forces, unanticipated impacts of a "first of class" specification on contractor furnished material costs (e.g. valves, electrical components, steel and other commodities), and refined understanding of material requirements as the ship design matured. Labor inefficiencies are the result of "first of class" challenges including producibility issues (e.g. thin plate steel, weld distortion, and the increase use of temporary structure and rigging) and the availability of new developmental components (e.g. valves, actuators). Additionally, increased supervision has been required to manage the above challenges and a developing workforce. The schedule variance is due to inefficiencies associated the material availability and "first of class" producibility issues described above, and delays in the release of engineering products required to develop construction work packages. As of December 31, 2011, the construction effort for the CVN 78 is 33.9% complete.
>
> The Navy is aggressively working with the shipbuilder to drive improvements to material and construction performance. These efforts to control cost are producing favorable results. Significant changes include designation of a Senior Vice President and a Total Ship Construction Superintendent for oversight of CVN 78 construction and changes in material management. The shipbuilder has established specific labor cost targets for key manufacturing and construction areas and implemented cost control initiatives to meet these goals. Specific initiatives include more effective coordination between engineering and production trades, extending Earned Value Management (EVM) targets throughout all levels of leadership, improving work control processes, the use of bulk material ordering where possible, and methods to more quickly resolve waterfront issues. In addition, the Navy has partnered with the shipbuilder to consider changes to specifications and modify them where

[15] Department of Defense, *Selected Acquisition Report (SAR), CVN 78 Class*, December 31, 2011, p. 32.

> appropriate to lower cost and schedule risk. On July 29, 2011, the Program awarded a new contract structure for non-recurring engineering (NRE) by transitioning from a Cost Plus Fixed Fee (CPFF) Level of Effort (LOE) to a Cost Plus Incentive Fee (CPIF) to complete the remaining NRE work.
>
> Senator John McCain's letter of August 11, 2011 to Secretary of the Navy, Raymond Mabus, addressed cost performance of the detail design and construction of the CVN 78. As a result, the Navy is submitting monthly reports to the four defense committees. In the Secretary of the Navy's response letter dated August 29, 2011, the Secretary directed the Assistant Secretary of the Navy (ASN) Research Development and Acquisition (RDA) to conduct a detailed review of the CVN 78 program build plan to improve end-to-end aircraft carrier design, material procurement, production planning, build and test. The Navy completed the assessment December 2011. The Navy is implementing recommendations from this report to both improve CVN 78 contract performance, and to drive further improvements in the upcoming CVN 79 DD&C contract.[16]

CVN-78 Program Procurement Cost Caps

Another issue for Congress is where the estimated procurement costs of CVNs 78, 79, and 80 now stand in relation to the legislated procurement cost caps for the ships (see "Program Procurement Cost Cap" in "Background"), and whether the cost caps should be amended. A Navy information paper provided to CRS and CBO on March 19, 2012, states that

> Beginning in fiscal year 2014, the estimated cost to complete GERALD R. FORD (CVN 78) will exceed the cap for causes requiring legislative relief. Accordingly, the Navy intends to submit a legislative proposal for a CVN 78 cost cap increase beginning in Fiscal Year 2014. For follow ships of the CVN78 Class, the cost cap is still under evaluation.[17]

Secretary of the Navy Ray Mabus, when asked by Senator John McCain at a March 15, 2012, hearing before the Senate Armed Services Committee whether the Navy will ask for legislative relief on the CVN-78 cost cap, replied: "Senator, not this year, but I'm certain we will be asking next year." In response to a follow-up question from Senator McCain on aircraft carrier program costs, Secretary Mabus stated in part:

> The one thing that we are absolutely committed to and the one thing that we will not go forward with [on] CVN-79 is that we will take the lessons learned here. We will have a firm price and we will not come back to the Senate to ask for—or Congress to ask for raising the cost cap on the follow-on ship, the John F. Kennedy CVN-79.[18]

Potential Two-Ship Block Buy on CVN-79 and CVN-80

Another issue for Congress concerns the potential for procuring CVN-79 and CVN-80 together in a two-ship block buy. The Navy currently plans to procure CVN-79 and CVN-80 separately, as one-ship procurements. Procuring the two ships together in a block buy could reduce their combined procurement cost.

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[16] Department of Defense, *Selected Acquisition Report (SAR), CVN 78 Class*, December 31, 2011, p. 5.

[17] Undated Navy information paper on CVN-78 program provided to CRS and CBO on March 19, 2012.

[18] Source: Transcript of hearing.

Procuring two aircraft carriers together in a two-ship block buy has been done on two previous occasions. The Navy procured two Nimitz (CVN-68) class aircraft carriers (CVN-72 and CVN-73) together in a block buy in FY1983, and procured another two Nimitz-class aircraft carriers (CVN-74 and CVN-75) together in a block buy in FY1988. The Navy proposed these block buys in the FY1983 and FY1988 budget submissions.[19]

When the FY1983 block buy was proposed, the Navy estimated that the block buy would reduce the combined cost CVN-72 and CVN-73 by 5.6% in real terms.[20] When the FY1988 block buy was proposed, the Navy estimated that the block buy would reduce the combined cost of CVN-74 and CVN-75 by a considerably larger percentage. GAO stated that the savings would be considerably less than the Navy estimated, but agreed that a two-ship acquisition strategy is less expensive than a single-ship acquisition strategy, and that some savings would occur in a two-ship strategy for CVN-74 and CVN-75.[21]

The FY1983 and FY1988 block buys each involved procuring two aircraft carriers in a single year. Procuring two carriers in the same year, however, is not mandatory for a two-ship aircraft carrier block buy. The Navy, for example, proposed the block buy for CVN-74 and CVN-75 in the FY1988 budget submission as something that would involve procuring CVN-74 in FY1990 and CVN-75 in FY1993. (Congress, in acting on the FY1988 budget, decided to not only approve the two-ship block buy, but also accelerate the procurement of both CVN-74 and CVN-75 to FY1988.)[22] A block buy on CVN-79 and CVN-80 could leave intact the FY2013 procurement

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[19] It can also be noted that the Air Force is procuring two Advanced EHF (AEHF) satellites under a two-satellite block buy that the Air Force proposed and Congress approved in FY2012.

[20] See General Accounting Office, *Request to Fully Fund Two Nuclear Aircraft Carriers in Fiscal Year 1983*, MASAD-82-87 (B-206847), March 26, 1982, 10 pp. The figure of 5.6% was derived by dividing $450 million in non-inflation cost avoidance shown on page 5 by the combined estimated cost of the two ships (absent a block buy) of $8,024 million shown on page 4.

[21] See General Accounting Office, Procurement Strategy For Acquiring Two Nuclear Aircraft Carriers, Statement of Frank Conahan, Assistant Comptroller General, National Security and International Affairs Division, Before the Conventional Forces and Alliance Defense Subcommittee and Projection Forces and Regional Defense Subcommittee of the Senate Armed Services Committee, April 7, 1987, T-NSIAD-87-28, 5 pp. The testimony states on page 2 that "A single ship acquisition strategy is more expensive because materials are bought separately for each ship rather than being combined into economic order quantity buys under a multi-ship procurement." The report discounted the Navy's estimated savings of $1,100 million based on this effect on the grounds that if CVN-74 and CVN-75 were not procured in the proposed two-ship block buy, with CVN-74 procured in FY1990 and CVN-75 procured FY1993, it was likely that CVN-74 and CVN-75 would subsequently be procured in a two-ship block buy, with CVN-74 procured in FY1994 and CVN-75 procured in FY1996. For the discussion here, however, the comparison is between the Navy's current plan to procure CVN-79 and CVN-80 separately and the potential alternative of procuring them together in a block buy.

The GAO report commented on an additional $700 million in savings that the Navy estimated would be derived from improving production continuity between CVN-73, CVN-74, and CVN-75 by stating on page 3 that "It is logical to assume that savings are possible through production continuity but the precise magnitude of such savings is difficult to calculate because of the many variables that affect the outcome." It is not clear how significant savings from production continuity might be in a two-ship block buy for CVN-79 and CVN-80 if the procurement dates for the two ships (FY2013 and FY2018, respectively) are not changed.

The GAO report noted that the Navy estimated $500 million in additional savings from avoided configuration changes on CVN-74 and CVN-75 if the ships were procured in FY1990 and FY1993 rather than FY1994 and FY1996. It is not clear how significant the savings from avoided configuration changes might be for a two-ship block buy for CVN-79 and CVN-80.

See also CRS Issue Brief IB87043, *Aircraft Carriers (Weapons Facts)*, 13 pp., updated February 10, 1988 and archived March 24, 1988, by Ronald O'Rourke. The report includes a discussion of the above GAO report. The report is out of print and available directly from the author.

[22] See CRS Issue Brief IB87043, *Aircraft Carriers (Weapons Facts)*, 13 pp., updated February 10, 1988 and archived (continued...)

date for CVN-79 and the FY2018 procurement date for CVN-80. This would permit the funding for the two ships to be spread out over the same fiscal years as currently planned, although the amounts of funding in individual years would likely change.

It is too late to implement a complete block buy on CVN-79 and CVN-80, because some of CVN-79, particularly its propulsion plant, has already been purchased. Consequently, the option would be to implement a partial block buy that would include the remaining part of CVN-79 and all of CVN-80.

To illustrate the notional scale of the savings that might result from using a block buy strategy on CVN-79 and CVN-80, it can be noted that if such a block buy were to achieve one-third as much percentage cost reduction as the FY1983 block buy—that is, if it were to reduce the combined procurement cost of CVN 79 and 80 by about 1.9%—that would equate to a savings of roughly $470 million on the currently estimated combined procurement cost of CVN-79 and CVN-80. More refined estimates might be higher or lower than this notional figure of $470 million.

At a March 19, 2012, briefing for CRS and CBO on the CVN-78 program, CRS asked the Navy whether it was considering the possibility of a block buy on CVN-79 and CVN-80. The Navy stated that it had looked into a narrower option of doing joint purchases of some materials for the two ships.

Implementing a block buy on CVN-79 and CVN-80 would require committing to the procurement of CVN-80. Whether Congress would want to commit to the procurement of CVN-80, particularly in light of current uncertainty over future levels of defense spending, is a factor that Congress may consider in assessing the option of doing a block buy. If budgetary circumstances were to lead to a decision to end procurement of Ford-class carriers after CVN-79, then much or all of the funding spent procuring materials for CVN-80 could go to waste.

At a March 29, 2012, hearing on Navy shipbuilding programs before the Seapower and Projection Forces subcommittee of the House Armed Services Committee, Sean Stackley, the Assistant Secretary of the Navy for Research, Development, and Acquisition (i.e., the Navy's acquisition executive), stated the following when asked by Representative Robert Wittman about the possibility of a two-ship block buy on CVN-79 and CVN-80:

> Yes, sir. Let me focus on affordability of the CVN-78 class. We are right now about 40 percent complete construction of the CVN-78 and we're running into some very difficult cost growth issues across the full span—design, material procurement, and production—material procurement on both contractor and government side.
>
> So our first focus right now is to stabilize the lead ship. Let's get cost under control so we can complete this ship as close to schedule at the lowest cost possible.
>
> But in parallel, the Navy is working very closely with the shipbuilder to take a step back and say, one, what are all the lessons we just learned on CVN-78? Two, CVN-78 is a very different ship from the Nimitz [CVN-68]; we cannot expect to build the [CVN-]78 the way we build the [CVN-]68 and—and get to an affordable ship construction plan. So we're

(...continued)

March 24, 1988, by Ronald O'Rourke. The report is out of print and available directly from the author.

> pressing on the way the carrier is built—the build plan for the carrier—to arrive at a more affordable CVN-79.
>
> Now, in the process of doing that we'll take a hard look at what opportunity there is across [CVN-]79 and [CVN-]80, recognizing that we're going to be limited, again, by [budget] top line. But there are going to be some opportunities that jump out at us. We don't want to have to replan each carrier. We have a vendor base that is stretched out with the carrier build cycle that for some components that are carrier-unique, that vendor base is—is just struggling to hold on between the five-year gaps.
>
> So we have to take a hard look at where does it make sense after we've gotten to what I'm calling an optimal build plan for CVN-79 and then be able to come back and—and say, OK, here—on CVN-79 here are some opportunities that if we could, in fact, reach out to CVN-80 we can either avoid a gap in a production line or avoid unnecessary cost growth on that follow ship.[23]

Later in the hearing, the following exchange occurred:

> REPRESENTATIVE RICK LARSEN:
>
> Finally, we had some discussion about this question with regard to CVNs and trying to find a way to squeeze some costs out, and one of the ideas was to do some—do block buy of certain components of—of—of CVN components. And have you considered that, and what's your thought on that on block buy on components from [CVN-]79 to [CVN-]80, or whatever, [CVN-]79, [CVN-]79 to [CVN-]80, and so on?
>
> ASSISTANT SECRETARY OF THE NAVY SEAN STACKLEY:
>
> Yes, sir. At this point in time the Navy and the shipbuilder are sitting side by side putting together a build plan for CVN-79. We're 40 percent complete construction of the [CVN-]78; we've got a lot that we've got to, I'll say, do different on the [CVN-]79 and follow from the lead ship. It's a very different ship class [compared to the Nimitz class].
>
> So we're taking a hard look at the build plan [for CVN-78]. We need to get that locked down. And associated with that is the complete bill of materials for the Ford class.
>
> At that point in time we'll be able to take a look at...
>
> LARSEN:
>
> On this, call it bill of materials, what does it make sense—what makes sense in terms of looking long term, beyond the immediate ship?
>
> STACKLEY:
>
> Right.
>
> LARSEN:
>
> Are there areas of the industrial base that are stressed to the point that it does make sense to look at coupling the CVN-79 and CVN-80 buy?

[23] Source: transcript of hearing.

STACKLEY:

> We're not at that point yet. I described earlier that I think after we get through this build plan review then we'll be able to come back in '14 [FY2014] and identify potential critical items that warrant a block buy approach.[24]

Later in the hearing, Matthew Mulherin, president of NNS and corporate vice president of HII, stated the following when asked by Representative Robert Wittman about the possibility of a two-ship block buy on CVN-79 and CVN-80:

> Yes, sir. You know, historically you go back, you were exactly right, if you look at the contracts that bought the CVN- 72 and [CVN-]73 there was huge savings that flowed to the second ship, both in the ability to go buy materials, a block buy and get—get discounts there, but also that you did the engineering up front the first time for both hulls so the second ship you really just had the answer, problem, paper [sic] and some of those kind of things the—the kind of the normal course of business to support the waterfront.
>
> So I wouldn't see any different. I think if we were able to do it both for material, for—for the engineering to be able to go pump out drawings that had two-ship applicability—plus, I think it brings the—the—the CVN—if we were to do a two-ship buy for [CVN-]79 and [CVN-]80 it would ensure CVN-80 was a copy of CVN-79, no change into the contract or very minimal, you're not having a—on the material side you get economic order savings, you don't have to deal with obsolescence.
>
> So absolutely. I think there's huge opportunity to go do that. You know, you talk to the—the vendor base. They would love to see it. It gives them the ability to go look at—at what investments they need, what work is out in front of them, and go invest in—in training and tools to—to be able to go support that.[25]

At the March 19, 2012, briefing for CRS and CBO on the CVN-78 program, CRS asked the Navy to examine the option of a block buy on CVN-79 and CVN-80, and inform CRS and CBO of the Navy's estimate of how much it might reduce the combined procurement cost of CVN-79 and CVN-80. The Navy's response, dated April 22, 2012, was sent to CRS on May 10, 2012 (i.e., just after the House Armed Services Committee completed its markup of H.R. 4310, the FY2013 National Defense Authorization Act). The response stated:

> There are several options for procuring aircraft carriers that differ from the current practice; two ship buys and block buys. Navy experience with aircraft carrier two ship buys includes procurement of the CVN 72 and CVN 73 (awarded in FY83), and the CVN 74 and CVN 75 (awarded in FY88). The actual cost returns for these procurements support significant savings compared to other NIMITZ Class single ship buys. This conclusion is based on a comparison of the NIMITZ Class two ship buys (CVN72, 73, 74 & 75) with single ship buys (CVN71 and CVN76). The total ship man-hour comparison shows a 9% reduction. The total ship material comparison in constant dollars shows an 8% reduction. The NIMITZ- Class two ship buys took advantage of a single year of full funding for the combined procurement, and less than three years between the deliveries of each ship. Having both ships fully funded in one year enabled the Navy and shipbuilder to take advantage of two ship-set Economic Order Quantity (EOQ) market savings for material items, and also allowed the shipbuilder to

[24] Source: Transcript of hearing.

[25] Source: Transcript of hearing.

> optimize production trades management. The short time between deliveries also resulted in design stability, minimized potential obsolescence, and greater opportunities for learning.
>
> Given hard budget constraints in FY13 and FY14, CVN 79 and CVN 80 cannot benefit from a multiyear construct, similar to those requested in PB13 for VIRGINIA Class Submarine and ARLIEGH BURKE Class Destroyers. By the end of FY14, 75% of CVN 79 material will be under contract with suppliers, leaving limited opportunities to implement material savings with multiyear incremental funding. 75% of CVN 80 material would also be incapable of achieving savings, as the material purchases would be placed after CVN 79.
>
> CVN 80/81 would present the first opportunity to potentially consider this strategy.[26]

The Navy's response states, "Having both ships fully funded in one year enabled the Navy and shipbuilder to take advantage of two ship-set Economic Order Quantity (EOQ) market savings for material items.... " It can be noted that ships funded in separate years can also take advantage of EOQ savings, provided that the authorizing legislation permits the use of EOQ, and that the FY1988 block buy of CVN-74 and CVN-75 was originally proposed by the Navy as a block buy in which CVN-74 would be procured in FY1990 and CVN-75 in FY1993.

The Navy's response states, "Given hard budget constraints in FY[20]13 and FY[20]14, CVN 79 and CVN 80 cannot benefit from a multiyear construct, similar to those requested in PB[20]13[27] for VIRGINIA Class Submarine and ARLIEGH BURKE Class Destroyers." It can be noted that a block buy on CVN-79 and CVN-80 would not necessarily be a multiyear procurement (MYP) contract, like those requested for the Virginia-class submarine program and the Arleigh Burke (DDG-51) destroyer programs. It can also be noted that Congress may decide to work within budget constraints for FY2013 and FY2014 that might differ from those on which is DOD basing its planning.

The Navy's response states, "By the end of FY14, 75% of CVN 79 material will be under contract with suppliers, leaving limited opportunities to implement material savings with multiyear incremental funding. 75% of CVN 80 material would also be incapable of achieving savings, as the material purchases would be placed after CVN 79." CRS on May 10, 2012, asked the Navy what percent of the material for CVN-79 would be under contract by the end of FY2012. The Navy's response, dated May 22, 2012, was sent to CRS on May 25, 2012 (i.e., the same day that the House Appropriations Committee reported H.R. 5856, the FY2013 DOD Appropriations Act). The response stated, "Approximately 47% of CVN 79 direct material will be under contract by the end of FY[20]12."[28]

The Navy's response states that "CVN 80/81 would present the first opportunity to potentially consider this [block buy] strategy." This statement appears to refer to a strategy of a complete block buy involving 100% of the material for both carriers. Based on the Navy's response dated May 22, 2012, a partial block buy on CVN-79 and CVN-80 involving as much as 53% of the material on CVN-79 might be possible, if the block buy were authorized and implemented as part of the FY2013 defense budget.

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[26] Navy information paper dated April 25, 2012, sent to CRS on May 10, 2012.

[27] This is a reference to the president's budget for FY2013—that is, the administration's requested budget for FY2013.

[28] Navy information paper dated May 22, 2012, sent to CRS on May 25, 2012.

Issues Raised in December 2012 DOT&E Report

Another issue for Congress concerns CVN-78 program issues that were raised in a December 2012 report from DOD's Director, Operational Test and Evaluation (DOT&E)—DOT&E's annual report for FY2012. The report stated, in its section on the CVN-78 program, that

> **Assessment**
>
> **Test Planning**
>
> • The current state of the Virtual Carrier model does not fully provide for an accurate accounting of SGR [sortie generation rate] due to a lack of fidelity regarding manning and equipment/aircraft availability. Spiral development of the Virtual Carrier model continues in order to ensure that the required fidelity will be available to support the SGR assessment during IOT&E [initial operational test and evaluation].
>
> • The current TEMP [test and evaluation master plan] does not adequately address whole platform-level developmental testing. The Program Office has begun to address the problem and has refined the Post Delivery Test and Trials schedule. The details are unclear on the extent of any additional integrated platform-level CVN-78 developmental tests. Lack of platform-level developmental testing significantly raises the likelihood of the discovery of platform-level problems during IOT&E.
>
> • The Navy plans to deliver CVN-78 in September 2015. Current progress supports this plan; however, the EMALS [electromagnetic aircraft launch system] , AAG [advanced arresting gear], DBR [dual band radar], and Integrated Warfare Systems remain pacing items for successful delivery of the ship.
>
> **EMALS [electromagnetic aircraft launch system]**
>
> • DOT&E holds moderate concern regarding the performance risk generated by the inability to test the full four-catapult electrical distribution system prior to initial trials aboard ship. This concern is partially mitigated by the current phase of test using a simulated shared electrical storage and shared power conversion at the EMALS system functional design test site in Joint Base McGuire-Dix-Lakehurst, New Jersey.
>
> **AAG [advanced arresting gear]**
>
> • Significant redesign of multiple components has slowed development of AAG development. The program will begin performance testing in FY13.
>
> **JSF [Joint Strike Fighter]**
>
> • JBD testing identified no deficiencies for catapult launch operations of JSF at military rated thrust. The tests did, however, determine that additional JBD [jet blast deflector] side panel cooling (SPC) and other adjustments are required for operations at combat rated thrust, i.e., with afterburner. The existing JBD panels will need to be replaced with new panels with SPC to be fully JSF-compatible. JBD panels with SPC are form, fit, and function replacements and will be installed after CVN-78 delivers.
>
> —JSF data flow aboard ship via the Autonomic Logistics Information System (ALIS) is critical to proper F-35 maintenance. Currently, the ALIS system has provided all required parametric information to interface properly with CANES [Consolidated Afloat Networks and Enterprise Services], but CANES is not fully developed yet, as the contract was awarded

in August 2012. ALIS is expected to undergo Application Integration Process testing in FY13 to ensure proper interface with CANES. DOT&E will be able to better assess the impact on JSF operations aboard CVN-78 after the test. Currently, data are planned to be exchanged manually until ALIS and CANES properly interface.

—In 2007, the Program Office identified discrepancies with the integration of the JSF's F135 engine onto aircraft carriers. The weight of the F135 power module, approximately 10,000 pounds, exceeds the limit of current underway replenishment (UNREP) systems. Although CVN-78 will include a heavy UNREP system that will allow transfer of 12,000 pounds, supply ships must include the new system for power module transfer to occur. The Navy's plan to install heavy UNREP systems on resupply ships has slipped eight years.

• Navy Fleet Force's JSF "day-in-the-life" analysis identified a significant number of aircraft-ship interface deficiencies that must be accomplished by the Navy in post-delivery ship modification. They include the following:

—JSF battle damage assessment and non-traditional Intelligence, Surveillance, and Reconnaissance information captured on the Portable Memory Device or cockpit video recorder cannot be shared real-time with the Distributed Common Ground System-Navy (DCGS-N). This prevents assessment by shipboard intelligence analysts for inclusion in mission reports.

—Ships are unable to receive and display Link 16 imagery; this problem is not unique to JSF. The Combatant Commanders have stated a need to display imagery to intelligence analysts and operations command and control nodes to enhance engagement decisions.

—Limited shipboard capabilities exist with expeditionary Link 16. The Navy is considering a program of record to distribute imagery to analysts and maritime operations command and control nodes (e.g., carriers and amphibious ships). This would be a temporary workaround for the DCGS-N post-flight data gap.

—The JSF Prognostic Health Maintenance (PHM) downlink design for ships is not mature. The uncertainty in the technical characteristics of the final design means that there are potential challenges to integrating PHM into current shipboard communications suites and networks. These challenges include unidentified Information Assurance considerations and unidentified waveform hosting and interfacing.

—The JSF wheel supplier's recent rim inspection requirement may force a significant increase in shipboard tire and wheel storage requirements. The JSF Program Office is currently working to determine the effect of this deficiency and the need for inspection by the wheel supplier.

DBR

• Previous testing of Navy combat systems similar to CVN-78's revealed numerous integration problems that degrade the performance of the combat system. The previous results emphasize the necessity of maintaining a DBR / CVN-78 combat system asset at Wallops Island. The Navy is considering long-term plans (i.e., beyond FY15) for testing DBR at Wallops Island, Virginia, but it is not clear if a Multi-Functional Radar and funding will be available. Such plans are critical to delivering a fully capable combat system and ensuring lifecycle support after CVN-78 delivery in 2015.

LFT&E [live fire test and evaluation]

• While the Navy has made substantial effort in component and surrogate testing, this work does not obviate the need to conduct the FSST [full-ship shock trial] to gain the critical empirical data that past testing has repeatedly demonstrated are required to rigorously evaluate the ship's ability to withstand shock and survive in combat. Shock Trials conducted on both the Nimitz class aircraft carrier and the San Antonio class Amphibious Transport Dock demonstrated the need for and substantial value of conducting the FSST. Postponing the FSST until CVN-79 would cause a five- to seven-year delay in obtaining the data critical to evaluating the survivability of the CVN-78 and would preclude timely modification of subsequent ships of this class to assure their survivability.

• The Navy proposes delaying the shock trial by five to seven years because of the approximately four- to six-month delay required to perform the FSST. The delay is not a sufficient reason to postpone the shock trial, since the shock trial could reveal valuable lessons, including previously unknown vulnerabilities.

• DOT&E has requested the Navy adequately fund and complete the actions necessary to conduct the TSST on the CVN-78. This includes updating the Damage Scenario Based Engineering Analyses (DSBEA) from prior Vulnerability Assessment Reports and enough new DSBEAs, including machinery spaces, to conduct an adequately scoped TSST [total ship survivability trial]. DOT&E expects this will require five or six TSST drills. While progress has been made toward reaching consensus on the scope of the TSST, there is still work to be done, mainly to include the machinery spaces, and the budget has not been adjusted to adequately support the TSST.

Recommendations

• Status of Previous Recommendations. The Navy addressed one of eight previous recommendations but the following seven remain valid:

1. Adequately test and address integration challenges with JSF; specifically logistics (storage of spare parts and engines, transport of support equipment and spares to / from the carrier), changes required to JBDs, changes (due to heat and or noise) to flight deck procedures, and ALIS integration.

2. Finalize plans that address CVN-78 integrated warfare system engineering and ship's self-defense system discrepancies prior to the start of IOT&E.

3. Continue aggressive EMALS and AAG risk-reduction efforts to maximize opportunity for successful system design and test completion in time to meet required in-yard dates for shipboard installation of components.

4. Continue development of a realistic model for determining CVN-78's SGR, while utilizing realistic assumptions regarding equipment availability, manning, and weather conditions for use in the IOT&E.

5. Provide scheduling, funding, and execution plans to DOT&E for the live SGR test event during the IOT&E.

6. Continue to work with the Navy's Bureau of Personnel to ensure adequate depth and breadth of required personnel to ensure that the 100 percent Navy Enlisted Classification fit / fill manning requirements of CVN-78 are met.

7. Conduct system-of-systems developmental testing to preclude discovery of deficiencies during IOT&E.

- FY12 Recommendations. None. [29]

Regarding the full ship shock test (FSST) discussed, above, an August 9, 2012, press report states:

> The Navy is inappropriately delaying or scaling back $70 million in needed combat testing of the USS Gerald R. Ford [CVN-78], an aircraft carrier that may cost $14.2 billion, in the name of cutting costs, according to the Pentagon's top weapons tester.
>
> A test that would "rigorously evaluate the ship's ability to withstand shock and survive in combat" would be postponed until a second carrier in the new Ford class [CVN-79] is built and may not be completed for seven years, Michael Gilmore, the Defense Department's director of operational test and evaluation, told Navy Secretary Ray Mabus in a July 12 memo obtained by Bloomberg News....
>
> "I recognize the need to expend resources wisely for all purposes, including testing, in the existing constrained fiscal environment," Gilmore said in the memo. "I consider these test costs well-justified, particularly when considered in the context of the $27.8 billion cost to design and build the first three of these new carriers, clearly one of the most expensive combat systems the department has ever acquired."...
>
> The dispute centers on the Navy's decision to change the agreed-upon test plan for the first carrier in the class without Gilmore's approval. The Navy wants to shift "full ship shock trial" evaluations to the John F. Kennedy, the second carrier, in the move Gilmore says would delay conducting the tests and gathering needed data for five to seven years.
>
> The tests, estimated to cost about $60 million, are designed to evaluate a ship's ability to perform its mission after absorbing repeated shock waves from underwater explosions using live ammunition detonated at a distance.
>
> Gilmore rescinded approval of the test plan on July 12 and that decision remains in place, he said in an e-mail through his spokeswoman Cheryl Irwin. Gilmore also said he has informed Defense Secretary Leon Panetta's staff of his concerns.
>
> Gilmore said in the e-mail that the delay "is not appropriate" because the tests "provide information key to assuring a ship's survivability in combat."
>
> Captain Cate Mueller, a Navy spokeswoman, said in an e-mailed statement that "the Navy and test office are committed to providing the most capable and survivable carrier." The service's differences with Gilmore "are in the technical aspects and phasing of the shock trials," she said.
>
> Conducting the full shock test "is a high-cost event with schedule impact," she said. The Navy also has been under pressure due to environmental impact concerns "to identify alternative means to validate ship shock design," Mueller said.
>
> The Ford carrier's hull form "has been subject to extensive survivability modeling and simulation, robust equipment and system component testing," she said, and the Navy's decision to delay the full shock testing "is fully consistent with past practices for new ship classes."

[29] Department of Defense, Director, Operational Test & Evaluation, *FY2012 Annual Report*, released January 2013, pp. 144-146.

Gilmore wrote Mabus that postponing the full shock tests until they can be performed on the Kennedy "would preclude timely modification of subsequent ships of this class to ensure survivability."

Conducting the tests on the first ship as originally planned would cause about a two-month delay in fielding the carrier, according to Gilmore.

"The data to be gained and risk mitigated are, in my view, clearly valuable enough to justify this delay," Gilmore wrote Mabus.

Gilmore wrote Mabus that he also disagreed with a second Navy decision that would "limit the scope" of "total ship survivability trials" on the first carrier. These tests, at an estimated cost of $10 million, are designed to demonstrate the ability of the ship and crew to control damage resulting from simulated anti-ship weapons and continue fighting.

"I cannot accept elimination of key and essential survivability analyses," including proposals to eliminate analysis of the carrier's machinery spaces, "simply to satisfy budget reductions," Gilmore said.[30]

Legislative Activity for FY2014

FY2014 Funding Request

As shown in **Table 1**, the Navy's proposed FY2014 budget requests $588.1 million in procurement funding to cover cost growth on CVN-78, and $944.9 million in procurement funding for CVN-79.

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[30] Tony Capaccio, "Navy Delays Combat Tests Needed For Carrier, Weapons Tester Says," *Bloomberg Government (bgov.com)*, August 9, 2012.

Senator REED. Secretary Stackley?

Mr. STACKLEY. If I may make a comment on that. The cost figures that were put into the 2006 NDAA associated with CVN–78 class did not account for escalation. So the dollars in 2006, when you escalate those out to the build span for the CVN–79 and the CVN–80, what you see is an increase associated with escalation. For CVN–79, there is also an increase associated with nonrecurring engineering to incorporate the design issues that we identified on –78 that need to be fixed before producibility of –79.

Senator MCCAIN. I appreciate that, but some of us do expect those increases to be anticipated rather than just saying we had to add on those costs. Then obviously these cost estimates that were submitted in the fiscal year 2008 budget—there are increases. That is what was presented to Congress, and that is not what happened.

Mr. STACKLEY. Sir, for the record, when those numbers were presented for the cost cap purposes, it was, call it, in constant year dollars in the year of the authorization and the allowances made to update those for impacts of escalation.

Senator MCCAIN. Of 23 and 29.5 percent? I do not think some of us would have voted for it if we had known of that kind of escalation, Mr. Secretary.

Senator REED. I think at this point it is appropriate to recognize Senator Sessions. We will have a second round, and we will have an opportunity for the Secretary in the course of that second round or other comments to further elaborate. Senator Sessions?

Senator SESSIONS. We have a tight budget situation. I know you guys are working hard at it. Thank you for what you do. But, Senator McCain raises important questions, and I think it is in the national interest that he does so.

With regard to the fleet and the size, Secretary Stackley or Admiral Myers, are you confident that we have the ships that we need to do the job that we are challenged to do? Would you give us any comments on it? Do you think we have the right mix?

Admiral MYERS. Senator, thanks for the question.

The force structure assessment that was completed and released is very comprehensive. This is a periodic review by the Navy to make sure that we understand what force structure are we building to. Now, this is an important element of our shipbuilding plan. The shipbuilding plan is a combination of not just the force structure assessment but also what we think we can afford budget-wise, looking at the industrial base, understanding our ship construction profiles and a number of things. But key to beginning the process of building our annual shipbuilding plan is understanding what force structure that we are building to.

So for the force structure assessment, what we did was we went to the combatant commanders and talked to them to try to understand what mission sets, what capabilities that they need in their areas of responsibility (AOR). We also looked at deployment schedules in our GFMAP.

Senator SESSIONS. Can I interrupt you? When was this done and when did it commence?

Admiral MYERS. Last year, and it was completed within the last year. So this is current. This is the force structure assessment that changed from 313 to 306.

So in the course of that analysis, what the Navy discovered is a couple of things. One is we have new Defense Strategic Guidance, and in that guidance it prioritizes presence in different AORs.

Senator SESSIONS. Who decided the new defense guidance? How was that decided?

Admiral MYERS. The Defense Strategic Guidance was released by the administration in, I believe it was, January of last year.

So based on the Defense Strategic Guidance, what we did was we talked to the combatant commanders, looked at the GFMAP, looked at the ships that we have in our inventory, looked at the industrial base, and then considered what is it that the Navy needs in terms of a requirement for force structure to meet the presence and warfighting capabilities overseas.

The results of that were 306 ships. Now, that is a change from 313.

A couple of things were unique that changed over the last year besides the Defense Strategic Guidance shifting some of our priorities to the Asia-Pacific. What we also did was the Navy has been increasing our emphasis on forward-deployed naval ships, and we have four ships that will be permanently stationed in Rota as part of the Ballistic Missile Defense (BMD) rotation in the Mediterranean. Those four ships keep us from having to have more ships sailing from the east coast. So we went from 94 surface combatants down to 88. So instead of having additional ships to sail back and forth across the Atlantic, we were able to keep those BMD ships in Rota and have the same kind of force structure we need in terms of presence but reduced overall force structure.

Senator SESSIONS. When I came on this committee some years ago now, that was a serious discussion about the forward deployment in ships. So you feel good about that strategy? We have been doing more of it. Is it effective in increasing our presence and reducing the number of ships that we need in the fleet?

Admiral MYERS. Absolutely. We benefit from forward presence in Japan and the western pacific routinely, and having commanded the USS *Kitty Hawk* homeported in Yokosuka, I can personally attest to the effectiveness and the efficiency of having a forward-deployed naval force in the AOR. So what we are doing in Rota is we are moving theater BMD destroyers. Beginning in fiscal year 2014 will be the first ship and that will be a more efficient way to maintaining a presence in the Mediterranean for that mission.

We also within the force structure assessment looked at efficiencies of civilian crewed Joint High Speed Vessels for a presence where we could have increased presence and then prioritizing some of the military manned like our amphib ships in different AORs. So we are able to find some efficiencies.

We are also bringing on board our MLPs in float staging bases, and those are also going to be civilian manned and we will be able to increase our presence.

So when you do the math, we come up with 306 ships and we think it is the right mix. We think that we have a path ahead to account for the SSGN.

Senator SESSIONS. My time is about up, but I appreciate that. I think we should all recognize that this overall assessment strategy is determined by the administration and it, therefore, allows you,

if your mission is less, to have less ships. You are given a mission. You provide the ships that you have to have to accomplish that. You constrict the requirements. You do not have to have as many ships. So we need to be sure, when we analyze all this, in the long run we are not making a mistake.

Secretary Stackley, in your 30-year plan for shipbuilding, you do maintain the LCS as a significant role in that. There have been questions raised over this ship, but one of the reports was over a year old. I know it was recently published. Would you give us your assessment of where the LCS is?

I will have to say I have been impressed with your leadership over the years in trying to manage shipbuilding programs. I think all of us appreciate your service to the country.

Mr. STACKLEY. Sir, thanks for the question.

Let me address LCS in two pieces. One is ship production and then the other is mission packages or mission modules.

First, I think the subcommittee is well aware of the history in terms of ship production, and today I can report that ship production is stable. Costs are going down. The contracts are fixed-price. So there is all goodness there.

Senator SESSIONS. Are costs actually at the level you expect? How do you compare it to projections?

Mr. STACKLEY. When we awarded the dual block buy, we projected $2.9 billion in savings across the 20 ships. That was assuming not just the fixed prices on the contracts, but we also included some margin above those fixed—I am sorry—fixed-price incentives above the targets on those contracts and we are operating well within that budget. So they are performing below the budget that we had outlined when we awarded the dual block buy, which is a measure that we are achieving the savings that we had targeted.

We are still early in production, but we see the learning that we expect to see. We see the investment by the shipyards that they needed to make, and we are seeing them leverage the block buys with the vendor base in order to get savings in material as well. So production is stable.

Sequestration, frankly, pulled the margins out of those budgets. So where we held a margin above the target to account for potential risk, sequestration pulled much of that margin out. Sequestration pulled out much of the Government's reserve for change orders that we include in our budget, but frankly, we have locked down requirements to the extent that we are not burning dollars on change orders in production.

So we are on a good path on the ship production side and really working out, I will call it, the learning that goes with the investments that the shipyards have made and the early deliveries.

On the mission package side, we are in developmental testing across the three mission packages. LCS–1 deployed with an early increment of surface warfare capability. The mine countermeasure mission package, in the first increment of the mine countermeasure mission package and surface warfare mission package, we are scheduled to initial operational capability (IOC) next year.

In terms of sequestration impacts, the dollars that we have lost in research and development (R&D) to support those development efforts are likely pushing those IOCs into 2015.

So if I have a plea for Congress, it is to recognize that it is difficult to hold onto developmental schedules when you suffer these types of setbacks in your funding, and so I would ask that we do not compound that issue in marking the 2014 budget. But actually let us sit down and take a look at what we need in terms of completing that development so we can, in fact, IOC those systems that we need desperately today. The mine countermeasure package is a priority for the Navy. Our capability today with the legacy ships is extremely limited, and we have to get increased capability and capacity to deal with a potential threat in the mine warfare area.

Senator SESSIONS. Thank you.

Senator REED. Thank you, Senator Sessions.

Senator King, please.

Senator KING. Good morning, gentlemen. Thank you for joining us.

Secretary Stackley, first thanks for the notice last week on the nine purchase procurement on the DDG–51.

What is the amount of the current shortfall projected for the 10th destroyer in that package?

Mr. STACKLEY. Yes, sir. Sequestration pulled about $560 million out of the DDG–51 program. Congress had rescinded $400 million of prior year assets for the DDG–51s, included that in a $987 million add for the 10th destroyer, and then sequestration pulled about $560 million out. Of the $560 million, almost half of that, about $260 million of it, we were able to offset with other assets in the program. So for that 10th destroyer, we are about $300 million short.

Senator KING. Do you have the necessary authority within the current budget request to cover the shortfall? If not, do you need something from Congress? I am learning new meaning to the phrase—my father used to use it—"it will take an act of Congress."

Mr. STACKLEY. Yes, sir. I describe it as we have to work real closely with the defense committees because you now have the 2014 budget request. So we rely upon your actions in 2014 in order to be able to award that 10th ship in 2014.

Senator KING. So we need to be in close communication on that issue.

Mr. STACKLEY. Yes, sir.

Senator KING. If the 10th ship is fully funded in the 2014 budget, can it be added to the set of nine procurement and generate some savings throughout the program?

Mr. STACKLEY. Yes, sir. That 10th ship is an option that was competed between the two builders. So we have contract proposals in hand for the 10th ship. We have all but about $300 million appropriated that we need to award the 10th ship. So we are in the red zone. We got to punch this thing across the goal line.

Senator KING. Does it generate savings in the overall program?

Mr. STACKLEY. I would describe it as the marginal cost for that 10th ship. It will be the most affordable destroyer that we will be looking at for the foreseeable future.

Senator KING. Thank you.

As I understand it, under sequestration, the DDG–1000 could experience about a $90 million shortfall on the last pieces of the third

DDG–1000. Does the fiscal year 2014 budget request take care of this issue?

Mr. STACKLEY. No, sir. This is very similar to the earlier discussion on the LCS mission packages where the DDG–1000—there are a lot of developmental activities that are going along side by side with the ship construction. So we are impacted in terms of development associated with the lead ship and also procurement associated with the lead ship. So we are very concerned that we do not have the ability make up that reduction. We have limitations in terms of our reprogramming authority. We have limited assets under sequestration in order to be able to offer up an asset to backfill. So we are stuck in 2013 with that reduction, and we do not have the ability to fix it in 2014 and the budget request in fact did not anticipate having to backfill 2013——

Senator KING. So this is another area where we have to work together.

Mr. STACKLEY. Yes, sir.

Senator KING. There has been a lot of discussion about fleet size. The target has moved from 313 to 306, and you mentioned that it is going to be 2037 before that occurs. Admiral Greenert testified that the fleet, in the meantime, could sink as low as 235 ships if we cannot replace sequestration. Is that consistent with your thinking? Assume for a moment sequestration continues for the next 9 years, which is what the law allows.

Mr. STACKLEY. First, I guard against putting a specific number on what happens under sequestration, and that is not to pull back from the CNO's statement. But there are a lot of assumptions that you have to get past. The first thing we have to sort out is what is the top line for the foreseeable future. Second is what flexibility or authority do we have to manage our priorities within that top line. Third, what are we going to do to offset the reductions to the extent possible by improving affordability, driving down the cost of doing business, and potentially load-shedding lower priority activities or in certain cases curtailing operations, et cetera? Then with the balance of top line versus priorities, now how does shipbuilding fare?

Senator KING. But is it safe to say that if sequestration continues into the indefinite foreseeable future, we will have a substantial impact on shipbuilding?

Mr. STACKLEY. It will be unavoidable. Yes, sir.

Senator KING. Any thoughts on taking advantage of the technical abilities of the DDG–1000, for example, the all-electric drive and incorporating that into future other ships? If we are going to build only three of those ships, we ought to at least learn from them and apply some of that technology in some of the newer ships.

Mr. STACKLEY. Yes, sir. First, we are already doing that. So, for example, the DDG–51 Flight III is leveraging some of the developments from the DDG–1000-class, and likewise on the *Ohio* replacement program, that will be an all-electric drive, an integrated power system for that boat. A lot of the early development of the electric drive for DDG–1000 is porting over to the *Ohio* replacement. So the answer is absolutely we need to be leveraging those technologies.

In terms of the capacity that the DDG–1000 brings, the power generation capacity that you can now distribute beyond just propulsion but now put it on the grid for weapons systems, that is an area where, if you take a look at a lot of our early development activities in directed energy, for example, those technologies need that type of platform, that type of electric power capacity to provide the Navy the full potential.

Senator KING. Perhaps this should have been the first question, but getting back to this overall question, I was frankly surprised that the 306-ship goal would not be reached for 24 years. I assume the 306-ship goal is something that the Navy feels they need now, and not having it for 24 years strikes me as—if I said to somebody I need my roof fixed and they said that will be great, we will do it in 24 years, my response would be "huh"?

Mr. STACKLEY. The force structure assessment first defined the requirements of the post-fiscal year 2020 requirement. Now, in terms of the Navy's long-range shipbuilding plan, we can certainly come up with a plan that gets us to 306 and holds us there, but if we are under criticism today for the realism associated with the budget assumptions in that plan, we would only be compounding it by stating that during the construction of the *Ohio* replacement submarine, we will be able to hit and hold 306 ships. So that is just one of the practical challenges that we have.

The requirement was built. The plan was laid out. A measure of constraint was put on the plan in terms of the budget, and then within that budget constraint, we worked to keep a balanced force. Then you bounce around. You hit a 300 number, go through the *Ohio* replacement. You draw down, come out of the *Ohio* replacement construction and start to build back up. That is how you end up with——

Senator KING. But that 306 number in 24 years is based upon no sequestration. Is that correct?

Mr. STACKLEY. Yes, sir.

Admiral MYERS. Senator, if I could add. The 306—I think it is important to note that it is not just 306. It is 306 of the right types of ships. It is not just the right types of ships. It is when we need those ships. So when we hit 300 in 2019, then we essentially maintain 300 through the 2020s, but it is the right mix of 300. I think that is critical and that we do not look just at the number.

Senator KING. Thank you, Mr. Chairman.

Senator REED. Thank you, Senator King.

Senator Wicker.

Senator WICKER. I would point out that I think the accurate way to say that, Senator King, is that 306 is the minimum requirement. That is the way the Navy puts it.

But let me ask you, Secretary Stackley, about amphibious ships. You note that the current inventory of 33 ships allows the Navy and Marine Corps to meet combatant commander requirements but with risks—that is in your advance testimony—and further note that the number of amphibious ships you really need is 38. Is that right?

Mr. STACKLEY. Yes, sir. The derivation of the 38 requirement is all about what the Marine Corps—the two Marine Expeditionary Brigade (MEB) lift requirement for forcible entry operations. 38 as-

sumes that not all will be available for the fight. 38 is a notional number. You need the right mix of 30 amphibs at the fight to provide a full two MEB lift capacity. Going to 33 introduces some risk in terms of the elements of the MEB that would have to arrive as part of a follow-on echelon.

Senator WICKER. You are pretty high on the *San Antonio*-class of LPDs, and I know that you singled out the superb performance of the Mesa Verde during 19 months of deployed operation over a 24-month period. It sounds to me like the *San Antonio* class has become a proven workhorse in our amphibious inventory.

So, Secretary Stackley, would the addition of a 12th *San Antonio*-class LPD be of value to the fleet, and would continued production of a 12th ship in the class have the additional benefit of maintaining the fragile shipbuilding industrial base which would, in turn, allow you to procure future LXR class of amphibious ships at a more affordable price?

Mr. STACKLEY. Senator, that is an unconstrained question. Would the addition of a 12th LPD——

Senator WICKER. I hope that is all right.

Mr. STACKLEY. Rarely do I have the opportunity to answer a question without constraints.

But would the addition of a 12th LPD–17 be of advantage to the fleet? Absolutely. The Navy's requirement, though, consistent with the force structure assessment, is 11 LPD–17 class, and then we move to replace the LSD–41 and –49 class with the LXR.

So the plan of record is a good plan. The challenge before us is we do go through a period where we are below the 33 amphibious force structure inventory requirement, and that same period is marked by what I would call a valley in amphibious ship construction in our shipyards. So that is the challenge before us in this fiscal environment.

Senator WICKER. We are going to try to get you a 12th LPD, and we think that it is going to help you in your future years with a more affordable price.

Let me pivot then to survivability. I am concerned with the recent trends toward acquisition of non-military shipping as a substitute for combat ready amphibious warships. Commercial grade ships have the potential to save costs when used intra-theater, but a robust anti-access, area of denial (A2–AD) capability is being developed by such regional threats as Iran, and North Korea indicates that commercial grade ships would not survive in the event of conflict. The idea of procuring ships built to civilian standards as an augment to military grade amphibious warships might sound appealing from a cost standpoint, but it is fairly clear that ships built to commercial standards would be unable to operate in a robust area of defense environments such as Iran and North Korea. Conversely, ships built to military standards can operate across the spectrum of conflict and add far more value to the warfighter.

To this end, it seems that the U.S. Navy must continue to procure combat survivable amphibious shipping. While cost savings should be sought certainly in the adoption of commercial-grade standards where doing so will not negatively affect the safety of the ship and crew, the emphasis must remain on ensuring our amphibious ships are built to fight and survive.

So, Secretary Stackley and Admiral Myers, do you agree with me regarding the need to continue to build amphibious ships that are meant to operate and survive in a multi-threat combat environment? Admiral, do you want to go first?

Admiral MYERS. I will take that first, Senator.

First of all, when we talk about the 33-ship agreed-upon number from the Commandant and the Chief of Naval Operations back in January 2009, then we are focusing on the amphibious ships that you describe. We also have ships that support the amphibious MEB as a follow echelon, and we look for efficiencies when it comes to how we can support our amphibious MEB 2.0 requirement.

When we looked at the MLP and we look at the float staging base, we looked at different ways that we can be the most efficient, and it also gives us, with the civilian mariners that man our MLPs with our Maritime Prepositioning Ship Squadrons (MPSRON)—we think that that is the most efficient and effective way to maintain presence, have the capability overseas where we need it when we need it and the right kind of capability for an affordable price.

Now, everything that I do I have to look at a strategy-driven budget, and I cannot look and prioritize just in one element at a time. I have to look across the portfolio. I think the mix we have with our MPSRONs, our MLPs, and our amphibious ships is the right mix for right now and into the future.

Senator WICKER. I will tell you, let me go to Admiral McCoy and then let us see if Secretary Stackley can sum up.

The CNO in a recent article in Proceedings magazine argued that the Navy should reuse proven hull forms and focus its R&D investment in warfare systems and not the hull, not the mechanical and electrical systems of new vessels. Do you agree with Admiral Greenert that the starting point for new warships design should be on a proven combat-capable hull form that could be modified according to the need and cost constraints?

Admiral MCCOY. Certainly I agree with my CNO, Senator.

Senator WICKER. I thought you would.

Admiral MCCOY. But let me talk about that. So, for example, what is probably on your mind is the LSD–41/49 replacement. So when we approach looking at what should the attributes of that ship be, we start with a year-long process. For example, it is called an analysis of alternatives. The initial starting point for that AOA is: What are the existing hot production lines? What are the existing light hulls that might meet the requirements? Because there is a certain economy from having a hot production line or from having gotten over the design issues, for example, of a new class—and that is the starting point that we always look at.

Then we look at what are the specific requirements, what is the threat that that ship is expected to see over its service life. We look at, well, does the entire ship, every system on that ship, for example, have to be shot qualified or maybe just the propulsion plant and some damage control systems be shot qualified and then other portions of the ship can be built to a lesser standard and, therefore, a potential for saving money.

So we look across the board, Senator, starting with an existing ship design, how much does it cost to change it to meet the requirement of this new ship. We look at other options in terms of is

there, for example, a commercial ship design in some parts of the ship with military specifications in other parts of the ship that will get us the survivability that we need for the threat environment that we expect the ship to see.

Then we look at those options. We take them to the table and say, okay, so what is the cost of this increase over here? What is the cost of this level of survivability? What do we expect the Marine Corps, for example, entry to be and experience in terms of the threat environment? We lay that out and look at what is the best alternative. But typically we look at three or four different alternatives starting with a hot production line.

Senator WICKER. Secretary Stackley, we are over my time limit, but perhaps you could respond briefly.

Mr. STACKLEY. Yes, sir. I am going to actually go back to some of the prior discussion on CVN–78. That is an example of where we went with an entirely new design to get the added capability that we needed and brought with that a high degree of risk, and now we are experiencing the cost that came with that risk.

We shift over the DDG Flight III as the other example. With DDG Flight III, we are taking a very proven hull form and we are bringing it to an increased air missile defense capability through a Flight III upgrade. So we are, in fact, using mature design and mature technologies to get to the added capability and therefore walking away from risk.

When we look at the LXR, we are accomplishing the AOA that Admiral McCoy described, and then there we will place weight on the values associated with mature design, mature production, and then lower risk that comes with that. Our challenge is to get there affordably. But the LPD–17 is more ship than the ship that we need to replace with the LXR. So we have to get that ship's cost into the box associated with the LXR given all these considerations with reusing hull forms and mature technology.

Senator REED. Thank you very much.

Senator Blumenthal.

Senator BLUMENTHAL. Thank you, Mr. Chairman, and thank each of you for your service and your excellent work.

I want to come back, if I may, Mr. Secretary, to the *Virginia*-class submarine. You, I think, characterized in your testimony in response to a previous question this program as being a priority, notwithstanding sequestration, and that even without sequestration, the number of attack submarines under the current program would be in the low 40s as compared to the projected need for about 48. Is that a fair summary?

Mr. STACKLEY. Yes, sir. Today, in fact, we are at 55 attack submarines. So what is happening over time is the retirement rate of the *Los Angeles*-class is outstripping the build rate of the *Virginia*-class, and in fact, we went through a period in the 1990s where our build rates were down in the zero and one range. So we have to get through that transition, and in going through that transition, we drop below our 48 requirement.

Senator BLUMENTHAL. So it is absolutely vital that we continue the present pace of building at two submarines a year as outlined by the program submitted by the Department of the Navy.

Mr. STACKLEY. Absolutely for the near term because each submarine that we forgo in production deepens the valley when we get to it. Ultimately, we will stabilize at about a three submarines every 2-year point, which is what you need to build to sustain a 48-boat requirement. But we have to get through that valley that we are staring at.

Senator BLUMENTHAL. Which is also the reason why the two submarines are projected for 2014 in the current budget.

Mr. STACKLEY. From a couple of perspectives, one in terms of requirement and the priority associated with the requirement and also in terms of the benefit that we gain by adding that boat inside of the multiyear that was authorized last year.

Senator BLUMENTHAL. My understanding is that the current program involves building those submarines actually on time or even ahead of schedule and on or under budget. Is that correct?

Mr. STACKLEY. Yes, sir. In fact, one of the key strategies associated with how to increase our operational availability of our submarines has everything to do with reducing the build span. So not too long ago, the build span was about 66 months. The most recently delivered submarine is about 63 to 64 months, and as we march into the multiyear, we look at getting it down to about a 60-month build span.

Senator BLUMENTHAL. I am looking at your testimony in describing the three parallel efforts to mitigate the impending shortfall, which are to reduce the construction span of the *Virginia*-class submarines, extending the service lives of selected attack submarines, and extending the length of the deployments. I wonder if you could expand on what kind of progress we are making in those three parallel efforts. Please feel free, either of the two admirals.

Mr. STACKLEY. Yes. I am going to share this response with Admiral Myers on the deployment schedules.

I just described the progress that we are making in terms of getting the build span down. 4 or 5 years ago, that looked like a pretty significant challenge, but the program has been steadily making the progress that it needs to hit the schedules that we are going forward with in the fiscal year 2014 multiyear. So we see the build span coming down.

The other important part of this is we are pulling work into the construction span that used to go into a post-shakedown availability. So in fact the boats will be deployment-ready earlier in their life than historically had been in the past.

The deployment schedules. I will leave that to Admiral Myers to address.

Senator BLUMENTHAL. Admiral Myers?

Admiral MYERS. We are anticipating that with the reduced number of submarines, it is going to put more stress on the force to make the combatant commanders' demand for overseas presence. So the three approaches that we are taking are seeing what we can do to extend the life of the *Los Angeles*-class submarines, delivering the *Virginia*-class early, and then taking the deployments that are currently scheduled or will be scheduled and increasing their length to bridge the gap.

Senator BLUMENTHAL. Thank you.

One of the great advantages—obvious advantages—of the submarine force is its stealth, and the public, I think, appreciates the physical stealth which is apparent to everyone who knows that they can go in shallower waters with less detection than ever before. But the other part of the stealth advantage seems to me perhaps to be in the cyber attack area, and I do not know whether that is true. Perhaps you could expand on it.

Mr. STACKLEY. Senator, I am going to suggest that we take that for the record and provide a more comprehensive discussion on that in a classified setting.

Senator BLUMENTHAL. I would appreciate that. I expected it that might be the response and I do appreciate it.

[The information referred to follows:]

I will have my staff contact the Senate Armed Services Committee professional staff and Senator Blumenthal's MLA to schedule a classified briefing on this.

Senator BLUMENTHAL. Shifting now to the payload module, I understood either from your testimony or from other briefings that there was an effort underway to extend the size of the payload module and that that issue was going to be under study, but that the funds for that work have been reduced somewhat. Could you explain, number one, the reasons to extend the payload module and, number two, the reasons to reduce the funding going into that study?

Mr. STACKLEY. Yes. I am not sure about the context of extending.

What we are looking at within the *Virginia* payload module concept is adding 4 modules to the current capacity on the *Virginia* which would add an additional 28 missiles per boat.

Senator BLUMENTHAL. I should have used the word "expand" probably instead of "extend."

Mr. STACKLEY. Okay.

So if you add 4 modules per boat, in order to recover the capacity that we lose with the retirement of the SSGNs in the late 2020s, we will need about 20 *Virginias* modified with *Virginia* payload modules. We are currently targeting or looking at the 2019 block 5 *Virginia* procurement as the initiation of *Virginia* payload modules. But first, we have to go through the design phase and we also have to take a hard look at the cost per boat. There will be a significant review between now and then to assess whether that investment is appropriate for that capability and capacity.

The funding that we have laid out in the FYDP, about $800 million in the FYDP and a trace outside the FYDP, adding up to about $924 million nonrecurring engineering, is necessary to address the changes that would be required. I would say we are held up at the outset due to the continuing resolutions since this is a new start, and then we were stunned by sequestration in terms of reducing the funding in 2013. So we are delayed on that start, but we still see a 2019 incorporation as quite feasible. But when you look at the long-range shipbuilding plan, that is not included in the cost per boat in 2019 and out. So those decisions have not been made.

The current estimate is in then-year dollars, inflation accounted for, we are looking at as much as a $500 million per boat increase for that added capacity, and we are going to do some significant review of that cost and see what we can do to drive that cost down

and go through those deliberations with all the uncertainty that we are staring at in the budget at least in the near term.

Admiral MYERS. Senator, if I could add.

Senator BLUMENTHAL. Yes, Admiral Myers.

Admiral MYERS. The *Virginia* payload module incorporation of the *Virginia*-class submarines is an assumption that went into the force structure assessment, and when we lose the SSGNs from the 2026 to 2028 timeframe, then that is a loss of four vessels, four boats. That was another reason, a compounding reason, that the numbers changed from 313 to 306.

Senator BLUMENTHAL. $500 million as an additional cost is a fairly significant increment of the total cost. Is it not? It is a fairly significant percentage.

Mr. STACKLEY. The two boat per year rate right now is about 2.7 to 2.8 per boat. So you are looking at a 15 to 20 percent increase in the unit cost of the submarines. We have work to do to try to improve upon that. Actually let me back up here.

There is $500 million in then-year. So that is out in the 2019 timeframe. The 2.7/2.8 is in current year. So in current year, the Virginia payload module is closer to a $360 to $380 million estimate.

Senator BLUMENTHAL. My time has expired, but I want to thank each of you for your excellent testimony today. Thank you very much.

Senator REED. Thank you, Senator Blumenthal.

We will begin a second round of 5 minutes to give our witnesses an opportunity to at least relax a bit.

But I want to thank the witnesses and also my colleagues. This has been a very thoughtful and constructive hearing. Again, Secretary Stackley, let me join my colleagues in saluting your service over many years. You have done an extraordinarily effective job, along with Admiral McCoy and Admiral Myers.

But a lot of our hearing has been, I think, engaged in the perennial issue: does the budget drive strategy or strategy drive budgets? It is a little of both probably. But one of the things that we are reminded by with some of Admiral Myers' comments that you have to look at, in terms of strategy, is the threat environment. Senator Blumenthal alluded to this.

We have two not new but increasingly more problematic issues. One is cyber in which some of our systems, both offensive and defensive, might be compromised either with our knowledge or without our knowledge, and second, long-range precision weapons that can essentially reach out hundreds of miles, if not further.

Again, this might be more appropriate for a closed session but, Mr. Secretary and Admiral Myers, how are you factoring in these not new developments but increasingly more critical developments in terms of, as you point out, the ship size, the size of the fleet, and the mix of ships? Let us begin with Admiral Myers.

Admiral MYERS. Mr. Chairman, I think that the place to start, when we look at the construction of our annual shipbuilding plan, is the force structure assessment and do we have that right or are we focused and targeted on the right quantity and the right kinds of ships.

Our current force structure assessment takes into account the requirements for our operational plans by the combatant commanders, our presence requirements overseas, what we have in the force structure, what we think we can build to the industrial base, and also looks at it with an eye on the fiscal constraint. So when you put it all together, we have what we think is the right force to have the right capability in the right place at the right time.

Now, when it comes to the Asia-Pacific AOR, it is important that we have the right modernization and capabilities so that we can pace the changing environment. When you look at the A2–AD environment, our submarines having undersea dominance is a top priority for the Navy. We have investments in the right kinds of ship modernization and protection measures that we think are appropriate at this point. We are vigilant. We are watching. We are monitoring, but we are also not sitting around waiting. We are actively developing and fielding the capabilities that we need to assure our access in that kind of environment.

When it comes to the cyber portion, that is very complementary to A2–AD, and the Navy has a couple of approaches. We are investing in increasing our manpower contribution to our cyber force working with the cyber force commander, but also all the way down to the ship level with Consolidated Attack Network Enterprises (CANEs) and the incorporation within our ships to make sure that we have the right kind of firewalls, the right kind of thresholds to try to mitigate from any kind of cyber intrusion.

With that, I will turn it over to Secretary Stackley.

Senator REED. Thank you, Admiral.

Mr. Secretary, any further comments?

Mr. STACKLEY. Yes, sir. Let me just kind of go down a short list here.

First, a lot of this hearing was focused on platforms, but it is really about capability. So if I use the DDG Flight III as an example, the reason we are able to evolve that ship class to provide for increased air missile defense is because we are going to look to leverage other sensors and integrate the other sensors into the battle problem to increase the effectiveness of the shooter so we do not have to load all the radar capability onto one platform. We believe that is extremely feasible and it is the right way to go. So we have to continue to develop not just the platform, not just the radar for the platform, but the integration of the sensors across the force to amass the effects.

Second is R&D. A lot of the discussion about sequestration—one of the things we have to keep a close eye on is in a sequestration environment, if we are looking at as much as a $50 billion a year reduction over the next decade, we have to keep our investments going forward in R&D. A decision was made back in post-World War II that the United States of America is going to remain dominant on the battlefield because of capability not just numbers. That comes through the R&D stream. So we have to keep our eye focused on developing those technologies and capabilities that we need for dominance not just winning the numbers battle.

There is a modernization piece to it. Admiral Myers described CANEs as an example. CANEs is an upgrade to our, call it, communications backbone on our ships that we need to get to because

a lot of the legacy capability is vulnerable. We have to get there quickly, though. So the investment in CANEs, left to its own devices, becomes a 10- to 20-year modernization plan. We might not have 10 to 20 years to get there. So we have to continually look at how to drive those necessary upgrades earlier to the fleet, which means wholeness in terms of our modernization accounts as well.

Then the last piece is—I am just going to put the plug in for open architecture. 5–6 years ago, it was a concept. Today everyone recognizes that we have to employ open architecture in the design of our systems so that we can, in fact, upgrade them to keep pace with the threat and not bring our major platforms down for lengthy periods of time when we have to do massive rip-out and upgrades.

Senator REED. Thank you, Mr. Secretary.

Senator King, any questions?

Senator KING. No additional questions, Mr. Chairman. I just want to again thank the witnesses. Mr. Secretary, thank you for the superb work that you do and have done.

Admiral, I understand you are retiring soon, and I want to thank you for your long service and wish you a happy retirement. I know you will miss coming before this committee. [Laughter.]

Senator REED. He will miss coming before Senator King.

Senator Kaine.

Senator KAINE. Just briefly to all three of you, again thanks. This has been helpful. We have talked a lot about platforms and then, Secretary Stackley, you talked about capability.

Let us talk about people for a minute. Just over the course of the testimony this morning, we have heard about the question about furloughs. We have heard questions about the hiring freeze and its effect upon the shipbuilding mission, and we have also talked about potential cuts to contracting, which obviously has an effect on the industrial base. I would love it if each of you could just sort of offer your own perspectives about the people side of this, this budgetary uncertainty.

The chairman indicated does budget drive defense strategy or does defense strategy drive budget. I am worried that we are letting budgetary indecision drive defense strategy, which is a horrible thing to do, but that indecision affects people's choices about their careers, about where they will work, about whether a welder would go to work in the shipyard or choose to go to work for the many other companies that want to hire good welders.

Mr. STACKLEY. Yes, sir. I think you are going to get three different perspectives, but we are all going to land at pretty much the same spot here.

Let me first describe that DOD and Congress, and industry all recognized that over the period of drawdown of the 1990s that we drew down our acquisition workforce far too fast, far too deep, and we lost a lot of the capabilities, the talent, the skills that we need to have inside the Government in order to be able to manage these large, complex programs.

So we went on the path of rebuilding the acquisition workforce. We leveraged the fund that was set up by Congress to bring in talent. It is not a numbers count. It is talent. It is youth and it is also experience, the right skill sets, the right locations. We have done pretty well there. We probably hit 70–75 percent of our target be-

fore we intersected things like hiring freezes and some of these other budget issues. So step one is we want to hold onto the skilled workforce that we have.

Sequestration and all the churn that comes with that—that is a demoralizer for folks inside of the Government, but I will tell you you have a professional workforce out there and we are delivering what we need to deliver because the sailors and the marines at the far end need our best.

But it is also a distracter or detractor for folks that are in industry that are considering entering Government service. That causes me equal concern because we need that talent. We need that experience. It still takes 20 years to get 20 years' experience, and if we lose the ability to tap into industry for that, then we have a long growth path ahead of us.

So from an acquisition workforce perspective, this period that we are going through, uncertainty, the churn, it is almost a de-valuing of the Government workforce. That is pretty significant. Congress' understanding of that helps. Now what we all need to do is work together to try to resolve some of the issues before us. In the end, the budget reductions directly impact people whether they are inside the Government or service industries supporting the Government or our defense contractors.

Admiral MCCOY. Senator, thank you very much for asking that question. I have a little over 57,000 civilian employees in the NAVSEA, and I get many emails every week from what I call the "man on the street" talking to me and asking me questions about the furlough and the uncertainty ahead. I had a recent one from a worker out of Puget Sound Naval Shipyard who said I am getting ready to close on a $73,000 mobile home for my wife, myself, and my daughter. I cannot afford it if I am furloughed. Do you think I should close on the mobile home? All I could say was I can tell you what I know and I can tell you what I do not know.

What I worry about particularly in an industrial environment is the focus, and the people are incredibly patriotic. On the Friday night before a 3-day weekend, if I told a worker in any shipyard, hey, you are flying to Guam tomorrow to fix a submarine or fix a ship, even though they had plans, they would be the first ones. Their bags would be packed and they would be on the airplane. That is the caliber of people we have. They put their lives on hold at a moment's notice to do the Nation's work.

What I worry about is the churn out there and the potential impacts of the lack of focus either on personnel safety or ship safety.

Senator KAINE. Admiral Myers?

Admiral MYERS. Again, I appreciate the opportunity to respond to that question. I think that I have the unique perspective of recently as 6 months ago coming from the fleet, being the commander of naval aviation and currently being the chief financial officer for the Navy.

So when I look at what is happening, first you have to think about what is the role of the Navy. The role of the Navy is to operate forward and be ready with a capable force, a trained and capable force. That is our job. But to do that, we have to plan. We have to plan a budget. We have to plan a shipbuilding plan. We have to plan how we are going to operate, train to make sure that we

are ready to operate overseas, maintain our aircraft, our ships and our weapons systems so that they can be ready when we need them. We have to have the sailors that are trained and ready to man those ships and aircraft.

The sequestration and the budget uncertainty is disruptive. It is immensely disruptive. It disrupts our ability to sort out the budget. It disrupts the shipbuilding plan. It disrupts our ability to plan for the future. It disrupts our ability to operate, and we saw that just this last spring and will continue to see that with the impacts of the fiscal year 2013 sequester. It disrupts the way we train because if our operating schedule is changing and we do not have the funding in our operating accounts to train the way we want to, then we have to reduce the training. It impacts the way we maintain, and if you impact the way you train and maintain, now you are impacting the way you are going to operate the next fiscal year. Most significantly, it is very disruptive to the sailors and their families because of all the uncertainty that is introduced.

So anything that we can do together to put certainty back into our budget process to de-trigger the sequester, to support PB–14, would be not only appreciated but embraced by the 613,000 civilians and sailors operating around the globe for the U.S. Navy.

Senator KAINE. Thank you very much.

Thank you, Mr. Chair.

Senator REED. Thank you, Senator Kaine.

Senator Blumenthal.

Senator BLUMENTHAL. Thank you, Mr. Chairman.

Just briefly to pursue the excellent question asked by Senator Kaine, in terms of the impact of sequester, I think we on this panel, maybe every Member of the U.S. Senate at this point, could do the denunciation of sequester in our sleep. We have done it so often and we are so deeply believing in the harmful, even disastrous effects of sequester on morale, on procurement, and so forth. At least members of this committee, I think almost to a person feel that strongly about it. So I appreciate the very passionate and committed remarks that you just made.

But looking at the personnel issue from a different standpoint, the weapons systems that we have been discussing here are so advanced and sophisticated that they really require extraordinarily talented and trained, dedicated individuals to operate. Obviously, we deeply appreciate the extraordinary ability that you bring and the service and sacrifice that you have made as individuals, but that same kind of sacrifice, it seems to me, needs to be made by those individuals who actually drive those ships and operate the weapons systems as they become more advanced and more demanding.

I guess the question I am asking is, are you satisfied that the Navy, whether it is because of sequester or any of the other disadvantages relative to the private sector, can continue to attract the exceptionally devoted and able people that it has in past so as to be able to operate the submarines and the ships and the aircraft that we are endeavoring to fund now?

Admiral MYERS. That is a great question, Senator, and something that we are actively looking at very closely. I think it is going to be increasingly difficult and challenging for the military to at-

tract the right people at the right level if we do not put some certainty back into our process. I cannot overemphasize the disruption from this budget uncertainty and what it is doing out in the fleet, what it is doing to not just our investment accounts and our training, but just down to the deck plates.

If we can put certainty back into the process, then I think that it would make it easier to communicate not just within the Navy but outside the Navy what we are going to be doing for the next few years. We absolutely understand what our responsibilities are. We understand that this is something that we need to work through together, but outside the Navy, those that are not part of the process have a hard time understanding what is happening and why. So being able to assure them that they are coming to an organization that is going to have not just potential for their personal development but also has the kind of purpose that our military offers in terms of embracing our national security and doing something worthwhile with your life, wearing the cloth of your Nation is something that we are going to have to continue to emphasize. But having any kind of budget certainty back into the process would enable us to communicate that a little more clearly.

Senator BLUMENTHAL. Thank you, and I appreciate that very candid answer.

At the same time, if it is any reassurance, as the father of a son who was commissioned as a Navy officer in March and who is very enthusiastic, to put it mildly, about his service, I want to thank you for the model of service you have provided, "you" meaning the men and women of our U.S. Navy, because in spite of the uncertainty, in spite of the challenges, we have some of the best and brightest of his generation wanting to follow that model that you have so ably established. So I know that may not be a lot of reassurance, and I share your doubts and determination to avoid the effects of sequester. But again, I thank you for your service. Thank you.

Senator REED. Senator King, please.

Senator KING. I was struck by the sentence you just uttered, Admiral Myers. I just want to speak for one U.S. Senator. I am having a hard time understanding what is happening and why. What is going on in this institution with regard to the fiscal situation is inexcusable, and to me it is a fundamental issue of competence. We are not doing our job. I say "we" collectively. I know there are plenty of people who are trying very hard to do their job. But it is not just you. It is the American people. But there are also people in this institution who have a hard time understanding what is going on and why. I think that is the key question that I have heard today, and we are going to be discussing this. But I appreciate your candor, and I know that what you have said is true because I am hearing it from people in Maine every time I talk to them on the street.

Thank you very much, gentlemen.

Senator REED. Thank you, Senator King.

For the record, we will keep it open until May 15, next Wednesday. My colleagues might have statements they want to submit, additional questions. I would ask you, gentlemen, to respond as quickly as possible to these questions.

Thank you, not only for today's hearing, but for your service to the Navy and the Nation.

With that, this hearing is adjourned.

[Questions for the record with answers supplied follow:]

QUESTIONS SUBMITTED BY SENATOR JACK REED

313 TO 306 SHIPS—GOAL FOR FLEET SIZE

1. Senator REED. Admiral Myers, for a number of years now, the Navy has stated that the long-term goal for fleet size is 313 ships. That goal included a number of assumptions about which ships were included in the 313-ship fleet, where they would be based, how they would be manned, et cetera. This year, the Navy has changed the goal to 306 ships. The reason identified in the report related to a change in demand for ships in U.S. Africa Command (AFRICOM). With the situation in AFRICOM we see today, why should we believe that there should be a reduction in overall fleet size based on reduced demand for naval forces in AFRICOM?

Admiral MYERS. The reduction in overall fleet size contained in Navy's most recent Force Structure Assessment was primarily driven by increased global posture forward and modified employment cycles. In comparison, the reduction to the AFRICOM presence requirement, in alignment with the 2012 Defense Strategic Guidance (DSG), had minimal impact on Navy force structure requirements. The revised AFRICOM presence requirement is still more than what is currently being provided.

LITTORAL COMBAT SHIP

2. Senator REED. Secretary Stackley, one of the lessons the Navy has had to periodically relearn is that we shouldn't be making changes in the middle of a shipbuilding acquisition contract. We certainly most recently saw the problems this creates on the Littoral Combat Ship (LCS) program where the Navy changed requirements shortly after signing the contract. However, after many original problems, the LCS program seemed to be improving in its execution. Recently, some concerns have been raised about two major issues: what warranted the establishment of an LCS Council and are we spending several billion dollars on the LCS program to produce a ship that will not meet requirements? Can you discuss why the Navy felt the need to create an LCS Council and what problems is the Council trying to solve?

Mr. STACKLEY. In August 2012, the Navy (CNO/ASN(RD&A)) established the LCS Council with three-star flag officer membership from requirements, acquisition, and Fleet stakeholders with the objective of driving actions and coordinating all administrative control responsibilities for the LCS class to ensure LCS is ready to meet its assigned missions. Fundamentally, the Council was constituted and empowered to bridge "gaps and seams" that may exist or arise between various stakeholders, warfare and mission communities and, supporting activities across the requirements, acquisition, and Fleet enterprise to ensure the successful procurement, development, manning, training, sustainment and operational employment of the LCS class ships, their associated Mission Packages, and shore infrastructure.

LCS will meet all expected Capability Development Document Key Performance Parameters including speed, mission package payload, range, navigational draft, core crew manning (addition of 10 crew members remains within the threshold), interoperability and the various detect to engage scenarios for (ASW, MIW, and SUW). LCS was conceived as an integral part of a battle force architecture based on an essential need for a new generation of multi-role, "focused mission" surface combatants optimized for battle network operations in the near-land battlespace dominance arena. This capability is precisely what the Department of the Navy has received with LCS.

LCS's concept of operations calls for LCS to penetrate contested littorals in the face of three major anti-access threats which are clearly documented as joint capability gaps: swarming fast attack craft/fast inshore attack craft/ (FAC/FIAC), diesel submarines (SSK/SMM) and maritime mines. LCS' design characteristics of high speed, maneuverability, shallow draft, networked sensors, and readily-exchangeable focused mission packages were specifically intended to allow LCS to dominate these threats and assure access to the littorals.

3. Senator REED. Admiral Myers, why do you believe that Vice Admiral Tom Copeman, USN, Commander of Naval Surface Forces in the U.S. Pacific Fleet, has

been quoted as calling for the truncation of the LCS program if it will meet Navy requirements?

Admiral MYERS. In 2012, Chief of Naval Operations Admiral Jonathan Greenert requested a memo from Vice Admiral Tom Copeman, Commander of U.S. Surface Forces, to provoke open and honest discussion to senior Navy leadership with regard to force requirements. Vice Admiral Copeman's document was entitled "Vision for the 2025 Surface Fleet." The comments on the LCS are three paragraphs in a 10-page document on the future of Navy's surface fleet. The vision memo does not yet represent any program changes or decisions, although it does put these issues into the official ring of discussion.

As the Type Commander for all U.S. Navy Surface Forces, Vice Admiral Copeman is specifically responsible for manning, training, and equipping Navy's surface forces, including LCS, to meet operational commander requirements, and his recommendations and thoughts on the Fleet of the future are invaluable in Navy's decisionmaking process. Chief of Naval Operations Admiral Greenert stated that "he appreciated the thoughtful look he [Vice Admiral Copeman] gave into the future," and considered Vice Admiral Copeman's vision to be "interesting and useful."

COST AND SCHEDULE PERFORMANCE OF ALL SHIPS

4. Senator REED. Secretary Stackley, could you please give me an overview of how the other shipbuilding programs, like aircraft carriers, destroyers, LCS, other amphibious ships, and auxiliaries, are performing? Please provide detailed metrics on cost and schedule performance of these programs.

Mr. STACKLEY. Below is a summary of the cost and schedule performance for surface Navy ships under construction. The contracts for CVN–78 and DDG–1000 are cost plus. All other current contracts are fixed price. The Navy continues to assess the impact of fiscal year 2013 sequestration reductions on shipbuilding programs.

CVN–78:

The ship is above target cost and will deliver beyond the contractual delivery date. The launch date for *Gerald R. Ford*, the first CVN–78 class ship, was revised from July 2013 to November 2013 with a corresponding delay in delivery until the second quarter of fiscal year 2016. Delay of launch and associated delivery will allow for increased outfitting to more economically complete the ship. With the ship at 70 percent complete at launch, CVN–78 will be well prepared for subsequent shipboard testing. The comprehensive effort to reverse the trend in cost growth has stabilized program cost performance, and the Program Manager's Estimate at Completion, has remained steady at $12.887 billion for the past 2 years. However, there are still risks associated with full-system testing and first-time integration of developmental systems on this first-of-class. Additional funding as cost to complete, along with the legislative proposal to adjust the cost cap to the program's estimate at completion, is included in the fiscal year 2014 President's budget (PB) request.

DDG–1000:

Some of the DDG–1000 program contracts have experienced cost increases typical with first of class ships. Cost increases on the first ship are primarily attributed to contracts for the construction of the lead ship at Bath Iron Works (BIW), and completion of the lead ship hangar, deckhouse and aft peripheral vertical launching system at Huntington Ingalls Industries (HII). Many factors contribute to any cost increase, including contractor performance, contract change, government furnished equipment (GFE), inflation, and labor rates. The cost increases at BIW are typical for learning associated with construction of a lead ship. The Navy is currently assessing cost performance on the program, as well as the impact of sequestration reductions, and will address cost increases in the fiscal year 2015 President's budget. The acquisition procurement unit cost (APUC) in the most recent Selected Acquisition Report (SAR) is below the current acquisition program baseline (APB) unit price. The program remains on track for launch and christening of DDG–1000 in the fall of 2013 and to achieve initial operational capability (IOC) in fiscal year 2016.

DDG–51:

There are currently 13 ships under contract from fiscal year 2010 to fiscal year 2017. DDG–113 to DDG–116 were awarded in fiscal year 2010–fiscal year 2012 timeframe while the remaining nine ships were awarded as part of the fiscal year 2013–fiscal year 2017 multiyear procurement (MYP). While it is still early in the construction process for DDG–113 to DDG–116, and the MYP ships are in the preconstruction phase, the ships are currently on or projected to be on cost and sched-

ule. Sequestration in fiscal year 2013 results in a shortfall to the program and requires $304.2 million in Completion of Prior Year Shipbuilding Programs.

LCS:

The Lockheed Martin and Austal USA shipbuilding teams revised their schedules based on refined build strategies and have done so to maintain solid cost performance (not chasing schedule at the expense of cost performance). The shipbuilding teams have paced production work to the availability of complete design products, the ability to use new facilities efficiently, and the availability of skilled workforce in Marinette, WI and Mobile, AL. The shift in the delivery dates for the first ships of the Block Buy contracts has resulted in a serial production schedule that has an LCS being delivered from each shipbuilder every 6 months in the most cost effective method possible. LCS seaframe construction continues to be within the allotted congressional-mandated budget.

LHA–6:

LHA–6's Builder's Trials are scheduled to occur this Fall and anticipated delivery is March 2014. The ship will deliver beyond the contractual delivery date and is projected to be near the cost ceiling. Additional funding to complete was provided in the fiscal year 2013 President's budget. The fiscal year 2014 President's budget request includes additional cost to complete for economic price adjustment.

LPD:

LPD–25 will deliver in the fall 2013 and will be the last ship delivered at the Avondale shipyard in Louisiana. LPD–26 and –27, under construction at HII's Pascagoula shipyard, are planned for delivery in 2016 and 2017 respectively. LPD–25 contract is at ceiling. LPD–26 is currently above target cost and behind schedule due to initial resource/facility challenges at the Pascagoula shipyard. It is very early in LPD–27 construction process; the initial baseline review is scheduled for summer 2013.

MLP:

MLP–1 delivered in May 2013, on-cost and on-schedule, which is a major accomplishment for the lead ship of a class. MLP–2 will deliver in 2014 and is on-cost and on-schedule. It is very early in MLP–3 construction process (start of construction occurred in February 2013); therefore, the current estimate at completion for MLP–3 is the contract target cost.

JHSV:

JHSV–3 to –5 are under construction. Ship deliveries are set 6 months after the delivery of the previous hull and in the near term, are on schedule. Shipbuilder is addressing cost performance with capital and process improvement investments. JHSV–3, –4, and –5 are projected to complete above target cost, although cost improvement is being seen from one ship to the next. Additional funds will be required to complete these ships. The HAC–D mark up of the fiscal year 2014 President's budget request has proposed an additional $7.6 million for JHSV–4 overrun. The Navy is addressing overruns for JHSV–3 and –5, which were originally funded with Other Procurement, Army.

EFFECT OF RETIRING AN AIRCRAFT CARRIER BEFORE A REPLACEMENT IS AVAILABLE

5. Senator REED. Secretary Stackley, having stretched out carrier funding in the long-term shipbuilding plan to a rate of buying an aircraft carrier every 6 years, we will likely be faced with having to retire an aircraft carrier before its replacement has been built. We saw this situation with the inactivation of the USS *Enterprise* before the USS *George H.W. Bush* had been delivered. This resulted in temporarily dropping the carrier force level from 11 to 10 for a 2- to 3-year period. I suspect that the gap period has led to pressure to maintain the construction schedule at the expense of efficiency and total costs. As we get further into the plan to buy one carrier every 6 years, I suspect that this pressure will only increase. Will the Navy have the resilience to avoid letting the shipyard make very inefficient, expensive production decisions to try to deliver carriers on schedule or even earlier in order to try to minimize carrier force structure gaps occasioned by retiring older carriers?

Mr. STACKLEY. Aircraft carriers are procured on 5-year centers. CVN–78 was awarded in 2008; CVN–79 and CVN–80 have planned awards in 2013 and 2018, respectively. As noted in the 30-year shipbuilding plan, this pace supports the required carrier force structure of 11 through 2039. The force structure gap created between the inactivation of CVN–65 and the commissioning on CVN–78 was the di-

rect result of previous DOD and Navy decisions to defer the construction start for CVN–78.

The Navy and shipbuilder are committed to the most cost efficient construction and testing process for aircraft carriers, and will not let schedule pressures drive cost inefficiencies into the program. The recent decision to delay launch of CVN–78 from July to November 2013 reflects this commitment; allowing the shipbuilder to complete more outfitting and best prepare the ship for the post-launch test program, steps that will ultimately lower the production costs to build the ship.

The follow-on ships of the class, CVN–79 and CVN–80 will incorporate repeatable, sustainable build, and test processes, built on lessons learned from CVN–78 that will substantially lower the costs of these follow-on ships.

6. Senator REED. Secretary Stackley, will the Navy be able to maintain self-discipline in this situation?

Mr. STACKLEY. Yes, the Navy remains committed to the most cost effective delivery schedule regardless of the pressure to the schedule. The recent decision to delay launch of CVN–78 from July to November 2013 reflects this commitment; allowing the shipbuilder to complete more outfitting and best prepare the ship for the post-launch test program, steps that will ultimately lower the production costs to build the ship.

QUESTIONS SUBMITTED BY SENATOR BILL NELSON

MAYPORT AND STRATEGIC DISPERSAL

7. Senator NELSON. Admiral McCoy, dispersing our capital ships is in our best national security interest and specifically, dispersing the East Coast carrier fleet is a national security priority. The 2010 Quadrennial Defense Review clearly states, "To mitigate the risk of a terrorist attack, accident, or natural disaster, the Navy will homeport an East Coast carrier in Mayport, Florida." The Navy has stated military construction (MILCON) costs to prepare Mayport to homeport a carrier, which includes nuclear maintenance facilities, would be approximately $500 million, while the Government Accountability Office (GAO) estimates the number to be $250 to $300 million. The next phase of the effort is a Controlled Industrial facility (CIF) for nuclear maintenance. Navy estimates it will cost $150 million. GAO states the range as $35 to $94 million. However, the Navy recently completed a CIF at the Naval Shipyard in Portsmouth, VA, for $33 million. I know that the Navy is always interested in ensuring that we have adequate capacity and a suitably diverse footprint for our surface ship nuclear maintenance facilities. Do you have any reason to believe that the Navy is backing off from this position?

Admiral MCCOY. The Navy is committed to strategic dispersal of its forces. The east coast carriers are not currently dispersed. All east coast carriers and support infrastructure are consolidated within a 15 nautical mile radius in the Hampton Roads area. Two Atlantic Fleet CVN homeports reduce risk and provide strategic flexibility/options in the event of natural disaster, manmade calamity, or attack by foreign nation or terrorists, and are consistent with homeporting strategies in place on the west coast (i.e., Bremerton, Everett, & San Diego). Due to fiscal constraints, the decision has been made to defer the investment required to homeport a CVN in Mayport at this time. The Navy remains committed to strategic dispersal of east coast carriers and intends to homeport a CVN in Mayport in the future.

8. Senator NELSON. Admiral McCoy, can you discuss how the Navy can provide such a drastically different quote for a similar facility?

Admiral MCCOY. The CIF at Norfolk is currently under construction and therefore the $26 million cost represents an actual winning bid in the current economic climate; whereas the $150 million estimate for the CIF at Mayport is based on a very preliminary design. Additionally, the Mayport CIF design is more robust to accommodate the increased potential for higher storm surges due to its location adjacent to the coast of Florida. Furthermore, the Mayport CIF will also include some nuclear facilities (such as a long-term mixed waste storage facility, container storage, additional crane capacity, and additional radiological work enclosures) that the Norfolk CIF does not require because those facilities already exist at Norfolk.

COUNTERDRUG

9. Senator NELSON. Admiral Myers, due to the sequestration, Navy ship deployments to U.S. Southern Command (SOUTHCOM) have been cancelled. Additionally,

the President's fiscal year 2014 budget request saw a drastic 38 percent reduction from the President's 2013 budget for drug interdiction efforts. Historically, SOUTHCOM drug interdiction results in the annual removal of 200 tons of cocaine from the U.S. supply—10 times that which is removed by U.S. law enforcement along the Southwest border. I realize that we have the unfortunate effects of sequestration, ongoing commitments in U.S. Central Command (CENTCOM), as well as the pivot to Asia influencing the number of Navy ships available to the SOUTHCOM commander. No Navy ships for the counterdrug effort in the Caribbean for the remainder of the fiscal year, however, is a very negative development, indeed. Now that you have sent the new LCS on its maiden deployment in the Western Pacific, will you commit to examining SOUTHCOM as the next developmental deployment for LCS?

Admiral MYERS. In accordance with the DSG, the initial LCS deliveries and deployments are focused in the Pacific. Navy has a variety of platforms that can support SOUTHCOM's counter illicit trafficking line of operations and we continuously review support to SOUTHCOM as part of our defense strategy. However, we cannot commit to making SOUTHCOM the next deployment for LCS without a stable defense budget. Navy is currently assessing the impacts of sequestration as part of the Strategic Choices Management Review (SCMR), which is designed to factor in defense-wide budget cuts and their impacts to the DSG.

QUESTIONS SUBMITTED BY SENATOR JEANNE SHAHEEN

SUBMARINES

10. Senator SHAHEEN. Secretary Stackley and Admiral McCoy, the Defense Advanced Research Projects Agency (DARPA) is developing an unmanned anti-submarine system called the anti-submarine warfare continuous trail unmanned vessel (ACTUV). Could you please provide the Navy's assessment of the program's potential capabilities and current state of development?

Mr. STACKLEY and Admiral MCCOY. The Navy is watching ACTUV with interest. The program will advance the state-of-the-art for Unmanned Surface Vehicle (USV) autonomy which will be useful for many other programs. It will provide insight into the flexibility of a surface craft to engage a submarine in an environment short of hostility. The program will also advance the state-of-the-art of various ASW sensors which have been under development by the Office of Naval Research, notably Non-Acoustic sensors. The ACTUV concept of operation is focused on "hold-at-risk" after first being cued by ASW surveillance systems to search an area of uncertainty. This concept of operation depends on initial detection and classification of a threat target within a large area by a surveillance system, the hardest task in ASW. The success of long term track depends to some extent on benign behavior of the threat country's maritime assets.

The ACTUV program has selected a USV design and has completed scale-model testing to validate speed/power relationships. Collision avoidance autonomy has been bench-marked in simulations. The algorithms were tested against the International Collision Regulations (COLREGS). The reacquired and continued track of a simulated submarine after executing COLREGS maneuvers 95 percent of the time. The Navy will continue to stay engaged with DARPA on this technology development.

OHIO-CLASS GUIDED MISSILE SUBMARINE RETIREMENT

11. Senator SHAHEEN. Admiral McCoy, U.S. Special Operations Command (SOCOM) has indicated that the *Ohio*-class guided missile submarines (SSGN) are the only host platform capable of deploying with dual dry deck shelters (DDS), which allow Special Operators much greater flexibility during undersea campaigns. How will that requirement be met as the SSGNs retire?

Admiral MCCOY. The Navy and SOCOM are currently conducting an Analysis of Alternatives (AoA) to evaluate options to address the gap in undersea clandestine insertion of Special Operations Forces when the four *Ohio*-class SSGNs retire. The AoA is expected to be completed in 2013.

12. Senator SHAHEEN. Admiral McCoy, would the Virginia Payload Module (VPM) accommodate the DDSs?

Admiral MCCOY. *Virginia*-class (SSN–774) submarines with VPM will still be required to accommodate the DDS.

13. Senator SHAHEEN. Admiral McCoy, what capabilities will be lost from a special operations perspective in the transition from SSGNs to *Virginia*-class boats both with the VPM?

Admiral MCCOY. *Ohio*-class SSGNs are much larger submarines than *Virginia*-class attack submarines (SSN), with or without VPM. This size, and the modifications made to the SSGNs during conversion to support special operations, allows them to carry large complements of Special Operations Forces (SOF) and their support teams, ammunition and equipment and two dry deck shelters (DDS) to support long duration, sustained, undersea special operations campaigns.

Virginia-class SSNs were also extensively designed to support special operations forces, on a smaller level. Current *Virginia*-class SSNs can accommodate approximately half the personnel, only one DDS, and much less equipment because of their size, but have much better maneuverability and access to shallow, littoral waters, optimizing them for focused missions vice long term campaigns.

VPM, because of its added compartment size and accessible large diameter payload tubes, would provide the opportunity to host more SOF personnel and their equipment for longer durations than current *Virginia*-class SSNs, though not to the degree of the SSGNs. The suitability of *Virginia*-class SSNs with and without VPM is being considered as a potential material solution in the ongoing Navy and SOCOM AoA. This analysis will identify options and address the gap in undersea clandestine insertion of special operations forces when the four *Ohio*-class SSGNs retire.

14. Senator SHAHEEN. Admiral McCoy, what capabilities will be lost from a special operations perspective in the transition from SSGNs to *Virginia*-class boats both without the VPM?

Admiral MCCOY. *Ohio* Class SSGNs are much larger submarines than *Virginia*-class attack submarines (SSN), with or without VPM. This size, and the modifications made to the SSGNs during conversion to support special operations, allows them to carry large complements of Special Operations Forces (SOF) and their support teams, ammunition, equipment and two DDSs to support long duration, sustained, undersea special operations campaigns. *Virginia*-class SSNs were also extensively designed to support SOF, but on a smaller scale. Current *Virginia*-class SSNs can accommodate approximately half the personnel, only one DDS, and much less equipment because of their size. The smaller SOF payload is balanced against better maneuverability and access to shallow, littoral waters, optimizing *Virginia*-class for focused missions vice long-term campaigns. U.S. Special Operations Command requirements currently are fulfilled by maintaining both an SSGN and SSN operational capability. VPM, because of its added size and accessible large diameter payload tubes, would provide the opportunity to host more SOF personnel and their equipment for longer durations than current *Virginia*-class SSNs, though not to the degree of the SSGNs. The suitability of *Virginia*-class SSNs with and without VPM is being considered as a potential material solution in the ongoing Navy and SOCOM AoA. This analysis will identify options and address the gap in undersea clandestine insertion of Special Operations Forces when the four *Ohio*-class SSGNs retire.

DRY DECK SHELTERS

15. Senator SHAHEEN. Secretary Stackley, the first DDSs will reach the end of their service life in 2022. In order to optimize design, ensure a smooth transition, and minimize cost the Navy should consider the next generation DDS as soon as possible. What is the Navy's current plan to replace the DDS platform?

Mr. STACKLEY. In January of this year, an engineering evaluation of the current DDSs was completed, resulting in their service life being extended an additional 20 years. As a result, the first DDS will not reach its end of service life until 2042. U.S. Special Operations Command (SOCOM) is the resource sponsor for the DDSs, as "special operations forces peculiar equipment," and is responsible for their operation, modification and eventual replacement. An ongoing AoA is evaluating various options to modify or replace the current DDSs, along with the Navy's options for associated host submarines, to best support SOCOM and the regional combatant commanders' warfighting requirements. The AoA is expected to be complete in 2013.

QUESTION SUBMITTED BY SENATOR RICHARD BLUMENTHAL

VIRGINIA PAYLOAD MODULE

16. Senator BLUMENTHAL. Secretary Stackley, I appreciate your statement that, to make up for the loss of the strike capacity of the retiring SSGNs, the Navy requested funding of approximately $121 million in fiscal year 2014 to continue the design for the VPM that can launch more cruise missiles. I understand the Navy plans to procure the modified *Virginia*-class SSNs starting in fiscal year 2019. Given that plan, I would appreciate if you could please provide information as to why the request for new design SSN for fiscal year 2014 was reduced by approximately $146 million from the $268 million projected for fiscal year 2014 last year, to what we saw submitted in the President's budget this year. The Navy budget justification documents say only that $55 million reduction was for program adjustments and $91 million was a miscellaneous adjustment. I would like to have more fidelity as to the nature of these reductions and whether they will impact your target date of 2019 for this capability.

Mr. STACKLEY. The Navy is proceeding with development and design of the Virginia Payload Module (VPM) with the intent of pursuing the option to include this capability in the 2019 *Virginia*-class procurement. The ultimate decision regarding procuring VPM in 2019 will be made in conjunction with budgeting decisions for the fiscal year 2019 President's budget. The VPM effort (RDT&E Project 4500) was reduced $91 million in fiscal year 2014 to align with a rephased funding profile, which supports starting major design activities in fiscal year 2014, vice fiscal year 2013 as was projected in last year's budget.

Funding for the reduced total ownership cost (RTOC) initiative, under RDT&E Project 1947, was reduced by $47 million. The RTOC work performed to date had determined that the full amount originally programmed was not required to reach the core objective of increasing *Virginia*-class SSN operational availability by reducing depot-level maintenance, starting in Block IV.

The remaining balance of the adjustment was related to efficiencies in doing business or was used for other Department priorities and rephased to future years.

These adjustments do not impact on the ability to incorporate VPM in Block V *Virginia*-class SSNs starting in fiscal year 2019.

QUESTIONS SUBMITTED BY SENATOR JOHN MCCAIN

IMPACT OF SEQUESTRATION

17. Senator MCCAIN. Secretary Stackley, last year you testified that the Navy cannot "imagine continuing [the current defense program] with another half a trillion dollar reduction over the next 10 years. It's a significant shift and we have not put contingencies in place." It's a year later and sequestration has occurred. Has the Navy budget accounted for sequestration in the budget request for fiscal year 2014?

Mr. STACKLEY. The fiscal year 2014 President's budget submission did not account for sequestration in fiscal year 2014. Navy is working with the Office of the Secretary of Defense in the Strategic Choices and Management Review (SCMR) to inform the major decision that must be made in the decade ahead to preserve and adapt our defense strategy, our force, and our institutions under a range of future budgetary scenarios. In the event sequestration is allowed to occur in 2014, we will work with the Department to make the necessary adjustments to continue to provide Combatant Commanders with ready and capable Naval forces while, to the extent practicable, protecting our research base and ensuring that our people are properly resourced.

18. Senator MCCAIN. Secretary Stackley, you state in your testimony that, "Every major weapon system is impacted by sequestration in 2013." Which specific acquisition programs are experiencing reduced quantities, delayed schedules, and potential cost growth as a result of sequestration?

Mr. STACKLEY. The Navy is still reconciling the impact of sequestration in fiscal year 2013 to each specific acquisition program. Sequestration law implemented automatic cuts that impacted each separate program line in the entire budget. We are working to mitigate the impacts, but in some cases we had to de-scope certain items in the shipbuilding plan, while maintaining overall force structure capacity and capability. For example, Navy was unable to award the 10th DDG–51 in the multiyear authorized and appropriated in 2013 due to funding lost by sequestration. We are continuing to work with Congress to examine this impact. Additionally, we

estimate that there will be a reduction of up to 12 aircraft procurements across our aviation programs and approximately 291 weapons of various types not procured.

In other cases, we may have to delay delivery or initial operational capability (IOC). For example, due to the funding lost in research and development, sequestration will likely cause a delay in the IOC dates for the LCS mission packages, systems and capabilities that we need desperately today. Similarly, sequestration also reduced the development and procurement associated with the lead ship in the DDG–1000 program, which potentially will delay lead ship delivery.

Delays in schedules, uncertainty in planning, and deferral of costs to future years inevitably lead to future cost growth and affordability challenges. Our ship construction programs will need to restructure schedules and shift some costs to future years due to sequestration. This will pass on "costs to complete" that will need to be reconciled in future years. These costs will not be an insignificant challenge as they may compel Navy to cancel the procurement of future ships to complete ships that are nearing delivery.

Navy is able to mitigate some of the impacts of sequestration in fiscal year 2013 by liquidating all the assets we were building through cost reduction efforts in the prior years of our major procurement programs. If sequestration continues into fiscal year 2014, that margin is gone and there will be direct impacts to our acquisition programs with significant reductions in shipbuilding, aviation, and weapons system programs.

19. Senator MCCAIN. Secretary Stackley, your testimony states that the Navy will need an average annual level of shipbuilding investment of $16.8 billion over the next 10 years, and the 10 years after that about $20 billion annually to meet goals outlined in the 30-year shipbuilding report. Given the current fiscal crisis facing the Department of Defense (DOD), do you realistically expect to even get $14 billion or $15 billion over the next 3 years?

Mr. STACKLEY. As the Secretary of Defense certified with the shipbuilding plan, the budget for fiscal year 2014 and the Future Years Defense Program (FYDP) for fiscal years 2014–2018 provide a sufficient level of funding to procure the naval vessels specified by the plan. DON has historically been able to resource between $12 billion and $14 billion in annual new-ship procurement funding. During the fiscal year 2014–2018 FYDP, average annual new-ship procurement funding is about $14 billion. This level of investment is based on the need to balance our resources between manning, maintenance, sustainment, modernization and recapitalization of our ships, aircraft and weapons. The plan is affordable within the FYDP, but does not account for the effects of the Budget Control Act of 2011.

There will be resourcing challenges outside the FYDP, largely due to the investment requirements associated with the *Ohio*-class replacement (OR) SSBN. The cost of the OR SSBN is significant relative to the resources available to DoN in any given year. At the same time, the Department will have to address the block retirement of ships procured in large numbers during the 1980s which are reaching the end of their service lives. The confluence on these events prevents DoN from being able to shift resources within the shipbuilding account to accommodate the cost of the OR SSBN.

If DoN funds the OR SSBN from within its own resources, OR SSBN construction will compete for the resources available for construction of other ships in the battle force such as attack submarines, destroyers, aircraft carriers and amphibious warfare ships. The resulting battle force will not meet the requirements of the Force Structure Assessment (FSA) and will therefore not be sufficient to implement the DSG. In addition, there will be significant negative impact to the shipbuilding industrial base since, for the decade the SSBNs are being built, there will only be sufficient resources (assuming historical funding levels) to procure one or two additional multi-mission ships each year during that period.

20. Senator MCCAIN. Secretary Stackley, please provide a revised 30-year shipbuilding plan that takes into account, to the best of your ability, the sequestration of defense accounts over the next 9 years.

Mr. STACKLEY. Accordingly, a shipbuilding plan that takes into account a decade of sequestration cannot be constructed in isolation, but must rather be constructed with the formation of the overall budget. As Secretary Hagel stated in his letter of May 10, 2013 to the Defense Authorization and Appropriations committees, forwarding the Report to Congress on the Annual Long-Range Plan for the Construction of Naval Vessels for fiscal year 2014, the plan will be updated and submitted with the President's budget submission for fiscal year 2015 when the Strategic Choices and Management Review is completed and the Department's Appropriations Bill for fiscal year 2014 is enacted.

FORD-CLASS AIRCRAFT CARRIER

21. Senator MCCAIN. Secretary Stackley, the President's budget request for 2014 includes a legislative proposal to raise the cost cap for the first *Ford*-class aircraft carrier (CVN–78) from $11.8 billion to $12.9 billion. Why do you need the cap this year when the carrier is only 58 percent complete—6.5 percent behind schedule—and not scheduled for delivery until 2016?

Mr. STACKLEY. The Navy requires an increase to the CVN–78 cost cap in fiscal year 2014 because, based on the expected spend rates, the program will exceed the current cap of $11.8 billion during fiscal year 2014. The fiscal year 2014 President's budget adds $588 million to the CVN–78 program in fiscal year 2014. When added to the appropriated funding of $11,512 million, the total program funding through fiscal year 2014 is $12,100 million.

22. Senator MCCAIN. Secretary Stackley, the majority of the shipboard test programs for CVN–78 will not commence until after the launch in November 2013. What is the risk that the operational testing for CVN will result in expenses that exceed the proposed cost cap?

Mr. STACKLEY. The significant new developmental technologies, Electromagnetic Aircraft Launch System (EMALS), Advanced Arresting Gear (AAG), and Dual Band Radar (DBR) are executing land based programs to mitigate shipboard testing risk. In addition, all shipboard systems are undergoing a methodical test progression that will ensure testing is conducted as a totally integrated test program vice a federation of individual tests. All of these steps will minimize the risk associated with follow-on testing. However, there are always unknowns associated with first time operation of new systems that could produce cost risk during the shipboard test program. The Navy is taking all available steps to minimize that risk but it cannot be fully eliminated and cannot be precisely quantified at this time.

23. Senator MCCAIN. Secretary Stackley, in December the Director of Operational Test and Evaluation noted that the current test plan for CVN–78 does not adequately address "platform-level developmental testing." What are you doing to address this concern?

Mr. STACKLEY. The Program's Test and Evaluation Master Plan (TEMP 1610) is currently being revised, and will be submitted for approval as part of the upcoming Defense Acquisition Board. The revisions have been made to address the concerns noted by DOT&E and organized the planned testing into five distinct Developmental Test phases to include platform-level developmental testing. This approach was established based on recommendation received from, and in collaboration with COMOPTEVFOR, DASD (DT&E), and DOT&E.

24. Senator MCCAIN. Secretary Stackley, do you have concerns that the concurrent development, testing, and installation of an electronic aircraft launch system designed to replace legacy catapult systems will affect either cost or schedule for CVN–78?

Mr. STACKLEY. The Navy has taken specific steps to mitigate both the cost and schedule risks associated with the concurrent development, testing and installation of Electromagnetic Aircraft Launch System (EMALS).

EMALS hardware is being procured on a Firm-Fixed-Price contract. Hardware deliveries to the shipbuilder have been ongoing since May 2011, and most equipment interior to the ship is already installed. Flight deck equipment will be installed this year using lessons learned from the full scale single launcher installation at the land-based test site. Further cost risk from development and shipboard installation of EMALS is projected to be low.

EMALS is 92 percent complete on an extensive System Development and Demonstration land-based test program, having successfully launched 134 aircraft and more than 2,600 deadloads. This testing and the identified design issues have been resolved, greatly mitigating risk to the shipboard test program. Additionally, following installation, a methodical step-by-step shipboard testing sequence has been developed to further reduce risk of significant test problems that could affect cost or schedule. Testing of the integrated EMALS system (four launchers and three energy storage groups) will be completed shipboard. This process, together with laboratory testing of the shipboard four launcher control system and the land-based testing already completed, lowers cost risk due to shipboard testing. However, because there are always unknowns associated with first time shipboard operations of new systems, some cost and schedule risk remains as part of this effort. In particular, EMALS installation and testing will be on the critical path for CVN–78 Delivery and will require a heightened degree of coordination and performance by the

shipbuilder in order to capitalize on the extensive risk mitigation efforts employed throughout EMALS development; else cost and schedule will be significantly impacted.

25. Senator MCCAIN. Secretary Stackley, how confident are you that the final cost for CVN–78 will not exceed the proposed statutory cap?

Mr. STACKLEY. The cost estimate that forms the basis for the proposed cost cap was first established and reported to Congress approximately 2 years ago. The estimate accounts for all elements of cost (design, contractor furnished material, government furnished material, shipbuilding labor, fees, change orders, and government support cost) factoring in performance-to-date, estimated work-to-go, risks and opportunities to future performance. In the course of these past 2 years, design, material (contractor and government), labor rates, change orders and government support costs have performed within range of the estimate and confidence is high that these elements of cost will not exceed their allocation within the proposed cap. There remains, however, substantial risks associated with full system testing and first time integration on this first-of-class. System testing and land-based testing to date have increased confidence that the test program has mitigated the impact of major changes to the ship's platform. Yet, the extent and complexity of these new systems preclude fully retiring this risk in advance of shipboard testing. Accordingly, in view of remaining risk associated with completing the first-of-class test and trials program, the Navy has requested authority for the Secretary of the Navy to be able to adjust the cost cap in the event test-related cost growth jeopardizes completion of CVN–78 within the proposed cost cap.

26. Senator MCCAIN. Secretary Stackley, the launch for CVN–78 has been delayed from July 2013 to November 2013 and even then will only be 70 percent construction complete. How do schedule slips affect the costs to the Navy?

Mr. STACKLEY. The delay in launch reflects the Navy's commitment to follow the most cost-effective path to CVN–78 delivery. Rather than inefficiently pursuing scheduled milestone dates, the Navy has opted to delay launch. Doing so allows time for the most cost-effective completion of critical path work and also enables the ship to reach the 70 percent complete mark at launch—10 percent above the previous program goal. This advanced state of completion serves to lower cost risk associated with the follow-on shipboard testing schedule.

27. Senator MCCAIN. Secretary Stackley, what concerns do you have that CVN–78 will be delivered by early 2016?

Mr. STACKLEY. The shipbuilder has developed a cost-effective plan to complete construction and test of CVN–78 in early 2016 with minimal schedule risk considering technical risks identified to date. However, as has been seen in other first-of-class ships, unknown risks associated with first time shipboard testing of new systems could, depending on the magnitude of the issue, impact scheduled delivery. The Navy has taken several steps to minimize these risks, including extensive land-based testing and well-designed shipboard testing plans.

28. Senator MCCAIN. Secretary Stackley, the next carrier, CVN–79, is now estimated to cost the Navy $11.3 billion and the Secretary of the Navy has used an authority provided by law to adjust the cost cap for total construction to $11.5 billion. The shipyard at Newport News, which will construct CVN–79, is operated by Huntington Ingalls Industries, the Nation's sole industrial designer, builder, and refueler of nuclear-powered aircraft carriers. How can the Navy use competitive practices to control costs for CVN–79?

Mr. STACKLEY. The Navy is taking several steps to introduce as much competition as possible into the construction process for its carriers. These include working directly with the shipbuilder to ensure competitive practices are employed where feasible within the material procurement process. New suppliers have also been developed and qualified to increase the number of competitive opportunities. In addition, while outside contractors have not been employed in past CVN construction, the Navy is pursuing the use of Alteration Installation Teams, who routinely install modernization items at a lower cost on other Navy ships, to accomplish the installation of select systems on CVN–78 and CVN–79 as another competitive practice. Finally, we are examining the effectiveness of competing select portions of the ship itself, similar to the deckhouse on DDG1000. We will work diligently to expand each of these opportunities for CVN–80 and subsequent ships of the class.

29. Senator MCCAIN. Secretary Stackley, the Navy recently submitted a report to Congress regarding the costs for CVN–79 that detailed a series of actions expected

to reduce the material cost of CVN–79 by 10 to 20 percent in real terms from CVN–78, to reduce the number of man-hours required to build the CVN–79 by 15 to 25 percent from CVN–78, and to reduce the cost of government furnished systems by 5 to 10 percent in real terms from CVN–78. Can you please provide what the current actual baselines in real terms for CVN–78 are for each goal that you're going to measure savings against for CVN–79?

Mr. STACKLEY. The cost savings expected to be realized in the construction of CVN–79 and identified in the May 6, 2013 Report to Congress are measured against the corresponding elements (hours to build the ship, material cost, and government furnished systems cost) of the CVN–78 Program Manager's estimate at completion (EAC) as identified in the 2011 SAR as measured in TY$13. The details of this baseline are considered sensitive and were provided to the subcommittee professional staff members on June 8, 2013.

30. Senator MCCAIN. Secretary Stackley, given the sole source nature of the negotiations, how realistic is the projection of savings for CVN–79?

Mr. STACKLEY. As detailed in its May 6, 2013 Report to Congress, the Navy's approach to carrier construction has undergone an extensive affordability review. Changes made by the Navy and the shipbuilder will significantly reduce the cost to build CVN–79. These changes include starting construction on CVN–79 with:

- A complete design and bill of materials
- A firm set of stable requirements
- Development completed on a host of new technologies inserted on CVN–78
- An optimal build plan that emphasizes the completion of work and ship outfitting to optimize cost and ultimately schedule performance

Additionally, the Navy and the shipbuilder continue to discuss a series of additional changes that could positively impact construction costs. The Navy has also imposed cost targets and is aggressively pursuing cost reduction initiatives in its government furnished systems. The projection of savings on CVN–79 is consistent with both the actions we are taking to change the way we are building CVN–79, and reductions achieved between the first and second ships of other ship classes.

31. Senator MCCAIN. Secretary Stackley, in your opinion, what is the incentive for the contractor to negotiate price reductions with the Navy in good faith?

Mr. STACKLEY. The incentive for the contractor to negotiate price reductions with the Navy in good faith is the direct linkage between shipbuilding cost reduction and a stable and predictable workload into the future. The Navy has communicated its expectations to the shipbuilder that performance on CVN construction must improve. The shipbuilder's actions, including visiting other construction yards to view best practices and the changes they have already made to the CVN–79 construction process, indicate that they have heard that message and are changing how CVNs are constructed to reduce the cost. While they are the sole provider capable of building CVNs, we have made it clear that failure to reduce costs will come at the expense of future workload stability for Huntington Ingalls Industries-Newport News Shipbuilding.

32. Senator MCCAIN. Secretary Stackley, the Secretary of the Navy's recent report on costs for CVN–79 mentions a series of lessons learned that should significantly control the cost of construction, starting with a firm set of stable requirements, a complete design and a complete bill of material, and ensuring an optimal build plan that emphasizes the completion of work and ship outfitting as early as possible in the construction process to optimize cost and ultimately schedule performance. How are you applying these lessons to the development and construction of other ship classes? Please provide specific examples.

Mr. STACKLEY. The Aircraft Carrier Construction Report to Congress dated May 2013, provided a comprehensive report detailing the actions being taken to reduce the cost to build CVN–79. Lessons learned from CVN–78, which were driven by material availability and first-of-class design/construction issues, have resulted in changes to the build strategy, design changes for greater producibility, facility upgrades, and improved supply chain management, that are being or will be incorporated on CVN–79 and follow ships.

Certain lessons learned, such as shipbuilding and manufacturing best practices, can be implemented to various degrees across all shipyards. Within the Navy's shipbuilding portfolio, the Navy has instituted priorities that center upon improving affordability and wholeness, which include, but are not limited to, employing fixed-price type contracts to control cost for ships in production, and utilizing long-term

contracts such as multiyear procurements (MYP) and block buys; maturing design plans prior to the start of construction; and continuing emphasis on cost performance, production stability, and improving quality.

Examples of these priorities and the resulting benefits are outlined below:

Employing Fixed-Price Type Contracts and Utilizing MYP and Block Buys:

For stable programs, the Navy has leveraged fixed-price MYP and block buys. These two methods alone are resulting in over $11.5B of savings in current procurements of major Navy weapons systems. Within the surface and submarine shipbuilding portfolio, the Navy has utilized fixed-price type contracts in the DDG–51, LPD–17, LCS, LHA (R), JHSV, MLP, and *Virginia*-class programs.

The recent DDG–51 fiscal year 2013–2017 MYP yielded savings of more than $1.5 billion. MYP contracts achieve savings through economic order quantity (EOQ), reduced hardware and engineering costs, and improved planning and production efforts possible with increased stability in the industrial base.

The dual block buy award strategy employed on the LCS program afforded the Navy an opportunity to award up to 20 ships between fiscal year 2010–2015 with fixed-price type contracts resulting in a savings of approximately $2.9 billion. This strategy stabilized both the LCS program and the industrial base. It increased the ship procurement rate to support urgent operational requirements, promoted efficiency across the entire spectrum of the industrial base while sustaining competition, and enhanced Foreign Military Sales opportunities. The fixed-price type contract also limits the government's liability and incentivizes both the government and the shipbuilder to aggressively pursue further efficiencies.

Two shipbuilders, Electric Boat and Newport News Shipbuilding, are currently building *Virginia*-class submarines under a teaming agreement originally legislated by Congress. The *Virginia*-class submarines have been awarded as MYP blocks with each block incorporating minimal changes designed to reduce cost and improve performance. Block III was awarded as a fixed-price incentive (FPI) contract for eight ships in December 2008. Construction of the first Block III ship started in March 2009; and the construction of the eighth ship is planned to start in September 2013. Award of the Block IV MYP FPI contract for 10 ships is expected in early fiscal year 2014. As a result of these actions, procurement rates are increasing, competition and stable procurements are fostered, and affordability has improved.

Mature Design Plans Prior to the Start of Construction:

In Production Readiness Reviews, the Navy ensures that design maturity is at least 85 percent prior to start of construction because a shipyard's efficiency and learning curve is heavily impacted by having a completed design using 3D modeling. In the case of the MLP, the design was 100 percent complete before starting construction. Using the 3D modeling and collaborative government-industry teams, the shipbuilder was able to identify interferences early and plan the block design more efficiently. During construction, minimal change orders were executed—the change order budget for MLP was less than 1 percent, safety was maintained and rework was kept to a low of 2.4 percent. With a completed design, the shipbuilder was able to outfit construction blocks prior to launching the ship. By performing the outfitting on the ground, access is easier and productivity is improved which reduces both cost and schedule performance. MLP–1 was more than 90 percent complete at launch.

This principle was further exemplified by the decision to leverage the stable DDG–51 design and production baseline for the introduction of integrated air and missile defense capability. The fiscal year 2010 and follow DDG–51's required a significant design update to accommodate the addition of the integrated air and missile defense capability in AEGIS Baseline 9. The design update was fully complete and design products fully developed before either Bath or Ingalls began construction on DDG 113 and follow. This prevented delays and cost increases due to design concurrency. Requirement stability is also key, and the DDG–51 program, like others in the Navy's shipbuilding portfolio, have used annual Configuration Steering Boards to vet all proposed additional requirements and control the inclusion of new requirements to only those judged essential by Navy leadership.

Material/Supply Chain Process:

Material cost has become the largest area of the shipbuilder's overall cost for a ship; and there is great opportunity to reduce those costs by the shipbuilders, particularly in a sole source contractor environment. The standardization of material specifications has created opportunities to bundle material orders and achieve economic order quantity pricing for *Virginia*-class submarines and *Nimitz*-class refueling complex overhaul. Conversion of contractor furnished equipment (CFE) to GFE, as was done for the last two ships of the LPD–17 class, has resulted in significant

savings by eliminating pass-through costs and fees associated with material subcontracts. The utilization of expert material consultants and establishment of material should-cost estimates have driven costs downward by creating opportunities for competition and promoting aggressive pricing.

The Navy has been working to minimize ship equipment and parts variants within ship classes, and from ship class to ship class, to create greater commonality across the Fleet, while also looking at smart ways to reduce the number of ship specifications and procedures. From these efforts, the Navy believes that additional cost savings can be achieved through application of the block buy approach across a subset of shipbuilding material, common equipment, parts, and commodities. The Navy is currently evaluating this alternate acquisition concept and ways to implement it within the confines of the current authorization and appropriation process. Once the concept is developed further, additional flexibility may be desired with respect to authorization, appropriation, and bundling of advanced procurement material across appropriations (SCN, OPN, and NDSF), and possibly fiscal years, to best implement this alternative acquisition concept.

Continued Emphasis on Cost and Execution Performance, Production, and Quality:

Commonality of shipboard systems across ship classes not only presents opportunities for EOQ buys, but it also allows lessons learned from installation of those shipboard systems on earlier ships to be leveraged on future ships—resulting in favorable impacts to production costs and schedules. The Navy has worked with the *Virginia*-class shipbuilder to reduce the submarine construction span through the use of multiyear procurements, fixed price contracts, and EOQ buys. Design changes focused on improved performance and reduction in costs have been incorporated on follow ships; and the use of outside supply chain experts has increased material availability while driving down material costs. Ten *Virginia*-class submarines have been delivered to date. The last eight have been delivered on budget and on or ahead of schedule with the most recent submarines (SSN–782 and –783) being delivered an average of 11 months ahead of contract delivery date.

Marinette Marine and Austal, USA, the two LCS shipyards and their parent companies, have invested considerable capital resources to improve shipyard quality, capacity, and efficiency. Substantial production efficiencies are being realized by both shipbuilders on LCS as a result of those capital investments, which were not in place for the lead ships.

The T-AKE–1 Class (Dry Cargo/Ammunition ship) program is another example of successful leveraging of continuous process improvements, best practices, and learning across a relatively large production run. The T-AKE-class sustained an exceptional 79 percent production learning curve across the class, with the seventh ship being produced for less than 50 percent of the man-hours of the lead ship, and demonstrated a corresponding reduction in production and delivery cycle times. Stable requirements and a mature design were the primary drivers behind a less than 2 percent configuration change rate and less than 3.9 percent rework across the class resulting in an overall average of greater than 85 percent completion at launch. Proper sequencing and allocation of work packages, stable funding, and long lead material procurements enabled efficient production, reduced cycle times and overhead, and created material purchasing economies. Capital improvements led to increased throughput and lower overhead; the implementation of hundreds of "lean design" producibility improvements reduced the cost of follow ships by an average of $10 million (2 percent savings) per hull.

The LPD–17-class shipbuilder, Huntington Ingalls Industries, developed a new class build plan which was implemented on LPD–22 and follow ships. The plan aligned work packages in a more logical sequence and focused on accomplishing an increased portion of construction on land, which is the most efficient approach. As a result, pre-outfitting and completion levels at launch have increased with each successive LPD–17-class ship.

The *Virginia*-class design was tailored to optimize the construction process, facilitate the integration of supplier equipment, and incorporate Navy operational and maintenance experience. The best strategy is to maximize work in the shop environment and minimize work within the hull, which means increasing the size, weight, and state of completion of modules prior to inserting them into hull sections. The shipbuilder, Electric Boat, began to develop build plan improvements in the *Virginia*-class when hull sections and module weights were no longer limited by the capacity of the Groton Land Level Ship Construction Facility transportation system. Increasing the transportable module weight opened up virtually unlimited possibilities for construction planners; and the build plan could be based on an approach that made the most sense from an efficiency standpoint—maximizing module manufacturing at module outfitting facilities and doing final assembly at the delivery

yards. The improvements to the module transportation system are expected to save more than 1.2 million construction hours on a 30-ship *Virginia*-class reducing the number of module end loads performed by the final assembly yard from four to one, reducing the number of critical installs from eight to one, and reducing the number of hull butt welds from five to three.

The Capital Expenditures (CAPEX) program is a unique investment opportunity for the shipyards wherein the Navy funds selected process and infrastructure improvements. The projects are designed to reduce overall construction costs. Under the program, the shipyard presents a proposal and business case to the Navy outlining improvements to its processes or facilities. If the plan and business case are deemed worthy, the Navy funds 50 percent of the cost of the improvement upfront. Once complete, the Navy then pays for the remainder of the project; however, the Navy can recoup up to 100 percent of the funds provided for the project if it fails to meet the projected savings. Several shipbuilders have taken advantage of this opportunity over the past few years to upgrade their facilities resulting in increased through-put and productivity, improved efficiencies and quality, and reduced costs and schedule durations.

BIW recently completed one of those CAPEX improvements, the Ultra Hall facility, which incorporated early release of retentions, special contract incentive fees, and share-line adjustments resulting in maximized pre-outfitting levels, man-hour reductions, and savings for the DDG–51 and DDG–1000 programs. The Ultra Hall facility allows for increased work in climate-controlled conditions which optimizes outfitting levels early in construction. The resultant improved quality in the blast and paint process and the elimination of the requirement for custom-built staging has also reduced schedule durations. Electric Boat's Quonset Point Coating Facility is another example of a CAPEX success. The facility reduces cost by applying hull coatings prior to the submarine's delivery as opposed to the legacy approach which involved applying the coating in a dry-dock during the submarine's post shakedown availability (PSA). In addition to the cost reduction, the PSA schedule was able to be shortened allowing submarines to be delivered 6 to 9 months sooner.

The Navy is also driving increased quality in shipbuilding. The LPD–17 class has seen significant improvement in ship quality at delivery; most recently, LPD 24 had zero starred cards open at delivery. Another test of total ship quality is how the ship performs at Acceptance Trials; and that is evidenced by the reduced number of "starred cards" being issued by the Navy's Board of Inspection and Survey (INSURV). During acceptance trials for MLP–1, there were 0 starred cards—this was a first for any new ship class. Across the other ship classes, the Navy is closing out most, if not all, starred cards prior to ship delivery.

LITTORAL COMBAT SHIP

33. Senator MCCAIN. Secretary Stackley, the Navy originally intended the LCS to replace a total of 56 frigates, minesweepers, and patrol boats. The current plan calls for the purchase of 52 LCS, which will eventually comprise one-third of the Navy's surface combatant fleet. Recent critical reviews about the LCS's capabilities and performance have surfaced with specific concerns about survivability, adequate manning, endurance, and the ship's ability to meet warfighter requirements. As a result of internal reviews, are you currently considering terminating the program at the 24 ships in operation, under construction, or on order?

Mr. STACKLEY. Navy is not considering terminating the program at 24 ships. With regard to LCS performance characteristics, LCS meets its warfighter requirements; including survivability and endurance. Navy's 2012 Force Structure Assessment calls for 52 LCSs to meet global fleet requirements, and Navy leadership is committed to LCS as an integral component of the future fleet.

34. Senator MCCAIN. Secretary Stackley, does the Navy intend to down select to a single LCS design in fiscal year 2016? If not, why not?

Mr. STACKLEY. The Navy is evaluating its follow-on acquisition strategy and has not made a decision about down-selecting to a single LCS design. Both LCS variants provide the operational capability required by the Navy and continued competition promises continued affordability for the program.

35. Senator MCCAIN. Secretary Stackley, why is LCS–4 delayed in its delivery date? Will this affect –5 through –8?

Mr. STACKLEY. The delay in LCS–4's delivery date is attributed to several factors: an aggressive initial schedule, transition from stick-built to modular construction, delay in production manning ramp-up early in the construction process, incorpora-

tion of design lessons learned from LCS–2, and a consistent focus on cost performance.

Austal USA has paced production work to the availability of complete design products, the ability to use new facilities efficiently, and the availability of skilled workforce in the Mobile, AL, region. The shipyard has revised its schedule based on a refined build strategy and has done so to maintain solid cost performance (not chasing schedule at the expense of cost performance). The shift in the delivery dates for the first ships of the Block Buy contract has resulted in a serial production schedule that has an LCS being delivered every 6 months and in the most cost effective method possible.

The delivery schedules for all of the Austal USA Block Buy ships are delayed an average 5 months, with the most significant delivery delays being on LCS 6 and 8, where the contract delivery dates were modified 6 and 8 months, respectively. Navy believes the initial schedule for the Austal ships was somewhat aggressive, and the schedule adjustment proposed by the shipbuilder, represents a more realistic delivery schedule, balancing shipyard workload between LCS and Joint High Speed Vessel (JHSV).

LCS–4 through LCS–8 are contracted under fixed-price incentive type contracts with established target costs and associated under and over share lines and ceiling prices. The current planned delivery dates are consistent with the fiscal year 2014 President's budget SCN exhibits. There are no changes to target prices of the ships as a result of changes in the ship delivery dates.

LCS–5 and –7 are being built by Marinette Marine Corporation (MMC) in Wisconsin and therefore are not impacted by the schedule shifts at Austal USA.

36. Senator MCCAIN. Secretary Stackley, would it be economical to maintain production of both LCS designs at a combined production rate of two per year? If not, can you provide a detailed estimate of the additional costs that the Navy would incur?

Mr. STACKLEY. Reducing procurement to one ship per year at each shipyard instead of two ships would permit the contractors to renegotiate the prices for the remaining ships of the Block Buy in fiscal year 2014 and the last year of the block buy in fiscal year 2015. Navy would expect the shipbuilders to renegotiate the ship prices at a higher cost since there would be no guarantee of future work. Further, shipbuilder costs will increase because their ability to buy components in quantity would be reduced.

If only two ships instead of four were authorized in fiscal year 2014, the increased cost estimate for the contracted LCSs (fiscal year 2010–fiscal year 2013 ships) is estimated to be $302 million. This cost estimate includes schedule slips and labor inefficiencies resulting in the fiscal year 2011, fiscal year 2012 and fiscal year 2013 ships going from target to ceiling cost.

If Navy is unable to come to an agreement on the cost of the two fiscal year 2014 ships and ships in later years (fiscal year 2015 and later), the cost for all the ships already under contract will be increased due to impact of lost workload, inefficiencies, and breakage to vendor base. The Navy's liability in this case extends to the contract ceiling for LCS–5 to LCS–16 (up to $462 million).

Additionally, in the event of lost workload at Austal USA in Mobile, AL, JHSV program cost would also increase.

37. Senator MCCAIN. Admiral Myers, a recently leaked draft GAO report notes that the the Navy's own analysts have only about 10 percent confidence in the current estimate that it will cost $50.4 billion to operate and support a total of 52 LCSs over their 25-year service lives. While such long-term life cycle costs are notoriously hard to estimate accurately decades out, a normal program would have at least 50 percent confidence in its figures at this stage. Does the Navy have confidence that the estimate of $50.4 billion for the long-term costs to operate and support the fleet of LCSs is accurate?

Admiral MYERS. The Navy is confident in its operating and support estimate based on current parameters and assumptions. The draft GAO report references an estimated life cycle cost and risk analysis based on the program requirements set during the Milestone B decision in April 2011 for the LCS program. At that time, the operating and sustainment cost estimate of range $50.4 billion (Calendar Year 2010$) to $86.8 billion (calendar year 2010$) represented a total of 55 LCSs, each with a 25-year service life. For Milestone B, Navy conducted a risk analysis on the total program life cycle cost estimate where the point estimate was at a 10 percent confidence level. However, the 10 percent assessment reflects the risks inherent in operating and sustainment estimates that are typical for any ship class—principally uncertainties in future inflation, the price of crude oil, and realized ship operating

tempo (OPTEMPO) for a period of 48 years (the life of the class). As additional hulls are delivered and become operational, the long-term cost estimate to operate and support the fleet of LCSs will be further refined and will be reflected annually in the program's SAR.

38. Senator MCCAIN. Admiral Myers, is the LCS built to military standards?

Admiral MYERS. The LCSs were designed and built to the standards of the American Bureau of Shipping (ABS) High Speed Naval Craft and Naval Vessel Rules (NVR) with additional military requirements stipulated in the class-specific contractual Build Specifications. The NVR was developed jointly between ABS and the Navy and it integrates industry and military standards. This design specification meets all the JROC approved requirements, including survivability.

39. Senator MCCAIN. Admiral Myers, how is the Navy addressing concerns with the LCS's survivability?

Admiral MYERS. Navy has designed and built the LCS to meet its JROC approved survivability requirements. LCS is designed and built to ABS NVR, which require higher performance and survivability features for a naval combatant and allow the ship to fight and operate in high-threat environments as part of a networked battle force which includes higher-end surface combatants. LCS can operate independently in low- to medium-threat environments.

LCS ships are built to meet JROC-approved survivability requirements and include OPNAVINST 9070.1 Level 1 Survivability standards. The LCS design specifically includes Level 1 plus additional tailored survivability enhancements ("Level 1+"). LCS' Level 1+ survivability standard is greater than the Level I standard to which Navy patrol craft and mine warfare ships were designed, but less than the Level II standard to which the *Oliver Hazard Perry* (FFG–7)-class frigates were designed. LCS survivability depends on a combination of ship design, ship numbers, and ship CONOPS which says LCS will;

- Operate as part of a networked battle force
  - Independent operations in low to medium threat scenarios
  - Part of a networked battle force ops in high threat environments
- Create Battle Space/Avoid being hit
  - Reliance on networked battle force for threat attrition
  - Reliance on offboard systems
- Fight and survive if hit
  - Ship design: Accept ship mission kill; keep ship afloat and protect crew after hit
  - Battle force design: Maintain battle force fight-through capability through LCS numbers and mission flexibility
- Withdraw/reposition if hit

LCS is designed to maintain essential mobility after a hit allowing the ship to exit the battle area under its own power. The LCS systems allow ship's crew to navigate and communicate while repositioning after a hit all the while utilizing numbers (of LCSs), and CONOPS as force multipliers. LCS incorporates survivability systems to perform required missions in the littoral with an emphasis on crew survival.

40. Senator MCCAIN. Admiral Myers, in your opinion, does the LCS have the capability to adequately meet all expected warfighters' requirements?

Admiral MYERS. The LCS will meet all expected warfighting requirements. LCS was conceived as an integral part of a battle force architecture based on an essential need for a new generation of multi-role, "focused mission" surface combatants optimized for battle network operations in the near-land battlespace dominance arena. This capability is precisely what the Department of the Navy has received with LCS.

LCS's concept of operations calls for LCS to penetrate contested littorals in the face of three major anti-access threats which are clearly documented as joint capability gaps: swarming fast attack craft/fast inshore attack craft/(FAC/FIAC), diesel submarines (SSK/SMM) and maritime mines. LCS' design characteristics of high speed, maneuverability, shallow draft, networked sensors, and readily-exchangeable focused mission packages were specifically intended to allow LCS to dominate these threats and assure access to the littorals.

41. Senator MCCAIN. Admiral Myers, based on the current performance of the ship and modules, are you comfortable with the LCS comprising one-third of the Navy's surface combatant fleet by 2027?

Admiral MYERS. I am completely comfortable relying on the LCS for a third of the Navy's surface combatant fleet. LCS fills current capability gaps for the Joint Force in the littorals. LCS is a component of a balanced force, structured to defeat adversaries in times of war and maintain a sizeable, continuous naval presence across the globe. Much of what the Navy does in peacetime, and a sizable portion of what we need to do in any conflict, are within the capability of these ships.

While expensive, multi-mission ships, like cruisers and destroyers, could do what the LCS does, we would have far fewer of them and this is a classic case of quantity having a quality of its own. By having this mix of multi-mission ships and LCSes, the Navy is able to be in more places at the same time—with combat credible ships. This "phase zero" presence is what deters conflict from happening in the first place and aides in establishing the conditions for success in conflicts when deterrence fails.

Their rotational crewing construct enables LCS to spend more than twice the percentage of their service life deployed overseas when compared to U.S.-based cruisers and destroyers, and does so at a quarter of the procurement cost by operating from a more forward presence. LCS will provide significantly greater forward presence than a like number of cruisers and destroyers, and will relieve those more expensive surface combatants to focus on their primary missions.

42. Senator MCCAIN. Admiral Myers, in January, the Navy revised the number of naval combatant vessels required to meet a revised strategic defense guidance issued last year by the President. Despite rebalancing U.S. military forces to the Asia-Pacific region and the recent testimony by Navy leaders that a fleet of more than 500 ships would be required to meet the demands of combatant commanders, the Navy concluded that a fleet of 306 ships would be adequate to meet the range of worldwide requirements, down from 313 ships it established in 2010. In your testimony, you state that this reduction was attributed to four factors:

A. Reduced presence requirements resulting from the 2012 Strategic Guidance;
B. Increased forward basing of ships;
C. Introduction of new payload capacity for cruise-missile submarines; and
D. Increased use of rotational manning on ships—keeping the ships at sea longer.

Can you describe which priorities for reduced presence in the DSG specifically resulted in a decrease in the number of ships required to meet the strategy?

Admiral MYERS. The DSG states that in a period of declining resources, U.S. forces will require "innovative and creative solutions to maintain our support" for allies and partners. Further, "thoughtful choices will need to be made regarding the location and frequency" of operations that provide a stabilizing presence.

The DSG, warfighting requirements, and an analysis of platforms to capabilities were all used to derive the Force Structure Assessment (FSA). A number of factors, including the rebalance toward the Asia-Pacific region, modifications to employment cycles and increases to Navy's global posture forward, led to a smaller number of ships required to execute DSG guidance.

The reduction in overall fleet size contained in Navy's most recent Force Structure Assessment was primarily driven by increased global posture forward and modified employment cycles. In comparison, the reduction to the AFRICOM presence requirement, in alignment with the 2012 DSG, had minimal impact on Navy force structure requirements, only impacting the number of LCSs and Combat Logistics Force (CLF) ships. The revised AFRICOM presence requirement is still more than what is currently being provided.

43. Senator MCCAIN. Admiral Myers, how exactly does increased forward basing of ships equate to a rationale to decrease the total size of the fleet?

Admiral MYERS. One of our CNO's tenets, operate forward, compels us to look for new ways to increase the amount of presence we can deliver at the right places—and to do so more efficiently. Each of these ways places ships overseas where they deliver continuous ("non-rotational") presence, instead of having to deploy from the continental United States (CONUS) to provide "rotational" presence. One ship operating from an overseas port in this manner provides the same presence as about four ships operating from homeports in the United States.

The Navy operates forward to make the most effective and efficient use of what we own. There are two basic ways in which we can sustain ships overseas:

- Ships can be homeported overseas as part of the Forward Deployed Naval Force (FDNF) with their sailors and their families as we do in Japan and will soon do in Rota, Spain. This provides continuous presence, immediate response to crisis, and the means to build a strong relationship with the host nation.

For example, we continued preparations for the planned move of four destroyers to Rota, Spain, which highlights the benefit of FDNF ships. Conducting the European ballistic missile defense (BMD) mission today takes 10 ships deploying from CONUS. This same mission can be done with four destroyers based forward, freeing up six rotationally-deployed destroyers to deploy to other regions such as the Asia-Pacific.

• Ships can also Forward Station overseas and be manned by civilian or military crews that rotate out to the ship. Rotating civilian crews man our Mobile Landing Platform (MLP), JHSV, Afloat Forward Staging Base (AFSB) and Combat Logistics Force (CLF) ships. Rotating military crews man our LCS and nuclear guided missile submarines (SSGN).

44. Senator MCCAIN. Admiral Myers, if ships have a certain service life that requires so many days per year at the pier for maintenance, how would rotating crews provide more presence per ship?

Admiral MYERS. The LCS will operate differently than most legacy surface platforms by using a rotational crewing concept and conducting maintenance while operating forward. The ships will deploy from continental United States (CONUS) homeports for 16 months and crews will be swapped during the deployment at 4-month intervals. Rotating crews provide more presence per ship since it will enable LCS ships to remain forward without lengthy transits to and from CONUS homeports in support of a standard 6- to 7-month deployment.

Combatant commanders will benefit from increased Operational Availability (Ao) from LCS due to its ability to consistently remain in theatre. The ships will return to homeport every 16 months for a CNO maintenance period, during which time the ship will undergo depot maintenance as well as support crew training and CONUS-based tasking. While deployed overseas, LCS will be able to operate approximately 25 days per month with 5 days per month dedicated to inport maintenance periods. There will also be a dedicated maintenance period every 4 months during which the ship remains available for surge operations.

45. Senator MCCAIN. Admiral Myers, DOD seems to be revising fleet size requirements to respond to diminishing defense budgets. How do we know that 306 is the right number?

Admiral MYERS. The Navy conducted a comprehensive and rigorous analytical Force Structure Assessment (FSA) in 2012, consistent with the DSG, that identified a 306 ship combatant force as that required to deter and respond to crises and war, and protect the interconnected systems of trade, information, and security that underpin American prosperity. The 306 ship combatant force possesses the capability and capacity to deliver credible deterrence, sea control, and power projection to deter or contain conflict and, if called upon, to fight and win our Nation's wars. These critical missions have been, remain, and will continue to be the Navy's core responsibilities.

The new battle force requirement is different from the 2010 FSA results (313-ship requirement) because of: (1) adjusted global presence requirements aligned with DSG's priorities; (2) increased forward basing/stationing of ships (and systems); (3) new payload (strike) capacity for attack submarines (replacing nuclear guided missile submarines); and (4) increased use of rotating civilian and military crews, providing more forward presence per ship.

The FSA provides a comprehensive description of and justification for the 306 ship combatant force. We would be happy to provide a classified brief on the FSA if additional information is requested.

EARLY RETIREMENTS

46. Senator MCCAIN. Secretary Stackley, this year's shipbuilding plan submitted by the Secretary of Defense included this caveat: "All battle force ships serve to the end of their planned or extended service lives." Last year's plan included the additional note that: "In this fiscal environment, the Navy can ill-afford to inflate future shipbuilding requirements by retiring ships earlier than planned." However, the Navy is still planning to retire 20 ships in fiscal year 2015, and 42 over the Future Years Defense Plan, 12 of which are being proposed for retirement prior to the end of their expected service life: 7 guided missile cruisers; 2 dock landing ships; 1 mine countermeasure; and 2 T–AOE fast support ships. When was the last time the Navy retired so many ships in such a short time?

Mr. STACKLEY. In the past, particularly during the 1990's draw down, the Navy retired a significant number of ships in single fiscal years. For example, in 1998,

29 ships were retired and in 1999, 21 ships. In a more recent period, in the timeframe of fiscal year 2004 to fiscal year 2008, the Navy retired 45 ships.

The budget decisions that drove the retirements in the fiscal year 2014 President's budget plan were based on the Navy's determination to reshape force structure to reflect the priorities of the DSG and the reality of top line reductions consistent with the Budget Control Act.

47. Senator MCCAIN. Secretary Stackley, given uncertain future shipbuilding budgets, why is the Navy taking this risk?

Mr. STACKLEY. As part of the difficult choices required by the Budget Control Act (BCA) of 2011, the fiscal year 2014 President's budget request proposed the decommissioning of seven guided missile cruisers (CGs) and two dock landing ships (LSDs) in fiscal year 2015. This is before the end of their expected service life. Navy decided to retire these ships to provide a ready and sustainable Fleet within budget constraints. The Navy reshaped force structure to reflect the priorities of the DSG and the reality of top line reductions consistent with the BCA.

The DSG is designed to ensure U.S. Armed Forces can meet the demands of the National Security Strategy at acceptable risk. To support the DSG under fiscal constraints, Navy force structure struck a balance between capacity, capability, affordability, and preserving the industrial base, while ensuring our warfighters have the necessary tools to protect our vital interests around the world. These ships are in need of significant maintenance investment, and the decision to retire these ships allows increased funding for training and maintenance for the balance of the fleet. This decision is driven by the need to provide wholeness of the force, averting more force structure than we can afford to man, train, and equip.

48. Senator MCCAIN. Secretary Stackley, what is the current estimate of savings the Navy will achieve for these retirements?

Mr. STACKLEY. The Navy reported an estimated $4.8 billion in savings associated with early retirement of the seven CGs and two LSDs with submission of the fiscal year 2013 President's budget. Congress subsequently fully funded the cost for continued operation and sustainment of these ships through the end of fiscal year 2014 with the Ship Modernization, Operation, and Sustainment Fund (SMOSF). Insofar as the unused balance of SMOSF funds expire at the end of fiscal year 2014 and no further sustainment funding is programmed for fiscal year 2015 and beyond, the estimated cost to retain these ships across the fiscal year 2015 Future Years Defense Plan—with the same set of assumptions regarding operations and modernization of these ships in fiscal year 2015–fiscal year 2019, would be on the order of $4.8 billion. (This number would need to be updated—likely reduced—pending decisions regarding ship modernization, since the fleet modernization plan has been directly affected by the revised scheduling resulting from the decision to retire these ships.) Since these costs are not programmed, retiring these ships in early fiscal year 2015 equates to cost avoidance rather than savings relative to the budget.

49. Senator MCCAIN. Secretary Stackley, Congress rejected the Navy's proposal last year to early retire seven cruisers. Congress also provided the Navy an additional $2.4 billion to cover the costs for 2 years of ship modernization, operations, and sustainment. Yet, in the draft shipbuilding plan for fiscal year 2014, the Navy again proposes to retire the same ships in 2015. What is the Navy's expense plan for the $2.4 billion?

Mr. STACKLEY. The current Navy plan only includes the expense of basic operation and sustainment (O&S) costs for fiscal year 2013 ($280 million) and fiscal year 2014 ($550.3 million). The CGs and LSDs covered by Ship Modernization, Operation and Sustainment Fund (SMOSF) will be maintained until the currently planned retirement in fiscal year 2015. However, due to the expiring nature of the SMOSF funds and the longer term budget uncertainty that contributed to the Navy's submission of the fiscal year 2013 budget proposing to retire these ships early, there is no viable plan to expend SMOSF funds to modernize these ships. Specifically, the SMOSF funding expires at the end of fiscal year 2014, and no funding is currently available in the Navy's budget beyond fiscal year 2014 for the required manpower and operating costs. Full combat system and HM&E modernizations require 2 years for procuring material, and for planning and executing the modernization availabilities.

50. Senator MCCAIN. Secretary Stackley, how will maintaining these ships in the fleet beyond 2014 affect the Navy's shipbuilding plan? Please provide specific changes.

Mr. STACKLEY. There would be more ships in the Naval Battle Force Inventory if the ships scheduled for early retirement were maintained beyond 2014. Specifically, the year-to-year battle force inventory would be nine ships higher than projected in the 2014 Shipbuilding Plan until fiscal year 2024. In fiscal year 2025, these ships would begin to reach their expected service lives until all nine ships were retired by fiscal year 2029.

The budget decisions that drove the retirements in the fiscal year 2014 President's budget plan were based on the Navy's determination to provide a ready and sustainable Fleet within budget constraints, and reshape force structure to reflect the priorities of the DSG and the reality of top line reductions consistent with the Budget Control Act. Navy made the difficult decision to retire these ships to allow increased funding for training and maintenance through the balance of the fleet, and balance between capacity, capability, affordability, and preserving the industrial base, while ensuring our warfighters have the necessary tools to protect our vital interests around the world.

VIRGINIA PAYLOAD MODULE

51. Senator MCCAIN. Secretary Stackley, according to the witnesses' prepared testimony, the introduction of new payload capacity for SSNs is one of four cited rationales used to justify a decrease in the battle force requirement reduction from 313 to 306 ships. What is the current design maturity of the VPM?

Mr. STACKLEY. The *Virginia* Payload Module (VPM) is currently in concept development. The Department of Defense added RDT&E and non-recurring engineering funding in the fiscal years 2013–2018 Future Years Defense Program for VPM, which will incorporate four large diameter payload tubes in a new hull section that could be inserted aft of the sail on future *Virginia*-class SSNs. This advance engineering work will enable the Department to consider incorporating VPMs in the fiscal year 2019 Block V *Virginia*-class buy as an alternative to recapitalizing the *Ohio*-class guided missile submarines (SSGNs).

The Navy has just started the design effort this fiscal year and will initially focus on requirements definition and concept design. The Navy will make the final decision whether or not to incorporate VPM in ship procurement in the fiscal year 2017 President's budget request to support the first year of Advanced Procurement SCN required for the submarines starting construction in fiscal year 2019. The design efforts for VPM will leverage existing technologies proven in *Virginia* Payload Tubes, SSGNs and with the construction of USS *Jimmy Carter* (SSN–23). There is no developmental technology required for VPM.

52. Senator MCCAIN. Admiral Myers, with additional payload capacity, will the future fleet be able to satisfy combatant command demand or will you still have a shortfall in overall the overall submarine fleet size?

Admiral MYERS. SSN force structure will drop below the requirement of 48 SSNs in 2025 and remain below 48 for 10 years. Though increased payload capacity would improve the capability of individual SSNs, the overall force size will still be unable to satisfy forward presence demands.

Undersea strike volume will decrease by approximately 63 percent in the 2030 timeframe due to SSGN retirement and SSN force structure reductions. The additional payload capacity provided by *Virginia* Payload Module (VPM) will allow the Navy to satisfy the regional combatant commanders' demand for major contingency operations where the unique value of undersea strike is most important. Including VPM on future *Virginia*-class submarines in the Navy's long range shipbuilding strategy would allow the Navy to eventually restore approximately 94 percent of our current undersea strike volume.

The Navy is considering measures to mitigate the impact of the SSN force structure trough—including reductions in SSN construction time and overhaul length and increases in deployment length—and has developed an Integrated Undersea Future Strategy to balance considerations of force structure and payload capacity.

While VPM represents a significant improvement in strike capacity, it comes at a cost. Given the increased costs VPM would introduce in the *Virginia*-class concurrent with our efforts to field the SSBN(X) replacement, it may render VPM unaffordable as we assess the future fiscal impact of sequestration.

53. Senator MCCAIN. Secretary Stackley, how would a delay in the design of the VPM impact the Navy's ability to move forward with production on block V in fiscal year 2019?

Mr. STACKLEY. Department of Defense requested RDT&E and nonrecurring engineering funding in the fiscal year 2013–2018 Future Years Defense Program for VPM, which will incorporate four large diameter payload tubes in a new hull section that could be inserted aft of the sail on future *Virginia*-class SSNs. This advance engineering work will enable the Navy to consider incorporating VPMs in the fiscal year 2019 Block V *Virginia*-class buy.

The Navy will make the final decision whether or not to incorporate VPM in ship procurement in the fiscal year 2017 President's budget request to support the first year of advanced procurement SCN required for the submarines starting construction in fiscal year 2019. A design delay will influence which hull ultimately receives the VPM. Navy will not proceed unless design maturity is achieved.

2-YEAR DELAY OF THE SSBN(X)

54. Senator MCCAIN. Admiral Myers, the fiscal year 2014 budget fully funded the SSBN(X) development effort. It does not repair the 2-year delay initiated in last year's budget. In prior years, the Navy claimed that the schedule for procuring 12 follow-on ballistic missile submarines is inextricably linked to legacy submarine retirements and that there is no leeway in this plan to allow a start or any delay in the procurement plan. Does the delay the Navy proposed last year risk your ability to maintain the same at-sea availability rates required under current nuclear force posture?

Admiral MYERS. Long term, the Navy needs a minimum of twelve SSBNs to provide a survivable force and meet STRATCOM strategic targeting objectives. This force structure is necessary to provide 10 operationally available SSBNs during the middle-of-life overhaul period (beginning in the mid-2050s). The key to ensuring we meet strategic requirements is to start construction of the lead *Ohio* Replacement SSBN in fiscal year 2021.

The 2-year delay introduced a second period where the Navy will be at the absolute minimum requirement of 10 operational SSBNs during the 2030s as the *Ohio* Replacement comes into service. Since no legacy *Ohio*-class SSBNs will be in overhaul during this period. We will be able to satisfy STRATCOM requirements with moderate risk.

Any further delay to the *Ohio* Replacement program will reduce the total SSBN force structure below that required to provide 10 operational SSBNs during the transition period from the *Ohio*-class to the *Ohio* Replacement, which would prevent us from meeting STRATCOM at-sea requirements.

55. Senator MCCAIN. Admiral Myers, does the current strategy include any margin for design or development challenges?

Admiral MYERS. To meet U.S. Strategic Command operational requirements, the first *Ohio* Replacement SSBN must be ready for strategic deterrent patrol by 2031. The *Ohio* Replacement SSBN program leverages the highly successful *Virginia*-class design-build methodology. The program schedule was developed using lessons learned from previous submarine classes (i.e., *Ohio*-class, *Seawolf*-class, and *Virginia*-class) enabling the *Ohio* Replacement SSBN to obtain a high design maturity at construction start ensuring minimal changes during construction and provide a predictable delivery cost and schedule. As with many shipbuilding programs employing new technologies to meet operational requirements, a risk assessment is performed to identify potential technical, cost, and schedule issues that could occur during development and ensure that plans properly account for those potential issues. Even with this approach, unforeseen issues with new technology development can occur and impact plans.

Given the strength of our submarine industrial base—as witnessed in the success of fielding the *Virginia*-class—our *Ohio* Replacement design-build-sustain strategy timeline is sound.

56. Senator MCCAIN. Admiral Myers, did this delay in any way infuse additional risk in our national ability to meet our current strategic requirements in the future?

Admiral MYERS. As detailed question 54, the 2-year delay introduced a period where the Navy will be at the absolute minimum requirement of 10 operational SSBNs during the 2030s as the *Ohio* Replacement comes into service. This adds moderate risk to the period of transition between *Ohio* and *Ohio* Replacement. However, since no legacy *Ohio*-class SSBNs will be in overhaul during this period, we will be able to satisfy STRATCOM requirements with moderate risk.

VIRGINIA-CLASS ADVANCE APPROPRIATIONS

57. Senator MCCAIN. Admiral Myers, instead of the traditional funding approach utilizing incremental funding, the fiscal year 2014 budget proposes to fund the *Virginia*-class using advanced appropriations, legislatively locking in the fiscal year 2015 funding increment. According to the Congressional Research Service (CRS), while the Navy has expressed interest in advanced appropriations in the past, there is little precedent in recent years for funding Navy ships with advance appropriations. Why did you propose to use advanced appropriations?

Admiral MYERS. When assessing the path ahead on the procurement of the 10th Block IV or second *Virginia*-class SSN in fiscal year 2014, the Department looked at a range of funding options. During final budget deliberations, the Department decided that advance appropriations was the best way to fund the second *Virginia*-class submarine in fiscal year 2014. This would mitigate the budget spike of the balance of the second submarine in fiscal year 2014 minimizing the impact to other Navy shipbuilding programs, but allow Congress to make a single procurement decision vice incrementally funding.

The use of advance appropriations for the 10th Block IV multiyear procurement *Virginia* SSN will also greatly reduce significant programmatic and budgetary uncertainties. Moreover, advance appropriations will help ensure transparency of total ship procurement costs.

58. Senator MCCAIN. Admiral Myers, given the budget does not account for sequestration, how might advance appropriations impact Navy flexibility if sequestration were not averted in fiscal year 2014?

Admiral MYERS. The Department is currently assessing the impact of sequestration on its shipbuilding goals as part of the SCMR, which is designed to factor in defense-wide budget cuts and its impact on the DSG. Upon completion of the review, we will balance the level of risk across warfighting and support capabilities for the full range of potential military operations and prioritize procurements to meet the capabilities and capacities to achieve this balance. Changes to ship force structure numbers and types of ships will be evaluated based on the results of this review.

AMPHIBIOUS SHIP CONSTRUCTION

59. Senator MCCAIN. Secretary Stackley, today, the Amphibious Force Structure stands at 30 amphibious ships, which includes 9 LHD/LHAs, 9 LPDs, and 12 LSDs. Of this amount, only 22 to 23 are currently operationally available. The Navy determined last year that an overall force structure of 38 amphibious ships is required to ensure that 30 ships are operationally available as required to support the Marine Corps. But the Navy concluded that it can accept a measured degree of risk by employing planning factors that call for a force of 33 ships, even though the DSG in 2012 calls for dispersing the Marine Corps around the Pacific theater, thereby increasing the reliance on amphibious ships. Based on the projected 2014 shipbuilding plan, when will the fleet have the right mix of 33 amphibious ships?

Mr. STACKLEY. The fiscal year 2014 Long-Range Shipbuilding Report to Congress provides the plan to meet the 33 ship amphibious force mix with eleven LHD/LHAs, eleven LPDs, and eleven LSDs upon delivery of the first LX(R) in fiscal year 2025.

60. Senator MCCAIN. Secretary Stackley, is the Navy currently assessing any plan to accelerate the construction of additional amphibious ships?

Mr. STACKLEY. Not at this time. However, as the AoA for LX(R) concludes this year, the Department will assess the timing of acquisition of this amphibious ship class.

61. Senator MCCAIN. Secretary Stackley, what is the Navy's position on a proposal to authorize and appropriate an additional $825 million in fiscal year 2014 and authorize 2-year incremental funding for a 12th LPD–17-class vessel?

Mr. STACKLEY. Balancing requirements, affordability and industrial base considerations, the Navy's shipbuilding plan builds toward a 33 ship amphibious force comprising 11 LHD/LHAs, 11 LPD and 11 LSD amphibious ships. The fiscal year 2013 Continuing and Furthering Appropriations Bill (P.L. 113–6) added $263 million of Advanced Procurement (AP) funding for a 12th LPD–17 amphibious transport dock ship. With the sequestration mark of ~$20 million, the net AP appropriated for a 12th ship is $243 million. Assuming the $243 million of AP in fiscal year 2013 was leveraged, the end cost of a 12th ship in fiscal year 2014 is estimated at $2.13 billion, leaving a balance of approximately $1.9 billion of full funding required in fiscal year 2014.

Accordingly, the Department has concluded that procurement of a 12th LPD is not an affordable alternative to meeting the 33 ship amphibious force requirement. However, within the context of the LX(R) AoA, the Navy is assessing the feasibility of significantly reducing the cost of the LPD hull form through design for affordability initiatives and capability trades. Insofar as procurement funding for the LX(R) is not required until fiscal year 2018, the Navy is currently holding the AP funds pending determination of LX(R) design/development funding needs.

62. Senator MCCAIN. Secretary Stackley, Congress provided $263 million for advanced procurement in fiscal year 2013 appropriations for a 12th LPD. What is the plan for the use of those funds?

Mr. STACKLEY. The administration opposed the addition of $263 million for advanced procurement in fiscal year 2013 appropriations for a 12th LPD as excess to requirement. The Navy is currently holding the AP funds pending determination of LX(R) design/development funding needs and will provide recommendations on the use of these funds at that time.

63. Senator MCCAIN. Secretary Stackley, what additional funding would be required by the Navy to construct a 12th LPD?

Mr. STACKLEY. The fiscal year 2013 Continuing and Furthering Appropriations Bill (P.L. 113–6) added $263 million of advanced procurement (AP) funding for a 12th LPD–17 amphibious transport dock ship. With the sequestration mark of ~$20 million, the net AP appropriated for a 12th ship is $243 million. Assuming the $243 million of AP in fiscal year 2013 was leveraged, the end cost of a 12th ship in fiscal year 2014 is $2.13 billion, leaving a balance of approximately $1.9 billion of full funding required in fiscal year 2014.

QUESTIONS SUBMITTED BY SENATOR ROGER F. WICKER

STABILIZING THE SHIPBUILDING INDUSTRIAL BASE

64. Senator WICKER. Secretary Stackley and Admiral Myers, in your advance testimony, you discuss at length the need to maintain a robust and healthy shipbuilding industrial base. In my discussions with industry leaders, they expressed to me their concerns with the unsteady nature of the contract work they perform for the Navy and the difficulties that stem from the shipbuilding acquisition program. Because of the feast or famine nature of the Navy's shipbuilding process, companies are challenged to find steady work for their highly-skilled employees to ensure they do not lose them to other industries. Once these employees leave an industry or region, they are unlikely to return. Such losses have the potential to cripple a fragile shipbuilding industrial base. Additionally, the lack of consistency that characterizes the acquisition system currently in place has a ripple effect on second- and third-tier suppliers. While major companies can generally survive short periods in which they are not building a ship, smaller companies that produce components or provide materials are often forced out of business. This uncertainty increases costs to the Navy and the taxpayers in the near-term, and contributes to the gradual erosion of the industrial base in the long-term. Do you agree that it is in the best interest of the Navy and the shipbuilding industry to establish a more consistent, predictable method of contracting and paying for ship construction?

Mr. STACKLEY and Admiral MYERS. The Navy agrees that stability and affordability are key to obtaining the objectives of the shipbuilding plan and improving the health of the industrial base. Over the past several years, the Navy has placed a priority on increasing shipbuilding rates and providing stability for the shipbuilding industrial base. Stability translates into retention of skilled labor, improved material purchasing, improved workforce and financial planning, strong learning curve performance, and the ability for industry to invest in facility improvements; all resulting in more efficient ship construction and a more affordable shipbuilding program. The past *Virginia*-class and DDG–51 class multiyear procurements (MYPs), the DDG–1000 Swap/DDG–51 Restart Agreement, the LCS dual block buy, the MLP procurement, the continuation of CVN–78-class procurements on constant 5-year centers, and the heel-to-toe CVN RCOH induction-to-delivery cycle have provided critical stable workload for our shipyards and their respective vendor bases. The approved upcoming *Virginia*-class MYP and just awarded DDG–51-class MYP will help to further stabilize the submarine and surface combatant industrial base through this decade. Likewise, the funding requested to procure a fourth MLP, and to configure MLP–3 and MLP–4 as AFSBs will also provide for much-needed workload within the auxiliary shipbuilding sector.

The strategy going forward continues to center upon improving affordability. To this end, in addition to the emphasis on stability discussed above, the Navy has established affordability requirements and invested in design for affordability for future ship programs; mandating use of open systems design; leveraging competition at every opportunity in shipbuilding and weapons systems production; employing fixed-price contracts to control cost for ships and weapon systems in production; imposing strict criteria limiting disruptive change to contracts; investing in industry-wide manufacturing process improvements through the National Shipbuilding Research Program; and incentivizing capital investment in facilities where warranted.

The fiscal year 2014 President's budget request for fiscal years 2014–2018 requests 41 ships. Of these 41 ships, 25 ships are part of stable DDG–51 or SSN–774 MYPs or the LCS block buy contracts, and 11 ships are part of ongoing shipbuilding construction programs.

The Navy believes continued use of multiyear and block buy procurements provide the best means of ensuring stability and predictability within the industry with respect to workload and financial planning. The greatest risk to the industrial base is associated with budget uncertainty, particularly the disruption and inefficiency caused by sequestration, delayed authorization and appropriations, and the looming budgetary challenges. The Navy will continue to aggressively pursue the mutual objectives of improving the affordability of our shipbuilding program and increasing the strength of our shipbuilding industrial base, and is committed to working closely with Congress on these efforts.

65. Senator WICKER. Secretary Stackley and Admiral Myers, if you had the option, would you agree to funding contracts on a multiyear basis, rather than year by year?

Mr. STACKLEY and Admiral MYERS. New ship construction is typically procured using Shipbuilding and Conversion, Navy (SCN) appropriation funding which provides multiple year budget authority that is available for obligation for 5 years. With few exceptions, the Navy typically requests to fully fund an entire ship in the year of authorization/appropriation. In cases where there is a requirement for advance procurement (AP) funds, which typically is associated with the need to order long lead time material or to achieve economic order quantity discounts, the Navy will request AP funds in the year(s) preceding a ship's full funding request. With respect to aircraft carriers and large deck amphibious ships, in addition to AP funds, the Navy will request to incrementally or "split" fund the balance of the ship, in order to avoid large spikes in the budget request for the years that these platforms are authorized and appropriated.

In instances where the ship class design is mature and production is proven and stable, the Navy believes continued use of multiyear and block buy procurements provide the best means of ensuring stability and predictability within the industry with respect to workload and financial planning. The fiscal year 2014 President's budget request for fiscal years 2014–2018 requests 41 ships. Of these 41 ships, 25 ships are part of stable DDG–51 or SSN–774 multiyear procurements or the LCS block buy contracts. The greatest risk to the industrial base is associated with budget uncertainty, particularly the disruption, inefficiency and irrational acts necessitated by sequestration, delayed authorization and appropriations, and the looming budgetary challenges. The Navy will continue to aggressively pursue the mutual objectives of improving the affordability of our shipbuilding program and increasing the strength of our shipbuilding industrial base, and is committed to working closely with Congress on these efforts

66. Senator WICKER. Secretary Stackley, if given the opportunity to restructure the way the Navy pays for ship acquisition, from design to construction to final acceptance by the Navy, what changes would you make?

Mr. STACKLEY. Today one of the greatest risks facing Navy shipbuilding is associated with budget uncertainty. To mitigate budget uncertainty, the Navy believes the continued use of multiyear and block buy procurements provide the best means of ensuring stability and predictability within the industry in instances where the ship design is complete and the production is proven and stable. Consideration should be given to expanding the period over which these types of procurements can be used to 6 or 7 years, in order to leverage economic order quantity purchases and to increase stability. As well, as we approach a period of ship construction that will be dominated by the capital demands for replacing the *Ohio*-class strategic deterrent submarine, we need to investigate financing methods that enable continued steady investment across the balance of our shipbuilding programs commensurate with the *Ohio* Replacement procurement. This should include limited exceptions to the full funding policy for shipbuilding.

The Navy has been working to minimize ship equipment and parts variants within ship classes and from ship class to ship class, to create greater commonality across the Fleet, while also looking at smart ways to reduce the number of ship specifications and procedures. From these efforts, the Navy believes that additional cost savings can be achieved through application of the block buy approach across a subset of shipbuilding material, common equipment, parts and commodities. The Navy is currently evaluating this alternate acquisition concept and ways to implement it, within the confines of the current authorization and appropriation process. Once the concept is developed further, additional flexibility may be desired with respect to authorization, appropriation, and bundling of advanced procurement material across appropriations (SCN, OPN, and NDSF) and possibly fiscal years, to best implement this alternative acquisition concept.

Another potential area of consideration regards restrictions and scoring rules associated with long term lease-purchase agreements. A long-term "Charter-Build" construct may be a prudent way to build, lease, and possibly procure some auxiliary ships such as T–AO(X) and T–ATS(X). In this construct, the Navy would enter into a long-term agreement with a private sector contractor to design, build, and then lease a number of ships to the Navy. The Navy would pay for the use of the vessels over the length of the lease, rather than upfront, and would secure the private sector contractor's loan from the Federal Financing Bank, pay financing charges, and would have the option to buy the vessel at a later date.

QUESTIONS SUBMITTED BY SENATOR KELLY AYOTTE

SHIPBUILDING INDUSTRIAL BASE

67. Senator AYOTTE. Secretary Stackley, Admiral McCoy, and Admiral Myers, in your joint prepared statement, you highlight the importance of providing "stability for the shipbuilding industrial base." Due to the inability to pass budgets and appropriations bills on time and find alternative spending reductions to replace defense sequestration, Congress has not provided the Navy the stability and predictability it needs. You also underscore the need to increase the "strength of our shipbuilding industrial base." I would be interested to hear from each of you . . . how healthy is our Nation's shipbuilding industrial base, and what vulnerabilities or weaknesses do you see in our shipbuilding industrial base?

Mr. STACKLEY, Admiral MCCOY, and Admiral MYERS. At present, the First Tier Shipbuilding Industrial Base is relatively stable, although the Navy remains concerned with the Amphibious and Auxiliary shipbuilding sector. The current shipbuilding plan of one Aircraft Carrier Refueling and Complex Overhaul (RCOH) approximately every 3 years, and one new carrier procurement every 5 years, maintains sufficiently stable production at Huntington Ingalls Industries Newport News Shipbuilding (HII–NNS) to sustain a level workload and a highly skilled workforce that supports complex aircraft carrier work. Submarine design and construction workload is at its highest level in over 2 decades at General Dynamics (GD)-Electric Boat and HII–NNS. Congress' approval in fiscal year 2013 of the Navy's request for multiyear procurement for the *Virginia*-class Block IV fiscal year 2014–2018 contract for up to 10 submarines should further stabilize the submarine industrial base. With the early June 2013 award of the fiscal year 2013–2017 multiyear procurement contract, surface combatant backlog provides workload stability at both GD BIW and HII-Ingalls shipyards. The Amphibious and Auxiliary Ship sector, consisting of HII–Ingalls and GD–NASSCO faces the greatest challenges with respect to sustaining a stable design and construction workload. HII has announced plans to close its Avondale, LA, shipyard and consolidate its naval shipbuilding at its HII–Ingalls facility in Pascagoula, MS. With both the LPD–17 class and MLP–1 class program delivering their last ships in fiscal year 2017, bridging the gap in procurement of amphibious and auxiliary ships will be challenging, as the next auxiliary program (T–AO(X)) is not planned until fiscal year 2016, the next amphibious ship award (LHA–8) is not until fiscal year 2017, and the next amphibious program (LX(R)) is not planned to be procured until fiscal year 2019 with advanced procurement funding in fiscal year 2018.

The second-tier shipbuilding industrial base consisting of Marinette Marine, Austal USA, VT Halter Marine, Dakota Creek Industries, Textron and others, is considered healthy. Second-tier shipyards are building the LCS, JHSV, Oceanographic Survey Research Ship (T–AGS–66), Oceanographic Research Ship (Ocean AGOR) and the Ship-to-Shore Connector (SSC).

The Navy continues to assess the industrial base for risk as it executes this shipbuilding plan and will address industrial base matters with industry and Congress

in the course of programming future years' shipbuilding budgets, formulating industrial base policies and agreements, and implementing acquisition strategies.

68. Senator AYOTTE. Secretary Stackley, Admiral McCoy, and Admiral Myers, what damage has sequestration and the lack of budget predictability and stability caused?

Mr. STACKLEY, Admiral MCCOY, and Admiral MYERS. Both sequestration and delayed appropriations have resulted in inefficiencies, short term reactions at the expense of long term goals, added risk, and damage at various extents and at various levels throughout the Navy enterprise. While the Navy made every attempt to minimize the damage when administering sequestration, some impacts were unavoidable given the size and timing of the reduction. The Navy has cancelled the unbudgeted deployment of a second carrier to CENTCOM in February and has cancelled other deployments to EUCOM, PACOM and SOUTHCOM. We have also forgone training and reduced our parts purchases, lowering our ability to surge forces and maintain our readiness levels while deployed. We have reduced the scope and efforts associated with development and acquisition, and are preparing to furlough our civilian workforce for up to 11 days beginning in July.

Many of our decisions in the area of procurement have been focused on making immediate reductions, although temporary de-scopes and deferrals were necessary, programs will require a "pay-back" in the future. This creates a continued rightward push of projects and requirements for what amounts to a one-time, non repeatable savings. As such, future budgets will have much less trade space available to respond, and ultimately our readiness and ability to surge will continue to be diminished. In fact, should sequestration continue with the Department placed on a lower funding path, the readiness impacts will increase disproportionately. As funding declines, our shore infrastructure will degrade and our shipbuilding, weapons system and supplier base will decline. Some contractors may choose not to do business with the Department or cease to exist entirely.

While some efficiency can still be obtained, reduction of the Navy's top-line budget will ultimately require a more balanced strategic approach, which the Department is currently assessing.

69. Senator AYOTTE. Secretary Stackley, Admiral McCoy, and Admiral Myers, what can we do to address those weaknesses?

Mr. STACKLEY, Admiral MCCOY, and Admiral MYERS. Budget uncertainty and instability are immensely disruptive to our ability to execute the current year budget and our ability to plan for the future.

We have limited options to restore funding lost to fiscal year 2013 sequestration that is required to complete fiscal year 2013 and prior year ships. A portion of fiscal year 2015 through fiscal year 2018 budget authority will be diverted from budget year requirements to fund prior year program completion efforts.

Reducing uncertainty in the budget process through passage of appropriation acts (or allowing anomalies during extended periods of Continuing Resolution Authority which are extremely disruptive for shipbuilding programs) and acting to avoid sequestration would help to address disruptions in programs. The Department is limited in terms of its reprogramming authority. Increasing the General Transfer Authority and the scope and purpose of Special Transfer Authority associated with new construction shipbuilding would provide additional flexibility to enable the Department leadership to review alternatives and take actions to meet the defense strategy.

70. Senator AYOTTE. Secretary Stackley, Admiral McCoy, and Admiral Myers, to what degree is the Navy reliant on sole source suppliers? Has the reliance increased or decreased in recent years?

Mr. STACKLEY, Admiral MCCOY, and Admiral MYERS. The Navy's shipbuilding industrial base is relatively stable. At the prime level, we have sole source contracts for our aircraft carriers and currently with our large deck amphibious ships. Most of the other shipbuilding contracts are procured using limited competition. These shipbuilders have established supplier relationships, in some cases with a single domestic source supplying critical equipment or components for one or more shipbuilders, or in some cases Services.

Where demand and funding are stable and/or the supplier is not solely reliant on one customer or product, sole source or single source arrangements can and do exist, typically without issue. Of course, relying on a single supplier introduces risk, as it creates a single point of failure, possibly from natural disasters, labor unrest, surge limitations, or financial distress. The Department recognizes that only a small fraction of our enormous industrial base capabilities are truly at risk (fragile) and

therefore in danger of disappearing without dedicated efforts to sustain them. As such we will continue to identify those firms which may warrant action if appropriate.

IMPORTANCE OF *VIRGINIA* PAYLOAD MODULE TO U.S. UNDERSEA STRIKE CAPACITY

71. Senator AYOTTE. Secretary Stackley, Admiral McCoy, and Admiral Myers, based on the planned drop to 42 attack submarines in 2029, what will be the specific impact on the Navy's undersea strike capacity?

Mr. STACKLEY, Admiral MCCOY, and Admiral MYERS. Undersea strike volume will decrease by approximately 63 percent in the 2030 timeframe due to two factors: SSN force structure reductions and SSGN retirement. The retirement of SSGNs accounts for a loss of 616 launchers and the reduction in SSN force structure for a loss of 72 launchers.

DOD added RDT&E and non-recurring engineering funding for a *Virginia* Payload Module (VPM) that could be inserted into future *Virginia*-class SSNs that would restore approximately 94 percent of our current undersea strike volume. This advance engineering work will enable the DoN to consider incorporating VPMs in the fiscal year 2019 Block V *Virginia*-class buy as an alternative to recapitalizing the SSGNs.

72. Senator AYOTTE. Secretary Stackley, Admiral McCoy, and Admiral Myers, how important is it that Congress fully fund the research and development funding for the VPM to mitigate the loss of undersea strike capacity?

Mr. STACKLEY, Admiral MCCOY, and Admiral MYERS. Undersea strike is a critical element of the ability to counter adversary anti-access and area denial capabilities, and to assure access for the Joint Force.

The *Virginia* Payload Module (VPM) is a potential option to more than triple the vertical launch capacity in current *Virginia*-class ships. VPM would provide an additional four large diameter payload tubes, each capable of carrying seven Tomahawk cruise missiles, increasing vertical launch cruise missile capacity from 12 to 40 per ship. Twenty *Virginia*-class SSNs with VPM could replace the undersea strike volume gap created by the inactivation of the SSGNs. The current advanced engineering design work on VPM will enable the Department of the Navy to consider incorporating VPM in the fiscal year 2019 Block V *Virginia*-class buy.

While the VPM represents a significant improvement in strike capacity that may be made available to us if we could incorporate this change into the *Virginia*-class design, it comes at a cost. In isolation, these costs would not be insurmountable but including them in the *Virginia*-class costs concurrent with our efforts to field the *Ohio* Replacement SSBN may prove to make these changes unaffordable regardless of the contribution they might represent.

OHIO-CLASS REPLACEMENT

73. Senator AYOTTE. Secretary Stackley, Admiral McCoy, and Admiral Myers, I note that Vice Admiral William Burke, the Deputy Chief of Naval Operations Warfare Systems, recently said that, "if we buy the SSBN within existing funds, we will not reach 300 ships. In fact, we'll find ourselves closer to 250 . . . our global presence will be reduced such that we will only be able to visit some areas of the world episodically." Our national security requires not only the *Ohio*-class replacement, but also a fleet of 306 ships. Under the current plan, not even accounting for sequestration, we are not going to have a 306-ship Navy until 2037. How can we ensure our Nation builds the 12 *Ohio*-class replacement boats we need with the common missile component for the U.K. Vanguard program, while protecting our shipbuilding plan that will allow the Navy to reach and sustain approximately a 300-ship fleet through much of the 2020s?

Mr. STACKLEY, Admiral MCCOY, and Admiral MYERS. The Department of the Navy will require ship construction funds identified in the 30-year shipbuilding plan to execute the plan and meet the requirements of the Force Structure Assessment (FSA). The funding cost estimates presented in the 30-year shipbuilding plan will build to and maintain a battle force inventory of approximately 300 ships during the time of *Ohio*-class recapitalization and ultimately achieve the Navy's FSA post-fiscal year 2020 objective of 306 battle force ships. The battle force represents an integrated and balanced fleet that executes the DSG. The challenge before us all is ensuring that shipbuilding receives the level of funding necessary to meet these force structure requirements.

74. Senator AYOTTE. Secretary Stackley, Admiral McCoy, and Admiral Myers, do we need a new national capital ships account in addition to the SCN account?

Mr. STACKLEY, Admiral MCCOY, and Admiral MYERS. Budgeting for *Ohio* Replacement (OR) in a separate national capital ships account will not affect the cost of the program or the resources required to meet the 30-year shipbuilding plan. The challenge before the Department is the episodic nature of SSBN recapitalization. SSBNs are not built in a level loaded schedule approach as are virtually other Navy platforms and instead, are built in tight class groupings every 30 to 40 years. The "historical average" shipbuilding plan over the last 20 years does not include SSBNs, so it is not surprising that a shipbuilding plan which includes SSBNs will exceed the historical average.

Accordingly, the Department with Congress will need to increase shipbuilding funds to account for the OR SSBN. Otherwise, with the OR estimated to require about one third of the historical average shipbuilding budget; existing, stable, lean shipbuilding plans implemented to provide optimal cost-efficiency (and the associated workforce stability) would be disrupted for 15 years in a manner inconsistent with cost control. Fewer ships would be built, and those built would be less cost efficient.

75. Senator AYOTTE. Secretary Stackley, Admiral McCoy, and Admiral Myers, is the collaboration with the United Kingdom on the Common Missile Compartment (CMC) for the *Ohio*-class replacement saving the U.S. money due to economies of scale?

Mr. STACKLEY, Admiral MCCOY, and Admiral MYERS. The U.S. and U.K. Governments both share in the U.S.-designed CMC. The U.K. provides funding for the non-recurring engineering (NRE) costs of designing the CMC; under the joint agreement the U.K. will pay a 12.5 percent cost share of all CMC design NRE. To date, the U.K. has invested approximately $400 million.

The U.S. and U.K. Governments anticipate both CFE and GFE material savings benefits associated with combined purchases from the recently reconstituted missile tube and launch tube industrial bases for construction of both the *Ohio* Replacement and U.K. *Successor* submarines.

In addition to missile and launch tube savings, the U.S. and U.K. Governments anticipate cost savings from joint manufacturing fixture procurements by sharing non-recurring engineering and design costs, leveraging suppliers' economic order quantities, including procurement and quality management labor hour reductions, and securing learning curve improvements during the assembly and testing of fixtures. The program expects to realize a cost savings of approximately 5 to 10 percent of the overall contract values for each manufacturing fixture based on the combined buy. At this time, actions for the fixtures are in various stages of competitive process. The Navy plans to award a fixture contract in 2013 and both nations will benefit from these savings.

76. Senator AYOTTE. Secretary Stackley, Admiral McCoy, and Admiral Myers, are there other areas of shipbuilding where we could seek to establish similar international partnerships that could save money?

Mr. STACKLEY, Admiral MCCOY, and Admiral MYERS. There are numerous international partnerships that provide technology and tools that aid Navy shipbuilding. Actual shipbuilding cooperation is limited by legislation; therefore, most of these projects focus on cooperation in the research and development phases. Some examples are:

- Advanced steel technology with Japan (completed—results used in submarine and ship construction).
- Trimaran with the U.K. (completed—design technology for trimaran hulls like that used in LCS 2 Variant).
- Tip vortex cavitation with the Netherlands (completed—results used in the design of the propeller for DDG–51).
- Dynamic system mechanics advanced simulation (DYSMAS) with Germany—(completed—provided modeling code for undersea explosion effect and ship design that mitigate such effects).
- Submarine composite structures with the U.K. (signed and underway—developing and testing composites for submarine structures).
- Advanced material propeller with Australia (recently signed—will design and test future designs for submarine propulsors).
- High speed multi-hull vessel with Japan (in negotiation—will develop tools to support future designs).

- Large diameter unmanned undersea vessels with South Korea (in negotiation—will provide an additional prototype platform for Unmanned Undersea Vessels).
- Hydrodynamics with the U.K. (active Project arrangement—collaboratively designed and evaluated different stern designs for use on *Ohio* Replacement and *Successor* programs).

The Navy meets regularly with several countries to assess any future efforts and conducts numerous active information exchanges with allies.

[Whereupon, at 11:46 a.m., the subcommittee adjourned.]