

NOT FOR PUBLICATION UNTIL RELEASED BY THE
SENATE ARMED SERVICES COMMITTEE
SEAPOWER SUBCOMMITTEE

STATEMENT OF

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BEFORE THE

SEAPOWER SUBCOMMITTEE

OF THE

SENATE ARMED SERVICES COMMITTEE

ON

FY 2003 NAVY/MARINE CORPS SHIPBUILDING PROGRAMS

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Mr. Chairman, distinguished members of the Subcommittee, thank you for this opportunity to appear before you to discuss the Department of the Navy's Fiscal Year 2003 (FY03) ship programs budget.

The United States has always been a maritime nation, and our mastery of the seas, sustained by forward-deployed U.S. naval forces, ensures our access to our economic, political, and security interests overseas. Our economic prosperity, now more than ever before, is inextricably tied to the global economy a global economy that is totally reliant upon maritime trade to sustain its growth. The oceans are therefore the "great commons" of this economy: with public access to all, and so used by all. The United States Navy and Marine Corps ultimately guarantee this freedom.

The need for continuing our mastery of the seas was revalidated by the events of September 11, 2001. The United States Navy provided the sovereign soil to project power and protect our national interests when nations could not support hosting our land-based military. During Operation Enduring Freedom, carrier-based Navy and Marine aircraft have provided the preponderance of combat sorties, while Tomahawk cruise missiles fired from surface ships and submarines struck communications and air defense sites. Marines from amphibious ships provided the first large U.S. ground presence in Afghanistan and were supported ashore by Naval Construction Battalions which restored runways and enhanced the conditions of forward operating bases far inland.

Command of the seas, provided by U.S. sovereign power deployed forward, provides a tangible demonstration of our commitment to shared interests, and underwrites our political alliances and friendships across the globe. It is important to say that we will be there when needed to maintain the freedom of these shared global commons, deal effectively with shared problems and to respond quickly to acts of aggression...but, it means even more to be there beforehand.

Finally, the success of future joint combat operations will require us to have immediate and sustained military access wherever and whenever it is needed. Command of the seas which are fully two-thirds of the world's surface provide that global access, which is a priceless strategic advantage for our nation.

We are building upon our tradition of expeditionary operations as we transform into "network-centric" and "knowledge-superior" Services. Knowledge superiority is the achievement of a real-time, shared understanding of the battlespace by warriors at all levels of command. This in turn, will facilitate our ability to remain forward by providing the means for timely and informed decisions inside any adversary's sensor and engagement timelines.

To support this strategy and our forces, the President's FY03 budget request increases the amount of research, development and overall procurement investment critical to maintaining our Navy and Marine Corps Team as the pre-eminent combat force in the world. We seek an agile, flexible force, that can counter both the known and the unforeseeable threats to our national security.

STRATEGY

After years of under funding, the FY03 budget request represents a significant improvement for the Department of the Navy (DoN). Although the DoN still had to make difficult priority decisions, the final request represents the best mix possible among competing priorities. The highest priority items are directed at our most valuable asset, our people. The Navy and Marine Corps are committed to our people and their training as well as the readiness of their equipment. As the next priority, we have funded systems such as Cooperative Engagement Capability (CEC) and the Naval Fires Network (NFN) to enhance the performance of the current warfighting systems. Finally, we have sought to fully fund our ship and aircraft production programs while adding funds to develop new capabilities such as the family of surface combatants led by DD(X), the Joint Strike Fighter (JSF) and SSGN.

I believe current combat capability is healthy and the Fiscal Year 2003 budget request provides a stable foundation from which the Marine Corps and Navy will continue to work with the other military services to determine the best path to transformation and the best aggregate warfighting capabilities for our country.

COMPLETION OF PRIOR YEAR SHIPBUILDING CONTRACTS

A key component of our effort to build a stable foundation has been a strong emphasis on adequately estimating and managing program costs. During the past year, no other single issue has received more management attention by the top levels of the DoN than the Completion of Prior Year Shipbuilding account. Cost growth on ship construction contracts has eroded the confidence of the Defense Department and the Congress in our estimating, budgeting, and execution process for current and future procurements. The Navy is committed to restoring the confidence of Congress and building stable programs to ensure force structure requirements are sustained.

Many factors have contributed to the cost growth of current ships under contract, including:

- Configuration changes,
- Unanticipated challenges with the design and production of lead ships,
- Unanticipated growth in shipyard labor rates,
- Low rate procurement of vendor material and Government Furnished Equipment,
- Inflation and fiscal constraints, and
- Budget reductions/rescissions.

All of these factors, but particularly fiscal constraints, resulted in programs being aggressively budgeted. The Congress provided over \$700 million in FY 2002 to address those ships contracted in 1995 to 2001 in order to deliver ships with relevant capability to the fleet. The

FY 2003 Budget requests \$645 million to address similar shortfalls in order to deliver ships appropriated in 1996 to 2001. Also visible in the Navy's budget request are the known requirements through the Future Years Defense Plan (FYDP) to address similar issues for ships appropriated through 2001. The Department will soon be submitting a formal report to Congress on this issue, but I will briefly outline the management actions taken to mitigate the existing condition and to prevent a reoccurrence of the situation for ships requested in FY03 and future budget submissions. To prevent further increases to the prior-year-completion funding shortfall, the Navy has instituted the following corrective actions:

- In FY03 and beyond, shipbuilding programs have been budgeted to the Cost Analysis Improvement Group (CAIG) or Program Manager (PM) estimate.
- Change order budgeting levels have been established to reflect maturity of respective programs.
- Shipbuilding and government furnished equipment (GFE) program managers have been directed to limit changes to a small number of critical safety issues.
- The Department has reestablished the Ship Configuration Improvement Panel (SCIP) to ensure required changes are validated and fully funded.
- The Department further motivated industry cost performance through incentives in FY02 contracts.
- Prior decisions regarding workload splits among multiple yards have been reevaluated in light of the increased cost of having multiple "lead" ships.

If costs continue to rise in spite of these management efforts, the Department is prepared to descope or delay capability to maintain a funded, executable program.

Shipbuilding Plan

Recapitalization of the naval force structure demands implementation of a shipbuilding strategy that is robust with respect to the capabilities of the ships and warfare systems fielded, innovative with respect to design, technology, funding mechanisms and industry participation, and stable with respect to the annual investment and the essential industrial base. This shipbuilding strategy must produce a recapitalization plan that is not just a plan for the next year, but a plan that is supportable and executable across the FYDP and sustainable into the foreseeable future. What has been done too often in the past, using the recapitalization funds for battle force ships as a surge tank to attempt to balance a wide array of Navy programs, can not continue.

Our FY03 budget request calls for construction of 5 ships and the conversion of 2 submarines in FY03: 2 DDG-51 class destroyers; one VIRGINIA class submarine; one SAN ANTONIO (LPD-17) class Amphibious Transport Dock Ship; one LEWIS & CLARK (T-AKE) Auxiliary Cargo & Ammunition Ship; and incremental funding for the FY02 LHD-8, resulting in 36 new construction ships under contract. In addition, we have requested funding for advance

procurement of the sixth and seventh VIRGINIA class submarines, advance procurement for the CVN 70 refueling complex overhaul, the service life extension for three Landing Craft Air Cushion (LCAC) craft, and one LOS ANGELES class submarine engineering refueling overhaul (ERO). The budget request fully commits the Navy to the conversion of 4 OHIO class SSBNs into SSGNs by providing the necessary funding for the ERO and conversion needed to execute the four-ship program. When the four conversions are completed, these submarines will provide transformational warfighting capability, carrying up to 154 Tomahawk cruise missiles, support sustained deployed special operating forces, and sustain our submarine force structure. As we move forward, there are four key elements to our shipbuilding strategy.

Establish Core SCN(Shipbuilding and Conversion, Navy) Program First, is the need to properly price and fund the systematic recapitalization of primary battle force ships. This can best be accomplished by using full funding in each year with a stable investment for quantities of known needed ships. The mix of ships must provide the minimum essential force structure to meet warfighting requirements and the minimum essential industrial base workload to sustain needed capacity. This systematic recapitalization forms the core of the shipbuilding and conversion strategy, a core that does not change with every budget cycle; a core that is not used as a bill payer for shortfalls in other appropriations. The core may be added to in any given year in order to build-up force structure numbers, but the core investment must not decrease.

Leverage Creative Funding Methods Second, ships need to be bought smartly and, where appropriate, creatively, allowing exploration and leveraging of the use of funding mechanisms which produce industrial effectiveness and efficiency. There are several such mechanisms that when applied judiciously will allow stabilized investment and reduce the periodic funding spikes and cost overruns that plague efforts to maintain a balanced, stable industry workforce and material acquisition strategy. Specifically, advanced construction in conjunction with advanced procurement may prove to be advantageous in smoothing out the periodic spikes associated with high cost capital ships, the big deck ships, that serve to disrupt the systematic recapitalization of other battle force ships and the efficient level loading of the industrial base. The use of research, development, test & evaluation (RDT&E) appropriations for the lead ship of a class at each shipbuilder can aid in stabilizing a new construction program through better management of the inherently higher risk and capitalizing on the opportunity for industry collaboration. Furthermore, yearly review of RDT&E budgets will improve the fidelity in the execution year budget requirement and allow flexibility to adjust out year budgets if critical technologies are delayed or require additional maturation. In an era of teaming with industry, leveraging of the opportunity provided by these developmental efforts and investments must be pursued.

Another area that we need to look at closely is our process of budgeting for ships, particularly their electronic systems. The Navy is currently building the FY04 budget request. Thus, the Navy is now estimating the cost of ships that will be authorized and appropriated about 18 months from now. Those ships will take four to seven years to build. So today, program managers have to select and estimate the cost of electronic systems that will not be installed for two to four years. We are baselining information-technology systems for a ship two to four years before the need for these systems. Baselining the electronics in a ship in year one almost guarantees that those systems will change over the course of the ship's construction.

The program manager is faced with two choices. Buy the systems that were budgeted, building early obsolescence and capability limits into the ship or alternately, budget a greater amount for changes to allow the ship's information technology (IT) systems to be changed to pace technology. However, the system resists budgeting adequate funds for changes or management reserve.

We are working to find more efficient ways to proceed. We cannot let contracts and the fear of losing money drive us to make bad procurement decisions. I hope to urge a review of budgeting practices to allow phasing of money to be more consistent with when the funds are required.

Implement Cost Saving Measures. Third, it is essential to pursue those actions that will reduce the cost of ships. The factors that will achieve cost savings, or simply provide more capability per dollar, are understood within the industry and need to be applied by the Navy with discipline. Stability in design and production with reasonable cost targets are the most important aspects of reducing ship cost. Prior year shipbuilding cost increases are severely jeopardizing the ability to recapitalize battle force ships. The Navy and industry need to work together to achieve cost savings where possible and ensure that the cost of ship procurements are properly estimated and budgeted, and then executed within the established budget.

Insert Key Ship System Technology. Fourth, implementation of processes that provide for the modular insertion of rapidly evolving technology, so that warships remain capable in the face of emergent threats, is needed for key ship systems. These processes must provide the ability to insert new technologies into ship classes at planned points without disrupting shipyard production or increasing cost. Such planned spiral development, that exponentially increases capability through periodic upgrades, requires the efficient and expeditious transition from rapid prototype to production systems. Controlling cost while decreasing the cycle time for technology insertion will require the use of open architectures, module interface standards, commercial processors, etc. in conjunction with strict configuration control. Shortening this cycle time will require simultaneous acceleration of requirements and acquisition processes and changes to how programs and budgets are developed for these systems.

In combination, these elements of the shipbuilding strategy will provide for needed capability increases in the warfighting force and stability in the industry that is the key to the future recapitalization of the naval force structure. Such combat capability and shipbuilding stability can only come from a Navy commitment to define and stay the course.

Our FY03 shipbuilding plan provides the best available balance between the Department's requirements and available resources. The innovative teaming strategy approved by Congress for the construction of VIRGINIA class submarines, advance procurement for future VIRGINIA class submarines, and the next DDG-51 multiyear procurement contract, all highlight acquisition strategies aimed at lowering costs, reducing disruptions from hiring and layoff cycles, while level loading employment, and encouraging capital investments. Our shipbuilding plan maintains the LPD-17 program and the Auxiliary Cargo & Ammunition Ship (T-AKE) program that will help the auxiliary vessel manufacturers capitalize on past and current program efficiencies.

In addition, the Department's FY03 budget plan adds six DDG-51 class destroyers across the FYDP to the procurement profile to sustain the industrial base and future surface combatant force structure during the transition to DD(X) production. These actions constitute the Navy's near term effort to ensure the long-term ability of the shipbuilding industry to support our future construction programs.

Submarine Force Structure

The FY2003 budget requests \$360 million for the refueling of USS NORFOLK (SSN 714) at Portsmouth Naval Shipyard and for advance planning funding for future LOS ANGELES and OHIO class refueling overhauls and Trident D5 backfits. This refueling overhaul will provide important near-term attack-submarine force structure. LOS ANGELES class submarine refuelings provides the quickest and most affordable means of fulfilling submarine mission requirements met by fast attack submarines. The Navy's budget submission provides a submarine refueling plan for all but two of the LOS ANGELES class submarines. Refueling LOS ANGELES class submarines uses the nominal remaining 15 years in hull life on those submarines that do not have life-of-hull reactors. The Navy is continuing to identify options, which will support refueling the two remaining hulls.

The Navy is equally committed to the conversion of four OHIO class submarines into strike warfare and Special Operational Forces support platforms as transformational SSGN submarines envisioned by the 2001 Quadrennial Defense Review (QDR). When refueled, these ballistic missile submarines will each provide an additional 21 to 23 years of service. When converted to guided missile submarines (SSGNs), these submarines will fulfill Tomahawk Land Attack Missile and Special Operations Forces mission requirements. The FY03 budget request also funds the ERO planning for USS MICHIGAN (SSBN 727) and USS GEORGIA (SSBN 729) to be conducted in FY04.

PROGRAMS

ARLEIGH BURKE (DDG 51) Class Destroyer

The DDG-51 class guided missile destroyer program remains the Navy's largest surface ship program. The FY03 budget request includes \$2.37 billion for the procurement of two DDG 51 Class destroyers. The request adds six additional destroyers to the procurement profile, 2 additional ships/year in FY05 through FY07. The addition of the six DDGs addresses three issues: mitigates the industrial base gap between DDG-51 production and DD(X) construction from prior budgets; better stabilizes the surface combatant build rate as we transition to DD(X); and stabilizes future surface combatant force structure by 2012. A new four year, FY02 through FY05, Multi-Year Procurement contract solicitation was recently released. I anticipate a contract will be awarded for these eight ships, plus options, this summer.

The two ARLEIGH BURKE class destroyers procured in FY03 will be Flight IIA ships configured with the Baseline 7 Phase I Aegis Combat System, which we introduced on the third ship in FY98. This baseline incorporates new integrated mission capability and makes these ships more capable in the littoral than any other combatant in the world. The upgrades include the

SPY-1D(V) radar system, Cooperative Engagement Capability, the 5"/62 gun and a Remote Mine Hunting System capability. Additionally, the DDG-51 destroyers of the FY02 multiyear procurement will be forward fit with Baseline 7 of the Mk 41 Vertical Launching System, the Tactical Tomahawk Weapons Control System and the ability to accommodate the MH-60R helicopter variant.

USS RONALD REAGAN (CVN-76)

The delivery of the ninth ship of the NIMITZ class, RONALD REAGAN (CVN 76), is planned for 2003 at Northrop Grumman - Newport News.

Nuclear-powered Aircraft Carrier - CVN-77

The CVN-77, the tenth and final ship of the NIMITZ Class, has a contract delivery date of March 31, 2008, to replace the USS KITTY HAWK (CV 63). CVN-77 remains the future carriers' transition ship to CVN(X). CVN77 will include a flexible island design that will facilitate warfare system upgrades as needed during the ship's service life. Propulsion plant improvements include centralized electric plant controls and integrated propulsion plant controls. The FY03 budget request includes research, development, test & evaluation, Navy (RDT&E, N) funding of \$92 million to continue the development of the integrated warfare system, incorporating critical transition technologies into CVN-77. Technology demonstration for this effort will be conducted in the new Virginia Advanced Shipbuilding and Carrier Integration Center at Northrop Grumman - Newport News to prove new technologies before installation in the ship.

SAN ANTONIO Class Amphibious Transport Dock Ship LPD-17

The SAN ANTONIO class of amphibious transport dock ships represents a critical element of the Navy and Marine Corps future in amphibious warfare, and is a cornerstone in the Department's strategic plan. The 12 ships of the SAN ANTONIO class will functionally replace four classes of amphibious ships. This plan will not only modernize our amphibious forces, but will also result in significant manpower and life cycle cost savings. Despite the challenges confronted in program execution, the Navy remains committed to the vital role the LPD-17 class will play in the 21st Century.

The FY03 budget request includes \$604 million to fully fund the construction of the fifth ship of the class when coupled with Advance Procurement funds provided in FY01 and FY02. Only one LPD-17 class ship is requested in the FY03 budget, compared to previous plans for two ships. Appropriation requests for the final three ships of the 12-ship class are planned beyond the FYDP. Cost growth and schedule delays caused the Navy to revise the procurement plan to one per year. Current metrics indicate the LPD-17 program team is now performing in a predictable and disciplined manner.

Detail design of the lead ship is completing and fabrication has started on over two-thirds of the lead-ship construction units. LPD-18 construction began in February 2002 and LPD-19 construction commenced last summer.

Last fall, the Navy formally adjusted the contract delivery date for LPD-17 by 14 months (for a total delay of 24 months) to November 2004 and adjusted the contract delivery dates for the other three ships under contract accordingly. Production progress in fabrication, assembly and erection of LPD-17 construction units supports the revised schedule.

We are currently reviewing the efficiency of constructing this relatively small quantity of a single class of ships in two separate yards, essentially supporting two lead ships. In conjunction with our industry partners, we are evaluating whether there are better ways to load our shipyards across the entire spectrum of our shipbuilding efforts to provide greater efficiencies and lower costs.

Amphibious Assault Ship LHD-8

LHD-8 is a gas turbine powered amphibious assault ship based on the successful LHD-1 Class. The gas turbine propulsion with all electric auxiliary systems being included in LHD-8 will result in an estimated Total Ownership Cost savings of \$350 million - \$420 million for this ship over its 40-year estimated service life. The Navy awarded a contract for detail design of the propulsion plant in July 2000. Procurement of long lead material and advance construction of components as authorized by Congress was awarded in May 2001. The contract for LHD-8 construction is in negotiation for a FY02 award. The FY03 request includes incremental funding of \$253 million towards the total projected LHD-8 program costs of \$1.9 billion.

Auxiliary Cargo & Ammunition Ship (T-AKE)

We are replacing the aging Ammunition and Dry Stores Ships (T-AEs and T-AFSs) with the T-AKE Auxiliary Cargo & Ammunition Ships. The ships that T-AKE will replace are already over 30 years old. The FY03 budget request includes \$389 million for the fourth ship of this 12-ship class. Last fall, the Navy awarded a contract for T-AKE lead ship detail design and construction. Lead ship delivery is scheduled in FY05.

VIRGINIA (SSN 774) Class Attack Submarines

Construction on the VIRGINIA, TEXAS, HAWAII, and NORTH CAROLINA is progressing on schedule. The FY03 budget request includes \$2.2 billion for the fifth ship and advance procurement for the sixth and seventh ships of the VIRGINIA class. The fifth and follow-on ships will continue to be built under the unique construction-teaming plan approved by Congress in 1998. The teaming plan remains unaltered by the merger of Newport News and Northrop Grumman. This teaming approach provides a cost effective low rate production while maintaining two capable nuclear submarine shipbuilders. The teaming arrangement also helps both shipbuilders achieve level manning and more economic material buys.

The fifth ship is the first of the new contract the Navy is preparing for the next five VIRGINIA Class submarines. The Department considered various contracting strategies such as the multiyear procurement and block buy with economic order quantity (EOQ) material purchases, but they were considered unaffordable because of the large, front-loaded budget

requirements. The Department continues to assess contracting strategies and may revisit these alternative approaches in future budget submissions.

During the past year, the Department has raised its management focus on three critical issues for VIRGINIA class program execution: identifying the causes for cost growth for submarines under contract, mitigating the effects of these unforeseen cost factors, and ensuring that the FY03 budget request fully accounts for all known factors. The execution funding shortfall is primarily the result of the effects of low rate ship production on the shipbuilder and submarine vendor base which was inaccurately budgeted, and were fully realized as the shipbuilders took delivery on much of the ship equipment and material. The cost of these contractor furnished equipment items was much higher than procurement inflation indices and other cost estimating techniques that the Department used to budget for these submarines in 1997. Unbudgeted effects of labor disputes, which occurred after the lead ship was appropriated, contributed to the execution shortfall. Other significant factors included design performance, Government Furnished Equipment cost growth, overhead, and rates. Our FY03 budget lays out a funding plan to address the shortfall across the FYDP and covers the immediate funding requirements for the first three submarines. The cost of the fourth ship was addressed in the FY02 appropriation.

The VIRGINIA program continues to incorporate warfare improvements as a result of past and on-going R&D investments as budget allows. The FY03 submarine incorporates shipboard local area network (LAN) improvements, which will improve quality of work and Advanced Processor Builds for the combat system, which will improve warfighting performance and reliability.

USS JIMMY CARTER (SSN 23)

The SEAWOLF Class submarine program has delivered two of her three submarines. The USS SEAWOLF and USS CONNECTICUT have completed deployments to the Arctic, the North Atlantic and the Mediterranean. The third and final SEAWOLF class submarine, Pre-Commissioning Unit JIMMY CARTER (SSN 23), is being modified with additional volume to accommodate advanced technology for Naval Special Warfare, tactical surveillance, and mine warfare operations. The design modification is nearly complete and construction of the new module is on schedule. Overall ship construction is more than 70 percent complete, and delivery is targeted for 2004.

Strategic Sealift

The Strategic Sealift program is providing nineteen large, medium-speed, self-sustaining, roll-on/roll-off ships. These ships provide for strategic sealift of Army unit equipment and supplies from the U.S. mainland for pre-positioning in the vicinity of potential objective areas throughout the world. Two of the three remaining ships of this class will deliver in FY02, with the final ship delivering in mid-2003.

Joint Command and Control Ship JCC(X)

JCC (X) will be the first new afloat command and control capability in over 30 years directly supporting the Joint Command and Control elements of both the Operational Goals and Transformational Pillars of the 2001 QDR. It will be built around a robust, advanced C4ISR mission system that can be tailored to meet specific mission requirements and can rapidly and affordably incorporate new technology necessary to meet the demands of sustained operations at sea. The program entered Concept Exploration and Definition in November 1999. The Navy is evaluating the best course of action based on the analysis presented.

Experimental Destroyer DD(X)

DD(X), with its transformational technologies, will be the cornerstone for a family of next-generation surface combatants. These combatants must be affordable to produce and less costly to operate. They must be designed from the keel up to enable dramatic, 50-70 percent, manpower reductions. Automated damage control systems will help, as will improved human interfaces and a total-ship computing environment.

Equally important, the next-generation of surface combatants will be designed to reduce signatures across the full spectrum radio frequency/radar, magnetic, acoustic, and infrared. This reduced signature will have implications for tactics, systems, and self-defense requirements.

As for transformation, no Navy ship currently employs electric drive, though it is becoming common in the commercial world. Electric drive propulsion greatly improves design flexibility the engine compartments are no longer tied to a mechanical shaft. We can disperse the turbines throughout the ship, improving redundancy, reliability, and survivability. We can also improve efficiency by allowing the crew to match power generation to power consumption. Finally, an integrated power system will enable a new generation of advanced weapons systems and sensors by increasing the amount of power available at any one time.

Many of these technologies were intended to be incorporated into the DD-21 program. However, the DD-21 program allowed very little technical risk reduction though many of the technologies are quite transformational. With DD-21, we were taking a single step to full capability. There was a success-oriented assumption that everything would proceed on schedule and cost. There were limited opportunities for prototyping and no room for error. In the end, these factors resulted in a program at risk of significant cost growth. Thus, DD(X) was formulated to employ a broad range of strategies to make our entire family of next-generation surface combatants more affordable.

To mitigate the high technical risk; the restructured DD(X) program adds several land-based and sea-based prototypes for the key technologies. This provides an excellent means of reducing risk within each area. The Navy will see potential problems earlier in the process, providing us a better chance to solve them. This strategy improves the chances of delivering a functional destroyer within cost and schedule.

Additionally, the Navy plans to produce the lead ship using RDT&E funds. The Program Manager will be required to demonstrate progress on an annual basis to defend his budget. The Navy can react to problems without the risk of resorting to prior-year completion funding. The program manager can focus on establishing an efficient process for manufacturing the DD(X) class and avoid trading away producibility initiatives when costs increase. Being able to adjust the RDT&E budget for the lead ship provides the best chance to control costs and define a production process that allows the Navy to affordably build the entire class of these next-generation surface combatants.

As you all recognize, construction of the lead ship in RDT&E is a significant change in the Navy's approach to shipbuilding, which the Navy hopes the committee will support.

Using a spiral development approach will allow technologies to be fielded when they are ready through a flight approach, forged to capture cutting edge initiatives. As DD(X) drives the development of technology in many areas, we will look for opportunities to backfit advancements on existing platforms. Carefully focused upgrade and conversion programs will ensure the existing core of surface combatants maintain the capability for battlespace dominance.

Littoral Combat Ship

Included in the family of multi-mission surface combatants is the development of a Littoral Combat Ship (LCS). LCS will provide focused-mission warfighting capabilities. We are actively investigating many innovative hull designs that provide both the stability and speed necessary to enable an LCS to be effective in the littorals. LCS will be outfitted with network-centric capabilities, like the multi-mission combatants, to make this ship a combat multiplier. LCS' modular design will provide significant flexibility in both displacement and combat capability. These qualities may make it a good candidate for coordination with the Coast Guard's Deepwater program.

Nuclear-powered Aircraft Carrier CVN(X)

CVN(X)-1 is the next step in the evolution of improved aircraft carriers following CVN-77. Specifically, CVN(X)-1 will build on the CVN-77 design and incorporate an improved nuclear propulsion plant, nearly tripling electrical power generation capacity to replace manpower intensive steam auxiliary systems. The combination of a highly automated nuclear plant and the elimination of steam auxiliaries will reduce the manpower and lifecycle costs. Equally important to reducing lifecycle costs are the lower manning and maintenance requirements for the electromagnetic launching system (EMALS), which will also reduce lifecycle costs on carrier aircraft due to reduced wear and tear.

The next step in this spiral development effort will be CVN(X)-2, which will provide further improvements in flight deck performance, survivability enhancements, service life allowance, and continued reduction in total ownership costs.

In order to support other Navy funding needs and to allow for further technology maturation of CVN(X) systems, the FY03 budget submission delays CVN(X) detailed design,

construction start, and delivery by one year and split funds CVN(X)-1 construction between FY07 and FY08. The decision to delay the program is not attributable to program execution performance issues.

Following Milestone I, the Navy awarded the first increment of CVN(X)-1 design development work. The FY03 budget request provides funding required to support future CVN(X) construction in FY07.

Guided Missile Submarine SSGN

The Navy is committed to the conversion of four OHIO class submarines into Strike Warfare and Special Operations Forces support platforms as transformational SSGN submarines envisioned by the 2001 QDR. The FY 2003 budget includes over \$1 billion in Procurement and R&D funding to start the engineering refueling overhauls (EROs) of the first two OHIO class submarines in preparation for their conversion to SSGNs. This also funds attack weapons system design and begins procurement of long lead-time material for all four submarines. We are balancing rapid delivery of this capability with a fiscally responsible, business-like approach and exploring opportunities for public-private partnering.

Amphibious Assault Ship Replacement LHA(R)

LHA(R) is planned as the next generation large deck amphibious assault ship to replace the aging LHAs. The Mission Need Statement was validated in March 2001 and Milestone A decision reached in July 2001. The Analysis of Alternatives(AoA) is still in progress and should complete this summer: Options being considered are a repeat LHD, a modified LHD (slightly longer and wider) as well as a totally new design. Following completion of the AoA, Navy will select a preferred alternative and proceed through the acquisition process.

The first LHA will be replaced in approximately FY07 by LHD-8. We anticipate replacing the remaining LHAs by 2024. Average age for the 5 ships of the TARAWA class will be 39.2 years at decommissioning (4.2 years average past estimated service life (ESL)).

Ship Modernization and Technology Insertion

While building new platforms for the future is a prime priority, maintaining and modernizing our current platforms enables them to continue to be valuable war-fighting assets in the years ahead while concurrently trying to mitigate escalating support costs of aging equipment. As technological cycle times are now shorter than platform service life, it is fiscally prudent and operationally imperative to modernize the force through timely upgrades and technology insertion. In support of this priority, we plan to modernize the TICONDEROGA class cruisers, conduct planned maintenance and refueling of our NIMITZ class aircraft carriers and extend the service life of our air cushion landing craft. Our technology insertion efforts include the Smartship initiatives and a spectrum of new capabilities for both existing and in-development submarines.

TICONDEROGA (CG 47) Cruiser Conversion Plan The Navy plans to add new mission capabilities and extend the combat system service life of the TICONDEROGA class

cruisers. The FY03 budget request includes \$104 million in all procurement accounts to continue the engineering efforts and to procure systems for the first installation in FY06. The upgrade of these ships will add new, and enhance existing, combat system capabilities for Land Attack, Cooperative Engagement Capability, and Area Air Defense Commander missions. These new mission capabilities will dramatically improve the ability of these warships to operate in Joint and Coalition warfare environments. The program is essential to maintaining a mission-relevant force surface combatants.

Aegis Open Architecture While not quite DD(X) or LCS, one step that sets the stage for the Aegis fleet in the future is the upgrade of the Aegis Weapon System into a fully open architecture. Key features of this Baseline upgrade will be:

- Improvements to reduce operator workload and manning,
- Upgraded radar processing, and
- A software architecture that allows for rapid and cost effective commercial off the shelf (COTS) technology insertions needed to pace the threat.

This new Aegis Baseline will reduce the punitive costs of maintaining multiple baselines across the fleet. The result will be a common Aegis Baseline that will carry the Aegis equipped fleet well into the 21st Century.

Landing Craft Air Cushion Service Life Extension(LCAC SLEP) Program LCAC SLEP continues in FY03 through the award of options on the second production contract. The Navy plans to award a second production contract this year with options for up to nine craft over the next three fiscal years. LCAC SLEP combines major structural improvements with command, control, communications, computer, and navigation upgrades, while adding 10 years to the service life, extending it to at least 30 years. In FY03, LCAC SLEP is funded at \$68 million and will extend the service life of three craft. The SLEP is planned for 74 craft.

SUBTECH The Navy continues to pursue a strategy of increasing the capabilities of the VIRGINIA class submarine force through the insertion of advanced technology into new construction and follow-on ships. The FY03 budget request includes \$107 million in RDT&E funding for advanced submarine technology development emphasizing capability improvements in sonar and major electrical/mechanical systems. Additionally, the Navy is pursuing R&D in other areas of submarine technology that address a spectrum of new capabilities for existing submarines, planned construction, and future submarine classes. The eighth VIRGINIA class submarine (FY06) is targeted to receive a new composite advanced sail, which will provide space and volume for payloads and sensors. Separate efforts are advancing both payloads and sensors under development by two industry consortia for bringing revolutionary new capabilities to the submarine force for battleforce access, sharing knowledge, projecting stealthy power from the littoral. As these technologies mature and prove value for submarine enhancement, they will be added to VIRGINIA class submarines.

Both submarine shipbuilders are playing important roles by assisting the Department's efforts to identify additional technologies for insertion opportunities and by identifying design changes that bring a life cycle cost avoidance benefit. Last year the shipbuilders submitted seventeen design improvements for consideration of which eight were approved for further development and evaluation. Forty new technologies are being developed by the submarine community to provide these new capabilities. Two industry consortia, representing over 50 industry partners, are currently working under a Navy agreement to pursue specific areas of future advanced submarine research and development. These efforts are a result of the 1998 Defense Science Board study recommending revolutionary capability advances to the submarine force by harnessing future technologies. In FY01 these consortia began working on actual prototype demonstrations of selected technological concepts in an effort to mature the most promising advances for insertion into the submarine force. FY03 should see a continuation and expansion of these demonstrations to further develop technologies needed to provide additional capabilities to the submarine fleet by 2020.

Research & Development (R&D)

Identifying future capabilities for Naval Forces will require robust experimentation involving systems, platforms, organizations, and tactics. The Department must continually examine and question how we operate in various strategic environments and what the future might entail. Extensive use of simulations, modeling, joint test facilities, and actual forces is necessary to maintain our technical advantage and continual command of the seas. Technology will never substitute for presence; rather, it should always address a mission requirement of making naval forces more effective.

Twenty-first century technology offers enormous opportunities to enhance our warfighting abilities. Emerging technologies must be embraced, both to mitigate risk and to take advantage of new possibilities. Seizing these opportunities at a reasonable cost requires efficient organizational alignment, resolution of difficult interoperability and integration problems, systematic innovation using improved business practices, and the steady pursuit of promising scientific and technological initiatives.

Electric Power for Ships Specifically, the Department will fund development and at-sea demonstrations of: innovative superconducting and permanent magnet motor technologies for podded propulsors; advanced prime power, including high speed superconducting generators and fuel cells; and electrical auxiliaries such as Electromagnetic Aircraft Launch System for CVN(X).

Littoral Support Craft (LSC(X)) The Navy and Marine Corps will research advanced hull forms, cutting edge propulsion, and material and modular payload technologies for use in a littoral support role. Demonstration efforts are underway on several different vessels, predominantly catamaran designs. The Navy needs to expand this work and look at additional hull designs in order to support our future decisions on LCS.

Future Naval Capabilities (FNC's) The Navy's science and technology efforts are focused on FNC's, which address many aspects of future shipbuilding. In the areas of sensors, weapons, communications and radar, the Navy continues to make progress transitioning methods

and equipment that allow leap ahead technologies to better fight our ships while protecting our Sailors and Marines. The Navy is also pursuing many human systems technologies to make the man/machine interface more efficient in order to reduce manning on future ships. To better address the network centric aspects of future warfighting, the Navy has combined two FNC's to bring hardware and software communities together in a more integrated approach. The most important leap ahead technology for the future of naval warfare will be Electric Warship. The Navy is standing up a new FNC to address all aspects of Electric Warship to include the propulsion, sensors, auxiliaries and weapons.

The Navy's Science & Technology (S&T) program is focused on twelve FNC's:

1. Autonomous Operations
2. Capable Manpower
3. Electric Ships and Combat Vehicles
4. Knowledge Superiority and Assurance
5. Littoral Anti-submarine Warfare (ASW)
6. Littoral Combat and Power Projection
7. Missile Defense
8. Organic Mine Countermeasures (MCM)
9. Platform Protection
10. Time Critical Strike
11. Total Ownership Cost Reduction
12. Warfighter Protection

The largest near-term beneficiaries of the Navy's S&T program are the DD(X) and CVN(X) programs. S&T investments in electric drive and integrated electric architecture provide the basis for similar "electric ship" technology insertions in future ship programs. Other examples of technology insertions that will benefit future warships include alternative hull forms for high-speed combatants and incorporation of integrated and federated apertures for improved C4I and signatures performance. The benefits for the 21st century Sailor range from improved automation to improved quality of life. The benefits for the 21st century Navy are improved life-cycle costs to improved combat performance.

National Shipbuilding Research Program Advanced Shipbuilding Enterprise (NSRP ASE)

The Navy's NSRP ASE continues in FY03, building on previous efforts initiated under DARPA's MARITECH program (1993-1998). Productivity improvements achieved under MARITECH have helped stimulate commercial business opportunities such as construction of crude carriers, cruise ships, and trailer ships at three U.S. shipyards. NSRP ASE is an innovative approach in public/private cooperation involving 11 companies associated with the Navy shipbuilding and repair industry to jointly fund R&D for technologies critical to the Navy's ability to reduce shipbuilding, ship repair and Total Ownership Costs.

Naval Surface Fires Support

We are executing a two-phase plan to develop new weapons systems, advanced munitions and a Naval Fires Control System to provide improved Naval Surface Fire Support (NSFS) capability. These new developments will provide long range, time critical, accurate and lethal fires in support of ground forces in amphibious and littoral operations through a combination of advanced guns, precision gun ammunition and precision land attack missiles.

In the first phase, the Navy developed a 5-inch, 62 caliber gun and is currently developing the associated Extended Range Guided Munitions (ERGM) to engage targets between 41 and 63 nautical miles. These weapons and the Naval Fires Control System will be installed on 28 new ARLEIGH BURKE (DDG 51) Class destroyers and on Baseline 1 and 4 TICONDEROGA Class cruisers scheduled for modernization beginning in FY06.

The Navy was developing the Land Attack Standard Missile (LASM) to provide a Naval Surface Fire Support capability out to 150 nautical miles. However, LASM development was terminated in the FY03 budget request. Even though LASM was on track to meet all its stated program requirements, it would not have provided a lethal capability against all target types, including mobile and hardened targets.

The second phase, to be introduced to the Fleet with the DD(X) in FY11, is intended to fully meet Marine Corps Naval Surface Gunfire Support requirements for range, accuracy, and lethality. It includes developing a longer range, higher volume, larger caliber Advanced Gun System (AGS), the associated increased lethality Long Range Land Attack Projectile (LRLAP) and a long range, increased lethality Advanced Land Attack Missile (ALAM). The AGS and associated magazine will be fully automated and be able to deliver 12 precision guided LRLAP munitions per minute to ranges up to 100 nautical miles. Congressional support for the DD(X) Program is critical to development of the AGS and the LRLAP munition to lower the risk to our ground forces operating inland from the beachhead. Although the Navy's FY03 request has no funding for the ALAM Program, it provides the last, long range piece to the NSFS plan. ALAM is intended to deliver various tactical payloads to counter mobile and armored targets at ranges of over 200 nautical miles. The Navy intends to fund the ALAM Program in its FY04 request. These "second phase" weapons programs will fully satisfy all Marine Corps fire support requirements for Operational Maneuver From the Sea/Ship to Objective Maneuver.

SUMMARY

We are institutionalizing reforms that make acquisition success a common occurrence. We continue to communicate fully and openly with Congress, industry, our warfighters, and our acquisition professionals, and are doing everything it takes to make sure our Sailors and Marines are provided with the safest, most dependable, and highest performance equipment available within fiscal constraints. We appreciate the support provided by Congress and look forward to working together with this Committee toward a secure future for our nation. Mr. Chairman, the Navy and Marine Corps acquisition team is continuing to work very hard to build the best shipbuilding acquisition programs that maximize our current benefits while buying smart for the future.