

**DEPARTMENT OF DEFENSE AUTHORIZATION FOR
APPROPRIATIONS FOR FISCAL YEAR 2011**

HEARING

BEFORE THE

COMMITTEE ON ARMED SERVICES

UNITED STATES SENATE

ONE HUNDRED ELEVENTH CONGRESS

SECOND SESSION

ON

S. 3454

TO AUTHORIZE APPROPRIATIONS FOR FISCAL YEAR 2011 FOR MILITARY
ACTIVITIES OF THE DEPARTMENT OF DEFENSE, FOR MILITARY CON-
STRUCTION, AND FOR DEFENSE ACTIVITIES OF THE DEPARTMENT OF
ENERGY, TO PRESCRIBE PERSONNEL STRENGTHS FOR SUCH FISCAL
YEAR, AND FOR OTHER PURPOSES

**PART 2
SEAPOWER**

MAY 6, 2010



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**DEPARTMENT OF DEFENSE AUTHORIZATION
FOR APPROPRIATIONS FOR FISCAL YEAR
2011**

THURSDAY, MAY 6, 2010

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

NAVY SHIPBUILDING PROGRAMS

The subcommittee met, pursuant to notice, at 2:34 p.m. in room SR-222, Russell Senate Office Building, Senator Jack Reed (chairman of the subcommittee) presiding.

Committee members present: Senators Reed, Webb, Hagan, Sessions, Wicker, LeMieux, and Collins.

Majority staff members present: Creighton Greene, professional staff member; and Jason W. Maroney, counsel.

Minority staff members present: Pablo E. Carrillo, minority investigative counsel; David M. Morriss, minority counsel; and Christopher J. Paul, professional staff member.

Staff assistants present: Kevin A. Cronin, Hannah I. Lloyd, and Brian F. Sebold.

Committee members' assistants present: Carolyn A. Chuhta, assistant to Senator Reed; Nick Ikeda, assistant to Senator Akaka; Greta Lundeberg, assistant to Senator Bill Nelson; Juliet M. Beyler and Gordon I. Peterson, assistants to Senator Webb; Perrin Cooke and Roger Pena, assistants to Senator Hagan; Sandra Luff, assistant to Senator Sessions; Erskine W. Wells III, assistant to Senator Wicker; Brian Walsh, assistant to Senator LeMieux; and Ryan Kaldahl, assistant to Senator Collins.

OPENING STATEMENT OF SENATOR JACK REED, CHAIRMAN

Senator REED. Let me call the hearing to order and welcome our witnesses—Secretary Stackley, Vice Admiral John Blake, and Lieutenant General Flynn—to the subcommittee this morning.

I want to also recognize my colleague and the ranking member, Senator Wicker, and my colleague and chairman and ranking member of so many committees, Senator Collins.

Thank you all.

We are obviously, gentlemen, grateful for your service to the Nation and to the Navy and the Marine Corps. We want you to convey our appreciation to the men and women of those Services, and their

families, who serve so valiantly today and across the globe. So, thank you, and thank them.

This is the first hearing I've held as chairman of the Seapower Subcommittee, and I particularly want to welcome Senator Wicker; Roger and I serve together as chairman and ranking member. He and his staff have done extraordinarily good work. I appreciate and look forward to continuing our efforts together.

Since the last time the subcommittee met, the Department of Defense (DOD) has completed the 2009 Quadrennial Defense Review (QDR), and released an updated 30-year shipbuilding plan. We look forward to the witnesses' assessment of the QDR and the 30-year shipbuilding plan.

We'd like to hear how these documents have driven the Services' fiscal year 2011 budget request, and how they support and describe this year's budgets decisions.

The Navy continues to be faced with a number of critical issues as it tries to balance its modernization needs and procurement needs against the cost of current operations. The shipbuilding budget remains at a level where it will be difficult, at best, to field the Navy we want and, indeed, even the Navy that we need.

We were very pleased to see the Department's decision to continue budgeting for two *Virginia*-class submarines per year. We believe that, when the Navy and contract team have been achieving effects like driving down costs and reducing construction-span times, it should be a model for other programs in the shipbuilding area.

We support the Navy's inclusion of the cost of the *Ohio* replacement SSBN in its budget documents. SSBNs will remain a vital leg of the nuclear triad for the foreseeable future.

These two decisions, building two attack boats per year and starting the *Ohio* replacement program, will yield significant stability to the Nation's submarine industrial base and provide the Navy with a more than capable submarine fleet for many years to come.

Unfortunately, the picture isn't as rosy everywhere. We continue to have significant concerns in the shipbuilding area. The most notable area of concern remains in surface combatant. The Navy has made strides in the Littoral Combat Ship (LCS) program. Since last year, the Navy has decided upon a winner-take-all acquisition strategy to procure the two fiscal year 2010 vessels, with fixed-price options for two ships per year for the next 4 years. However, we remain concerned about the ability of the competing shipyards to produce these ships on time and under the cost cap.

We look forward to receiving more analysis during the Navy's decisionmaking on large surface combatants. The restart of the DDG-51 program, following the truncation of the DDG-1000 program, is now underway. Although the Navy has said that the primary reason for making this change is requirements, we know that the Navy was also concerned about the cost of the DDG-1000. We remain concerned about the cost of the DDG-51s, and intend to keep a close eye on this program, as well as DDG-1000.

As the Navy firms up its requirements and its understanding of its needs for fiscal year 2016 and out-year large surface combat-

ants, we look forward to your testimony providing the strategic linkage of threats, requirements, and resources.

The subcommittee notes the Navy's desire to utilize the DDG-51 hull form with the Air and Missile Defense Radar (AMDR) to fulfill these requirements. We are concerned with the amount of redesign for the DDG-51 that will be needed to accommodate the AMDR. We have even greater concern that the radar may not be fully developed and tested in time to meet the construction schedule for the first fiscal year 2016 ships.

Since this ship appears to be significantly different from even the restarted DDG-51, we look forward to hearing how the Department plans to use full and open competition, to the maximum extent practicable, for both the ship and the major systems on the ship in order to keep costs down while maximizing capabilities.

Specifically, we expect the Navy, per longstanding requirements of the subcommittee, to procure ships that utilize open architecture.

These are significant challenges, and we fear they have the potential to add great deals of instability to the Navy shipbuilding budget, even in the near term. If the Department of the Navy is unable to control its acquisition programs and drive out cost growth, the Navy will not be able to afford the fleet it needs to meet the requirements of the QDR.

The QDR heavily emphasized the need to overcome anti-access capabilities and strategies that might be employed by potential adversaries. It therefore approved continuing the Expeditionary Fighting Vehicle (EFV). The EFV attempts to fulfill the Marine Corps' requirement to swim ashore from 20 to 30 miles at sea in armored vehicles and execute an amphibious landing. Unfortunately, the EFV program has been another poster child for troubled programs, with continuing cost, schedule, and performance issues. While we understand the requirement, we look forward to hearing how the Marine Corps plans to correct the problems in the program and deliver this needed capability.

In concert with this testimony on the Marine Corps' requirements for amphibious landing capabilities, we would like to hear from the witnesses this afternoon how the Department intends to meet the Marine Corps' naval surface fire support needs, particularly given the truncation of the DDG-1000 program that was intended to meet those needs.

We also welcome further information on our rate of production of big-deck amphibious ships. At our last hearing, Chairman Levin noted that the Department of the Navy has had trouble defining the requirements for the Maritime Prepositioning Force-Future (MPF(F)) program. Since that time, the Navy has shifted away from a MPF(F) optimize for forceful entry operations, towards a new Mobile Landing Platform (MLP) produced and procured to enhance maritime prepositioning squadron capability.

We'd like to hear the witnesses discuss this change and its impact on the Navy's ability to achieve its various missions, including humanitarian and disaster relief.

Finally, I'd like to note Secretary Gates' comments at the Air-Sea-Space Conference this week, that we must, in his words, "be willing to reexamine and question basic assumptions, in light of

evolving technologies, new threats, and budget realities.” This subcommittee will accept his challenge. The world and technology are changing rapidly, and the Navy must adapt to those challenges.

We will continue to work with the Navy and Marine Corps to ensure that our sailors and marines have not only the best equipment, but also the right equipment to succeed in today’s challenging environments. As you can see, there are some bright spots, but there are significant areas of concern.

We look forward to hearing your testimony today and dealing with the other issues that face the Department of the Navy.

Now I’d like to recognize Senator Wicker.

Roger?

STATEMENT OF SENATOR ROGER F. WICKER

Senator WICKER. Thank you, Mr. Chairman. I appreciate your kind words of welcome. I look forward to this hearing.

We have an outstanding panel, and I think they are to be commended for their selfless service to the Nation. I think we’ll have a very interesting hearing.

The chair has raised a number of issues, in his opening statement, that I agree need to be debated. The fiscal year 2011 shipbuilding budget funds nine ships, including two *Virginia*-class submarines, two DDG-51-class destroyers, two LCSs, one LHA amphibious assault ship, an MLP, and a third joint high-speed vessel (JHSV), at a total cost of \$13.7 billion in new ship construction.

Against the backdrop of the President’s budget request for fiscal year 2011, Secretary Gates’ speech, that the chair referred to, before the Navy League Symposium on Monday of this week, makes our hearing today on the Navy’s shipbuilding programs particularly timely. Secretary Gates’ public comments force us to review long-standing assumptions about how our Navy and Marine Corps will project power globally and whether our long-range shipbuilding plans and budget are consistent with these needs, and adequate to meet them.

Given the President’s budget before us, I find some of Secretary Gates’ comments confusing. I hope our witnesses can help clarify some crucial issues. For example, Secretary Gates urged the Navy to revisit its plans to keep 11 carrier strike groups for the next 3 decades. He questioned what kind of amphibious launch capability we really need to deal with the most likely threat scenarios. How do these comments square with the force structure requirements laid out in the QDR and the 30-year shipbuilding plan recently submitted to Congress, which call for 11 CVNs and about 33 amphibious ships?

Some of Secretary Gates’ comments raise questions, in terms of the budget for the coming year, and even more so for out-years. In his speech, Secretary Gates cautioned that he doesn’t foresee any significant top-line increases in the shipbuilding budget, beyond current assumptions. But, here are the facts: right now, we spend \$15.8 billion on ship construction. According to the Navy’s 30-year shipbuilding plan, we need to spend \$17.9 billion per year to sustain current submarine and surface ship construction levels. So, what does this mean for the future of the Navy, if the Secretary

of Defense does not think additional funds will be available to meet the Navy's own plans?

For example, the Navy's 30-year shipbuilding plan calls for replacement of 14 *Ohio*-class ballistic missile submarines and the multiyear procurement of 2 *Virginia*-class attack submarines per year. Because the ballistic missile submarines cost over \$6.5 billion each, and the *Virginia*-class submarines cost around \$2 billion each, these expenditures, alone, consume over 75 percent of the current shipbuilding budget. So, unless the Navy intends to increase its shipbuilding top line during this period, overall surface ship production would decrease to only two surface ships per year. Taking this into consideration, is a 313-battleship force merely lip-service?

On the LHA amphibious assault ship program, I remain concerned about the aviation and surface lift requirements. In my view, both the F-35 Joint Strike Fighter and the V-22 Osprey programs present unresolved questions, in terms of their operational suitability on L-class ships.

For future LHA vessels, why didn't the Navy invest in a more incremental acquisition strategy, which would have us integrate larger hangar space into that ship as the aircraft programs that require such space ripen, while we preserve a well-deck capability for surface assault?

With the many modern advances incorporated into LHD-8, I hoped a common hull design and maturity would create stability in the big deck amphibs. However, LHA-6 and LHA-7 will both be radically different from LHD-8. I understand there are discussions about changing the design of the follow-on ship to the LHA-7. These changes impact our ability to be as efficient with every dollar as we possibly can.

With DOD pursuing a 33-ship amphibious fleet, as blessed by the QDR, rather than the Marine Corps' original requirement for 38 amphibious ships, I understand that the Department of the Navy is accepting risks. So, we need to get this right. I hope our witnesses can help us with this issue, and identify the specifics of these acceptable risks.

I would also like to hear from the Marine Corps on updates with the long-delayed and challenged EFV, which the chair mentioned, especially in light of Secretary Gates' comments on Monday.

From the Navy, I'd like to know how they intend to go forward with the third DDG-1000 destroyer, now that we've been notified of critical cost growth in that program.

In addition, I look forward to hearing from the witnesses about the LCS competition and the status of the electromagnetic aircraft launch system, which would be deployed on the USS *Gerald Ford*.

So, we have many issues to discuss today, and I look forward to the testimony of our witnesses.

Again, thank you, Mr. Chairman.

Senator REED. Thank you, Senator Wicker.

We've been joined by Senator Sessions and Senator LeMieux.

If someone wants to make a brief comment, I'll entertain it, but I think the normal procedure is to go to the witnesses and accept their statements for the record.

Thank you very much.

Secretary Stackley.

STATEMENT OF HON. SEAN J. STACKLEY, ASSISTANT SECRETARY OF THE NAVY FOR RESEARCH, DEVELOPMENT, AND ACQUISITION; ACCOMPANIED BY VADM JOHN T. BLAKE, USN, DEPUTY CHIEF OF NAVAL OPERATIONS FOR INTEGRATION OF CAPABILITIES AND RESOURCES; LT. GEN. GEORGE J. FLYNN, USMC, DEPUTY COMMANDANT FOR COMBAT DEVELOPMENT AND INTEGRATION

Mr. STACKLEY. Yes, sir.

Mr. Chairman, Senator Wicker, distinguished members of the Seapower Subcommittee, thank you for the opportunity to appear before you today to discuss Navy shipbuilding.

More importantly, thank you for the steadfast support for the Navy and Marine Corps program, and, of course, your constant support for our sailors and marines.

With the permission of the committee, I'd like to provide a brief statement and submit the more formal statement for the record.

Senator REED. You have unanimous consent.

Mr. STACKLEY. Thank you.

Today we are a battle force of 286 ships supporting global operations with, arguably, greater reach and greater command of the seas than any navy at any point in history. While we take pride in knowing that our ships, aircraft, and weapon systems are unmatched at sea, as formidable as our technology may be, it is the skill, dedication, and resourcefulness of our sailors and marines that gives us our greatest edge. It's our responsibility to place in their hands the tools that they need to win the fight we're in and to return home safe. It's our responsibility to provide the capabilities and capacities to win the next fight.

The Chief of Naval Operations (CNO) and the Commandant of the Marine Corps have outlined those capabilities in what has been referred to as the 313-ship Navy. To this end, the fiscal year 2011 budget request includes funding for nine ships, a modest, but important, step towards meeting the CNO's and Commandant's requirements.

This year, we increased *Virginia*-class submarine procurement to two boats per year. In 2005, then CNO Mullen challenged the *Virginia* program to put the Navy in a position to be able to buy two boats for \$4 billion in 2012. This year, with Congress's support, "two for four in 2012" has become "two for four in 2011."

In 2011 we increased DDG-51 production to two ships, which, alongside the Aegis modernization program, adds both capability and capacity to our fleet's sea-based missile defense.

With the competitive down-select to a single design for the LCS program later this year, our 2011 budget request sustains an efficient build rate of two LCSs per year for the winning shipyard. Congress's support for this revised acquisition strategy, which includes opening competition for a second builder in 2012, has been critical to the Navy's efforts to bring much-needed stability and improved affordability for this program.

With this year's request, we increase our amphibious lift capability with procurement of an LHA-6 amphibious assault ship and our logistics lift capability with procurement of an MLP and a

JHSV. Additionally, a second JHSV is funded in Other Procurement Army, for a total of 10 ships in fiscal year 2011.

As we look to the near term, the Navy shipbuilding plan averages 10 ships per year, while balancing requirements, affordability, and industrial-based considerations in the next decade. Specifically, we have placed aircraft carrier procurement on a 5-year cycle, which will ensure our ability to sustain an 11-carrier force from the delivery of *Gerald R. Ford*, in 2015, through 2040. We sustained submarine construction at two boats per year, average, for the next quarter century. We've canceled the CG(X) program, because of technical risk and affordability concerns, and we will continue DDG-51 construction, leveraging a stable and mature design and infrastructure, while increasing the ship's air and missile defense capabilities through spiral upgrades to the weapons and ship sensor suites. We've restructured the maritime prepositioning force to provide enhanced yet affordable sea-basing capabilities.

In the second half of this decade, we will need to proceed with recapitalization of three major ship programs. We plan to commence procurement of the replacement for the LSD-41-class amphibious ships, following the definition of lift requirements.

We look to accelerate introduction of our next fleet oiler, the T-AOX. The T-AOX will bring greater efficiency and modern commercial design to our refueling-at-sea capabilities, while also providing critical stability to an important sector of our industrial base.

Most significantly, we'll procure the lead ship of the *Ohio*-class replacement, SSBN(X), in 2019.

The Navy's long-range shipbuilding plan fairly outlines the challenges we confront today. For the long term, in meeting our Navy's force structure requirements, operational, technical, manufacturing, and fiscal challenges all come to bear as we impose upon the plan greater cost realism and budget realism. In the most pragmatic terms, in balancing requirements, risks, and realistic budgets, affordability controls our numbers.

So, to this end, we're focusing on bringing stability to the shipbuilding program, adjusting our sights to find the affordable 80 percent solution, when 80 percent meets the need: working across our systems commands to improve the quality of our cost and schedule estimates that inform our requirements decisions; placing greater emphasis on competition and fixed-price contracts. We're continuing to improve our ability to affordably deliver combat capability to the fleet through open architecture. We're clamping down on contract design changes, and we have canceled high-risk programs.

Our goals for mounting today's force and recapitalizing the fleet affordably cannot be accomplished without strong performance by our industrial partners. So, it's essential that we have a clear understanding of the issues affecting their performance. So, we're building upon past studies this year, with assessment of our shipyards, the vendor base, and the design-industrial base, with an eye towards capability, capacity, and productivity requirements needed by our Navy, near-term and far-term.

In the end, industry must perform. We'll work to benchmark performance, to identify where improvements are necessary, to provide

the proper incentives, and to reward sustained strong performance with favorable terms and conditions.

To meet our objectives, we must be smart buyers. We've gone far, in the course of the past year, to reverse the downsizing trend of the acquisition workforce. From supervisors of shipbuilding to the warfare centers, systems commands, and program executive offices, we've added professionals in the fields of systems engineering, manufacturing, program management, contracts, cost-estimating, and test and evaluation. Of course, we have much farther to go.

The objective is not merely to increase the workforce, but to restore core competencies that have slipped loose in the course of the past decade and a half of downsizing.

In sum, the Department is committed to building the fleet required to support the national defense strategy, to which the fiscal year 2011 budget request addresses near-term capabilities while also laying the foundation for long-term requirements. Ultimately, we recognize that, as we balance requirements, affordability, and industrial-base considerations, it is vital that we, the Navy and industry, improve affordability within our programs in order to achieve a balance that gives greater favor to requirements in the industrial base.

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

[The joint prepared statement of Mr. Stackley, Admiral Blake, and General Flynn follows:]

JOINT PREPARED STATEMENT BY HON. SEAN J. STACKLEY, VADM JOHN T. BLAKE,
USN, AND LT. GEN. GEORGE J. FLYNN, USMC

Mr. Chairman, Senator Wicker, and distinguished members of the subcommittee, thank you for the opportunity to appear before you today to address Navy shipbuilding. The Department is committed to the effort to build an affordable fleet tailored to support the National Defense Strategy, the Maritime Strategy, and the new 2010 Quadrennial Defense Review (QDR). The Department's fiscal year 2011 budget will provide platforms that are multi-capable, agile, and able to respond to the dynamic nature of current and future threats. The fiscal year 2011 shipbuilding budget funds nine ships, including two *Virginia*-class fast attack submarines, two DDG-51 class destroyers, two Littoral Combat Ships (LCS) including economic order quantity for seven ships sets, an Amphibious Assault Ship (LHA), a Mobile Landing Platform and the third Joint High Speed Vessel (JHSV) for the Navy. Additionally, a second fiscal year 2011 JHSV is funded in Other Procurement, Army for a total of 10 ships in fiscal year 2011.

As we continue to build our future force, we remain engaged in operations in Afghanistan and in the drawdown of U.S. forces in Iraq.

Since last year, the Marine Corps has transferred authority for Anbar Province to the U.S. Army. From 2003–2009, our force levels in Iraq averaged 25,000 marines. Our mission in Iraq is complete and your marines have redeployed.

In Afghanistan, the mission has expanded. Since July, the 2nd Marine Expeditionary Brigade has conducted Operation Khanjar, the most significant Marine Corps operation since the battle of Fallujah in 2004, and the largest helicopter insertion since the Vietnam War. As of September 22, 2009, there were more marines in Afghanistan than in Iraq. In December, they conducted Operation Cobra's Anger in the vicinity of Now Zad and recently the First and Third Battalions, Sixth Marines conducted a major offensive to secure Marja. There is now a robust Marine Air-Ground Task Force of 19,400 personnel with equipment, commanded by a Marine two-star general in Afghanistan. Your marines and sailors have already had success and have made a difference in some of the toughest regions of Afghanistan, primarily Helmand Province in the south—the source of the highest volume of opium production in the world. However, more work remains to be done.

For the second year in a row, the Navy has more sailors on the ground than at sea in CENTCOM. At sea, we have more than 9,000 sailors, including a U.S. Navy aircraft carrier and air wing dedicated to providing 24/7 air support to U.S. and coa-

lition forces on the ground and ships supporting counterterrorism, theater security and security force assistance operations. Navy riverine forces are on their sixth deployment to Iraq, conducting interdiction patrols and training their Iraqi counterparts. On the ground, we have more than 12,000 Active and Reserve sailors supporting Navy, Joint Force, and combatant commander requirements. Navy commanders lead 6 of the 12 U.S.-led Provincial Reconstruction Teams in Afghanistan. We have doubled the presence of our SEABEE construction battalions in Afghanistan, increasing our capacity to build forward bases for U.S. forces and critical infrastructure in that country. Our Naval Special Warfare forces continue to be heavily engaged in direct combat operations and our explosive ordnance disposal teams continue to conduct lifesaving counter-Improvised Explosive Device operations. As we shift our effort from Iraq to Afghanistan, demand for Navy individual augmentees (IAs) has increased. We have additional IAs supporting the surge of U.S. forces in Afghanistan while our IAs in Iraq remain at current levels to support the withdrawal of U.S. combat troops, maintain detention facilities and critical infrastructure, and support coalition efforts until the operations and support they provide can be turned over to Iraqi forces.

While Iraq and Afghanistan continue to be the primary focus of our Nation's military efforts, our Navy remains globally present and engaged to protect our partners and advance our Nation's interests around the world. Approximately 40 percent of our Fleet is currently underway, providing U.S. presence in every region of the world. Our Fleet is executing all the capabilities of our Maritime Strategy today.

Our ballistic missile submarines are providing nuclear deterrence year-round, while our Aegis cruisers and destroyers are providing conventional deterrence in the form of ballistic missile defense (BMD) of our allies and partners in Europe, the Mediterranean, and the Western Pacific. Our carrier strike groups and amphibious ready groups continue to prevent conflict and deter aggression in the Western Pacific, Arabian Gulf, and Indian Ocean, while their forward deployments afford the United States the ability to influence events abroad and the opportunity to rapidly respond to crisis.

Our Navy continues to confront irregular challenges associated with regional instability, insurgency, crime, and violent extremism at sea, in the littorals, and on shore as we have done throughout our history. We are partnering with U.S. Coast Guard law enforcement teams in the Caribbean to conduct counter-narcotics and anti-trafficking operations and deny traffickers use of the sea for profit and exploitation.

We continue to strengthen our relationships and build the capabilities of our international partners through maritime security activities, such as global maritime partnership stations in Africa, South America, and Southeast Asia, and high-end training and operations with partners in the Western Pacific. Our ships continue to conduct counter-piracy operations off the coast of Somalia with an international presence that includes traditional and nontraditional partners, such as China and Russia.

We provided humanitarian assistance and disaster response to Haiti after a 7.0-magnitude earthquake devastated the Nation. Within hours of the earthquake, we mobilized the aircraft carrier USS *Carl Vinson* (CVN-70) with over a dozen helicopters, cargo aircraft, and extensive potable water-generating capability. The USS *Bataan* Amphibious Ready Group with the 22nd Marine Expeditionary Unit, the USS *Nassau* Amphibious Ready Group with the 24th Marine Expeditionary Units, and the USS *Gunston Hall* immediately responded to stabilize the increasingly volatile environment. This force included over 4,300 marines and sailors, 7 amphibious ships, 28 tilt rotor/rotary wing aircraft, multiple ship-to-shore landing craft, and significant medical, engineering, construction, and sustainment capability. Additional naval assistance included complementary sustainment and command and control capabilities along with a SEABEE construction detachment, our hospital ship USNS *Comfort* with medical personnel and supplies, a Navy dive and salvage team, P-3 surveillance aircraft; several surface ships with helicopters, Maritime Prepositioning Force ships with military and interagency supplies and equipment, and Military Sealift Command ships with fuel and cargo. Our disaster relief effort continues as part of a comprehensive U.S. Government and nongovernmental organization response.

Global demand for Navy forces remains high and continues to rise because of the ability of our maritime forces to overcome diplomatic, geographic, and military impediments to access while bringing the persistence, flexibility and agility to conduct operations from the sea.

The Department has updated the Long-Range Shipbuilding Plan based upon the 313-ship force originally set forth in the last Naval Force Structure Assessment, as amended by the Secretary of Defense decisions, and the 2010 QDR. As such, the

plan is designed to provide the global reach; persistent presence; and strategic, operational, and tactical effects expected of naval forces within reasonable levels of funding. The plan balances the demands for naval forces from the National Command Authority and combatant commanders with expected future resources. The plan takes into account the importance of maintaining an adequate national shipbuilding design and industrial base and uses realistic cost estimates for the ships.

In the near-term from fiscal year 2011 to fiscal year 2020, the Department of the Navy begins to ramp up production of ships necessary to support persistent presence, maritime security, irregular warfare, joint sealift, humanitarian assistance, disaster relief, and partnership building missions, namely the LCS and the JHSV. At the same time, the Department continues production of large surface combatants and attack submarines, as well as amphibious landing, combat logistics force, and support ships. Yearly shipbuilding spending during this period averages \$14.5 billion (fiscal year 2010\$), or about \$1.5 billion less than the 30-year average. The overall size of the battle force begins a steady climb, reaching 315 ships by fiscal year 2020.

In the mid-term planning period, from fiscal year 2021 to fiscal year 2030, the recapitalization plan for the current fleet ballistic missile submarine (SSBN) inventory begins to fully manifest itself. Current plans call for 12 new *Ohio*-class replacement submarines (SSBN(X)) with life-of-the-hull nuclear reactor cores to replace the existing 14 *Ohio*-class SSBNs. Advance procurement funds for detail design for the first SSBN(X) begins in fiscal year 2015, and the first boat in the class must be procured in fiscal year 2019 to ensure that 12 operational ballistic missile submarines will be available to perform the vital strategic deterrent mission. Eight more SSBNs will be procured between fiscal year 2021 and fiscal year 2030 (with the final three coming in the next planning period, beyond fiscal year 2031). Because of the high expected costs for these important national assets, yearly shipbuilding expenditures during the mid-term planning period will average about \$17.9 billion (CY 2010\$) per year, or about \$2 billion more than the steady-state 30-year average. Even at this elevated funding level, however, the total number of ships built per year will decline because of the percentage of the shipbuilding account which must be allocated for the procurement of the SSBN. Recognizing these impacts, we are looking at various ways to control the cost of these ships, including leveraging technology and lessons learned from the highly successful *Virginia* SSN shipbuilding program and by considering sustainment issues earlier in the design process than we have in the past.

In the far-term, from fiscal year 2031 to fiscal year 2040, average shipbuilding expenditures fall back to an average level of about \$15.3 billion (fiscal year 2010\$) per year. Moreover, after the production run of *Ohio* replacement SSBNs comes to an end in fiscal year 2033, the average number of ships built per year begins to rebound.

AIRCRAFT CARRIERS

The Navy remains firmly committed to maintaining a force of 11 carriers for the next 3 decades. With last year's commissioning of USS *George H.W. Bush* (CVN-77) and inactivation of the 48-year-old USS *Kitty Hawk* (CV-63), our last conventionally powered aircraft carrier, we have an all-nuclear-powered carrier force for the first time. Our carriers are best known for their unmistakable forward presence, ability to deter potential adversaries and assure our allies, and capacity to project power at sea and ashore; however, they are equally capable of providing our other core capabilities of sea control, maritime security, and humanitarian assistance and disaster response. 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.

Our 11-carrier force structure is based on world-wide presence requirements, surge availability, training and exercises, and maintenance. During the period between the November 2012 inactivation of USS *Enterprise* (CVN-65) and the commissioning of *Gerald R. Ford* (CVN-78), the Navy will utilize the congressional waiver for a 10 carrier fleet. We will continue to meet operational commitments during this 33-month period by carefully managing carrier deployment and maintenance cycles. After the commissioning of CVN-78, we will maintain an 11 carrier force through the continued refueling program for *Nimitz*-class ships and the delivery of our *Ford*-class carriers at 5-year intervals starting in 2020.

CVN-78

The *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 be the premier forward deployed asset for crisis response and early decisive striking power in a major combat operation. They incorporate the latest technology, including an innovative new flight

deck design to provide greater operational flexibility, reduced manning requirements, and the ability to operate all current and future naval aircraft. Among the new technologies being integrated is the electromagnetic aircraft launch system (EMALS) which will support *Ford's* increased sortie generation rates. EMALS is moving from having been a promising technology to a proven operational capability, which will deliver the warfighting enhancement needed in the future. Recently, the program successfully demonstrated a controlled launch sequence with the full-scale EMALS production representative unit and an aircraft launch demonstration is scheduled for later this summer. EMALS' production schedule supports delivery of CVN-78 in September 2015.

THE SUBMARINE FLEET

Our attack and guided missile 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 more robust capability to covertly deploy Special Operations Force personnel. Today, the Navy requires 48 attack submarines and 4 guided missile submarines (SSGN) to sustain our capabilities in these areas. The Navy is studying alternatives to sustain the capability that our SSGNs bring to the battle force when these ships begin retirement in 2026.

Virginia-Class SSN

The *Virginia*-class submarine is a multi-mission submarine that dominates in the littorals and open oceans. Now in its 13th year of construction, the *Virginia* program is demonstrating that this critical undersea capability can be delivered affordably and on time. These ships will begin construction at a rate of two per year in 2011, with two ship deliveries per year beginning in 2017. The Navy will attempt to mitigate the impending attack submarine force structure gap 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. One of the critical aspects of this mitigation plan is achieving and sustaining a construction rate of two *Virginia*-class submarines per year. The Navy continues to realize a return from investments in the *Virginia* cost reduction program and construction process improvements through upgraded shipbuilder performance on each successive ship. Not only are these submarines coming in within budget and ahead of schedule, their performance is exceeding expectations and continues to improve with each ship delivered. Additionally, three of the five commissioned ships completed initial deployments prior to their post shakedown availabilities.

Ballistic Missile Submarines

Our 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 number of these submarines was delineated by the Nuclear Posture Review 2001 which established the requirement of a force comprised of 12 operational SSBNs (with 2 additional in overhaul at any time). Because the *Ohio* SSBNs will begin retiring in fiscal year 2027, their recapitalization must start in fiscal year 2019 to ensure operational submarines will be available to replace these vital assets as they leave operational service. As a result, the procurement plan in this report supports a minimum inventory of 12 SSBNs for this force.

Submarine Modernization

As threats evolve, it is 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. Maintaining the stability of the modernization program is critical to our future Navy capability and capacity.

SURFACE COMBATANTS

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

In the Navy's fiscal year 2009 shipbuilding report, the lead CG(X) guided missile cruiser was planned to start in fiscal year 2011. This ship was to fulfill a critical role in integrated air and missile defenses (IAMD); but due to the ship's projected high cost and immaturity of its combat systems technology and still evolving joint BMD architecture, the Navy has determined that it is not feasible to continue to pursue a new-design CG(X) procurement program. Instead, we intend to deliver highly capable, multi-mission ships tailored for IAMD by spiraling the DDG-51 program into the next future destroyer, DDG Flight III. This preferred approach will develop the Air and Missile Defense Radar and install it on a DDG-51 hull with the necessary hull, power, cooling, and combat systems upgrades. The installation of this "family of systems" upgrade to the existing DDG-51 class will define the third flight of these ships. The warfighting analysis completed for CG(X) directly supports requirements development for this upgraded DDG-51 which is envisioned to be procured in fiscal year 2016.

DDG-51

To address the rapid proliferation of ballistic and anti-ship missiles along with deep-water submarine threats, we have restarted production of the *Arleigh Burke*-class destroyer DDG-51 Flight IIA series. The first ship of the restart, DDG-113, was funded in fiscal year 2010 and the contract is expected to be awarded this summer. This budget procures an additional two ships in fiscal year 2011. These ships will incorporate integrated air and missile defense, providing much-needed BMD capacity to the Fleet. They will also leverage the maturity of the DDG modernization program and include all associated hull, mechanical and electrical alterations. We will continue production of the DDG-51 in order to leverage the hot production line to spiral the DDG-51 to address future IAMD capabilities.

The DDG-51 class, starting with the Flight IIA restart, will continue to be upgraded in order to deliver the best combination of capability and capacity to meet future threats. This approach leverages the cost-savings of existing production lines; reduces total owner ship costs due to predictable designs; reduces cost overruns and delays through the incremental, or evolutionary, approach of developing new technologies; and it strengthens and stabilizes the industrial base to more efficiently and cost effectively produce ships to meet our national needs.

Littoral Combat Ship

The Navy remains committed to procuring 55 LCSs. LCS expands the battle space by complementing our inherent blue water capability. LCS fills warfighting gaps in support of maintaining dominance in the littorals and strategic choke points around the world. The LCS program capabilities address specific and validated capability gaps in mine countermeasures, surface warfare, and anti-submarine warfare. The concept of operations and design specifications for LCS were developed to meet these gaps with focused mission packages that deploy manned and unmanned vehicles to execute a variety of missions. LCS design characteristics (speed, agility, shallow draft, payload capacity, reconfigurable mission spaces, air/water craft capabilities) combined with its core command, control, communications, computers and intelligence, sensors, and weapons systems, make it an ideal platform for engaging in irregular warfare and maritime security operations.

Affordability remains the key factor to acquiring the needed future capacity of this highly flexible and capable ship. To stay on path to deliver this ship in the quantities needed, we announced this past September that we will down select between the two LCS designs in fiscal year 2010. We have assessed the combat capabilities of both these ships and believe that either ship would meet all of the key performance parameters for this class. While 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. On balance, they produce essentially equivalent results across the broad spectrum of missions assigned. Therefore,

the down select will be based largely upon procurement cost considerations. The selected industry team will deliver a quality technical data package, allowing the Navy to open competition for a second shipyard to build the selected design beginning in fiscal year 2012. The winner of the down select will be awarded a contract for up to 10 ships from fiscal year 2010 through fiscal year 2014, and also provide combat systems for up to 5 additional ships built by the second shipyard. This decision was reached after careful review of previous fiscal year 2010 industry bids, consideration of total program costs, and discussions with Congress. In addition to the funding required for two seaframes in fiscal year 2011, our fiscal year 2011 budget includes an additional \$280 million for economic order quantity for seven ships sets to continue the block buy which is essential to lowering the per unit costs of the seaframes. We request your continued support as we take the measures necessary to deliver this much needed capability at the capacity we need to meet future demands.

DDG-1000

The DDG-1000 *Zumwalt* guided missile destroyer will be an optimally crewed, multi-mission surface combatant designed to fulfill long-range, precision land attack requirements. The first DDG-1000 is under construction, with plans for three ships in the class. There is a validated operational requirements document which specifies that naval surface fires will be necessary to support combat operations across the beach. The DDG-1000 features two 155mm advanced gun systems capable of engaging targets with the long-range land attack projectile at a range of over 63nm. In addition to providing offensive, distributed and precision fires in support of forces ashore, it will provide valuable lessons in advanced technology such as signature reduction, active and passive self-defense systems, and enhanced survivability features. Overall, construction of DDG-1000 is approximately 20 percent complete and is scheduled to deliver in fiscal year 2013 with the initial operating capability in fiscal year 2015.

Modernization

As threats evolve it is vital to modernize existing ships with updated capabilities. Capable ships, supported by an effective industrial base, have been the decisive element during war, crisis response, and peace-time operations for more than two centuries. The destroyer and cruiser modernization program includes advances in standard missiles, integrated air and missile defense, open architecture, and necessary hull, mechanical and electrical upgrades. These upgrades are necessary to retain credible capabilities for future conflicts, including BMD, and to continue them on the path of reaching their full service life. Maintaining the stability of the cruiser and destroyer modernization program is critical to our future Navy capability and capacity.

The DDG Modernization Program is planned to execute in two 6-month availabilities; hull mechanical and electrical first, followed by combat systems 2 years later. The program focuses on the Flight I and II ships (hulls 51-78), commencing in fiscal year 2010. However, all ships of the class will be modernized at midlife. Key tenets of the DDG Modernization program include: upgrade of the Aegis Weapons System to include an Open Architecture (OA) computing environment; upgrade of the SPY radar signal processor; addition of BMD capability; Evolved Sea Sparrow Missile (ESSM); the upgraded SQQ-89A(V)15 anti-submarine warfare system; the SM-6 Missile; and improved air dominance with processing upgrades with the Naval Integrated Fire Control-Counter Air (NIFC-CA) capability.

The Cruiser Modernization Program is designed to modernize all remaining cruisers. The first fully modernized cruiser, USS *Bunker Hill* (CG-52), was completed in June 2009. The key aspects of the Cruiser Modernization program include: upgrade of the Aegis weapons system to include an open architecture (OA) computing environment; addition of Evolved Sea Sparrow Missile (ESSM); SPQ-9B radar; Close In Weapon System Block 1B; upgraded SQQ-89A(V)15 anti-submarine warfare system; and improved air dominance with processing upgrades and Naval Integrated Fire Control-Counter Air. Six cruisers will receive an additional BMD upgrade. Our fiscal year 2011 budget includes funds to execute the modernization of three cruisers and three destroyers.

AMPHIBIOUS WARFARE SHIPS

These ships provide distributed forward presence to support a wide range of missions from theater security cooperation and humanitarian assistance to conventional deterrence and assuring access for the Joint Force. When necessary, our forward postured amphibious forces can aggregate with others surged from homeports or other global locations to conduct major combat operations. The number of amphib-

ious ships in the Department's inventory is critically important for overcoming geographic, diplomatic, and military challenges to access in permission, uncertain, or hostile environments.

The Navy and Marine Corps have determined a minimum force of 33 ships represents the limit of acceptable risk in meeting the 38-ship amphibious force requirement for the assault echelon in a 2 Marine expeditionary brigade (MEB) forcible entry operation. A 33-ship force comprised of 11 LHA/D amphibious assault ships and a mix of 11 LPD-17 amphibious transport docks and 11 LSD(X) dock landing ships will be sufficient to support forcible entry operations with acceptable risk in the speed of arrival of combat support elements of the MEB.

LPD-17 Class Amphibious Warfare Ship

The LPD-17 *San Antonio* class of amphibious warfare ships represents the Navy's commitment to an expeditionary, power projection and engagement fleet capable of operating across the full spectrum of warfare. The class has a 40-year expected service life and serves as the replacement for four classes of older ships: the LKA, LST, LSD-36, and the LPD-4. *San Antonio* class ships play a key role in supporting ongoing overseas operations by forward deploying marines and their equipment to respond to global crises. USS *New York* (LPD-21) commissioned last November and to date, two LPD-17 ships have completed initial deployments. The 11th LPD is planned for procurement in fiscal year 2012.

LHA Replacement (LHA(R))

LHA(R) is the replacement for our *Tarawa* class ships that will reach the end of their already extended service life between 2011-2015. LHA(R) will provide flexible, multi-mission amphibious capabilities that span the range of military operations from forcible entry to humanitarian and disaster relief. LHA(R) will leverage the LHD-8 design while providing modifications that remove the well deck and increase aviation capacity to better accommodate aircraft in the future Marine Corps aviation combat element (ACE), such as the short take-off vertical landing Joint Strike Fighter and the MV-22. We laid the keel of the lead ship, USS *America* (LHA-6) in July 2009 and our fiscal year 2011 budget includes funds for one LHA(R) which is split-funded in fiscal year 2011 and fiscal year 2012.

MARITIME PREPOSITIONING FORCE (FUTURE)

The MPF(F) concept envisioned a forward-deployed squadron of ships to enable rapid closure to areas of interest, at-sea assembly, and tactical employment of forces to areas of interest in the event of crisis. Although useful in the lower end of the war-fighting spectrum, this squadron was primarily designed for use in major combat operations. Due to refocusing of priorities and cost, this program has been restructured and replaced with alternatives which enhance the existing capabilities of the Maritime Prepositioning Ship (MPS) Squadrons. While the MPF(F) program originally intended for this purpose has been truncated in this year's program, the creation of a support program has been added to enable development of the tactics, techniques, and procedures required to fully exploit this mission area in the future. Ships previously discussed in the context of the MPF(F) are moved to the command and support section for battle force accounting. In addition, the Navy has determined the LHA-6 class amphibious assault ships previously designated for the MPF(F) would better serve the Navy and Marine Corps in the assault echelon force where they could be employed in joint forcible-entry operations. As such, the requirement for these ships has been moved to the amphibious warfare category.

In support of this enhanced MPS concept of operations, three T-AKE auxiliary dry cargo ships have been shifted to provide logistic support to Marine Corps units ashore. Further, the Navy recognizes the need to provide for at-sea transfer of vehicles from a cargo ship and to provide an interface with landing craft air-cushioned vessels (both key capabilities the MPF(F) program was to provide). The Navy intends to procure three Mobile Landing Platforms (MLPs) to fulfill this capability. The planned MLPs, a lower cost variant of the MPF(F) MLP program, will be based on an *Alaska*-class crude oil carrier modified to be a float-on/float-off vessel. These ships will provide concept validation, operational testing and an incremental operational capability. Operationally, the three current MPS Squadrons will have an additional MLP and an additional T-AKE to supplement the current maritime prepositioning force in order to better provide in-theater capability to support resupplying a MEB.

JOINT HIGH-SPEED VESSEL

The JHSV provides high-speed support vessels for the Army and the Navy. JHSV will be an effective alternative to move assets throughout marginally developed the-

aters of operation while also requiring a less well developed port facility than is the case for today's principal lift assets. In addition, its relatively shallower draft permits operation in a greater number of port facilities around the globe. The combination of these attributes permits rapid transport of medium size payloads over intratheater distances to austere ports, and load/offload without reliance on well developed, heavy port infrastructure. Combatant commanders have made clear to the Navy their desire for this niche capability that can execute unique operations with partner nations throughout each of their areas of responsibility.

SHIPBUILDING INDUSTRIAL BASE

Beyond balancing requirements and resources, the fiscal year 2011 President's budget submission for shipbuilding also weighs the shipbuilding industrial base. The Navy's plan leverages stable designs to minimize disruption experienced over past decade of "first of class" construction. The plan provides stable procurement rates within constraints of requirements and budget which allows industry to plan and invest in facilities and process improvements to drive learning and efficiencies into serial production. The fiscal year 2011 shipbuilding plan ensures that major suppliers have "base" workload and opportunity to compete for future ship construction. As an example, the revised LCS acquisition strategy creates opportunity for our major shipbuilders to compete for future workload that was previously limited to incumbents. The Navy intends to sustain dual sources for fast attack submarines, surface combatants, LCSs, and amphibious/auxiliary ships.

The Navy continues to promote efficiency within the shipbuilding industry. The Navy has expanded use of competition and fixed-price contracts; incentivized shipyards to improve facilities through contract incentives, selective release of retentions, and Hurricane Katrina infrastructure funding; cracked down on contract changes; and judiciously employed multiyear authority, block buy authority and economic order quantity to show commitment to stable production.

Finally the Navy has initiated a Shipbuilding Industrial Base Study to review capabilities/capacities of the shipyards including design and production; the health of the vendor base, and trends in rates and overhead, productivity, and investment strategies. This study will inform Navy's fiscal year 2012 budget deliberations.

ACQUISITION WORKFORCE

The Department has embarked on a deliberate plan to increase the size of the DoN acquisition workforce by at least 5,000 employees over the Future Years Defense Program (FYDP), or about a 12 percent increase. We started last year and aggressively increased our acquisition workforce based upon bottoms-up requirements from our PEOs, systems commands, and warfare centers. In the last 15 months, for example, we have added 400 acquisition personnel (journeyman and high-grade) to support shipbuilding programs at the Naval Sea Systems Command. In addition, we have added over 900 acquisition personnel to our warfare centers across the country, that provide critical engineering, integration support, testing, and contracting oversight to all of our sea, air, land, space acquisition programs. These personnel are critical since they represent a part of the pipeline of future program managers and senior systems engineers.

We have also taken advantage of the Defense Acquisition Workforce Development Fund (DAWDF), initiated by Congress, and added nearly 300 acquisition interns this past year, and are on target to bring aboard an additional 500 this year and next. About 30 percent of our DAWDF acquisition workforce hires are now in shipbuilding organizations. We have also improved our education and training programs in two critical areas of need—shipbuilding program management and contracting. We have used DAWDF funds to pilot a shipbuilding program manager's course that was successful enough that we are moving it permanently to our Defense Acquisition University program. In addition, because of the difficulty in hiring experienced contracting officers, we have implemented an intense accelerated contracting training program at the Naval Sea Systems Command to increase the number of qualified contracting officers as well as increase retention rates among this important group. It will take several years to rebuild and rebalance the DoN's acquisition workforce, but these measures and continuing them with this budget is an important step.

These acquisition workforce initiatives are supportive of DOD's high priority performance goal to "Reform the DOD Acquisition Process" in the President's Analytic Perspectives volume (page 78) of his fiscal year 2011 budget which includes these performance measures:

- By 2011, DOD will decrease reliance on contract services in acquisition functions by increasing the in-house civilian and/or military workforce by 4,765 authorizations for personnel.
- By 2011, DOD will increase the total number of DOD civilian and military personnel performing acquisition functions by 10,025 personnel (end strength).

Navy's other acquisition initiatives described in this testimony are supportive of the other performance measures in DOD's high priority performance goal to "Reform the DOD Acquisition Process."

SUMMARY

The Navy's Long Range Plan for the Construction of Naval Vessels addresses the requirements in support the National Defense Strategy, the Maritime Strategy, and the new 2010 QDR. The plan sustains an 11-CVN force from 2015 through 2045; increases *Virginia*-class build rates to two submarines per year; increases air and missile defense capability with continued DDG-51 construction and Aegis modernization; increases amphibious lift capability with LHA-7 procurement in fiscal year 2011 and the 11th LPD in fiscal year 2012; increases intratheater lift capability with increased JHSV procurement; and continues *Ohio*-class replacement design and development by funding research and development efforts within the FYDP as well as advance procurement funds for detail design in fiscal year 2015.

Through the Long-Range Plan for Naval Vessels, the Navy has addressed affordability. The plan continues DDG-51 construction to leverage a stable design, mature infrastructure, and affordable capabilities. The Navy cancelled CG(X) and truncated DDG-1000 procurement at three ships and consolidated construction in a single shipyard. The Navy plans to transition DDG-1000 technologies and has aligned CG(X) Research and Development funding to the DDG-51 platform including development of the air and missile defense radar. The Navy intends to down select to a single LCS design which leverages competition, commonality, and efficient construction rates. The Navy has restructured the Maritime Prepositioning Force by continuing development of enhanced seabasing capabilities for the Maritime Prepositioning Squadrons. We have directed the LHA(R) ships to the amphibious force and intend to augment with MPS squadrons with a T-AKE, Mobile Landing Platform, and an existing large medium speed roll-on/roll-off ship. The Mobile Landing Platform will leverage an existing commercial design. The Navy has also increased the emphasis for meeting and extending service lives of in-service ships. We are sustaining the CG/DDG Modernization efforts and are targeting extension of the more capable DDG-51 Flight IIA ships to 40 year. We have deferred command ship replacement and intend to sustain the current command ships until 2029.

The Navy has addressed realism in the Long-Range Plan for Naval Vessels by incorporating realistic budget projections in the near- and mid-term and realistically estimating the long term. In addition, in this year's plan the Navy has included the estimated funding for the *Ohio*-class replacement program during the mid-term period.

Finally the Navy has addressed the industrial base in leveraging stable designs to minimize disruption experience with first of class constructions, provides stable production rates within the constraints of requirements and budget and ensures major shipbuilders have base workload and opportunities to compete for future ship construction.

Senator REED. Thank you, Secretary Stackley.

I presume that Admiral Blake's and General Flynn's statements that are included in the record are sufficient.

Admiral BLAKE. Yes, sir.

Senator REED. Fine.

Let me just begin a 7-minute round, and I anticipate also having a second round.

Secretary Stackley and Admiral Blake, the Navy's surface ship plan is basically divided into three periods: near-term, mid-term, and long-term. It's my understanding that, when in the near term, one of the driving forces is the Hull Radar Study, which some people have concluded suggests the approach is to buy a heavily modified DDG-51, and then add the yet-to-be-developed AMDR.

Just two questions. If the AMDR—which is currently being developed—is not ready for the fiscal year 2016 ship cycle, what are your plans? Mr. Secretary or Admiral Blake?

Mr. STACKLEY. Let me start.

Prior to the Hull Radar Study, we had initiated the AMDR, not a program at the time, but technology development, recognizing that this is the capability we believe we need to drive to, to be able to bring the ballistic missile defense (BMD) capability that the fleet needs in the back half of this decade.

That technology development was initiated a year-plus ago. We made a conscious decision, at the front end, to leverage competition, to the extent practical. We have three very capable competitors for that systems development. So, we are sustaining competition on the front end as we go through, today, technology development, going to ultimate system delivery.

As we did the Hull Radar Study in the course of 2009, we attacked this a couple of different ways. First, we put together a core team to do the study, which comprised our warfare centers, our program offices, and our systems commands. Then we wrapped that with outside experts, in the form of the Applied Physics Lab, Massachusetts Institute of Technology Lincoln Labs to, one, identify the right technology for the threat; two, determine how much capability is required; and, three, look at the technical viability and feasibility of the schedules that we are driving to.

The outcome of that study was that both the core team and the outside expert team that we brought to it concluded that 2016 was the feasible timeframe for AMDR. That means that between now and 2016 we need to continue to monitor progress in that development before we put the 2016 ship under contract, with the intent of ensuring we're not tying ourselves down to concurrent development with ship construction.

We have a path that we have to plow, between now and 2016, to monitor progress in the competition, in the technology development before 2106. If we determine, as we approach that, that we cannot get there on that timeline, then we're going to have to revisit.

What we're not going to do is put immature technology into 2016. At that point in time, we would keep a viable path going forward, where the development of the technology would pace the incorporation of the capability.

Senator REED. Thank you.

Admiral Blake, any comments?

Admiral BLAKE. I would just add, sir, that when we looked at the Hull Radar Study, we looked at it from three perspectives: from the perspective of the hull; the combat systems; and the radars themselves. We determined in that study that either hull could support the systems. We determined that the SPY-3, as well as AMDR, was the correct approach; it was more capable, it was scalable, and we could do it that way.

The third piece was, we looked at the lines of code that would be required as we looked at the DDG-51, and there was significantly less technical risk on the side of the DDG-51, as compared with any other hulls.

Senator REED. Thank you.

Just let me add a followup question, and that is, with this proposal of modified DDG-51, with the new radar for 2016, do you have a good understanding of the total cost of the ships, both the hull modifications and the new radar and fighting combat systems? Secretary Stackley?

Mr. STACKLEY. Yes, sir. Let me just start with the baseline ship. The last ship under construction and contract right now is DDG-112. We're going into the restart with 113, 114, and 115 at the two building yards. We have a solid estimate for that baseline. When we look at the 2016 ship, first we deal with core capabilities. The core capabilities would be the upgrade to the AMDR, bring in SPY-3, and then it's the support systems that go with the sensor suite upgrade. So, we're talking power and cooling.

The 30-year report does not lay in the costs for those upgrades, because we're going through the 2012 timeframe to put together, in concert with a requirement from last year's authorization bill, the technology roadmap that gets us there.

We have rough estimates today. We're refining the estimates as we look at the candidate technologies. That would lead to a POM-12 for a 2016 ship.

Senator REED. Okay.

Let me raise another question. This goes to continually looking back at alternative approaches. At some point, if the proposed modified DDG-51 plus the new radar gets so expensive, do you look back at going the other way; taking the DDG-1000, and modifying that ship to be more capable? Is there a point at which you begin to look at alternatives?

Mr. STACKLEY. We took a hard look at that with the Hull Radar Study, and there are several factors that work against that approach. One is the core combat system itself, and what it would take to modify the DDG-1000 core combat system to match what we have today, out in the fleet, with the Aegis and the advanced-capability builds that we have associated with the Aegis program. The other is the basic platform itself.

Senator REED. Admiral Blake, do you have any comments?

Admiral BLAKE. I would go back to the point I mentioned earlier about the lines of code. It was such a significant difference, when you looked at the DDG-1000 versus the DDG-51, it was in the range of two to one, because of that, it was felt that it was significantly less technical risk, and therefore that would be the more prudent path to go down.

Senator REED. Thank you.

Let me ask one final question in this round before I recognize Senator Wicker. With respect to DDG-1000, Secretary Stackley, it has breached the Nunn-McCurdy line, so there's a technical review underway. My understanding is, the principal cause of that is the truncation of the program from seven ships to three ships. Can you comment on that?

Second, what effect will this have on the truncated program, as it exists today?

Mr. STACKLEY. Yes, sir. Let me start with the baseline for the DDG-1000 program was struck at milestone B when it was, at that point in time, a 10-ship program. When you look at the criteria for determining the procurement acquisition unit cost, you have both

a research and development (R&D) component, as well as a procurement component. The program has a healthy R&D stream that preceded procurement. So, when you go from a 10-ship program to a 7- and then, ultimately, to the 3-ship program, that R&D front end basically gets divided into 3 ships and becomes a significant burden on the average unit cost.

That became the mechanism that triggered the Nunn-McCurdy critical breach. We're going through the process, right now, to meet the criteria for certifying continuation of the program, where we have five criteria that we need to certify. We are more than mid-stream through that process. June 4 is our requirement to certify, or other, back to the Hill. As you indicated in your remarks, the driver for this particular program has to deal with the quantity impact on the average unit cost.

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

Senator Wicker, please?

Senator WICKER. Thank you.

Gentlemen, in your joint statement, the testimony reads, "The Navy remains firmly committed to maintaining a force of 11 carriers for the next 3 decades." Firmly committed. The statement goes on to say that for a 33-month period, after the inactivation of the *Enterprise* and before the commissioning of the *Gerald R. Ford*, the Navy will utilize a congressional waiver for a 10-carrier fleet and then, after that, will maintain an 11-carrier force through the continued refueling program, et cetera.

By contrast, I mentioned in my opening statement that I hoped that you would help overcome some confusion that I have with regard to the Secretary of Defense and his speech on Monday. He said, "Considering that the Department must continually adjust its future plans as the strategic environment involves." He mentions two things, one of which is aircraft carriers. The Secretary said this: "Our current plan is to have 11 carrier strike groups through 2040. To be sure, the need to project power across the oceans will never go away. But, consider the massive overmatch the United States already enjoys. Consider, too, the growing antiship capabilities of adversaries. Do we really need 11 carrier strike groups for another 30 years, when no other country has more than 1?"

The QDR came out in February, Secretary Stackley. What has changed in the strategic environment to cause DOD and the Secretary of Defense to seemingly make such a dramatic departure from the QDR in a very important speech on Monday?

Mr. STACKLEY. Sir, let me be careful not to reinterpret the Secretary of Defense's speech, but try to address your question.

As described, both in my opening remarks, and I think you have hit on it as well, we have some very significant challenges before us in the Department of the Navy's shipbuilding program, regarding meeting our force structure requirements, for the 313-ship Navy, which includes 11 carriers, and doing it affordably, within the budgets that we have today within the Future Years Defense Program (FYDP) and, equally importantly, beyond the FYDP, when we project what it's going to cost.

The message that Secretary Gates has been very consistent with the Department of the Navy on is affordability of the Navy's shipbuilding program; that to achieve our 313-ship plan with realism

associated with future budgets, we have to come after affordability. We're doing that across the board in each of the areas that he highlighted in his speech. It's carriers, but it's carrier strike groups, which include support ships. It's the future *Ohio*-class replacement, and combatants, as well as amphibs.

I view his remarks in the framework of budget realism. We have to improve affordability to hit our numbers, in terms of force structure. We have to find that balance.

Senator WICKER. So, you're making a distinction between carriers and strike groups?

Mr. STACKLEY. He used the term carrier strike groups, which, when I hear carrier strike group, I hear the carrier and its escort ships.

Senator REED. Can I intervene for 1 second?

There's a vote on. I would propose to run over and vote.

Senator Webb will be recognized immediately after Senator Wicker. I will warn people that you're on your way, Senator.

Thank you.

Senator WEBB. Thank you, Mr. Chairman.

Senator WICKER. We certainly need to be mindful of cost, Mr. Secretary. But, the Secretary of Defense said, "Do we really need 11 carriers?" I'm just asking, have you had a conversation with the Secretary of Defense since he made these remarks on Monday?

Mr. STACKLEY. No, sir.

Senator WICKER. Did you participate at all with the Secretary in formulating his remarks on Monday?

Mr. STACKLEY. No, sir.

Senator WICKER. I see.

General Flynn, did you participate with the Secretary? Did he show you the speech before he made it?

General FLYNN. No, sir.

Senator WICKER. Admiral Blake?

Admiral BLAKE. No, sir.

Senator WICKER. Okay.

But, as far as the three of you are concerned, the Navy remains firmly committed to maintaining a force of 11 carriers for the next 3 decades.

Admiral BLAKE. Sir, as you noted in our statement, the Navy does remain firmly committed to 11 carriers. As you also noted, it is the law.

The second point I would make on that is, if you were to ask the CNO today, he would note for you that there has been no decrease in the demand signal for carriers from the combatant commanders (COCOMs), either now or as we look ahead to the foreseeable future.

Senator WICKER. I see.

Let me, then, move on to one other thing, and then I'll turn it over to Senator Webb for the first round.

The Secretary went on to say, on Monday, about how nice it was, and a real strategic asset, during the first Gulf war, to have a flotilla of marines waiting off Kuwait City, forcing Saddam's army to keep one eye on the Saudi border and one eye on the coast. Then he goes on to say, "But, we have to take a hard look at where it would be necessary or sensible to launch another major amphibious

landing again.” Further on, “On a more basic level, in the 21st century, what kind of amphibious capability do we really need to deal with the most likely scenarios?” Then, “How much?”

General Flynn, I’m not trying to get this panel into a debate with the Secretary of Defense. But, as far as the question of asking ourselves these questions, I thought we asked the questions and then developed the QDR. In what scenarios, General, might it be necessary or sensible to launch another major amphibious landing again?

General FLYNN. Senator, one of the key things, I think, that the Secretary said is, “We can’t define ourselves by the past.” I don’t believe we determine what our amphibious and power projection capabilities are by the events of the past. The heroic battles of Iwo Jima and Inchon and even what we did during Operation Desert Storm are in the past. As we look to the requirements of the future and what is demanded by the new security environment, I think we need to go to more recent history and take a look at the amphibious withdrawal from Somalia; the ability to project power into Afghanistan with Task Force 58; the noncombat evacuation of Lebanon, which was made possible by the fact that we had the ability to come ashore if we had to; the numerous partnership engagements that go on around the world right now; to the use of naval forces to prevent conflict; as well as the responses to humanitarian crisis and disasters around the world. That’s how we’re looking at defining the requirement. We believe that we need to take advantage of new operating concepts, which I believe we are in what you see, and the new plan now is to use the sea base as an operating base, and also to use the sea as maneuver space.

So, we’re changing our operational concepts. We’re going beyond things of the past. Major assaults, as they were planned in the past, are not, probably, going to happen in the future. But, other operations are, and they’re going to be defined by using the sea as a base of operations and, also, the sea as maneuver space.

Senator WICKER. No major assaults are likely. What about major amphibious landings?

General FLYNN. Sir, I think those are still a possibility in the future. But, assaults, as they were envisioned in the past—what comes to mind most often are battles like Inchon and Iwo Jima—they’re probably not going to happen in the future.

But, the ability to project power—and we believe the minimum requirement is to be able to project at least a two-brigade capability—is still a viable requirement, and one that we size the force to do, sir.

Senator WICKER. Thank you.

Let me just consult about how much time we have on this vote. [Pause.]

I think what we’re going to have to do is recess. I think, probably, Chairman Reed will be back in just a moment, because there was only one vote. But, for now, we’ll recess, subject to the call of the chair. [Recess.]

Senator REED. Let us reconvene.

At this point, I’d like to recognize Senator Collins, if you’re ready, Susan.

Senator COLLINS. Thank you, Mr. Chairman.

Mr. Chairman, you know that I really should be right up there by you, given my seniority. But, I'm delighted to be a member of your subcommittee, and look forward to working very closely with you on these issues which we care a lot about.

Senator REED. Likewise.

Senator COLLINS. Secretary Stackley, I want to follow up on an issue that the chairman raised about the Nunn-McCurdy cost breach for the DDG-1000 program. I think it's important, for the record, for all of us to reemphasize that this breach was caused by the reduction in quantity. It was not due to poor performance by the contractor. Is that correct?

Mr. STACKLEY. Yes, ma'am. To restate what I stated earlier, the R&D costs for the total program now get borne by three ships. That triggers a critical breach. There's actually several major contractors involved.

Senator COLLINS. True.

You can imagine the one I am most interested in.

Mr. STACKLEY. Yes, ma'am. But, when we evaluate, we take a look at total cost of the program.

This program has gone to great lengths to ensure that the maturity of the design is high before we get into construction. When we looked at reducing the number of ships, we went to great lengths to try to align the construction effort to a single location to gain efficiencies for a three-ship build and to leverage all that you can in one location. So, the efforts for the three-ship construction programs, when you look at the procurement unit cost as opposed to the R&D piece of it, we've been keeping that contained.

Senator COLLINS. I recognize that the process to recertify the DDG-1000, in light of this breach, requires significant analysis. You indicated to the chairman that you're about halfway through that process. I am concerned, however, that these delays are going to have an impact on program schedule, on program cost, and on the maintenance of the workforce, unless it comes to a closure soon. Could you give us some better understanding of how soon you think the process will be completed, and when the second and third DDG-1000 ships could be put under contract?

Mr. STACKLEY. Yes, ma'am. Let me start with the schedule. June 4 is the hard-and-fast date that we need to meet for certification. That's a pretty well-understood date for all the Nunn-McCurdys. We're driving to that date, and we will have all the issues addressed to support that schedule.

With regards to construction contracts, Bath Iron Works (BIW) has construction contracts for both DDG-1000 and -1001. Since the original program had production split over two shipyards, BIW had a piece of 1001 when that ship was contracted with Northrop Grumman. As the contract has moved north, they still have a core piece of their work share on 1001. We have a proposal in hand for the balance of the ship, under a fixed-price proposal, and we are negotiating those details so that when we come out of the Nunn-McCurdy process, we can quickly conclude the contract actions that are necessary.

In the interim, we have existing material procurement contracts, so that we can keep material orders on schedule, without causing

disruption for those ships' construction schedules to keep the costs contained.

Senator COLLINS. Mr. Stackley, in Secretary Gates' speech on Monday, he talked about the need for the Navy and the industry to find ways to build ships more economically. One way to do that is for the Navy to make greater use of multiyear procurement contracts. As the Navy looks at the restart of the DDG-51 line, are you giving consideration to the use of multiyear procurement contracts?

Mr. STACKLEY. Absolutely, we are. We've used two multiyears in the past, with the DDG-51 program, that provided great benefit. We are not ready yet—the initiation of the restart—to go right into a multiyear.

We do owe Congress an acquisition strategy. In formulating that acquisition strategy, we will be addressing an approach that considers multiyear, perhaps in 2013.

Senator COLLINS. Finally, I want to pick up on an issue that the ranking minority member raised, and that is about the adequacy of the shipbuilding budget. The Congressional Budget Office (CBO) has estimated that, in order to achieve the level of shipbuilding that is set out in the 30-year shipbuilding plan, you would need about \$4 billion more a year than what the Navy is budgeting. The Navy, I believe, is assuming an annual investment of about \$15.9 billion to meet the long-term goals of the plan. But, CBO has testified that the shipbuilding plan would cost \$20 billion a year. That was even based on a smaller plan than what the Navy ultimately embraced.

What is your reaction to the CBO's estimates of what it believes would be the true costs of carrying out the plan?

Mr. STACKLEY. Yes, ma'am. A couple things. First, the Navy has great respect for CBO's works. We spend time sharing data and information to understand our respective assumptions so that, where there are differences in our estimates, we can address them head-on.

In the CBO's report, in looking at a 30-year plan, the numbers that you quoted stretch out across the full 30-year plan. If you break it down into near-term, mid-term, and far-term, I think CBO would agree that our differences in the near-term are not to the extent that you've described; they're on the order of single digits of percent differences. In terms of the FYDP and the near-term, we're not exact, but we are relatively close. Now what we have to do is understand our differences and attack those differences.

Now, it grows in the longer term. We do have concerns with the projected costs and budgets in the longer term. That's why we're spending a great amount of effort today going after, not just requirements, but capabilities to meet the requirements to find more affordable solutions for our ship programs.

What CBO has highlighted is a risk in our 30-year program that is pronounced in the far term. What we intend to do is use the time we have now to try to address those risks, as well as understand our differences. We have different assumptions on things like escalation that, when you compound an escalation assumption over 30 years, it becomes pretty extreme on the back end.

We respect their analysis. We sit down, side by side, to understand the differences. We believe we're fairly close in the near-term, and we are tackling the issues in the near-term. We see the risk in the long-term, and we are working on that on the R&D side, in terms of defining requirements and capabilities.

Senator COLLINS. Thank you.

Thank you, Mr. Chairman.

Senator REED. Senator Webb.

Senator WEBB. Thank you, Mr. Chairman.

General, let me start off by pointing out that all three of you graduated from the Naval Academy. Is that correct?

Mr. STACKLEY. Yes, sir.

Admiral BLAKE. Yes, sir.

General FLYNN. Yes, sir.

Senator WEBB. Did you ever think there would be a time, when you were a midshipman, when you would be testifying before a chairman who graduated from West Point? [Laughter.]

That's a rhetorical question, Mr. Chairman. [Laughter.]

When I ran the Guard and Reserve programs, I spent most of my time with the Army, so I guess turnabout is fair play here.

I'd like to pick on a couple of points that Senator Wicker made. I think they are really important for us to get a clear idea of what this administration is doing, in terms of setting goals, on the one hand, and then hearing contrary information, on the other.

It is the administration's position that the Navy should grow to 313 ships. Is that correct, Secretary Stackley?

Mr. STACKLEY. Yes, sir.

Senator WEBB. Okay. I just want to make sure of that.

I had some real concerns with Secretary Gates' comments. I have great respect for him. I know that he, like you and all of us, is looking for efficiencies, in terms of shipbuilding programs and these sorts of things. But, this quote that Senator Wicker mentioned, it goes to a fundamental misunderstanding that I have seen repeated over and over again, through different cycles, about why we have a Navy.

When someone says that there is a massive overmatch between our Navy and other navies around the world, I think it's a misstatement of why we have navies or how different countries field military forces. You don't field a navy to fight another navy. You field military forces to protect your essential national interests.

Our Navy, as I believe all of you would agree, is vital to the strategic posture of the United States and to deterring malevolent behavior in a wide range of hotspots around the world that is an additional requirement, in terms of potentially fighting another navy, and it's also a requirement that we cannot ignore as we periodically, including right now, become committed to long-term engagements on the ground.

I think it would be a very serious mistake to cut back the defense budget or to alter the defense budget in order to fund ground forces that are in Iraq and Afghanistan, hopefully temporarily, in terms of the whole cycle of how our country operates, and, at the same time, do that at the expense of these vital shipbuilding programs that take years and years to put into place and are the envy of every other country.

Anytime a large emerging country decides that they want to become an international power, ask yourself what they do: they build up their navy; they try to build aircraft carriers. The Chinese are trying to build an aircraft carrier right now. So, let's be very, very careful, in terms of what we do affecting our long-term viability.

Admiral, I'd like you to, just for the record here, tell us how long it takes to design, build, test-run, and actually put to sea an aircraft carrier, from the inception of the concept.

Admiral BLAKE. I would first start with the R&D piece, sir. But, I would tell you that we need dollars up front for at least 7 years. We've just shifted the carriers from 4½- to 5-year cost centers. That means we need those cost centers there in order to be able to get the ship from design all the way to put it out in the fleet.

The other concern I think you have to look at is the industrial base. Because when you design a carrier which is an extremely unique asset, you must make sure that when you put that out there you are supporting the industrial base, which, as we know, has many fragile points in it.

From the beginning to the end, it is something that we have to definitely take into account. That was one of the things we took into account when we moved the cost centers from 4½ to 5 years.

Senator WEBB. So, from the beginning of a design concept to actually putting that ship out to sea in harm's way, we're talking how many years?

Admiral BLAKE. I believe it's 7, sir.

Mr. STACKLEY. I can take that, sir.

Senator WEBB. Secretary Stackley?

Mr. STACKLEY. Yes, sir. For a clean-sheet design, you're probably talking, from the start of the design to the ship operating it's about a 17-year period, for something like a carrier.

Senator WEBB. It's a considerable amount of time. Anyone who's visited one of these shipyards and seen, literally, the generations of expertise that go into how you lay down an aircraft carrier—where you put your wiring, all these sorts of things—can understand that this is something that has been passed down from generation to generation. It's very difficult to recreate, once you lose the workforce or you get away from the concept. That's why it's so difficult for other countries to match what we have.

My comment today, Mr. Chairman, is basically just a note of caution, in terms of how dangerous it would be for us to waver from this essential part of our strategic makeup.

Thank you, Mr. Chairman.

Senator REED. Thank you, Senator Webb.

Senator LeMieux.

Senator LEMIEUX. Thank you, Mr. Chairman.

I want to follow up on the comments of Senator Webb and Senator Wicker on the issue of the 313-ship plan, and ask when you expect the Navy will reach that plan.

Mr. STACKLEY. The 30-year report lays out both the structure of the 313-ship Navy, in terms of numbers versus types of ships, where we stand today, at 286 ships, and both our procurement plan and our decommissioning plan; so, the puts and takes and what the total force structure looks like over the next 30 years. We hit a number of 320 at about 2020.

So, when do we actually hit 313? It's the end of this decade. Then we're challenged to stay at that number. We're challenged to stay at that number because of the competition within the budget for the higher-class replacement program, and then to be able to sustain our force structure as the ships that we built in the 1980s and the 1990s, at high rates, meet their retirement age.

Senator LEMIEUX. Is the Navy prepared to be flexible in the decommissioning of ships if the new ships that were required to get to 313 don't come online, as expected?

Mr. STACKLEY. We have to be careful that we do that well in advance. So, when we look ahead, at surface combatants in particular, and recognize that the *Arleigh Burke*-class, that we procured at three to five per year in the 1990s, will be decommissioning at a rapid rate in the 2020s and 2030s, we need to look at extending their service life in order to hold up our force structure, because we won't be able to recapitalize at the same rate we bought those on.

Right now, the DDG-51 program is entering a mid-life modernization program. At the front end of that, we're taking a hard look at the material condition. We're baselining those ships. We are emplacing sensors and putting a surveying program in place, so that when we get to the more capable Flight IIA 51s going through modernization, we can do the necessary things to extend their service lives.

Senator LEMIEUX. That's good to hear. No one wants our sailors to be operating on a ship that's not safe or not up to par. But, at the same time, if the ship is still seaworthy and can still perform its mission, if we're having challenges adding new ships to get to the 313 level, it makes sense to do the things you just spoke about.

Let me ask you a question about the readiness level and our 313-ship plan, specifically to this administration's announcement last year of its new plan for BMD in Europe and for it to be more reliant upon our Aegis-class ship force, with the cruisers and destroyers. Based upon that change, do we have a sufficient cruiser and destroyer fleet in order to meet that mission?

Admiral BLAKE. Sir, if I could take that question?

Senator LEMIEUX. Yes, sir.

Admiral BLAKE. What you see now is the Navy's approach to the BMD challenge, which we are currently addressing. We currently have in the fleet 21 ships that are BMD-capable. By the end of the current FYDP, we will have 27 ships that will be BMD-capable and available for tasking.

The Navy's approach has been threefold. We've looked at it from the acquisition of BMD kits in order to make ships that are currently in the inventory capable of performing the BMD mission. The second approach we've taken is to build the BMD into the ships, from the keel up, which we have also put in the plan. But, the challenge there is, it takes us 5 years in order to go from the time we start the work until we deliver a ship. We have demand signal today that is out there that needs to be met in a quicker way. The third approach we are taking is, we are looking at what we call Aegis Ashore, in which we would put the BMD capability ashore. We are looking at beginning that in the 2015 timeframe.

So, it's a three-pronged approach. We will go with kits, we will go with ships from the keel up, and we will go with a program we're calling Aegis Ashore.

Senator LEMIEUX. Along that three-pronged program is the number of ships that we have and the number of ships that are in that effort sufficient, in your mind?

Admiral BLAKE. It is currently sufficient to meet the COCOM demand signal. The challenge we are facing is the rotation as we put those units out there, because we have to put them on station for a certain period of time. We have missions on both the east coast and west coast of the United States, where we have to put ships out for both.

In fact, one of the west coast units did the mission in the Mediterranean, the USS *Higgins*. She had actually been over there on the BMD mission, and then as she was on her way home, she responded to the Haiti event, in which they had the earthquake, and then she went back through the Canal and went home. So, we are able to move ships from both coasts.

But, yes, the short answer to your question is, we believe we have the levels.

Senator LEMIEUX. We're going to hear soon, I understand, about the announcement on the common hull for the 55-ship Littoral-class. Do you know when that announcement is due?

Mr. STACKLEY. We received proposals in April. We are going through proposal evaluation. We have a series of internal reviews that will need to be conducted. We engage, as necessary, in discussions with the offerers. We're targeting a down-select decision this summer.

Senator LEMIEUX. This summer.

Mr. STACKLEY. Yes, sir.

Senator LEMIEUX. We're scheduled to get those Littoral-class ships at Mayport, in Jacksonville. At the same time, we're decommissioning the frigates. So, there's a concern, which I'm sure you are aware, that we're going to have a huge gap as those frigates come offline and Littoral ships come online. So, urgency in getting that done is important to my State.

Mr. STACKLEY. Yes, sir.

Senator LEMIEUX. Mr. Chairman, that's all I have.

Senator REED. Thank you very much, Senator LeMieux.

Senator Hagan.

Senator HAGAN. Thank you, Mr. Chairman.

Thank you.

Despite the shortage of amphibious operational capabilities, the Navy continues to decommission the aging amphibious fleet in order to reduce the operation and maintenance (O&M) expenses. Admiral Blake, what are the Navy's plans to retire the vessels from the existing amphibious fleet within the next 10 years?

Admiral BLAKE. When we developed the 30-year shipbuilding plan, we looked at two factors. The first was affordability; what we could afford. The second was a view toward the future; how we were going to be able to get capabilities out into the fleet.

Specifically, the current large-deck amphibious ships, which we have in the budget for decommissioning, originally had service lives

of 20 years. They were subsequently extended, and they are coming to the end of those service lives.

What we have seen is that, as those ships come to the end of their service lives, we have had a challenge in order to keep on maintaining those vessels.

Recognizing the affordability issues we had, it was determined that, in order to be able to provide a capability in the future for the amphibious force, we were going to have to look at decommissioning those ships as they are currently listed in the 5-year defense plan.

So, the overall approach was, if we were to not decommission those ships, then we would have to pressurize both our manpower and our O&M accounts. If we were to do that, because those accounts would be pressurized, we would have to look into our other accounts in order to be able to cover that, because we have already reallocated the manpower and the O&M dollars in order to meet other emerging issues.

I'll give you an example. Manpower that would come off those ships would then be reapplied to our increase in the 10th Fleet, the Cyber Fleet. It would also be used to meet additional COCOM demand from organizations such as U.S. Special Operations Command. We've gotten demand signals to put additional folks out there.

What I would tell you is, while it was not easy to make that decision in order to be able to put those ships out within the current FYDP, we felt it prudent in order to be able to build the future force of the fleet, specifically on the NFP side, because if you pressurize both the manpower and O&M accounts, the only place we're able to go at that point is our procurement accounts. Our procurement accounts are made up, principally, of the aircraft and shipbuilding accounts.

Senator HAGAN. I think you said that the original life cycle was 20 years, but you've extended it?

Admiral BLAKE. That's correct.

Senator HAGAN. To what?

Admiral BLAKE. I'll have to take that one for the record. I'll get you the exact number on the years.

[The information referred to follows:]

The expected service life of the LHA 1 Class has been extended to 35 years.

Senator HAGAN. Admiral Blake and General Flynn, if the requirement for amphibious capabilities is 38 ships, and the agreed level of acceptable risk dictates a need for 33 ships, will the Navy and Marine Corps have the ability to fully support the COCOM requirements, when, I believe, only 29 ships will be available in 2011?

Admiral BLAKE. As I was stating earlier, it was a matter of affordability. If you look at the shipbuilding plan within the FYDP, you're absolutely correct. I believe in 2011, we get down to 29 ships, and then we build back up. It was an issue, from the Navy perspective, of affordability, risk, and getting that future capability out there in our procurement accounts.

General FLYNN. Senator, we agreed that the floor was 33 ships. One of the key issues is, when we put the plan together, there were

key assumptions and parameters about the availability of new ships.

Cost is one thing, and I think we need to strike a balance between that and capability. When you get around 29 ships, you are challenged, not only in meeting your larger requirement, but you are challenged in meeting your day-to-day requirements. Since the plan was written, we continue with those decommissionings as an operational assessment of what that will mean to our capabilities, because some of the assumptions as to when new ships would come online may no longer be valid.

Senator HAGAN. The 2011–2015 shipbuilding plan calls for procuring the 11th and the final *San Antonio*-class landing platform dock amphibious ship in 2012. In 2017, the 30-year shipbuilding plan calls for the start of procurement of a replacement for aging landing ship dock amphibious ships. Secretary Stackley, can the LPD–17 design be used as the basis for the LSD replacement? Would the procurement of a 12th LPD–17 in 2014 or 2015 support keeping the production line open while transitioning to the start of the LSD replacement?

Mr. STACKLEY. Yes, ma'am. In general terms, the Navy would look for reuse of design and common hull forms to improve affordability of any new program.

The timing for the LSD(X), as I mentioned in my opening remarks, is ahead of need. The LSD–41 and –49 class do not exit the service until the mid-2020s. We look at concerns with the industrial base. So, we have pulled that replacement program as early as we can without pushing some other requirement out that's more urgent, on a schedule basis. So, we have the LSD(X) just outside of the FYDP. This year and next year, we are going through the definition of the requirements to determine exactly what the lift fingerprint is that the replacement ship has to provide. Does that line up with an LPD–17 hull form? If it turns out that the LPD–17 has more capability than what the LSD(X) has, then we have to do the affordability and trades review to balance off, what's the cost of a new start versus the cost of reuse? Affordability, capability, requirements, and schedule are all going to be brought to the table in that review and that debate.

Senator HAGAN. Thank you. Let me go to one more.

The Navy originally estimated the cost of building the LCS sea frames at approximately \$220 million per vessel. I understand that Secretary Mabus has been a champion for acquisition reform; however, the current LCS sea-frame procurement costs have more than doubled. Will the Navy be awarding this as a fixed-price contract? What risk would the Navy face in the event that the winning shipyard is unable to build the first 10 of these ships within the contracted cost?

Mr. STACKLEY. It is a fixed-price contract that's out for bid.

Senator HAGAN. For 10 ships?

Mr. STACKLEY. Specifically, it's a fixed-price incentive contract. Two firm fiscal year 2010 ships, and then two-per-year options in 2011 through 2014, for a total of 10 ships.

There is a pricing portion as part of the review of the proposals, but there's also a technical portion. Inside of the technical portion, there's an evaluation of the bidder's ability to meet their proposal,

in terms of management and production. So, we evaluate that exact issue prior to awarding to the winner.

Senator HAGAN. What happens when their costs come in over?

Mr. STACKLEY. On the fixed-price contract, it's in accordance with the terms and conditions of the contract. So, they propose a target. We have what's referred to as a ceiling, where the ceiling limits the government's liability. Between the target that they propose and the ceiling, the cost is shared in accordance with what's referred to as a share line.

Senator HAGAN. I understand in the 1970s we had a serious situation where we had to do a substantial financial bailout. I was just curious we are looking into that when all these contracts with one bidder are signed.

Mr. STACKLEY. There was a lot of learning that took place in the 1970s. Our intent is not to repeat that experience, which is why cost realism is an important part of the evaluation process. We do not award based on what they bid. We award based on evaluated cost.

Senator HAGAN. Thank you.

Senator REED. Thank you, Senator Hagan.

Senator SESSIONS.

Senator SESSIONS. Thank you.

Thank all of you for your work.

Secretary Stackley, we appreciate the difficult choices all of you face in the Navy, with budgets that show not much growth from the President for defense when we're increasing personnel in DOD. I believe, as Admiral Blake indicated, that puts pressure on procurement. That's just the way it's always been. But, sometimes, when we have good programs that need to be completed, it's unthinkable to not complete them in a sound way.

Secretary Stackley, yesterday, Defense News reported that Secretary Mabus, the Navy Secretary, in his remarks to the Navy League on May 5, stated that, "Energy efficiency, both in the manufacturing process and in the final product, would increasingly be a factor in judging program performance, as well as in the contract awards."

Earlier, he said, in October of last year at an energy forum, "First, we're going to change the way the Navy and Marine Corps award contracts. The lifetime energy cost of a building or a system and the fully-burdened cost of fuel in powering those will be a mandatory evaluation factor used when awarding contracts. We're going to hold industry contractually accountable for meeting energy targets and system efficiency requirements." He goes on to emphasize that more.

In September 2009, he said, "One of the drivers, for me, is the affordability of being able to operate the force. We no longer have the luxury to say, 'It's a good deal on price,' or, 'Let's buy it.' We have to get our arms around lifecycle costs."

Do you agree that that's the right way to purchase a ship, or any vehicle, but a ship, particularly? That you want to know not only how much it costs today, but how much fuel it will use and how much it will cost to operate that? Is that a factor that should be given weight in the process?

Mr. STACKLEY. Sir, the Secretary has outlined his goals for energy, and we are putting a lot of effort into not just meeting his goals, but building the path to get there.

When we look at how we procure our ships, we bring total ownership cost into the equation, and we evaluate not just the procurement costs, but we look at the ownership costs throughout the life of the program, which includes energy, it includes manpower, it includes maintenance, and modernization considerations, in addition to the upfront procurement cost.

Senator SESSIONS. I think you said that you agree with the Secretary. Is that right?

Mr. STACKLEY. I would always agree with the Secretary, sir. [Laughter.]

Senator SESSIONS. Especially when he's correct, as he is in that statement. But, I didn't hear you say, precisely, that you are at that level now. He said, "First thing we're going to do is fix this energy matter."

So, I'm asking you, today, when you look at the LCS competition, is that effectively being evaluated in the bid process? It certainly seems that it should be.

Mr. STACKLEY. We took a look at the larger category of ownership cost, we considered it as an evaluation factor, compared the two designs, and arrived at an evaluation inside the technical portion of the LCS award criteria that would address improvements to total ownership costs, which would include energy, as well as maintenance and modernization.

Senator SESSIONS. The fact that that is a very long and complex answer makes me nervous, because my analysis of it is that it does not do just what the Secretary said.

I would offer for the record, Mr. Chairman, a report from the CBO that's analyzed this particular question.

[The information referred to follows:]



Douglas W. Elmendorf, Director

April 28, 2010

Honorable Jeff Sessions
United States Senate
Washington, DC 20510

Dear Senator:

In response to your recent request, the Congressional Budget Office (CBO) has analyzed the impact of operation and support (O&S) and other types of costs on the total life-cycle costs of four classes of Navy ships. The analysis—which aims to provide context for assessing the costs of the new littoral combat ship (LCS)—focuses on the following ship programs:

- MCM-1 Avenger class mine countermeasures ships,
- FFG-7 Oliver Hazard Perry class guided missile frigates,
- DDG-51 Flight IIA Arleigh Burke class guided missile destroyers, and
- CG-47 Ticonderoga class guided missile cruisers.

CBO chose those four classes because they have been in the fleet for decades, data for them are readily available, and they all conduct at least one mission that the LCS is also expected to perform. Using the Department of Defense's (DoD's) definitions of cost categories, CBO calculated costs over the life of each type of ship in the following six categories:

- Research and development,
- Procurement,
- Personnel,
- Fuel,

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- Other operations and support, and
- Disposal.

The resulting total life-cycle cost is smaller than the total ownership cost of a ship, which would also include indirect personnel costs (such as for recruiting, training, and medical support) and long-term infrastructure costs (for changes in bases, housing, and other infrastructure associated with a large-scale change in the size of the Navy). CBO does not have a reliable method to estimate those additional costs, however, so it limited its analysis to a ship's life-cycle cost.

Life-Cycle Costs of Four Types of Ships

CBO's analysis indicates that O&S costs—for personnel, fuel, and other items—make up 49 percent to 56 percent of the life-cycle costs of the four types of ships listed above (see Table 1). Personnel is the largest single element of O&S costs. For a small vessel with a relatively large crew, such as the MCM-1 class mine countermeasures ship, personnel costs represent 38 percent of the ship's life-cycle cost, compared with 29 percent for a CG-47 class cruiser, which is seven times bigger but has only four times as large a crew. Fuel costs account for a much smaller share of the life-cycle cost: 8 percent to 11 percent in the case of the frigate, destroyer, and cruiser. For the mine countermeasures ship, fuel costs make up only 1 percent of the life-cycle cost, largely because that ship travels at very slow speeds during mine-clearing operations.

Procurement costs account for most of the rest of those four ships' life-cycle costs, ranging from 43 percent to 50 percent. Disposal costs for destroyers and cruisers have averaged a little less than \$1 million per ship. In the case of FFG-7 frigates, the Navy has often sold retired ships or given them away to other countries. The Navy has not disposed of MCM-1 ships yet. But when it removed 12 MHC-51 coastal mine hunters, which are similar to the MCM-1s, from the fleet several years ago, it sold one and gave three to other nations. (The remaining eight are awaiting disposal.)

Basis for CBO's Analysis

CBO used the individual ship as the unit of this analysis. It allocated each program's research and development costs among ships by dividing the total amount spent in that category by the number of ships purchased in the program. Procurement costs were estimated as the historical average cost per ship in each class. Personnel costs were computed as all of the current and future pay and benefits (referred to as fully burdened costs) of an average officer and average enlisted crew member, multiplied by the average number of officers and enlisted personnel in a ship's crew. Fully burdened fuel costs represent the price of fuel delivered to the fleet by the Navy's supply system, including the expenses involved in purchasing oil, refining it into fuel, and transporting it to where it is needed. Other O&S costs mostly pertain to maintenance on a

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ship. Disposal costs reflect the expense of removing a ship from active service in the fleet. For each ship, CBO estimated those various costs for every year of the ship's notional service life (assuming that all of the ships entered into service today). The costs were then discounted to their present value in 2010 dollars using a real discount rate of 3 percent, which was based on the long-term average yield of 30-year Treasury bonds adjusted for inflation.

Data on acquisition costs—research and development plus procurement—came from DoD's Selected Acquisition Reports for each ship program. CBO estimated the number of personnel and the amount of fuel used per ship as five-year averages from the Navy's Visibility and Management of Operating and Support Costs (VAMOSC) system. The full price of military pay and benefits and the fully burdened price of fuel were calculated using data from DoD and drawing on prior CBO analyses.¹ CBO obtained data on other O&S costs directly from VAMOSC. Disposal costs were modeled using Navy data on the disposal of other ships.

Life-Cycle Costs of the Littoral Combat Ship

CBO included in its analysis equivalent estimates for the LCS-1, *U.S.S. Freedom*. The VAMOSC database currently contains one year's worth of data for that ship. (CBO did not include the LCS-2 in its cost analysis because no data based on normal operations were available for that newly commissioned ship.) CBO projected the life-cycle cost of the LCS-1 under three different assumptions about the average annual amount of fuel the ship will use over its 25-year life: low, moderate, and high. In all three scenarios, procurement costs dominate the life-cycle cost of the LCS-1, ranging from 58 percent to 66 percent of the total. Those procurement percentages are higher than for the other ships that CBO analyzed. However, the LCS-1 is the first ship of a new class, and as happened with the lead ships in most of the Navy's other programs over the past 20 years, it experienced a number of difficulties—and consequent cost growth—during its construction.² Personnel costs make up 14 percent to 16 percent of the LCS-1's total life-cycle cost in the various scenarios, and fuel costs account for 8 percent to 18 percent.

-
1. The price of oil was based on CBO's long-term forecast for oil prices. For the fully burdened price of fuel, CBO relied on data in an information paper from the Naval Sea Systems Command dated October 2, 2007. Since then, the Office of the Secretary of Defense has issued additional guidance on calculating the fully burdened cost of fuel, but the services have not yet implemented that guidance; see "Fully Burdened Cost of Delivered Energy—Methodological Guidance for Analyses of Alternatives and Acquisition Tradespace Analysis," in Defense Acquisition University, *Defense Acquisition Guidebook* (May 22, 2009), available at <https://acc.dau.mil/fbcfmethod>.
 2. The Navy plans to buy a total of 55 littoral combat ships through 2031. CBO estimates the average procurement cost for the LCS-3 through LCS-55 at \$550 million per ship (in 2010 dollars), plus \$44 million per ship for outfitting and postdelivery costs.

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The low-fuel case assumes that the LCS-1 generally operates at relatively low speeds—10 knots or less 90 percent of the time it is under way and 30 knots or more only about 3 percent of the time. That speed profile is based in part on how the Navy operated the LCS-1 between March 2009 and March 2010. In that scenario, operation and support costs total 33 percent of the ship's life-cycle cost: 16 percent for personnel costs, 8 percent for fuel costs (assuming that the ship consumes 25,000 barrels of fuel per year), and 9 percent for other O&S costs. The share attributable to personnel costs is lower than for the other ships that CBO analyzed, reflecting the Navy's goal to reduce crew size on the LCS substantially compared with that on other Navy ships. For example, the LCS-1 is about three-quarters the size of its predecessor, the FFG-7 guided missile frigate, but its crew is less than one-third the size of the frigate's.

The moderate-fuel case—which CBO considers the most likely of the three scenarios—assumes that the LCS-1 operates at 30 or more knots for about 5 percent of the time, at 14 knots to 16 knots 42 percent of the time (a range that might be typical when the ship was traveling from its home port to a deployment location), and at less than 12 knots for the rest of its time under way. In that scenario, O&S costs total 34 percent of the ship's life-cycle cost: 15 percent for personnel, 11 percent for fuel, and 8 percent for other O&S costs.³ The moderate speed profile would result in fuel usage of about 35,000 barrels per year, slightly less than the 37,600 barrels that the Navy assumed in formulating its 2011 budget request.⁴ By comparison, the FFG-7 class frigates consumed about 31,000 barrels of fuel per ship in 2009.

The high-fuel case assumes that the LCS-1 operates at 30 or more knots for about 20 percent of its time under way, an assumption based partly on a speed profile developed by the Naval Sea Systems Command for the LCS program.⁵ In that scenario, O&S costs represent about 40 percent of the ship's life-cycle cost—more than in the other scenarios for the LCS-1 but less than for any of the other types of ships considered in this analysis. Personnel costs make up 14 percent of the life-cycle total; fuel costs, 18 percent; and other O&S costs, 8 percent. Projected fuel usage in this scenario is about 67,000 barrels per year. That estimate is unlikely to be exceeded in actual practice: It is twice the historical average for frigates and about 80 percent of the amount used by the Navy's destroyers (which do not have the capability to speed

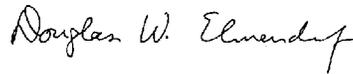
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3. Doubling the assumed price of oil in the moderate-fuel case (from an average of about \$85 per barrel to \$170 per barrel) results in a distribution of life-cycle costs very similar to that in the high-fuel case.
 4. Data about past and projected fuel usage for the LCS-1 were provided to CBO in an information paper from the Navy dated April 6, 2010.
 5. Naval Sea Systems Command, *Littoral Combat Ship: Design Reference Mission Profile* (September 30, 2005). The Navy plans to revise its mission scenarios for LCSs in the near future to better reflect how the ships will be used.

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at 40 knots, as the littoral combat ship does, but are three times larger than the LCS-1).

I hope that you find this information helpful. If you have any further questions, please contact me or CBO staff. The primary staff contacts for this analysis are Eric J. Labs and Derek Trunkey, who can be reached at (202) 226-2900.

Sincerely,



Douglas W. Elmendorf
Director

Attachment: Table 1

cc: Honorable Ike Skelton
Chairman
House Committee on Armed Services

Honorable Howard P. "Buck" McKeon
Ranking Member

Honorable Gene Taylor
Chairman
Subcommittee on Seapower and Expeditionary Forces
House Committee on Armed Services

Honorable W. Todd Akin
Ranking Member

Honorable David Obey
Chairman
House Committee on Appropriations

Honorable Jerry Lewis
Ranking Member

Honorable Norman D. Dicks
Chair
Subcommittee on Defense
House Committee on Appropriations

Honorable C.W. Bill Young
Ranking Member

Honorable Jeff Sessions
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Honorable Carl Levin
Chairman
Senate Committee on Armed Services

Honorable John McCain
Ranking Member

Honorable Jack Reed
Chairman
Subcommittee on Seapower
Senate Committee on Armed Services

Honorable Roger Wicker
Ranking Member

Honorable Daniel K. Inouye
Chairman
Senate Committee on Appropriations

Honorable Thad Cochran
Vice Chairman

Identical letter sent to the Honorable Richard Shelby and the Honorable Jo Bonner.

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Table 1.
Life-Cycle Costs of Various Navy Ships, Incorporating Current Fully Burdened Costs for Personnel and Fuel

	MCM-1 Class	FFG-7 Class (LAMPS III variant)	DDG-51 Class (Flight II A)	CG-47 Class (Upgraded)	LCS-1			LCS-2
					Low Speed Profile ^a	Moderate Speed Profile ^a	High Speed Profile ^a	
Ship Characteristics								
Weight (Full-load displacement in tons)	1,400	4,100	9,500	10,000	3,100	3,100	3,100	2,800
Crew Size ^b								
Officers	8	11	24	24	11	11	11	11
Enlisted personnel	76	170	254	340	43	43	43	43
Total	84	181	278	364	53	53	53	53
Number of Ships	14	30	34	22	1	1	1	1
Expected Service Life (Years)	30	30	35 ^c	35	25	25	25	25
Ship Costs								
Life-Cycle Cost per Ship (Outlays in millions of 2010 dollars) ^d								
R&D ^e	3	2	72	8	20	20	20	20
Procurement ^f	274	662	1,484	2,014	680	680	680	721
Personnel	243	510	897	1,156	161	161	161	161
Fuel	8	125	331	364	79	112	215	n.a.
Other O&S ^g	103	201	258	489	89	89	89	n.a.
Disposal ^h	0	0	*	*	0	0	0	0
Total	631	1,500	3,042	4,032	1,029	1,063	1,165	n.a.
Average Life-Cycle Cost per Year (Outlays in millions of 2010 dollars) ⁱ								
	21	50	87	115	41	43	47	n.a.

Continued

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Table 1
Breakdown of Life-Cycle Cost per Ship, Including All Personnel and Fuel Costs for Selected Navy Ship Classes

	MCM-1 Class	FFG-7 Class (LAMPS III variant)	DDG-51 Class (Flight IIA)	CG-47 Class (Upgraded)	LCS-1			LCS-2
					Low Speed Profile ^a	Moderate Speed Profile ^a	High Speed Profile ^a	
Ship Costs (Continued)								
Breakdown of Life-Cycle Cost per Ship (Percent) ^d								
R&D ^e	*	*	2	*	2	2	2	n.a.
Procurement ^f	43	44	49	50	66	64	58	n.a.
Personnel	38	34	29	29	16	15	14	n.a.
Fuel	1	8	11	9	8	11	18	n.a.
Other O&S ^g	16	13	8	12	9	8	8	n.a.
Disposal ^h	0	0	*	*	0	0	0	n.a.
Total	100	100	100	100	100	100	100	n.a.

Source: Congressional Budget Office.

Notes: Fully burdened personnel costs include pay, withholding taxes paid by the government, housing benefits, tax advantages, and veterans' benefits. The fully burdened cost of refined fuel includes overhead costs of the Navy and the Department of Defense (DoD); it is about 2.2 times the published price of crude oil, according to data provided by the Navy in 2007. The Navy is revising its method for calculating the fully burdened cost of fuel. One unofficial source calculated that cost for the DDG-51 at 2.26 times the DoD standard fuel price, which would imply that the fully burdened cost of Navy fuel is about 3.2 times the price of crude oil. Using that higher rate would increase the fully burdened cost of fuel by about 45 percent. See Robert Corley, "Evaluating the Impact of the Fully Burdened Cost of Fuel" (thesis, Naval Postgraduate School, Monterey, Calif., September 2009).

Numbers may not add up to totals because of rounding.

LAMPS = Light Airborne Multi-Purpose System (helicopter); R&D = research and development; O&S = operation and support; n.a. = not available; * = between zero and \$500,000 or between zero and 0.5 percent.

- The LCS-1 is assumed to consume 25,000 barrels of fuel per year in CBO's low speed profile, 35,000 barrels in the moderate speed profile, and 67,000 barrels in the high speed profile. By comparison, the ship's actual fuel use in 2009 was about 27,000 barrels, and the Navy has budgeted for the use of 37,600 barrels in 2011.
- CBO assumes that there will be 4 crews of 8 officers and 32 enlisted personnel for every 3 LCSs. Air detachments and mission packages will involve additional personnel.
- The service life of the DDG-51 Flight IIA destroyers may be extended to 40 years, but original costs and planning reflect a 35-year service life.
- These figures represent the projected cost for each type of ship if it began its service life now. Costs were discounted to their present value using a 3 percent real (inflation-adjusted) discount rate.
- Some R&D costs for an entire class were spread over other variants of a ship than the ones shown here. R&D costs for the LCS program as a whole total about \$1 billion, excluding costs associated with ship construction.
- Procurement costs for the LCS-1 and LCS-2 are estimated, not final. They include outfitting and postdelivery costs but exclude costs for mission packages.
- Other O&S costs are mostly for maintenance. The figures for the LCS are based on 2009 data, which may not match future maintenance costs. In addition, maintenance costs have not been adjusted to reflect ships' operational tempos.
- In the past, some of the ships in the classes showing zero disposal costs were sold to other countries, and on average, their disposal produced revenue for the United States. CBO assumed that the same thing would occur with the LCS class; therefore, although a zero disposal cost is shown here, disposal of those ships could actually yield revenue for the government.

Senator SESSIONS. The way I read the report, it's pretty clear to me that the Navy has not sufficiently calculated the comparative fuel costs of the two ships.

That's what you mean by those words you gave us, doesn't it? You compare the cost of one ship, in its normal operating procedure, and you compare the cost of the other. Correct? Is that what you mean?

Mr. STACKLEY. We look at total ownership cost, which includes all the factors, including energy. Yes, sir.

Senator SESSIONS. Let's focus on the energy part of cost. Do you consider how much it costs to run one ship, and you consider the cost of the other one? That's what it means, does it not?

Mr. STACKLEY. Yes, sir.

Senator SESSIONS. Have you calculated and reduced to dollar amounts the estimated fuel cost of operating these ships, each one, through the life cycle?

Mr. STACKLEY. We've looked at the different ways in which the Navy would operate the ship, because, clearly, fuel costs are dependent upon how you would operate the ship, and ran the respective analyses for the two different designs.

Senator SESSIONS. I'm well aware of that, but it would be part of how you would calculate it. Have you calculated it through to dollar-and-cent figure so you can compare actual cost?

Mr. STACKLEY. Yes, sir. In accordance with the different ways in which we would operate the ship inside the total—

Senator SESSIONS. How much do you calculate LCS-1 and LCS-2? What are the figures for each?

Mr. STACKLEY. I would not provide those in an open forum, because the respective figures that we have used are proprietary. However, we have provided that information, through other means, to CBO in forming their report.

Senator SESSIONS. As I read the CBO report, it would conclude the Navy inadequately scored that. But, do I hear you saying that you have an actual dollar-and-cents figure that you've used in evaluating the lifecycle cost that now the Navy has and is applying to this ship?

Mr. STACKLEY. To be exact, we took a look at the total ownership costs for the two competing designs. We looked at maintenance, modernization, manpower, and fuel consumption.

When we look at fuel consumption, we have to consider the different ways in which the Navy would operate the ship. Then we looked at the total ownership cost, side-by-side, for the two different designs, considering different categories for the way the Navy would operate—

Senator SESSIONS. Surely, you would have to reduce this variable speed to some sort of factor that you could evaluate, in terms of dollars and cents. That's what CBO said.

It's been done before, hasn't it?

Mr. STACKLEY. Yes, sir. As you read through the CBO report, what they point out is, there's a range, in terms of the percent of the total ownership cost that's made up by fuel. There's also a range for how much of an impact the different mission type of operations have on that percent. Within that range, you could have one design being better than the other, and vice versa. So, the outcome of the analysis for total ownership cost is highly sensitive to the way that the Navy would operate the ships.

Senator SESSIONS. I couldn't agree more. But, have you calculated that?

Mr. STACKLEY. Yes, sir.

Senator SESSIONS. You would agree, would you not, that if you didn't properly calculate that, then it could be unfair to one competitor or another?

Mr. STACKLEY. What I would definitely agree to is that there's a degree of uncertainty around the estimates. When you say, "not properly calculating it," I would say that the Navy's estimate is not so much of a point estimate as it is a number plus or minus a certain percentage of uncertainty. I would not suggest that we've been unfair to one or the other, based on that calculation.

Senator SESSIONS. Mr. Stackley, I'm not able to follow those answers. It's awfully complex to me. It would seem to me that if you were buying an automobile, and one got better gas mileage than another one, you would calculate, over the expected life of that car, how much you spend on fuel in each one. Are you saying that you have done that in this case, in this competition, and that you are prepared, at some point, to make that public?

Mr. STACKLEY. Two things. One, you say, "within the competition." The analysis that you are referring to is not a part of the award criteria.

Senator SESSIONS. Then are you going to make it a part of the award evaluation, or not?

Mr. STACKLEY. No, sir. What we have as a part of the award criteria is how to improve upon total ownership cost. When we do the analysis of total ownership cost, which includes fuel, and we put side-by-side comparisons between the two designs, then the outcome of that analysis is entirely dependent on the assumptions you make with regards to how the Navy would operate the ship, where the range of operations is entirely within what the LCS would be called to perform.

Senator SESSIONS. CBO, faced with those circumstances, came up with a range, did they not?

Mr. STACKLEY. Yes, sir.

Senator SESSIONS. The range was something like 8 to 18.

Mr. STACKLEY. It was 8 to 11 percent for a frigate type of combatant, which would include an LCS.

Senator SESSIONS. They estimated a moderate range would be 11. That was their estimate of what the fuel cost should be. Do you use that figure, or a different one?

Mr. STACKLEY. We used the baseline figures that we have for the two designs. The other information that CBO pointed towards was the operating regime of the ships, where they would nominally spend 95 percent of their time at 16 knots or less; 5 percent of the time north of that speed. You have a range of variability of 5 percent inside of CBO's numbers, driven by the way you operate the ships, for a cost factor that's 11 percent of the total ownership cost.

Senator SESSIONS. Thank you, Mr. Chairman.

I would just say that this is a very serious matter. I'm not able to follow your answers. My concern is that you're not adequately accounting for differences of fuel. I intend to follow it. I hope that you conduct this correctly. But, if not, I think we would not have had a fair competition.

Thank you, Mr. Chairman.

Senator REED. Thank you, Senator Sessions.

We'll begin the second round.

I want to commend Senator Wicker and my colleagues for raising the issue of Secretary Gates's speech. He really challenged us to look very closely at the cost of procurement systems. But, I want

to make the further point that that doesn't just apply to shipbuilding; that applies across the spectrum: aircraft, ground systems, et cetera. We're in an age in which the operational environment includes the budget, and we have to be conscious of that. But, I thank you, Roger, for bringing it up.

Senator SESSIONS. I join with you, Mr. Chairman, in sharing those comments and thanking Senator Wicker for his.

Senator REED. Thank you.

Let me just raise a few questions, then turn it over to Senator Wicker.

The *Ohio*-class replacement program is underway; the first steps. I think it's a very sensible program and that we have to follow through. But, Admiral Blake, in terms of what the Navy is doing, the tradeoffs, in terms of design, looking ahead at what this platform will look like, which will be reflected, first, in the R&D aspects and requests for funding, and then in procurement, how are you working to make this affordable, as well as effective?

Admiral BLAKE. Sir, what we started out with was, we took the original *Ohio* program, which we did many years ago, and we used that as the model in order to determine where we were going to go with the *Ohio* replacement. So, we used that as the framework in order to determine when we thought we needed to start the R&D process, which started in the 2010 budget. Then, we went forward from there.

The second piece we determined was, based on the service lives of the ship, when would we be required to bring the *Ohio* replacement into service? That was then determined to be 2019.

What we did was a two-step process. We started with the R&D piece, upfront, and then we determined when construction had to start. Then you had the advanced procurement that you would have to put in place. That was the idea, so that the first *Ohio* replacement would arrive, and we would meet the requirement to meet the mission. That was the entire process, as we drove towards it.

Senator REED. I understand the timeline, let me rephrase the question.

I think there's a temptation, when you're looking at a new platform, to make it capable of doing everything. That's expensive, typically. There's always this tradeoff between capability and expense. How are you dealing with those two issues?

Admiral BLAKE. One of the ways we're looking at it is, we're looking to see, first of all, what capability you want to have in the vessel.

Let me use the D5 program as an example. We determined that, based on the success of the D5 program, that we should take the D5 program and put an extension program in place so that we would be able to utilize that system and the reliability and security that it gave us out into the 2040 timeframe. We also felt that if you go back in history and you look, you'll remember that the previous program, the C4 program, was a less capable system. The D5 was then designed in the late 1970s, early 1980s.

What we determined was, in order to minimize risk, we would go to the D5 program, as opposed to starting up, since we have not, since the early 1980s, done any missile design work, with respect

to an SSBN weapon system. Therefore, we would continue down the path of using the D5.

The idea was to keep it affordable because if you go back in history, if we hadn't gone down that path, then we were going to have to rebuild the infrastructure, the design, and everything else, because we have not done that in several decades. The idea was to make it affordable and to make it less risky. That's one example.

Senator REED. Thank you, Admiral.

Mr. STACKLEY. Can I add to that?

Senator REED. Secretary Stackley, just your comments, briefly, on my questions. But, to the tradeoff between capacity and affordability. Is there a normative price in your head for per-ship, now? Or is it too early?

Mr. STACKLEY. Yes, sir. First, we have done an analysis of alternatives leading into the R&D ramp for the *Ohio* replacement. We looked at a large number of variations on a couple of concepts, where you start with the *Ohio* itself, you take a look at what we've learned from *Virginia*, and you look at variations on the *Virginia*, and then what you have left, beyond that, is a clean-sheet design.

We take a look at, what are the core requirements that the replacement boat needs to provide? Then we look at opportunities, either from the standpoint of affordability or capability.

Right now, we are going through tough discussions on capabilities versus requirements versus cost, leading up to a milestone decision this summer with acquisition, technology, and logistics. This process is absolutely key for the next decade, because we are going to build the *Ohio*-class replacement, it is going to be a very expensive platform, and it is going to meet our national security requirements.

Once we head down a certain path, we have to ensure it's the right path, because we won't get a restart opportunity and we won't have the ability to back out. So, we have to get it right, upfront.

We're muscling through this now. We have estimates that are on the table, in terms of both the R&D stream and the procurement stream. If you look at the 30-year report, it's a \$6- to \$7-billion boat, and that's simply taking the *Ohio* and escalating it out to the 2019 timeframe, when we will procure the first replacement boat.

That gives us great concern, because of the amount of pressure it puts on not just shipbuilding, but all procurement, as well as the R&D leading into it. We don't want to cut ourselves short on R&D, because we want to get it right. We need to look at both affordability and capability in this effort. But, we have to take a look at the total program and see what we can do to, not just keep it under control within the budget, but, when we get out there to execute, make sure it doesn't escape us.

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

Let me ask a question, then yield to Senator Wicker. I might have one more question.

Going back to the decision about the DDG-51 versus the DDG-1000, the DDG-1000 was developed with the principal mission of close fire support for forceful entry, principally, the Marine Corps. Then the Navy made a decision that they could do that by other means, and the more pressing need was missile defense, and the

DDG-51 seemed to be more capable at that. Part of that decision, I understand, is the thought that the Navy could essentially adopt an Army system, the non-line-of-sight (NLOS) launch system.

Now it appears that the Army is getting ready to abandon developing that system, forcing you to have no system, or to adopt the cost of that system, rather than bootstrapping on the Army.

Admiral Blake, if NLOS is canceled, which it appears close to being, what's your backup plan? I'd like everyone to comment on this general topic. What are you going to do to ensure close fire support for forceful entry of marines?

Admiral BLAKE. First of all, for the NLOS program, the NLOS was looked at, from the Navy perspective, to go on the LCS. It was going to be part of the surface modular package that was going to go on there. One of the missions it was going to be used for was for the swarming boat issue.

What we are doing right now is, because of the Army's announcement that they are potentially looking at terminating the program, going back and evaluating for that particular module, if, in fact, that program is terminated, and it is decided that the Navy would not go down that path, what would we have to do in order to meet the key performance parameters for that particular module on the LCS?

Senator REED. Thank you. That clarifies the situation a great deal. Secretary Stackley, might the close fire support be provided, not by destroyer, but by the LCS? Is that the operational concept, Mr. Secretary?

Mr. STACKLEY. No, sir. Naval surface fire support capability, or requirement, is met by what's referred to as a triad. First, there's organic artillery, there is air, and then there's naval surface fires. That triad is intended to meet the overarching, or capstone, requirement. We look at the contribution of the advanced gun system on the DDG-1000 to the overall requirement. We look at other surface ships—basically, 5-inch/54, which is common to the DDG-51 and the cruiser. With the NLOS, we look at a capability that the LCS could further contribute to that campaign problem.

Senator REED. General Flynn, since your marines are going to have to make the forcible entry, you have the last word on the whole topic and NLOS, too.

General FLYNN. Sir, over a year ago—and this was at the same time that we were looking at the DDG-1000 program—we agreed to look to a joint analysis of alternatives (AOA), to determine a way ahead for naval surface fires. A key part of that, as Secretary Stackley said, is our belief in the triad that no single leg of the triad can meet all the demands of it. We see naval surface fires as providing both volume and accuracy as a key part of that triad.

As part of the joint AOA, we looked at 71 alternatives, and we came down to the 6 most promising. One of them was the NLOS system. If it proved promising, it would have to have an extended range. But, that was one of the alternatives. That was one of the areas that we were also looking at to capitalize on the Navy's building of the LCS platform.

If NLOS proves not to be effective, then the only other option that's available right now is the development of a 5-inch extended-range round for use off the DDG-81 and higher-class hull forms.

That really needs to be a POM-12 issue, because right now there is no naval surface fire, with the exception of the DDG-1000, in the program or record. The next promising thing to look at, or the most viable, appears to be the extended range 5-inch. That would meet the requirement.

Senator REED. Thank you very much, General.

Senator WICKER.

Senator WICKER. Thank you very much.

General Flynn, with regard to this decommissioning of the LHA-4 in 2011 and LHA-5 in 2013, in advance of their expected service life, is it your understanding that that decision is still an open question? Let me put it is way. In your view, is there still an opportunity for that decision to be reversed?

General FLYNN. Sir, the way I'd answer that is, I believe that it's important that we have to balance what was in the 30-year shipbuilding plan. Has anything changed since the 30-year shipbuilding plan that would warrant going back and taking a look at that decommissioning of vessels? The key thing, I think, that needs to be done is, what is the operational impact, based on what was assumed or what was counted on in the plan? Has anything changed? If nothing's changed, and deliveries will be met, and capabilities will be there, I don't think that's a reversible decision.

But, the reality is that it's not just the funding requirements. Maybe in the current budget year we're across the line of departure. But, in the future budget year, I do think we need to take a look at the delivery of new ships and when they're going to be operational-ready, because there was an assumption made in the plan that those ships would be ready and deployable at a certain period of time.

We've had some challenges with the delivery of the new class of LPDs. It all comes together, when you take a look at the lift-carrying capacity of the fleet to do that. So, I'd be an advocate for an operational assessment, to see what impact that would have.

Senator WICKER. Okay. Where are we then, in the decision about making an operational assessment? How involved would such an assessment be?

General FLYNN. Sir, I think that how involved that assessment would be is to take a look at what demands you have for day-to-day operations and to see if the inventory can meet those demands.

Senator WICKER. Is it fair to say the Marine Corps was opposed to these two decommissionings?

General FLYNN. Sir, I think it'd be fair to say that the Marine Corps would like to see an operational assessment of the impact of those decommissions.

Senator WICKER. Where are we on that, Mr. Secretary?

Mr. STACKLEY. Let me describe that the decommissioning plan that you see in the report to Congress, that pulls the LHA-4 and -5 out, that was done in concert with the PB11 budget build and QDR. In terms of an operational assessment for changes, since that was put together, I'm not aware of one.

Senator WICKER. Would you be vigorously opposed to such an idea?

Mr. STACKLEY. I think we should always be reassessing our plans, based on changes that have occurred since the prior plan

was built. I think it's our responsibility to be constantly reviewing changes.

Senator WICKER. It would be possible to decommission the first one and make a different determination, with regard to the LHA-5, wouldn't it?

Mr. STACKLEY. It's not supposed to occur until 2013.

Mr. STACKLEY. General Flynn talked about passing a line of departure on the LHA-4. I think we have passed the line of departure, because you're talking about manpower that simply is not in the budget for a big-deck amphibious. So, that one, I believe, is passed.

Senator WICKER. We've not passed the line of departure for the LHA-5. Is that correct?

Mr. STACKLEY. The manpower accounts have been adjusted to assume decommissioning of the LHA-5 in 2013. That's inside of the FYDP. To change that plan, you'd have to change those manpower assumptions in POM-12, and that would have its attendant impact.

Senator WICKER. But, we've not passed the line of departure, have we?

Mr. STACKLEY. No, sir. That's a 2013 budget impact associated with, not just manpower, but also O&M associated with maintaining the ship past its current decommissioning date.

Admiral BLAKE. Sir, I would add one point to that.

Senator WICKER. Please.

Admiral BLAKE. If you look at the entire number of ships that are being decommissioned, when you decommission those large-deck amphibs, they are not being either scrapped or put for foreign military sale, they're being put in an inactive status. So, should a national emergency require them being brought back out into the active fleet, that, of course, could be accomplished.

The second thing I would point out, as Mr. Stackley pointed out, was that if you were to pressurize the accounts and in order to bring those ships back in, specifically with respect to manpower and the O&M accounts, we would likely have to go, in order to find the offsets to cover those costs, in our procurement accounts.

Senator WICKER. Thank you. That was helpful.

General Flynn, how do we arrive at the 38 number on amphibious ships to really meet our needs? What risks do we take when we go down to 31 or fewer?

General FLYNN. Sir, to give you an idea, the 38-ship requirement was based on what would it take to be able to conduct an amphibious assault with a 2-brigade-sized force, with each brigade needing 17 ships in the assault echelon. So, that gives you a total of 34, with 4 somewhere in the maintenance cycle.

That number pretty much would support the steady-state demand for day-to-day operations that we see from the COCOMs.

To give you an example of the utility of 31 ships, over 70 percent of the amphibious fleet at the end of January, during the Haiti operation, was at sea. So, that gives you an idea of the utility of the ships. As you get lower, for example, if you did the same thing with 29 ships, 80 percent of the amphibious fleet would be at sea, because we had 9 ships supporting 3 different expeditionary units, and you had 7 ships off the coast of Haiti, with 9 in maintenance

and 6 others available for deployment. So, that gives you an idea of the utility of the ships, as well as their use.

Senator WICKER. For accomplishing your mission, any drop between 31 would be an unacceptable risk. Is that correct?

General FLYNN. Sir, I believe, from some of the operational analysis that I've seen, we'd be challenged to meet some of our presence requirements.

Senator WICKER. All right.

I think people would be disappointed if I didn't talk about the well deck issue. Mr. Secretary, we had a lengthy discussion last year. The idea of inserting well deck back in the LHA-7 has seemingly been put to rest. Is that correct?

Mr. STACKLEY. Yes, sir.

Senator WICKER. I'm interested in the way ahead. I'll tell you, it's wonderful to have such access to General Conway and Admiral Roughead on a one-to-one basis. There seems to be an interest in adding the well deck back for future ships because of the increased weight of the equipment now.

General Flynn, do you support putting well deck back in for future LHAs?

Secretary Stackley, is the Navy considering adding a well deck back to the follow-on to the LHA-7?

General?

General FLYNN. Sir, a couple of points on that. When the LHAs were first designed without the well deck, they were part of a larger program. MPF(F) was still one of the considerations. When thinking about the requirement for amphibious ships, we also had to take into account what the program was at the time when that was first laid in.

Without the well deck, MPF(F) was also a viable program. That is no longer affordable, and we've made some adjustments there. In order to keep with the number of amphibious ships that we're likely to see in the future, it's important that you have as much flexibility as you can in the ship designs. That is why we've been working with the Navy and with Mr. Stackley to take a look at the feasibility of adding the well deck back into the ship that is currently programmed for fiscal year 2016.

Senator WICKER. Okay. We're looking at the feasibility. Do you advocate that, at this point?

General FLYNN. Yes, sir. We believe that we do need the well deck back in to provide the flexibility, not just because of the added weight of some of the equipment, but also for the utility of the ship. The size of the fleet is not going to get any bigger than 33, for sure, in the immediate future. So, the more flexibility you can have in the ships that you have, the better off you're going to be.

Senator WICKER. How close are we to a decision in that regard?

General FLYNN. Sir, it's a POM-12 issue that we're working through right now, as to which design would be the most feasible.

Admiral BLAKE. Sir, we had Navy and Marine Corps warfighter talks earlier in the year. As a result of those talks, it was determined that we would look at the feasibility of the well deck in the 2016 ship.

Senator WICKER. Fiscal year 2016?

Admiral BLAKE. Yes, sir. The fiscal year 2016 ship. That is the current discussion that is going on between the Navy and the Marine Corps.

Senator WICKER. Mr. Secretary, do you have anything to add?

Mr. STACKLEY. Just to cap it off. As we talked about last year, the discussion emerged, before last year's hearing, regarding the well deck; and the timing, in order to try to insert a well deck for a fiscal year 2011 ship, it just was not feasible, either in terms of cost or schedule.

What we have been doing in the meantime is taking a look at alternative approaches to getting back to a well deck big deck for the next LHA, LHA-8, which is a 2016 ship. We're looking at a mod-repeat to the LHD-8. We're looking at a LHA-6-based design with a well deck. Then we're looking at something a bit beyond that that provides a hybrid of capability between the LHA without a well deck and the well deck itself.

So, we are active right now, looking at those types of alternatives, so that when we come forward with POM-12, we have both a baseline and a design approach, leading to a fiscal year 2016 procurement.

Senator WICKER. I think that will wrap it up for me, Mr. Chairman.

Senator REED. Thank you very much, Senator Wicker.

I have one question on the EFV. The Commandant has made this the centerpiece of his forcible-entry strategy. But, it seems, with the procurement rate being so low, this vehicle would only be available at the full operational capability in 2025, with about 573 vehicles.

Mr. Secretary and General Flynn, can you comment on the role of the EFV and its importance? If it is important, how does this production rate match the importance?

I don't know who wants to go first.

Mr. STACKLEY. I'll have General Flynn address the role and I'll talk about the procurement approach.

General FLYNN. Senator, on the EFV, it's part of a larger ground tactical vehicle strategy; it's just one piece of that. The role that it performs is the ability to get us quickly ashore, to be able to use the sea as maneuver space, but, at the other time, it's designed to be a fighting vehicle onshore. So, it performs multiple roles.

It has been sized to what we believe is the minimum requirement, which is a two-brigade-size assault.

The key part of the program right now is, in accordance with the program restructure, the seven test vehicles are being delivered, starting last week. We're going to go through the test phase so that we can make a final decision on the viability of the program after we see how the seven test vehicles perform.

Senator REED. So, you're reserving judgment.

General FLYNN. I think a key part of the restructuring of the program was the delivery of the seven test vehicles, and then to see how those test vehicles met the restructured knowledge points, to see how they perform.

Senator REED. We want them to succeed. But, if they fail, then you're on to a new delivery system.

General FLYNN. If they don't meet their knowledge point, sir, then we're not going to stick with the program. They have to meet their performance parameters at each of the knowledge points.

Senator REED. Mr. Secretary, your comments.

Mr. STACKLEY. Yes, sir. The only thing to add is the history on the program. It did see cost growth early, and it also saw a significant reduction in the quantity that was planned for procurement by the Marine Corps; we proceeded with development and ran into some problems with testing and reliability, it hit a Nunn-McCurdy wall and was restructured. That was about 2 years ago.

Since the restructuring, the focus has been on, let's get the development right, so that we have a good firm baseline for production, recognizing that the out-year procurement rates are not optimal. So, you hit on it, that when you procure it at a lower rate, you're going to drive some cost, and you also delay when you get your full operational capability.

We have not made any adjustments to the out-year procurement in that regard. However, procurement was delayed a year on the front end, so we can get greater assurance that we have it right in the development. The program office and industry have been working, and doing a pretty credible job, in terms of at least giving the design and proofing the components. We're just now taking delivery of the test vehicles, where we can actually get into some substantive data to back up the analysis, to give us greater confidence.

Senator REED. This is a somewhat unrelated question, but it goes to the current operational tempo of all of the forces. How often are you exercising forcible entries within the Marine Corps today, General Flynn?

General FLYNN. Sir, I wouldn't say it's, "how often do you exercise forcible entry?" I'd say it's, "how often do you exercise sea-based operations?"

Senator REED. Right.

General FLYNN. I would say that we're doing it quite often.

Senator REED. Okay.

General FLYNN. There was the Haiti operation. We put two expeditionary units down there, plus an additional ship; the noncombat evacuation from Lebanon; scores of partnership engagements that take place around the globe throughout the year; the humanitarian relief that occurred last year with the expeditionary unit on its way to the Gulf; and other sea-based operations in the Central Command areas of operation. So, there are quite a lot of operations that are ongoing from the sea right now.

Senator REED. I recognize that.

But, it just strikes me that this is a cost to our land forces who are engaged in Afghanistan and Iraq, that some of the skills that they would need for non-counterinsurgency are not being exercised a lot. You're right, going to Haiti, moving marines across the beach is good. But, it's not the same thing as simulating a forcible entry with air support and live fire, et cetera. Is that done as much as it should be done?

General FLYNN. No, sir. That's one of the guidances we got from the Commandant, to start doing that. What you're going to see this year is an amphibious exercise done out at Camp Pendleton this

summer. This fall, you're going to see exercise Bald Alligator done on the East Coast in Camp Lejeune.

Senator REED. With the 82nd Airborne?

General FLYNN. Sir, I think they might be doing something else.

Senator REED. I'm addressing that to the former Deputy Commander of the 18th Airborne Corps.

General FLYNN. Right.

Senator REED. So, he keeps up with these airborne units.

General FLYNN. Whenever we can bring in the other corps into the Marine Corps, we will.

Senator REED. Right.

Thank you, gentlemen, not only for this excellent testimony, but for your service to the Navy, to the Marine Corps, and to the Nation. Thank you very much.

We will take any additional comments or statements my colleagues would like to submit for the record in the next several days. There may be questions addressed to you by members who were here or not here. I would ask you to respond promptly back to the committee.

If there's no other information, then the hearing is adjourned.

[Questions for the record with answers supplied follow:]

QUESTIONS SUBMITTED BY SENATOR JIM WEBB

NAVY SURFACE FIRE SUPPORT

1. Senator WEBB. Secretary Stackley and Admiral Blake, how is the Navy addressing its requirements for surface naval fires?

Secretary STACKLEY and Admiral BLAKE. As discussed in the fiscal year 2010 Naval Surface Fire Support (NSFS) Report to Congress, NSFS is one leg of a fires triad which also includes fires delivered by tactical aircraft and ground systems. The relative contribution of each leg of the triad varies with the tactical scenario. The Navy has invested in an array of capabilities to strengthen the fires triad including advanced networking capabilities, unmanned airborne systems, ships and ship-based systems, and tactical aircraft precision delivered munitions.

Advanced Networking Capabilities

- Naval Fire Control System (NFCS) is a shipboard naval fires planning and coordination system designed to automate all shipboard fire support battle management duties. It provides an interface to the Advanced Field Artillery Tactical Data System (AFATDS), the gun weapon system, and forward entry devices. NFCS is installed in DDG-51 class ships hull number 81-108 and will be installed in all future DDG-51 class destroyers.
- Supporting Arms Coordination Center (Automated) is installed on all LHAs and LHDs. It provides an integrated capability to conduct fire support planning, coordination, and execution of all supporting arms fires—including NSFS, tactical aviation, and ground artillery and mortars ashore. This system is capable of integrating multi-service command and control systems aboard ship, including AFATDS and NFCS, to provide maximum situational awareness and a common operating picture.

Unmanned Airborne Systems

- The fielding and wider use of unmanned systems such as Predator, Global Hawk, Scan Eagle, and other systems provide a range of capabilities and endurance options. Increasingly, ground spotters are using these systems to improve their targeting.

Ships and Ship-Based Systems

- Counter Fire Radar. The ability to rapidly detect and engage enemy indirect fire decreases friendly casualties. The radar system on DDG-1000 will provide an expanded capability to provide sea-based counter fire in the littoral.
- Tactical Tomahawk provides a precision, all weather, deep land attack capability. Today, Tactical Tomahawk is fielded on all vertical launching

system-equipped cruisers and destroyers. A version of Tactical Tomahawk Weapon Control System will also be fielded on DDG-1000 platforms and new construction DDG-51s. Various fleet exercises and operational test launches have demonstrated Tactical Tomahawk's utility and effectiveness in the NSFS role, including the ability for a ground spotter to derive Tomahawk quality targeting in the field and the capability to in-flight redirect Tomahawk to the new field-generated target.

- Five inch/62 guns for DDG-51 destroyers. The MK 45 Mod 4, 5 in/62 gun was introduced into the fleet in 2001 aboard USS *Winston Churchill* (DDG-81) and has since been installed on all new construction destroyers.
- DDG-1000 destroyers with 155mm advanced gun systems and long-range land attack projectiles. The DDG-1000 program of record consists of three ships. Its primary mission is to provide sustained precision and volume fires at long ranges to support distributed joint and coalition forces ashore and to conduct independent attacks against land targets.
- The electromagnetic rail gun is a promising technology that may become a key future naval land attack weapon. It uses electricity to launch projectiles at Mach 7, potentially propelling them up to 250 miles in about 6 minutes.

Tactical Aircraft Precision Delivered Munitions

- Over the past 20 years, the ability of Navy and Marine Corps tactical aviation to prosecute targets ashore has increased significantly. Current investments in additional capabilities include:

- Joint Air-to-Ground Missile (JAGM)
- Small Diameter Bomb Increment II (SDB II)
- Low Collateral Damage Bomb (LCDB)
- Direct Attack Moving Target Capability (DAMTC)
- Advanced Precision Kill Weapon System (APKWS)
- Harvest Hawk Airborne Weapon Mission Kit

All of these systems contribute to the fires triad and work together to provide effective fire support from the sea in support of troops ashore.

2. Senator WEBB. Secretary Stackley and Admiral Blake, the NSFS requirement was to be addressed, in part, by the DDG-1000, but now that there are only three ships being procured, what capabilities have been identified to meet NSFS needs, and what is the anticipated timeline for testing and fielding such capabilities?

Secretary STACKLEY and Admiral BLAKE. Analysis shows that when considering all Department of the Navy investments—including NSFS, tactical aircraft, and strike missiles—the Navy-Marine Corps team can provide sufficient fires from the sea to cover all anticipated scenarios. Additional future capabilities being procured include:

- Low Collateral Damage Bomb (LCDB) - currently in production
- Direct Attack Moving Target Capability (DAMTC) - IOC 2010
- Advanced Precision Kill Weapon System (APKWS) - IOC 2011
- Harvest Hawk Airborne Weapon Mission Kit - IOC 2011
- Advanced Gun System (DDG-1000) - IOC 2015
- Long Range Land Attack Projectile (LRLAP) - IOC 2015
- Joint Air-to-Ground Missile (JAGM) - IOC 2016
- Small Diameter Bomb Increment II (SDB II) - IOC 2016

3. Senator WEBB. Secretary Stackley and Admiral Blake, is the Navy assessing modular systems that could be deployed on a Littoral Combat Ship (LCS) to help satisfy Marine Corps requirements for surface fire support?

Secretary STACKLEY and Admiral BLAKE. LCS is being built to cover Joint Requirements Oversight Council (JROC) validated warfighting gaps in littoral anti-submarine warfare, surface warfare, and counter-mine operations. The 2009 NSFS Analysis of Alternatives (AoA) examined the possibility of a modular fire support system for LCS. However, there is no requirement for LCS to conduct the NSFS mission, as the current complement of surface and air weapons is capable of delivering sufficient supporting fires ashore to meet NSFS requirements.

4. Senator WEBB. Secretary Stackley and Admiral Blake, what is the status of the AoA for Joint Fires Capabilities?

Secretary STACKLEY and Admiral BLAKE. The NSFS AoA is complete and has been submitted to the Secretary of the Navy.

5. Senator WEBB. Secretary Stackley and Admiral Blake, has the Marine Corps been consulted in determining what programs should be funded/supported and how soon they need to begin testing?

Secretary STACKLEY. The Marine Corps was an active partner in the NSFS AoA and in developing the fiscal year 2010 NSFS Report to Congress. Additionally, the Marine Corps is an active participant in developing the Department of the Navy's annual Program Objective Memorandum (POM) submission.

MARINE CORPS SURFACE FIRE SUPPORT

6. Senator WEBB. General Flynn, what are the Marine Corps' specific needs regarding naval fire support?

General FLYNN. Accurate, timely, lethal, persistent, all-weather, long-range fires from U.S. Navy surface ships are essential for naval littoral operations. The Marine Corps requires naval surface fires that range 41 nautical miles, accounting for the over the horizon (OTH) distance of 25 nautical miles plus 16 nautical miles of coverage afforded by organic, ground-based indirect fire systems once ashore. Large area targets and targets classified as suppression targets may require that constant pressure be maintained for an extended period of time during joint forcible entry operations. The tactical assignment of direct support and the anticipated fire mission requirements are often responsive and defensive in nature. Direct support assignment speeds response and simplifies command and control through decentralization in ways not generally available with air support. NSFS would provide this capability until land-based indirect fire assets are ashore.

7. Senator WEBB. General Flynn, what is the Marine Corps' portion of the NSFS requirement, and how has the reduction in DDG-1000 procurement affected this requirement?

General FLYNN. DDG-1000 platforms will provide the sole long-range NSFS ashore during joint forcible entry operations; reductions in program scope limit the Navy's ability to fulfill this important tactical mission. As identified in papers from the Deputy Commandant for Combat Development and Integration (DC, CD&I), the Marine Corps requires a range of 41 nautical miles for NSFS. This distance will provide the OTH range of 25 nautical miles plus 16 nautical miles of coverage, replicating organic ground-based indirect fire systems. With only three DDG-1000s being produced, and all three being stationed on the west coast, the Navy may be limited in its ability to react to multiple LCO engagements simultaneously, or provide fires to all battalions ashore during an MCO. Additionally, if there is not a DDG-1000 on station when needed, the Navy would be unable to continuously meet the Marine Corps' 41 nautical mile range, volume, and responsiveness requirements for NSFS. With normal Navy deployment and maintenance cycles, the triad of fires may be degraded to the point that the ground commander will not always have adequate fire support available when and where he needs it. The Navy's NDAA Section 125 Shipbuilding Acquisition Strategy is asking for an increase in DDG-51s. While the DDG-1000 and its Advanced Gun System are critical elements needed to close the NSFS gap, the *Arleigh Burke* class destroyers, outfitted with the MK-45 Mod 4 5-inch/62 gun mount, have the potential to provide accurate and lethal fires at extended ranges when firing extended range munitions. This solution was one of the top performing alternatives in the NSFS AoA, and could augment the production of the DDG-1000s.

8. Senator WEBB. General Flynn, what alternative capabilities are being pursued?

General FLYNN. The Marine Corps concurred with the results of the draft NSFS AoA which identified several promising near-term NSFS technology options, to include the complementary development of an extended range 5-inch guided projectile and extended range precision attack missiles. These enhancements would augment the 155mm advanced gun system (AGS) and long-range land attack projectiles (LRLAP) of the DDG-1000 program, and help fulfill the Marine Corps 41 nautical mile range, volume, and responsiveness requirements for NSFS. The Marine Corps also endorses continued technology development of the electromagnetic rail gun (EMRG) as a future NSFS capability.

9. Senator WEBB. General Flynn, how is the Marine Corps working with the Navy to develop NSFS capabilities?

General FLYNN. Through the Naval Surface Fires Support AoA, the Marine Corps provided subject matter expert input for its NSFS requirements. The outcome of the draft analysis weighed the range, volume, and responsiveness requirements of the

Marine Corps before the final alternatives were selected for recommendation. We have also provided input to the Navy regarding the future development of the advanced gun system and long-range land attack projectile.

QUESTIONS SUBMITTED BY SENATOR DAVID VITTER

SHIPBUILDING

10. Senator VITTER. Secretary Stackley, I'm very concerned about the impact of the shipbuilding budget on the shipbuilding industrial base, and in particular, the effect on the Avondale shipyard in Louisiana. With statements from the Department of Defense (DOD) that future shipbuilding funding will at least be stagnant if not reduced, I would like the Navy to really focus on that impact on jobs and the industrial base as well as our Armed Forces. When can we expect to see the Shipbuilding Industrial Base Study?

Secretary STACKLEY. The Assistant Secretary of the Navy (Research, Development, and Acquisition) has chartered an independent entity to develop and provide a publicly available, comprehensive, and independent assessment of the Navy shipbuilding industrial base. The shipbuilding assessment aims to produce a publicly available report at the time the fiscal year 2012 budget and the fiscal year 2012–2016 FYDP are submitted to Congress, expected to be early February 2011.

11. Senator VITTER. Secretary Stackley, when the Navy examines the capabilities and capacities as well as the health of the base, will that cause the Navy to make significant changes, such as moving ships to the left in order to support the industrial base?

Secretary STACKLEY. The fiscal year 2011 President's budget request represents the best balance of resources, requirements, and industrial base. The Navy's 30-year shipbuilding plan submitted with the fiscal year 2011 budget request takes into account the importance of level loading of ship procurement to help sustain minimum employment levels and skill retention in order to promote a healthy U.S. shipbuilding industrial base.

12. Senator VITTER. Secretary Stackley, if the study finds that the budget is not enough to support a robust industrial base or sustain the existing base, what would you recommend for the existing shipyards that may not have enough work because of the budget?

Secretary STACKLEY. The Navy's Long Range Plan for Ship Construction Report to Congress submitted with the fiscal year 2011 President's budget plan balances needs against expected resources, and assesses the risks associated with DOD's balancing efforts. Further, the plan aims to maintain the shipbuilding design and industrial base necessary to build and sustain tomorrow's Navy, while providing opportunities for the industrial base to compete for future shipbuilding contracts. Ultimately, the Navy working with industry must stem the trends in cost growth in order to achieve our shipbuilding objective within projected budgets, and this will require increased efficiencies in the way we design, build, and buy our ships. Accordingly, to sustain their business base of Navy shipbuilding, U.S. shipyards must continue to strive for efficiencies to improve their competitive posture.

To this end, the Navy fosters programs such as the National Shipbuilding Research Program and the Manufacturing Technology (ManTech) Program that provide recommendations on facility improvements and efficiency efforts. The Industrial Base Innovation Fund, in its third year, is administered by ManTech and has been funded through congressional plus-ups to the President's defense budget. Further, U.S. shipyards can promote future growth by pursuing expansion of its commercial shipbuilding base through a Shipbuilding Capability Preservation Agreement application to the Secretary of the Navy.

13. Senator VITTER. Secretary Stackley, do you think the current shipbuilding budget is enough to sustain the shipbuilding workforce?

Secretary STACKLEY. The Navy's shipbuilding plan, in many instances, reflects recapitalizations based on projected ship retirements. The plan also includes competition opportunities for the shipbuilding industrial base. The Navy continues to work with the shipbuilding industry to reduce the cost of our platforms which may allow additional recapitalization.

14. Senator VITTER. Secretary Stackley, Secretary of Defense Gates said this week that "I do not foresee any significant top-line increases in the shipbuilding budget

beyond current assumptions.” Do you agree with Secretary Gates that the Navy should make no plans for increasing the shipbuilding budget?

Secretary STACKLEY. The Navy’s Long Range Plan for ship construction Report to Congress submitted with the fiscal year 2011 President’s budget request outlines the shipbuilding top line assumptions for the next 30 years. In this report, the Navy provides the plan for ship procurement to meet force structure requirements based on an average of \$15.9 billion per year shipbuilding budget (constant dollar fiscal year 2010), which represents an approximate 20 percent increase in shipbuilding compared to the past decade.

While the average shipbuilding budget has remained steady over the last few years, a significant change in the fiscal year 2011 report is the inclusion of the ballistic missile submarine recapitalization from within Navy’s anticipated total obligation authority. During the years in which the new submarine is being procured, the Navy’s shipbuilding plan projects an increase in the shipbuilding budget to approximately \$18 billion per year (approximately 45 percent increase relative to the past decade). The risks and challenges associated with projecting this level increase in shipbuilding budgets in the outyears are self-evident and therefore we are assessing impacts and alternatives to ensure the future force and industrial base that will support it are best postured to meet the national maritime requirement. The Navy has looked more closely at where it would be willing to assume risk for the future and not procure those ships which are not absolutely necessary in executing the missions for which the Navy is solely responsible. In completing this review, the Navy has balanced the anticipated risk in the period with the uncertainties of the future to achieve the best balance of missions, resources, and requirements possible.

The Navy recognizes that topline increases to the shipbuilding budget above this amount are unlikely. Therefore, the Navy will continue to drive for affordability initiatives into our shipbuilding programs while prioritizing our ship construction budget to best meet our warfighting requirements.

15. Senator VITTER. Secretary Stackley, for the LCS, do you believe the competition is on track and when do you expect to finalize the process and select the final design?

Secretary STACKLEY. The fiscal year 2010 LCS competition is on track. Proposals from the competitors were received on April 12, 2010. The Navy is evaluating these proposals and anticipates awarding a contract in summer 2010.

[Whereupon, at 4:34 p.m., the subcommittee adjourned.]

